TODAY'S YOUTH, TOMORROW'S CONSERVATIONISTS? LOGIC MODEL PROGRAM DESIGN

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TODAY'S YOUTH, TOMORROW'S CONSERVATIONISTS?
LOGIC MODEL PROGRAM DESIGN

A Thesis

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Abstract

of

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Statement of Problem
Friends of the River and its River Quest program intend to inspire future conservationists, the next generation who embody environmental ideals and practice conservationist behavior as well as proactive political action. The River Quest program provides educational outreach and encourages civic action, but also provides a means to show the value of the environment through experiencing the outdoors. As currently planned, it is unclear if the River Quest program is efficient or effective in inspiring future conservationists.

Conclusions Reached
The Logic Model framework assists in identifying a number of programmatic reforms that could enable the River Quest program to achieve growth and sustainability while better supporting the conservation mission of Friends of the River. Reflection upon relevant theories and best practices suggests a recommended model with benchmarks for growth for greater efficiency and effectiveness.

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Robert Waste PhD

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Date

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Chapter 1

INTRODUCTION

Teens in baggy pants swagger off the bus to return home, exhausted and elatedly chattering about the day's events. As a new volunteer, I wondered how the Friends of the River's River Quest program could affect these youths, youths that have low regard for civic or even personal responsibility. As a student of Business and Public Policy Administration with four years of work experience in community outreach, I joined the staff of Friends of the River in October 2008. Tasked with communicating the mission and efforts of Friends of the River, "how" River Quest "worked" became an even more intriguing question. How can today's "at-risk" youth become future conservationists after a day of white water rafting?

Utilizing the opportunity of a master's thesis, this paper seeks to provide an answer to that question to assist the Friends of the River staff in the planning and implementation of the River Quest program. There is a gap between youth stepping off the bus and returning home empowered. This project seeks to shed light on that gap. Enabling the profound Friends of the River mission through deliberate business principles is the focus of this paper, in other words to "plan the work; work the plan" because "proper planning prevents poor performance…failing to plan is planning to fail (Jacobson, McDuff, & Monroe, 2006)." The Logic Model framework to be used will assist in programmatic decisions enabling growth and sustainability (see Figure 9). This will be accomplished through reflection of theories and best practices in relation to the current program model to create a recommended model with benchmarks for growth for

greater efficiency and effectiveness. Finally, the Logic Model will assist in communication of program goals and results, which will enable funding solicitations to support the program.

Table 1
Logic Model Application (Kellogg, 2004, p. 40)

"Audience	Typical Questions	Evaluation Use
Program Management and Staff	Are we reaching our target population? Are our participants satisfied with our program? Is the program being run efficiently? How can we improve our program? Programming decisions, day-to-day operations	Programming decisions, day-to-day operations
Participants	Did the program help me and people like me? What would improve the program next time?	Decisions about continuing participation.
Community Members	Is the program suited to our community needs? What is the program really accomplishing?	Decisions about participation and support.
Public Officials	Who is the program serving? What difference has the program made? Is the program reaching its target population? What do participants think about the program? Is the program worth the cost?	Decisions about commitment and support. Knowledge about the utility and feasibility of the program approach.
Funders	Is what was promised being achieved? Is the program working? Is the program worth the cost?	Accountability and improvement of future grant making efforts."

Conservation education programs educate and empower the next generation of conservationists. Equal access to outdoor adventure experiences is a value of many environmentalists as integral to the formation of environmental ethics and behavior. Economic and social inequality and discrimination limit access to the natural world,

particularly for youth in their most impressionable years (Barrett & Greenaway, 1995). Kofi Annan once stated the profound need for this connection for the future of our community and environment, "Young people should be at the forefront of global change and innovation. Empowered, they can be key agents for development and peace. If, however, they are left on society's margins, all of us will be impoverished. Let us ensure that all young people have every opportunity to participate fully in the lives of their societies" (Better World.net, n.d). Conservation education programs lack sufficient evidence of efficacy. Conservation education utilizes the theories and results of experiential education instead of conservation educational practice and objectives. Of particular ambiguity is the differing programmatic treatments correlating with analogous results on participants. Therefore, this paper's secondary audience is researchers and conservation education practitioners with the goal to increase dialogue, review, and improvement of conservation education. Conversation and reflection will benefit devoted organizations, social causes, and participants' lives.

History of Adventure Programs

Adventure programs have evolved along with society and endeavor to improve and reconnect people with the earth. James Neill provides a view on this socio-cultural historical evolution of outdoor education (Neill, 2007). Neill begins this time line from the days of the hunter and gather societies where the young were taught how to live and interact with the natural world. Once the walls of civilization were constructed, there became a physical and mental barrier between man and earth. With industrialization, man's existence was centered within the walls of work and home and in between was the

accumulation of assets instead of resources. The isolation from the outdoors reduced the ability and necessity for man to observe the rhythms and his or her relationship to the environment. The advent of formal adventure programs occurred in the 19th century with the formation of academic camps. The following century saw the creation of groups like the Boy Scouts who provided military education during peacetime. Adventure education programs spread like wildfire with the re-embracing of all things natural and free in the 1970's. Soon after, national associations formed for both experimental education and wilderness education. Today, adventure programs are for profit and nonprofit organization as well as outreach programs for nonprofit organizations. Conservation education is a programmed experience to enhance understanding of the earth and oneself. In Phyllis Ford's 1986 paper, *Outdoor Education: Definition and Philosophy*, she summarizes adventure education as "education in, about, and for the out-of-doors" (p. 2). In 1997, a research team evaluating the Outward Bound program characterized adventure programs to include physical activities which challenge participants in ways that make them rely upon or develop personal and social resources (Hattie, Marsh, Neill, & Richards, 1997). Conservation educational adventure programs combine these goals "to explore the environment firsthand, experience adventure based challenges, and develop stewardship skills in active outdoor settings" (Stern, Powell, & Ardoin, 2008, p.31).

River Quest

River Quest seeks to educate and inspire a diverse next generation of conservationists by reaching out to youth groups and providing a one-day educational

white water rafting trip. A River Quest trip starts when the teens pour out of the bus and are welcomed amongst the trees at the riverbank. Immediately, the guides jump in to introduce themselves taking a few teens each to go move gear, pump up boats, and arrange paddles. Before pushing the boats from the shore, the group leader engages the group in playfully warm up games and bestows conservation lessons. On the river, listening to the guide and group cooperation is the key to safely navigate the white water. Peer pressure or cold dunks, as a teen falls overboard, quickly mitigates mistakes and inspires group cooperation. Along the quiet stretches of the river, the guide bestows facts about the water, plants, animals, and canyon. At takeout, boat teams are responsible for carrying, deflating, rolling, and putting away their group's boat. Exhausted the youth group gets back in the bus to head home, along the way recapping the trip's exciting moments in preparation for telling their friends at school the next day.

River Quest is a classic example of an adventure program with conservation education elements. Adventure programs involve environmental settings with challenge and education component to entertain and engage. The primary guiding theory, experiential learning, is that learning by hands on methods and experiences is superior to classroom methods. The activities and educational information provided in these programs range, yet the programs have analogous assertions of enabling personal growth, regard for the environment, and tools to be more productive in groups and society. These transformations are attributed to putting a person in a unique situation, from the city to the great outdoors or from wandering the streets to paddling down the river. This situation creates a state of disequilibrium through which teaching can occur in areas of

social responsibility, positive decision-making, and other aspects of cognition, character, intention, and behavior.

Public Policy and Administration

The study of public policy and administration seeks to understand and work within the constructs of our communities' social systems. Every day administrators and elected officials make decisions that affect others through government and community programs. A key to these decisions is strategic planning and evaluations that are communicated to or instigated by decision makers. In governance, as well as management of social programs, activity outputs are the means by which to measure success. The study of Public Policy and Administration encourages more deliberate and sensitive reflection of programs true economic, political, and social impact along with the efficiency of those programs. These reflections are key in supporting needed programs through communicating their benefit to society. Without deliberate planning and reflection at a micro level (based on program benchmarks) and macro level (based on determined benefit to society) it is unknown if our policy and program efforts are successful.

What is in this Paper

Chapter 2: Literature was reviewed to understand the common and unique attributes of the River Quest program. River Quest provides conservation education in an adventure program format. Conservation education adventure programs are similar to experiential education programs that inspire personal, group, and intellectual growth through hands on outdoor activities. Experiential education program attributes are based

on foundational theories tested by many empirical studies. However, conservation education attributes and impact are not substantiated by current research.

Chapter 3: Many studies indicate the need for review of program treatment methods to determine the correlation with impact. The Logic Model framework was chosen to assist Friends of the River to plan, assess, and implement their River Quest program. The Logic Model will assist in answering key managerial questions of accountability, marketing, and improvement.

Chapter 4: The River Quest program is presented as currently planned and implemented. The model was compiled through review of documentation and communication with the sole program manager. Subsequently the program manager verified the model, and associated commentary.

Chapter 5: Recommendations were prepared as a revised logic model and associated commentary. Best practices and ideas were a product of public policy and administration study along with literature review and interviews with stakeholders including an industry professional, partnering organization, and the Executive Director of Friends of the River. The recommendations are intended to guide Friends of the River in improving, growing, and sustaining their River Quest program.

Chapter 6: Lastly, this thesis intends to assist in the planning, implementation, and review of conservation education adventure programs. Research lacks, and this paper provides, a method for reviewing differing treatments to enable logical program delivery, systematic review, and communication of results. This method is demonstrated as applied to a case study, the River Quest program. The efforts of experiential education

programs are well documented, yet this will be the first of many to address social program interventions and intended results.

Chapter 2

LITERATURE REVIEW

This literature review focuses on the theories and defining features of adventure programs. The most recent and comprehensive literature review was published by Marcia McKenzie (2000) in the *Australian Journal of Education* entitled, *How are Adventure Education Program Outcomes Achieved?: A review of the literature.* This article served as a foundation for review of past pivotal studies. Specifically I focused on the underlying foundational theories that exist across Adventure programs. Then I explored the relatively unchallenged notion and assertion that conservation education leads to interest that then leads to involvement. Finally, a range of related recent research is described and provided as a resource (see Table 4).

Adventure program is a broad term to which there are many synonyms and variations. The common characteristics are that the programs occur outdoors and provide an "experience." Beyond these commonalities, the programs diverge to emphasize experiential education or conservation education. Experiential education utilizes the outdoors and its activities as a backdrop to teach, demonstrate, and facilitate intra and inter personal growth. Alternatively, conservation education utilizes the best practices of experiential education to create a learning environment in and about the outdoors.

As literature was reviewed, therapeutic adventure programs also surfaced but are not in the following literature review. Counseling activities and targeting youth and their families define these programs. The unique attributes and related theories were not included due to differing dependant variables, theories, and program goals.

Foundational Theories

Adventure programs have evolved to include many settings and activities; nonetheless, three theories dominate the rationale for these programmatic choices. Experiential Learning Theory speaks to the salience of learning through doing (and watching). The theory of Cognitive Dissonance delineates the unique opportunity for a risky or new setting, which open the minds of participants to new thoughts and behaviors. Finally, Constructionist Learning Theory qualifies that the assimilation of information is created through past experiences and is modeled for future understanding.

Experiential Learning Theory

The Experiential Learning Theory is a holistic model acknowledging how people learn, grow, and develop with an emphasis on the central role experience has in the learning process (Kolb, Boyatzis, & Mainemelis, 1999). The best description of Experimental Learning Theory comes from the writing of the theory's creator, David Kolb (1981):

> The theory of experiential learning maintains that learning is a process involving the resolution of dialectical conflicts between opposing modes of dealing with the world – action and reflection, concreteness, and abstraction. Learning styles represents preferences for one mode of adaptive modes and will vary from time to time and situation to situation. This idea of variability seems essential, since change and adaptation to environmental circumstances are central to any concept of learning (p. 290).

Kolb's theory drastically changed education practice (Kelly, 1997). The first conceptual documentation of experiential learning comes from a quotation attributed to Aristotle, "For the things we have to learn before we can do them, we learn by doing

them" (Eisenberg, 2001, p. 72). Preliminary discussions about experimental learning are attributed to John Dewey's 1938 book, in which he criticizes educational practice for lacking consideration of past and current experiences on current and future learning (Dewey 1938 as in Neill, 2005). David Kolb was first to formulated a formal scientific theory called the Experimental Learning Theory delineated in his 1976 research paper (published and updated in 1979) and in his book *The Learning Style Inventory: Technical Manual* (Kolb, 1981).

David Kolb et al (1999) asserts that concrete experiences (independent variable) lead to observation used for reflection and ultimately learning (dependant variable). This reflection occurs by perceiving (intellectually) or processing (viscerally), corresponding with the individual's learning style (Algonquin, 1996 as cited in Kelly, 1997)(see Appendix B). Curtis Kelly's (1997) writing describes reflection, a feature of Kolb's theory, as "…trying to explain [the experience] to oneself: comparing it to previous experiences to determine what is the same and what is unique, analyzing it according to personal or institutional standards, and formulating a course of action connected to the experiences of others" (paragraph 8).

Kolb's groundbreaking theory challenged common thought, leading to many discussions and challenges. After reading published articles questioning the validity of his theory, Kolb issued a retort (1981) asserting that over 90 studies support his assertions. Kolb also clarified that the learning styles he created are not fixed traits but rather fodder for understanding how we process experiences. Kolb's retort concludes

with a call for research testing the validity of his theory by scientifically rigorous methods.

The discussion continues today about the connection between experiences and learning. Many assert that experiences do not automatically cause learning and therefore; educators need to arrange reflection and questioning activities conductive to particular goals (Neill, 2006). Kurt Lewin reiterates Kolb's proposal that substantiative learning does not happen without the inclusion of experience and reflection, and further prescribes the need for conceptualization and opportunities to test ideas (Roth, 2008). Education text ardently encourages both tailoring subject matter so that it is relevant to the students' personal interests as well as self-initiated learning for salience (Neill, 2006). Therefore, adventure program leaders should help participants process the experience so they can apply its lessons to their daily lives. Processing can passively occur by a leader asking a student about their day or by leading a discussion (McKenzie, 2000; Neill 2006). Reflection can occur by reviewing activities and information, but the most important is reflection on one's own behaviors.

The Group

Learning is fostered by group activities. Jon Barrett and Dr. Roger Greenway's review of adventure program literature found that cooperative learning could be a potent tool for personal and social development. Adventure programs commonly provide opportunities for young people to be leaders or follow peers, establish and maintain group norms, and participate in communal tasks requiring cooperation (Barrett & Greenaway, 1995). This cooperative learning environment is enhanced further by peer pressure, risky

or uncertain circumstances, and challenging activities requiring cooperation. These added elements can also improve trust and communication between participants and mentors (Barrett & Greenaway, 1995). From the sociological perspective, some conjecture that personality problems arising in dysfunctional groups (such as bad influences in the neighborhood) can be reformed by positive cooperative groups (McKenzie, 2000). A positive experience of feeling valued and supported by others can change a self-centered teen into an empathetic group member. The feeling of belonging taps into a basic human need, which is further facilitated by activities emphasizing mutual reliance and reciprocity. Group activities generally can improve an individual's socialization, which in turn may assist in future conflict situations and relationships. Albeit almost all adventure programs tout these character-building impacts from group participation, there is no consensus on an ideal group size (Stern et al., 2008).

Incremental Success

Many experts also commented on the benefits of achievable success and management of failure. Incremental increases in difficulty through challenge, mastery, and then success can lead to increased self-esteem (McKenzie, 2000). However, with challenge failures are likely to occur. Some argue that failures can become teachable moments if combined with good facilitation (McKenzie, 2000). The opportunity and support in failure can provide some of the most salient lessons about accomplishment and perseverance.

Make a difference in just one day

Adventure programs range in duration from one day to several months. A review of literature suggests that an adventure program could help as a supplement to another longer-term community based program (Barrett & Greenway, 1995). For instance, a short-term program can facilitate a new assessment of the young persons needs for future intervention, especially if their continuous community mentor is involved or reported to at the end of the program. Randolph Halzua-Delay has qualified this assertion arguing that short-term experiences are not as beneficial as periodic experiences throughout life, particularly in earlier years. Research also implies that long term support or reinforcement of values (through one program or multiple) can show improvements in decreasing negative behaviors in youth (Higgins, 2007).

Cognitive Dissonance

Adventure programs share a common characteristic by occurring in an unfamiliar outdoor environment where there is some inherent perceived risk or uncertainty. The perception of risk or uncertainty comes from humans' need for security and consistency. This primal nature provides the foundation for Leon Festinger's (1962) theory of Cognitive Dissonance. Festinger's theory evolved from a impromptu field experiment in which he infiltrated a cult who believed that aliens were going to cause the world to end on a specific date and time (Robertson, 2001). In this experiment, he witnessed the cult's theory being disproved and in response, the cult members became more adamant about their belief. This experiment, data, and initial thoughts about cognitive dissonance and a recounting of his field experiment were presented in Festinger's 1956 book, *When*

Prophecy Fails.

Cognitive Dissonance occurs in situations with dissonance (or inconsistencies) whereto humans will seek out consistency (of cognition). Learning comes from the basic human need to minimize (if not eliminate) the gap between what is known and unknown. This anxiety or perception of risk allows for learning and accepting of new concepts (Atherton, 2005; McKenzie, 2000).

In 2000, Marcia McKenzie penned the most current and comprehensive literature review broadly inquiring, *How are Adventure Education Program Outcomes Achieved*, in which she explains that uncertainty (independent variable) can aide learning (dependant variable). McKenzie (2000) describes that a constructive level of anxiety created by the unfamiliar "can enable participants to gain new perspective on the familiar environments from which they came" (p. 20). Rebellious youth may find themselves affected by the new scary place and situation necessitating self-awareness and responsibility. This is accomplished by tapping into mental, emotional, and physical capabilities, which can allow youth to refresh or rethink their identity and behavior (McKenzie, 2000).

The theoretical marriage between cognition and motivation, with the cognitive dissonance theory, was a groundbreaking idea for social psychologists; accordingly, researchers have extensively tested its hypotheses and formulated alternate conclusions. In Elliot Aronson's 1992 article, he recounts first reading Festinger's theory in the draft of an article (a year after Festinger's book was published) outlining the theory of Cognitive Dissonance formally to the field. By his own admission, Elliot considered Festinger to be one of his closest friends yet since Elliot learned about the theory he

worked to disprove it. Aronson first asserted an alternate theory in 1969, similarly asserted by Daryl Bern in 1967, appending self-perception and image as a variable for consideration above dissonance (Bern, 1967). Aronson, Bern, and many other researchers have admitted difficultly singling out basic needs as a motivation, but rather have formulated many other possible factors, and all have been subsequently discounted (Aronson, 1992).

Constructionist Learning Theory

Adventure programs occur within the context of the participant's life. Experiential learning ties into key learning mechanisms encouraging higher synthesis of information; nonetheless, the constructionist learning theory qualifies this endeavor by stating that learning through one's own actions and experiences is the foundation for future applied meaning (Haluza-Delay, 2001; Hein 1991). Constructionist Learning Theory asserts that learners assimilate information by constructing mental models to better understand the current situation.

In Randolph Haluza-Delay's 2001 research paper, *Nothing here to care About…*, he explores youths' perception of nature after their adventure program experience. Students that were interviewed defined "nature" more for what it is not, than what it is. Counter to the perceptions and goals of many program coordinators, the experience reinforced the youth's concept that nature is "out there" and not at home. For instance, nature was described as "where there are no people"; therefore, the youth constructed nature to be a place not affected by people. This research concluded with a

recommendation to incorporate activities that clearly correlate nature with young people's daily lives, by connecting lessons from the outdoors to their local community.

Conservation Education

Conservation education is a type of adventure program, primarily preformed by environmentally based organizations, as a mechanism to create future conservationists. Literature on activism and education is sparse and ambiguous about the theories, motivations, and characteristics of activists (also referred to in this context as conservationists, stewards, or volunteers). North American Association for Environmental Education points to a website called *Wilderdom* for information on the background a theories behind conservation education. Most theories presented on this site are the same or variations of the above described experiential theories. One "theory" specifically addresses conservation education. This is the "Black Box Theory" (Niell, 2004):

> What makes outdoor education "work"? What makes outdoor education "not work"? What are the critical (or causal) nuts and bolts of outdoor education programs? It is unhelpful to clump all aspects of outdoor education into a Black Box that supposedly "just works." Likewise, it is unhelpful to consider all forms of outdoor education as inherently worthless. The solution is that we need to invest more deeply in analysis of theory and research about outdoor education to try to uncover more of the mystery of the black box. A theory is a proposed explanation for how a phenomenon operates or functions. A good theory should make its assumptions clear and lead to testable predictions. Good theory should also be able to account for the rich and varied reality of different people's experiences. Weak theories for the potential value of outdoor education are mostly used e.g., "its good for them because life's too easy these days", "no pain, no gain" or "being in nature is wonderful". Likewise, weak theories against outdoor education are often used e.g., "too expensive," "takes too much time", "not worth the risk," "too hard," etc. Can we do better?

Current research shows that many youths are concerned about social and environmental issues but do not act on those concerns. Charles Roth (2008) summarizes the dilemma and proposes his own insight that conservation education centers on the future when most people see issues as to how they benefit them today. Roth continues to explain, "until one's basic needs are met emotionally and physically, there can be little consideration of broader ecological issues. People need to see that they are part of, not except for the natural world. Science is a process for asking questions and seeking reliable, verifiable answers, thus, science education needs to focus on helping learners ask and frame suitable questions and develop tools for seeking answers to these questions. Unfortunately, much science education has focused on providing answers to questions. The students have never thought of asking " (Roth, 2008, p. 211).

Researchers have seen the disparity between interest and involvement and have made some efforts to reach out to youth and ask "why." In Haluza-Delay's (2001) interview's youth expressed a desire for wilderness settings to "remain as they are." However, when asked, the youth did not understand the connection between care for the environment, ascertained in the adventure program, and how to practice it at home. Supporting Halzua-Delay's qualitative research, Emma Partridge recently completed a meta-analysis survey on the importance of environmental issues to today's youth. Overwhelmingly youth expressed concern for the environment and that the government should do more to safeguard natural resources. However, when youths were questioned further to discuss a personal prioritization of important issues, the environment was often near the end of the list (Partridge, 2008). Partridge theorized that issues that relate to

their daily lives, ranked higher in priority. Further, additional research into social inaction suggests this lower prioritization could be resulting from frustration and cynicism; youths feel as though they cannot "make a difference." Several studies assert youth want to see concrete results and yet feel that one person cannot influence social issues (Partridge, 2008). Lewis Friedland and Shauna Morimoto (2004) studied the *Paradox of Youth Civic Engagement* in which they found that among youth there are discrepancies in their motivations for civic engagement (also called service learning or volunteering) based on socioeconomic class. Students from middle to high-income homes viewed community service as a tool to add experience to their application for acceptance to college or their first job. In comparison, students from low income or minority neighborhoods defined volunteering as personal. These youths most often volunteer in their community, including after school neighborhood centers, because they want a better life for themselves, siblings, and neighbors (Friedland & Morimoto, 2004). An additional study of note also attributed youth engagement to parental encouragement, which can have effect on the youth's motivation to contribute, particularly for females (Gordon, 2008; MTV, 2006).

MTV, the music television cable station, has also supplied some understanding of the disparity between interest and involvement. In 2006, MTV's Think project released a research study called *Just Cause: Today's Activism*. The project surveyed almost 1200 teens (in person and online) as well as spoke to experts and evaluated online journals. The project sought to identify youths' frequency in participating in activism and solicited suggestions from teens on how to enable increased activism. MTV's survey shed light on

the differing perspectives on volunteering (or activism) by today's youth in contrast to previous generations. In the past, activism has centered on towns and interest based causes. Today, youths have social ties to the virtual community of the Internet Therefore, youth surveyed have asked for more opportunities that are technology-based or social. Examples of technology-based activism include "causes" on Facebook and viral text messages. Finally, when segmenting those surveyed there were clear characteristics that were common in the most active amass: high social awareness and sincere interest, altruistic, often religious, and largely female.

Summary of Research

Adventure program research has primarily been on the impact of the program on specified variables. These variables or intended (asserted) results fall into three major categories: environmental education, character building, and encouragement of stewardship behavior. Educational activities are purported to enhance understanding of environmental issues and foster a personal relationship to the environment, created through construction, and assimilation based on past and current experiences (Haluza-Delay, 2001). Most organizations promote their influence on personal character building using a wide range of terms, which separate into distinct groups: interpersonal skills and self-concept. Interpersonal skills are behaviors that influence our interactions with others, while self-concept is the assessment of self, including physical attributes, social attributes, and self-ideals. Lastly, conservationist organizations include an additional goal to change participant's "attitudes toward environmental conservation and their intentions and actions regarding environmental behaviors" (Stern, Powel, & Ardoin,

2008, p. 34).

Based on the found research on conservation education (or adventure programs with conservation educational components) effectiveness, the results are uncertain and preliminary. Generally, there is substantial research that many self-concept variables improve after treatment, while impact on cognition is inconclusive, and effectiveness of stewardship information is unknown. Defining research questions to contemplate long term impacts, interest and involvement, and demographic factors has begun to shed light on the complexity of the external factors affecting the salience of the intervention.

There are two known studies to evaluate, specifically, conservation education efficacy in increasing knowledge and stewardship behavior (see Tables 2 & 3). In 1995, the American Institutes for Research conducted a study of three conservation education programs (affiliated academic) specifically assessing statistically significant outcomes in skill building, environmental knowledge, and stewardship. Recently, in 2007 Lisa Flowers conducted an evaluation of the Hooked on Fishing Program on behalf of the Montana Fish and Wildlife Parks.

Table 2
American Institutes for Research Study, 1995

Question (Statistically significant compared to control group)	Findings (Corresponding to Respondent)
"How does participation in outdoor education programs impact students' personal and social skills (e.g., self-esteem, cooperation, teamwork)?"	Student: 6-10 weeks later, gains in cooperation and conflict resolution. Teacher: Gains immediately and six to ten weeks later across all constructs (eight) particularly self-esteem, conflict resolution, relationship with peers, problem solving, motivation to learn, and behavior in class.
"How does participation in outdoor education programs foster students' stewardship of the environment and their appreciation of the importance of the wise use of natural resources?"	Parent: Increases in conservation behavior at home
"How does the science instruction received through the outdoor education program curriculum increase students' knowledge and understanding of science concepts?"	Teacher: Science scores raised 27% and were sustained over time.

Table 3
Flower's Study, 2007

Question	Findings
Is the program being implemented well?	Yes, the teachers valued the program's experienced instructors and provided the classroom materials.
Increased outdoor skills?	Statistically significant gain in fishing skills.
Are students learning about Montana's fish and aquatic resources?	Yes, statistically significant gains in names of fish, good habitat traits, importance of clean water, body parts of fish, and jobs in the fish and wildlife industry.
Is there value in providing multiple experiences?	More than one experience was shown to have a statistically superior result.
Recommendations	Desire for stewardship behavior should be matched with corresponding activities and evaluation.

The primary methods of research are variations of surveys or meta-analysis (see Table 4). Discrepancies in the treatment applied and/or the variables tested diminished the generalizability of the results. These inconsistencies detract from the ability to test the inherent assumptions (theories) and treatments applied for impact on variables. Many studies have cited in their conclusion that scientific rigor, parallel research, and long run evaluation should be instituted.

Table 4
Adventure Program Literature

Author(s), Title	Major Findings, Methodology
American Institutes for Research. (2005, January). Effects of Outdoor Education Programs for Children in California. Report submitted to the California Department of Education	Two months later the treatment group showed a statistically significant increase in conflict resolution and communication skills as rated by the participants and teachers. In addition, parents noted statistically significant gains in environmental behaviors. Science scores raised 27% and were sustained. Methodology: "Delayed treatment design." Studied impacts of weeklong program for at-risk sixth graders. Treatment and Control groups were given surveys including students, parents, and teachers. Also on-site observation and focus groups were conducted. Prompted by California legislation.
Cross, R. (2002, Spring). The effects of an adventure education program on perceptions of alienation and personal control among at-risk adolescents.	"Studied the impact of climbing programs on 17 at-risk adolescents and found measurable gains in the participants perceived feeling of personal-control as compared to at-risk peers who did not complete the program" (Higgins, 2007, slide 5). Methodology: Four two-way analyses of variance ANOVA; Dean Alienation Scale and Connell's New Multi-dimensional Measure of Children's Perceptions of Control (Cross, 2002).
Flowers, A. "L." B. (2007, May). Assessing the Effectiveness of a Place-based Conservation Education Program by Applying Utilization-focused Evaluation (Dissertation).	One to three day outdoor experiences had statistically significant affects on students' knowledge and skills. No change in attitudes or stewardship behaviors (Author noted this program did not have specific activities related to these points). Methodology: Quasi-experimental non-equivalent group study, surveys pre and post program

Table 4
Adventure Program Literature (Continued)

Author(s), Title	Major Findings, Methodology
Gordon, H. R. (2008). Gendered paths to teenage political participation: Parental power, civic mobility, and youth activism.	For girls, there is less correlation between political ideals and action. Author attributes that the impact of parental power is more significant for girls (Gordon, 2008). Methodology: Over two years, comparative ethnographic research between children and parents; Variables: parental worry, opposition, and control.
Haluza-Delay, R. (2001). Nothing Here to Care About: Participant Constructions of Nature Following a 12-Day Wilderness Program.	Perception is that nature is a place "out there." Disconnect between environmental concern and ability to act at home. Methodology: Participant observation and post-trip interviews.
Hattie, et al. (1997). Adventure Education and Outward Bound: Out-of-Class Experiences That Make a Lasting Difference.	Greatest immediate effects on leadership, academic, independence, assertiveness, emotional stability, social comparison, time management, and flexibility. Lower positive effects on leadership goals, physical ability self-concept, academic self-concept, and interpersonal communication. Methodology: Meta-analysis, self-concept variables.
Long, A. E. (2001). Learning the ropes: exploring the meaning and value of experiential education for girls at-risk.	Long-term program in which "girls showed growth in the areas of trust, leadership and attitude" when assessing their perceptions regarding their group and themselves in that group (Higgins, 2007, slide 7; Long, 2001). Methodology: "Symbolic Interactionism" (how participants place meaning on experiences).

Table 4
Adventure Program Literature (Continued)

Author(s), Title	Major Findings, Methodology
Miramontes, L. P. (2008). Exploring at-risk youths' personal and social development during wilderness experiences	"Major themes found included self-growth, motivation, community development, leadership development, and transfer of learning… Follow-up data demonstrated transfer of themes into students' daily lives, as well as passing on their knowledge to new students" (Miramontes, 2008, abstract).
MTV. (2006). Just Cause.	While 70% believing in the importance of helping the community, only a third do something on a weekly basis and interest far exceeds involvement. Young people need specific direction, encouragement, flexibility, and an early start. Strategies are needs to close the 'activation gap' - the gap between desire and action (MTV, 2006). Methodology: Segmentation study using expert interviews, ethnographies, and a national poll of a representative sample.
Priest, Simon (1992). Factor Exploration and Confirmation for the Dimensions of an Adventure Experience.	Reviewing perceived risk versus perceived confidence in relation to positive and negative outcomes. Priest found that adventure activities decrease perceived situational risk and increased perceived competence. Methodology: "Dimensions of Adventure Experience" survey with 24 bipolar adjectives.
Sheard, M., & Golby, J. (2006). The efficacy of an outdoor adventure education curriculum on selected aspects of positive psychological development	"Studied the effects of adventure programming on psychological development of college students. Students who received adventure programming showed positive psychological gains across several constructs. Adventure students made significant gains in 'hardiness' as compared to peers in the control group" (Higgins, 2007, slide 9).

Table 4
Adventure Program Literature (Continued)

Author(s), Title	Major Findings, Methodology
Stern, M., Powell, R. B., Ardoin, N. M. (2008). What Difference Does It Make? Assessing Outcomes From Participation in a Residential Environmental Education Program.	Program evaluation to ascertain retention of positive outcomes: attitude, behavior, and awareness. Immediate post-tests indicated significant gains in all areas. 3 month delayed post-tests continued to indicate significant gains in environmental stewardship and awareness, but also diminished gains in students' connection with nature and interest in discovery. Methodology: Survey with Likert scale index. Questions based on the staffs' visions for the program, there are many parallels with measures commonly used by other experiential education researchers (Stern, 2008).
Ungar, M., Dumond, C., and McDonald, W. (2005). Non-Profit. Risk, Resilience and Outdoor Programmes for At-risk Children	Favorable outcomes for relationship building and self-purpose. No significant effect on environmental issue awareness. Methodology: Qualitative program evaluations.
Wilson, S. J., & Lipsey, M. W. (2000). Academics Wilderness challenge programs for delinquent youth; a meta-analysis of outcome	"Adventure programs show moderate reduction of negative and anti-social behaviors. Identified programs that provide intense physical challenges with therapeutic individual, group and family counseling as most successful program design." Duration of program is not a factor. (Higgins, 2007, slide 8) Methodology: Meta-analysis of empirical studies.

Research Gaps

Studies continue to ask: are adventure programs effective in affecting cognition and character? This remains a question worthy of continued review. Many studies have sought to answer this question through evaluation of one program with specific variables or a meta-analysis of several studies with one variable. As noted above, to enhance the understanding and application of this research area would be to illuminate clear connections between the components of the program and measurable changes in participants. This could be accomplished by looking at programs in the context of education or social outreach. Another direction would be to follow-up with participants years later to truly determine the impact of the outdoor experience on their daily lives (Stern et al., 2008).

In the opposite direction, there needs to be more reflective and introspective thought of the intentions of the program, the direct activities applied to those intentions, and empirical data on the results. Narrowing to program activities will move the conversation beyond theories and general program effect to determine best practices for all programs. This will bridge the gap between process and results, encouraging program planning based on goals instead of making activities goals, held up by theoretical impacts. This will allow for the prioritization of key activities to affect cognition and character, and the ability to reduce superfluous activities.

Youths are the future of our world; therefore, a key question to continue to explore is whether adventure programs are an effective mean of affecting the quality of these teens' lives. Current research has focused on demographic predictors and

interventions for increased voter turnout. However, there remains a disconnect between youth concern and action. Studies have touched on perceptions of nature post-environmental experience, polling on importance of issues, barriers to engagement, and traits of those who volunteer. Additional studies combining and honing in on these areas would be beneficial to adventure programs, but also to the progress of social issues generally. Anyone working on affecting a social issue has wondered, "how to I make someone care" or "how can I encourage more of my supporters to take action." Understanding and segmenting groups into different levels of engagement to determine their motivations and obstacles can enable organizations to determine how to communicate and inspire.

Conclusion

Adventure programs commonly assert positive impacts on environmental cognition, character building, and environmental stewardship. Researchers have begun to test these assertions and to identify best practices that facilitate these outcomes. Of benefit to this field of research will be a more directed review of the program field and its impact on cognition and character, as well as understanding the discrepancy between interest and action.

Chapter 3

METHODOLOGY

This chapter describes why and how the logic model was chosen and applied to this research endeavor. The logic model was selected to enable visual representation of the adventure program theory of impact. In this chapter, the logic model context and components will be described. Finally, a detailed account is given of the survey process conducted.

Selection of Logic Model

Not all adventure programs are designed or implemented in the same way and therefore research should not necessarily attribute the outcomes of one program to another (Haras, Bunting, and Witt, 2005). The majority of research on adventure programs has asserted causal impacts based on specified variables (Cross, 2002; Flowers, 2007; Hattie et al., 1997; Long, 2001; Miramontes, 2008; Sheard & Golby, 2006; Stern et al., 2008; Ungar Dumond, & McDonald, 2005). Descriptive research has compiled results on similar variables supported by common foundational theories to infer generalizability of outcomes on all adventure programs. Cheryl Baldwin, John Persing, and Douglas Magnuson (2004) assert that there is in fact a "theory of adventure," however there have not yet been studies to test its validity. Instead, adventure program research has tested social science theories within the context of an adventure program. Only through review of program design, with correlating results, will the benefits of adventure programs be confirmed. This study seeks to continue to close this gap by

creating a theory driven logical conservation education (adventure) program model and evaluation tool.

A dichotomy surfaced in the exploration for an appropriate method to create an understanding of the design, delivery and ultimately an evaluation of an adventure program. Seeking the most beneficial conclusions deriving from clear linkages between treatment activities, understanding of the program, and the creation of measurable benchmarks lead to the use of the Logic Model framework for this study. This framework's importance and relevance have increasingly been realized as funding organizations require information such as defining the program, establishing a target audience, describing intended impact, asserting a plan for success, as well as setting up and later reporting on measured outcomes (Kellogg, n.d). These are common characteristics of logic models as most notably described in the W.K. Kellogg Foundation (n.d.) *Logic Model Development Guide* created explicitly to present and promote the use of logic models by their non-profit applicants.

In 1997, David Julian noted that social programs could greatly benefit but have not yet utilized, logical planning and evaluation methods. Since 1997, an increasing number of researchers have utilized methods, such as the Logic Model, to illuminate causal relationships, and to evaluate social program treatments and implementation. Below is a table displaying recent examples of social program design and implementation research (see Table 5).

Table 5
Social Program Design & Implementation Research

Author(s), Title	Major Findings
Cooksy, Leslie J., Gill, Paige, & Kelly, P. Adam. (2001). The program logic model as an integrative framework for a multimethod evaluation.	Evaluation of middle school curriculum program called Project TEAMS. Researchers concluded that the Logic Model forces the evaluator to look for sequences of events illuminating where program theories diverge from program design/implementation. Methodology: Logic Model
Haras, Kathy, Bunting, Camille, and Witt, Peter. (2005). Linking Outcomes with Ropes Course Program Design and Delivery	Identified design and delivery combinations and their resulting outcomes. The product found opposing results based on treatment. Methodology: Means-ends analysis survey
Lando, J., Williams S. M., Williams B., Sturgis S. (2006, April). A logic model for the integration of mental health into chronic disease prevention and health promotion.	Case study to showcase integrated focus of community intervention program Methodology: Logic Model
Saunders, Ruth P., Ward, Diane, Felton, Gwen M., Dowda, Marsha, & Pate, Russell R. (2006). Examining the link between program implementation and behavior outcomes in the lifestyle education for activity program (LEAP).	Review a new curriculum design and evaluation of its implementation and outcomes. Methodology: Logic Model, outcomes compared to control group
Sawhill, John C. & Williamson, David. (2001). Mission Impossible?: Measuring Success in Nonprofit Organizations.	Based on a case study of the Nature Conservancy, authors recommended creating a few relevant measures of impact, activity, and capacity for program planning. These should be based on review of mission in comparison to issue being addressed, to keep measures simple, and to market the program. Method: Case study focused on measurements

Only a few studies have utilized methodology, such as a logic model, to explain and explore the outcomes of adventure programs. The foremost example is by Kathy Haras et al (2005) in which they identify two distinct treatment designs and collect data on the treatments' respective outcomes. The study found that participants that were able to choose their level of involvement reported anxiety as a proximal outcome and excitement as a distal outcome. In direct contrast, participants without choice in their level of involvement reported outcomes in the areas of trust, communication, and group cooperation. These findings firmly support and encourage more research on varying treatments and the resulting outcomes.

Logic Model Overview

A logic model is a visual representation of a program rationale and the relationship of evaluation to that rationale (Renger & Titcomb, 2002). The Logic Model seeks to answer many questions to enable improvement, accountability, and marketing of a program (see Figure 1). This model can be viewed as an amalgam of five types of evaluation: needs assessment, feasibility study, process evaluation, outcome evaluation, and cost analysis (see Appendix D)(Priest, 2001).

The logic model will be able to meet the needs of this research; nonetheless, the limitations of this method must be acknowledged. The logic model is limited in its ability to diagram the complex nature of social program intervention. The method requires that the objectives be reduced into a linear frame, in which they may not precisely fit. In addition, the social objectives make it difficult to find measurable

indicators. Finally, the use of the Logic Model and the evaluation techniques can alienate the staff and can be construed as a top-down approach, mitigating some potential gains.

Figure 1
Logic Model Goals

Intends to answer: (McLaughlin & Jordan, 1999)
• What are the programs benefits and costs? • What is the program's goal(s)? • Do the program's goal(s) support strategic goals of the organization? • How is well is the program meeting goals and running efficiently? • Does the program address problems useful for the organization?
Improvement
• Assist in decisions of resource allocation, operations, and planning (Julian, 1997; Priest, 2001). • Determine essential activities for goal attainment. • Managers must make program components explicit which enable a complete and logical plan.
Accountability
• Shows links between theory, activities, and intended outcomes while highlighting results to be monitored and evaluated. • Provides data on achievement of intended outcomes (Priest, 2001). • Allows consistent performance measures to be articulated to staff.
Marketing
• To convey program/organizational effectiveness to solicit monetary and community support (McLaughlin & Jordan, 1999; Priest 2001). • Enables articulation of (to all stakeholders) the logic behind a program for common understanding (Gale, 2007; Keaher & Dunt, 2007; McLaughlin & Jordan, 1999).

The physical model can take many forms, but it is defined by its functional components (see Appendix C). The frame of the model comes from the articulation of the problem statement and the theory of change. The heart of the model is a map of the "planned work" and "planned results" broken down into sequential elements of the program. Planned work includes resources and activities while planned results are systematically described as outputs, outcomes, and impacts. Finally, assumptions and

external factors that influence each category and attribute are cited, completing the model.

Program analysis should revolve around a clear vision of the community need being addressed (Julian, 1997). This articulation of the circumstance that warrants a response is most commonly referred to as the Problem Statement (Item 1). In a presentation given by Dr. Trace Gale (2007), he explains that the problem statement should show a cause and effect relationship. The relationship should consider the target audience, best practices, and which organizations would be best suited to intervene. Ralph Renger and Allison Titcomb (2002) encourage stating the problem and then asking "why" seven times to try to reveal the most basic and clear community need.

After the articulation of the problem, it must be stated how the organization intends to bring about change. This is the overarching logic behind the program called the Theory of Change (Item 2) or the Theory of Action. This theory explains and structures the steps needed for complex social action. Through clarification of the underlying theory or logic of the program, the intermediate steps can more easily be identified and further segregated into relationships between short-term and long-term goals (Kelaher & Dunt, 2007). Through clearly stating the theory of change in this adventure program, the "adventure program theory" can be modeled and tested.

Resources (Item 3) or inputs are the tools and investment of the organization. These tools include staff, equipment, and community resources (like partnerships). This category needs to be extensive considering all inputs to truly visualize the cost (or forgone resources) being utilized by this program. In other words, if a staff person

spends half of their time operating the program and another staff member works a third of their time on administrative support, the proportion of each of their salaries need to be included as costs (resources that are not able to be utilized elsewhere).

Activities (Item 4) are what the program does with the invested resources. In other words, the activities are actions in response to the conditions, utilizing available resources. These actions include processes, tools, events, and technology applications. Activities should be directed toward the target audience and created based on outcomes intended.

Next, the model shows what outputs (Item 5) come from the cited activities. These are the direct results anticipated if the program accomplishes the planned activities or amount of service intended. The outputs can include number of participants per activity, the events, processes conducted, and levels of service. This is the stage that many non-profits conclude their measurement.

Based on the planned activities and the outputs, outcomes (Item 6) are the qualitative results of the activities. The outcomes cite benefits received by participants if the activities were preformed properly. Social program outcomes can be changes in participants' behavior, knowledge, skills, status, or level of functioning. For example, an anticipated outcome from an education program would be increased knowledge. Outcomes can be further segregated into short-term (occurring within one to three years) or long-term outcomes (occurring between four and six years).

Impacts (Item 7) are the final attribute of the program showing the anticipated long-term results. These impacts result over time, between seven and ten years. Usually

the impacts are an accumulation of a few outcomes and should directly affect the original problem cited. In many instances, these impacts occur long after the program and therefore are not a primary source for program measurements although beneficial in long-term assessments.

In creation of the Logic Model's planned work and planned results, assumptions (Item 8) are used and external factors (Item 9) influence aspects of the program. Assumptions are inherent in choices such as use of resources and planned activities. Assumptions both explain and qualify why and how the program planners believe the strategies will work. External factors affect the planned results in outputs, outcomes, and impacts. These are potential barriers as well as support in the environment, which are outside the control of the program. Often, external factors come from power dynamics, political policies, and other environmental fluctuations.

The Logic Model enables determination of key program components for evaluation. Benchmarks (Item 10) are measurements that show how well the program followed the plan and achieved the intended results. The breadth of the benchmarks should be comprehensive enough to give information on the efficiency and effectiveness of the program; however, benchmarks also need to be attainable, applicable, and not pose an overburden on staff and resources in its collection. This collection should be taken into consideration as a resource that needs to be set aside and considered in the overall cost of the program. Finally, benchmarks need to be specific, results oriented, and accessible in a timely manner.

Field Research

Field research conducted within the Logic Model framework and utilized best practices for information gathering and modeling. Computer files of brochures, correspondence, and evaluations were reviewed to layout a preliminary model and to derive questions to ask stakeholders. Interviews were conducted with the program's manager, Executive Director of the organization, an industry professional, and a partner organization. Questions to stakeholders included perspectives on program activities, past performance measures, perception of intervention effectiveness, inconsistencies in program goals in comparison to organizational goals, and recommendations for improvement (Kelaher & Dunt, 2007). All information was mapped out into the Logic Model framework and then presented to the program manager for verification.

Literature differs on the vantage point from which to explore the intersection of the program and problem (see Appendix D). Kelleher and Dunt (2007) describe a process based on the program in which the program components are fully explored, mapped, and then placed into the context of the problem. Alternatively, Renger and Titcomb (2002) base their process on the exploration of the problem in which the community issue defined and explore the best ways to address the problem and who is best suited to meet each part of the problem. With the tendency of social non-profits to morph their programs based on opportunities instead of intention, I chose to act most contrarily to common practice by following Renger and Titcomb's problem based method to enhance the validity of the program and study.

A logic model is best represented through adhering to best practices. All key components were placed (vertically and horizontally) based on occurrence and connection. Items were grouped into three lines to be simple while still being explanatory. The lines between components are hypothesized causal links that should be checked in every direction to ensure rationality. The model is based on current practice, objective review, and in consultation with stakeholders. Recommendations on benchmarks and model design will be given in subsequent chapters.

Conclusion

Current research lacks, and this proposal would provide, explicit connection between adventure program treatments and outcomes. The methodology will be used to showcase clear connections and logical planning. The model was prepared through the constant contact and feedback from the program staff.

Chapter 4

RIVER QUEST PROGRAM, CURRENT PROGRAM

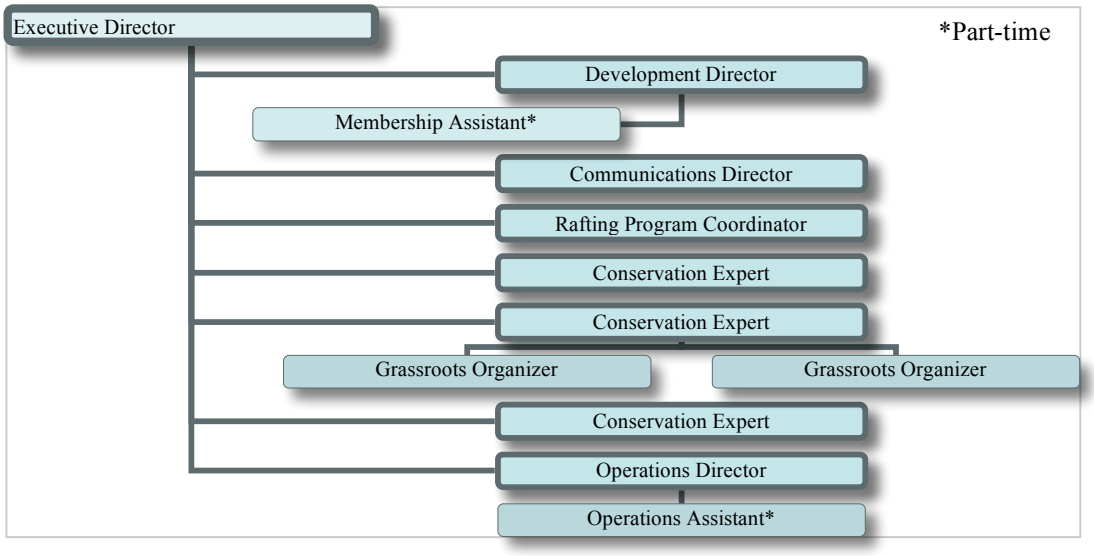
This chapter will detail the River Quest program, as it exists today. The model and corresponding text were created through review of program documentation and personal communication with the program manager (Tyana Maddock, personal communication, February 11, 2009). The information below was reviewed and verified as a representation of the program as currently planned, implemented, and evaluated (Tyana Maddock, personal communication, February 11, 2009).

Friends of the River

Friends of the River is California's statewide river conservation organization. Friends of the River was founded in 1973 as river users and environmentalists rallied together to oppose the New Melones Dam that was believed to damage the value of the Stanislaus river. From that victory, this organization was formed to influence public policy and encourage grassroots action. Today, Friends of the River remains a small organization of ten employees (see Figure 2) and approximately 50 active volunteers. Three employees are dedicated to being experts and active proponents of conservation interests in many policy efforts. These three staff members specialize in particular issues and rivers, sometimes for five to twenty years and are supported by two grassroots field staff. The remaining staff support policy efforts (and the organization overall) administratively. In practice, the organization has evolved to emphasize public policy efforts strongly often diminishing efforts to educate the public.

Friends of the River is currently reassessing its mission and strategic goals. The mission has been formalized as: "Friends of the River protects and preserves California Rivers by influencing public policy and inspiring citizen action." This revised mission means that an equal portion of efforts should be devoted to policy influence as well as grassroots outreach. During today's difficult financial times (caused by the 2008 international economic downturn), the organization's limited resources need to be committed to the most efficient and effective activities to support these efforts. A concern has been to quantify the outcomes created by the organization's efforts particularly regarding the influence on public policy, which may take many years (if not decades) and have many influencing variables.

Figure 2
Friends of the River Organization Chart



The River Quest program

River Quest is a low-cost, community-based program designed to provide at-risk youth in Northern California with an educational adventure of white water rafting on the

South Fork of the American River. Involved community groups experience personal and group challenges including river rafting and interactive exercises. Participants along with their community group mentors, work as a team to prepare river equipment for a day-long expedition, paddle through class III whitewater rapids, and learn about the natural resources and wildlife habitat in the historically significant river canyon. By the end of the day, the participants become a part of Friends of the River's public advocacy by writing a letter to an elected official.

The problem the program seeks to address comes from the value and assumption that youth (at-risk specifically) lack the outdoor experiences that may lead to a conservation ethic. Theoretically, the River Quest program will provide an educational outdoor experience that will enable participating at-risk youth to understand and value nature.

Assumptions

Conservation education programs are created to impart the value of nature through sharing experiences in nature with participants. Many adventure program leaders feel that youth of all ages, economic status, and ethnicity should accord the same access to the natural world and experiences it can provide. Experiential education courses utilize the outdoors as a place to incorporate experiential education techniques and experiences to facilitate personal growth. However, conservation education courses like River Quest focus on the outdoors utilizing the enhanced learning provided by experiential education techniques (Kurt Hoge, personal communication, February 12, 2009; Tyana Maddock, personal communication, February 10, 2009).

Resources

The organization has devoted a staff person (half-time) to the administration and facilitation of the River Quest program and trips. The administration of the program includes efforts to gather support from donors, partners, and volunteers to create the resources needed to support the program. The salary of the devoted staff person (hereby program manager) is included in the aggregate calculation of cost.

Activities

Administrative tasks include communication with scheduled groups, preparing the leaders with the expectations for the day as well as providing conservation education materials for their discretionary use before the trip. Partnerships remain steady with groups returning year after year as well as the regular acquisition of additional groups to fill openings. Volunteer guides are recruited each year and encouraged to attend a skill-building workshop. The program manager notes that this pre-season recruitment is not enough and often needs to call guides the day before a trip requesting help (even from guides not adept in working with youth). After the trip, program feedback surveys given to partner organizations are rarely returned. When time permits, the program manager applies for grants and attends events to solicit funding.

Once at the riverbank, the surroundings and curriculum are utilized to facilitate learning. Natural history and conservation are primary subjects in which youths participate in a scavenger hunt and learn about "leaving no trace." Leaving no trace is a common outdoor activity and conservation principle most succinctly defined as "take only photos, and leave only footprints." The combination of activities educates the youth

about the history of the environment and places themselves in the context of minimizing the impact of their presence. At the end of the day, the "closing circle" provides an opportunity for participants to reflect on their experience and say (in a few words) how they will apply what they learned to their daily lives.

The trip and program activities enable learning as well as building inter and intra personal skills and leadership. Rafting is an exciting, engaging activity that requires cooperation, communication, and group reliance. Intrinsically this rare experience is of value to the participant and partner organization. Participants apply leadership and cooperation by preparing and dismantling the gear and boats needed to go down the river. Finally, leadership and stewardship are discussed and facilitated as participants write to an elected official about their experience and the value of the river environment.

External Factors

Friends of the River began as a grassroots group of river users such as rafters and river lovers or environmental activists. As the organization has grown it has moved towards public policy efforts that are longer-term solutions requiring a few highly trained experts. River Quest has been a tool for Friends of the River to stay true to their roots in activism by conducting outreach to groups that would not be typical conservationists, by circumstance and age, and inspiring action and care for the environment. River Quest is unique in providing a white water experience while teaching conservation concepts (Kurt Hoge, personal communication, February 12, 2009). In addition, the affordability of the program enables access for most community-based groups. River Quest has thought of conducting restoration days or weekends with restoration and rafting combined, however

these conceptual activities have not sparked enthusiasm from partner agencies. Nonetheless, River Quest enjoys returning groups, which decreases the cost of reaching out to new organizations. However, River Quest still conducts some outreach into the area around the office and local river (the Sacramento area). River Quest's target audience of at-risk youth provides an avenue for funding opportunities from foundations with that focus. Finally, Friends of the River touts the existence and qualitative results of the River Quest program as fodder for public relations efforts.

Outputs

River Quest does not explicitly account funds raised to determine growth or accountability. Overall, the program is reviewed to verify that the costs and revenues reconcile at the end of the year. These costs and revenues are highly variable due to administrative effort and political environment including fundraising, partner fees, and habitually rising administrative costs such as insurance and "day use" fees.

Teaching volunteer guides the principles of youth facilitation is a challenge that is magnified by the difficulty of recruiting and maintaining volunteers to assist on the trips. This effort is assessed superficially in that training occurred and more quantitatively by how many guides attended. Currently, no benchmarks are set for how many volunteers follow through in helping with trips within each season.

The retention of partner groups and building of community relations is evident and assessed qualitatively by the preparedness of the leaders upon arrival and the number groups that are taken on the river. The scheduling and facilitation of these groups lead to a corresponding metric of trips conducted and participants that attended. Analogous but

not the same, is the collection and accounting of letters created by the participants addressed to an elected official. This metric does not continue to the next outcome stage by determining if the letters were effective in policy opinion or action. The partner relationship continues after the trip with the survey soliciting feedback, which has resulted in constructive criticism that volunteer guides should have more skill in facilitating youth. This has resulted in higher quality training nonetheless scarcity of volunteers remains a dilemma.

Finally, participants are encouraged to become leaders and facilitators of the information they have learned by applying and attending guide school. Guide skills can be utilized as a volunteer guide or youth leader in their community. Scholarships are given to subsidize cost and are evaluated based on the number of scholarships utilized.

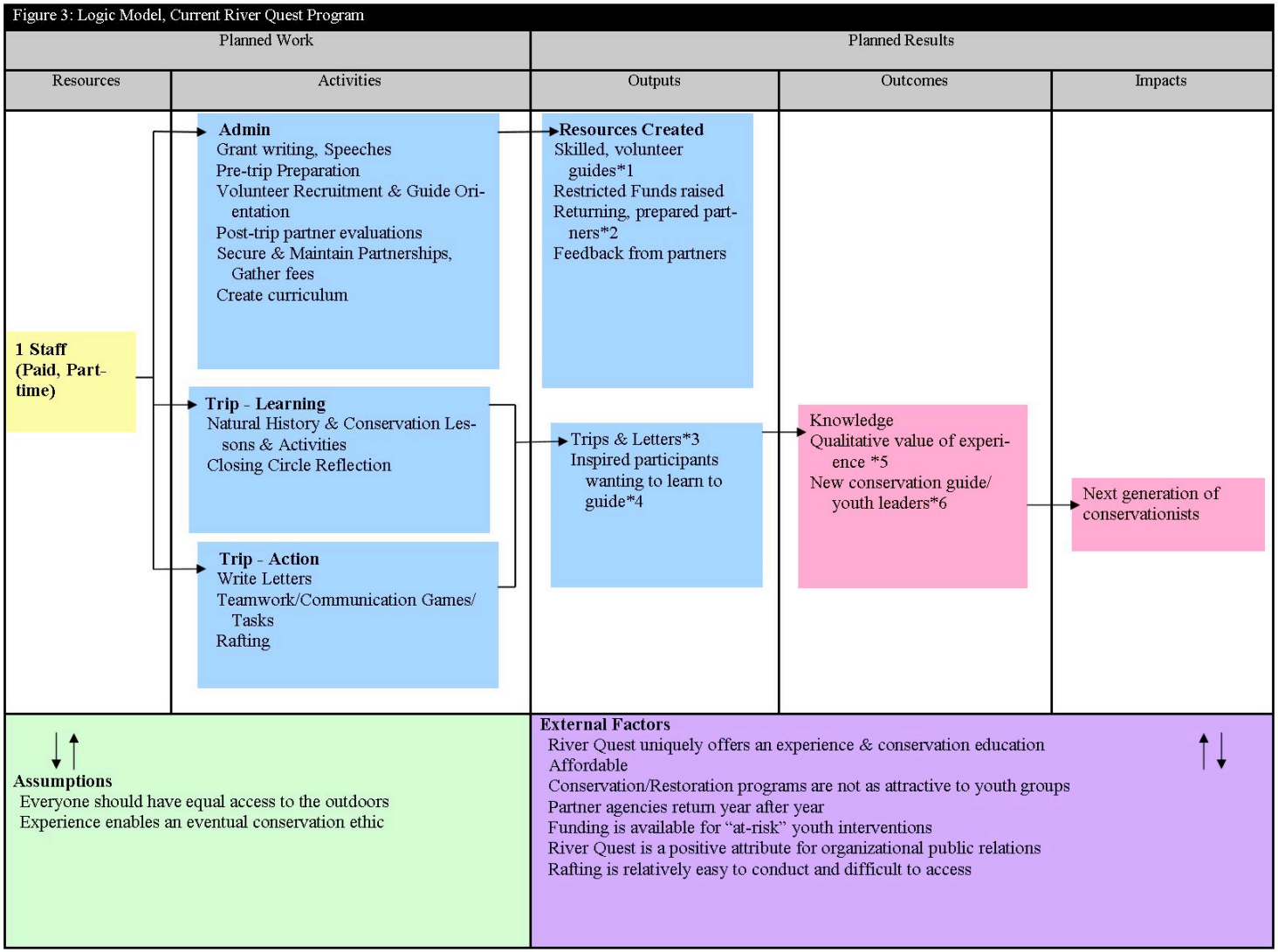
Outcomes

Integral outcomes of the program are participants' augmented cognizance of conservation issues and empowerment to take action. These outcomes are evaluated by qualitative comments written by participants. Scholarship guide trainees are noted if they come back to offer their guiding leadership or if they incorporate their new skills and understanding by providing leadership for programs in their own community.

Impact

All these efforts and inputs are geared to the eventual creation of the next generation of conservationists, in size and diversity of backgrounds.

Figure 3: Logic Model, Current River Quest Program



Benchmarks

Non-profit organizations addressing complex social issues, with limited resources and performance review expertise, limit benchmarks to outputs while key information is found in the outcomes and long-term impact (Sawhill & Williamson, 2001). Organizations and program managers tend to measure "how many?" or "how much" rather than "how well?" the program addresses the problem and supports the organizational mission (Sawhill & Williamson, 2001; Robert Waste, personal communication, February 15, 2009). This is evident in the currently assessed benchmarks for the River Quest program (see Figure 3). Each of the benchmarks listed are measuring process, or output measures, except number five. To determine "how well" a program is working; quantity and quality should be measured at each stage of the program.

Figure 4
Benchmarks (*)

1. Number of guides trained in facilitating youth
2. Number of groups retained from the Bay area,
   Number of groups added from the Sacramento area
3. Number of participants, Number of Trips, Number of Letters
4. Number of guide scholarships used
5. Qualitative comments from participants
6. Number of trained guides (through scholarship) that return to guide or facilitate a youth program

Conclusion

Based on the current program model and corresponding benchmarks, it is not possible to determine the relative value and (quantitatively supported) effectiveness of the River Quest program. However, the River Quest program holds qualitative value for Friends of the River. Here, it is difficult to answer whether this program is effective or if

the program supports the organizational mission. The next chapter will explore and propose recommendations in line with logic model principles, adventure program best practices, and the mission of the Friends of the River organization.

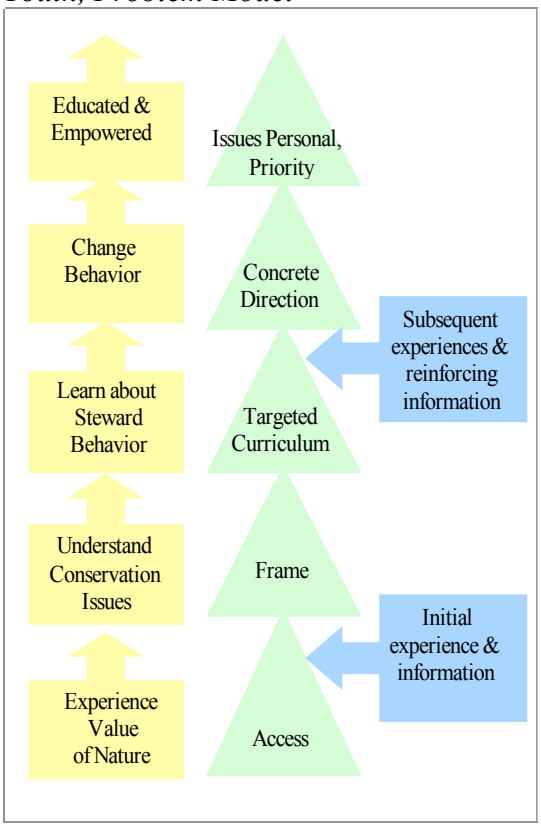
Chapter 5

RECOMMENDATIONS

California rivers can be restored and preserved through the direct efforts of Friends of the River, as the statewide river policy organization, and California's citizens educated through Friends of the River's efforts. Friends of the River and the River Quest program seek to educate and empower youth to adopt a conservation ethic and behavior. A key step in evaluating and recommending a direction for the River Quest program is to step back and contemplate the problem the program seeks to affect (Renger & Titcomb, 2002).

The path for youth to become environmental stewards is dynamic involving many steps, factors, and needs for multiple interventions (see Figure 5). The first barrier is access to the outdoor experience, which is difficult for youth who live in cities or that live in low income households where outdoor excursions are not feasible or a valued activity. River Quest and other organizations provide access to an

Figure 5
Empowered Educated Conservationist Youth, Problem Model

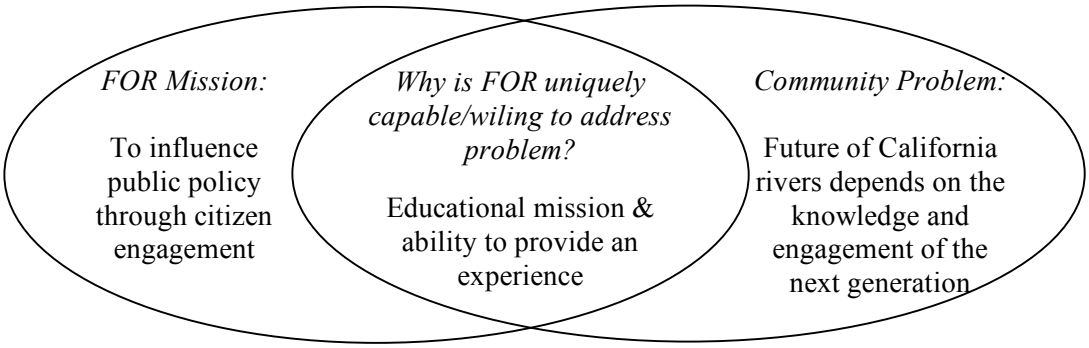


initial experience and educational lessons. The unique experience is invariably valued; however, it is helped or hampered by the processing through the participants' mental frame. Both their mental frame and the sufficiency of the targeted curriculum combined determine the extent that the participant understands conservation issues. Subsequent experiences and information with concrete direction are needed as a second intervention to assimilate the information into a learned behavior. This second intervention enables changes in behavior when presented and asserted as a personal priority issue. These steps, interventions, and factors can encourage a young person to become an active conservationist if well planned and implemented.

The Program

Friends of the River (FOR) and its River Quest program provide a unique ability to intervene to inspire future conservationists (see Figure 6), the next generation who embody environmental ideals and practice conservationist behavior and proactive political action. River Quest should, yet currently does not, have a clear environmental education focus. Friends of the River itself has a clear conservation focus and has retooled their mission statement to reflect the core mechanisms to inspire conservation in policy and personal action. River Quest, as an outreach program of Friends of the River, should also clearly show this conservation focus and clear mechanisms for change. The mission statement, vision statement, goals, benefits, and the target audience should clearly reflect this direction.

Figure 6
Friends of the River's Unique Contribution



Mission Statement

Current: "River Quest seeks to provide the opportunity for at-risk inner city youth to experience nature through outdoor adventures. It develops teamwork and problem-solving skills among participants. And it introduces at-risk youth to river conservation" (Friends of the River, n.d).	Proposed: River Quest provides an opportunity for youth to experience a fun and challenging outdoor adventure while providing engaging conservation lessons

Vision Statement

Current: "River Quest combines the thrill and personal challenge of river running with hands-on educational activities designed to cultivate self discovery, teamwork, and a healthy lifestyle."	Proposed: River Quest combines the thrill and personal challenge of river running with hands-on educational activities designed to cultivate self-discovery, teamwork, and a conservation ethic.

Program Goals

Current: • "Make rivers and their surrounding natural environment more accessible to at-risk youth. • Increase youth awareness of natural, ecological, and cultural history through environmental education. • Provide opportunities for personal growth	Proposed: • Make rivers and their surrounding natural environment more accessible to youth. • Increase youth awareness of natural, ecological, and

through fun and adventure. • Connect participating youth with an atmosphere of excitement surrounding river conservation and provide opportunities for them to get directly involved as volunteers and/or activists. • Recruit and train youth leaders to become volunteer river guides. • Encourage youth initiative and enhance youth participation as grassroots environmental/river conservation activists."	cultural history through environmental education. • Provide opportunities for personal growth through fun and adventure. • Empower youth to become environmental stewards at home. • Recruit and train youth to become volunteer river guides and community leaders.

Benefits to Youth and Communities

Current:	Proposed:
• "Improved team-building and problem-solving skills. • Expanded sense of community involvement. • Increased knowledge about environmental and conservation issues. • Leadership experience. • Increased self-esteem."	• Increased knowledge of environmental and conservation issues. • Activities that inspire personal growth and bonds between group members and group leaders. • Experience and tools, such as problem solving and team building, for youth to become more involved in their community and impact public policy. • A low cost experience of a lifetime.

Target Audience

Current: "River Quest teams Friends of the River and its professionally trained volunteer river guides with existing social service agencies serving at-risk youth. Our goal is to provide a unique recreational opportunity and educational experience to at-risk youth in Northern California, especially Sacramento and the Bay Area."	Proposed: River Quest collaborates with social service and academic agencies to provide a unique recreational opportunity and educational experience. Primarily serving groups in the Northern California, Sacramento and Bay areas.

Target Audience

Youths dictate the future of our environment; their knowledge and actions will someday influence public policy. River Quest seeks to educate and inspire citizen action to influence public policy. An assumption and value common among conservation organizations is that experiences in the outdoors are a key to the development of conservation ideals and behavior. Yet, River Quest has targeted at-risk youth and equally incorporated personal growth experiential learning mechanisms along with conservation education.

On the other hand, at-risk youth's mental frame may lend to a view of nature as removed and inaccessible, reducing if not eliminating the ability for ideals and behaviors to be learned and then applied at home. Further, today's youths seek socialization opportunities with their limited time. Online communities have taken the place of neighborhood communities for most teens; however, low-income teens still value community volunteerism as a means to enhance their daily lives and the lives of their community members. Scores of empirical studies show the salience of personal growth aspects of adventure programs; nonetheless, there is little evidence that environmental knowledge and further behavior is ever realized in at-risk youth (see Table 4, p 25).

Giving at-risk youth an otherwise inaccessible experience of the outdoors and the possibility that this experience may change ideals enhancing the ethnic diversity of the environmental movement is priceless. Nonetheless, the target audience should be reviewed to ensure congruence between the program plan and program or organizational goals (Renger & Titcomb, 2002). At-risk youth can remain a target group; however, I

would propose that another audience might serve the program goals more precisely. Outreach to middle-class youth or academic based groups may increase the retention and application of the conservation lessons as well as provide a target group that would have the means to contribute additional fees and maybe even resources for additional experiences. These youths may not have the mental frame hindrances or parental and support hurdles, aforementioned. These youths can be harnessed through online efforts or inspired to volunteer as an experience for future jobs that can be separate from their

Program Plan & Growth

Currently, an experienced youth educator and conservationist at a part-time level manage the River Quest program. Under that model the program has been focused, however, the administrative costs of the program have exceeded the monetary returns. Just this year, Friends of the River augmented the position to full-time and appended another program to the manager's purview (a program earlier overseen by a full-time staff member). Difficult fiscal and organizational challenges have necessitated this streamlining which may decrease the ability of the program manager to maintain activities at current levels.

Resources

Resources Recommendation #1: Increased Staff Time, Intern Recruitment

The River Quest program provides a tangible benefit to the organization; nonetheless the resources need to be efficient yet sufficient to carry out its programmatic goals (Paul Tebbel, personal communication, February 24, 2009). To this end, I would recommend increasing the staff position to full-time oversight of the program and active

recruitment of one to two interns or volunteers to support its administrative, logistical, and facilitative activities. A volunteer could operate a full-time position in the future through the Rafting Program if the structure and drive presents itself. With strong administrative support, volunteers (or interns) excited by the opportunity for applicable experiences would be instrumental in driving the success of the program and each of its components. This has been a successful strategy for other organizations that have one paid staff member and engaged volunteers (and Board members) to carry out the program activities (Kurt Hoge, personal communication, February 12, 2009). A noted concern is that at half time, the program manager has found it difficult to both facilitate learning while carrying out the logistical necessities of the trips. With intern support, these key facets would not be sacrificed (Tyana Maddock, personal communication, February 10, 2009). In addition, refinement of curriculum, partner recruitment, survey follow-up, increased training, recruitment and retention of guides would be enabled.

Resources Recommendation #2: Join North American Association of Environmental Educators (NAAEE)

River Quest is a unique educational program; nonetheless, it can be greatly enhanced by the connection and collaboration with NAAEE. For instance, NAAEE strongly promotes the book *Conservation Education and Outreach Techniques* by Susan Jacobson et al (2006). This book focuses on the educational theories and a wide range of activities directed at educating and inspiring stewardship behavior. This book echoes most of this report's literature reviewed, particularly the theories explored, as well as promotes a modified logic model called Planning, Implementation, and Evaluation (aka

P.I.E.). However, adventure or experiential education is superficially included. This book and other information on best practices through NAAEE may further assist in program planning, evaluation, and curriculum design.

Activities

The core programmatic activities of the River Quest program are firmly supported by experiential education theory and generalized research findings (see Chapter 2: Literature Review).

Core Activity #1: Rafting, The Outdoors

The Friends of the River's foundational Rafting and River Quest Programs form a core competency enabling the fun experience of white water rafting and educational lessons of river conservation and preservation. Firmly rooted in the Cognitive Dissonance Theory the outdoor setting coupled with the anxiety laden rafting experience enables learning to occur in inter and intra personal growth as well as the uptake of conservation information. The former is a major driver of at-risk youth group participation, and the latter is a key goal of the program. These learning's are supported through the rafting experience's inherent communal tasks and explicit and implicit trust and communication activities. In addition, the incremental success gained through challenge and accomplishment is built into the experience. Albeit inter and intra personal growth is a key benefit for the participants and can attribute to leadership and empowerment later, the program should focus on the education delivery and future application foremost throughout the exciting experience.

Core Activity #2: Reflection

A River Quest trip ends with reflection in the "closing circle." Each person stands in a large circle listening and speaking about his or her experience. This activity is supported by the Experiential Learning Theory, which encourages observation of the day's experiences, information learned, and personal behavior. This summarization of learning can be enhanced by taking pictures of the now close-knit group or through a letter drafted to themselves (or others) as a reminder for later review (Kurt Hoge, personal communication, February 12, 2009; Susie Rivera, personal communication, February 24, 2009).

Core Activity #3: Letters to Policy Makers

Learning about a current policy issue and the immediate opportunity to write to a policy maker is a major Friends of the River goal that is also an entry experience into political action. The activity of writing letters is currently taking place. Nonetheless, I recommend that this activity be reinforced by future lessons, activities, and feedback on how their first letter made a difference. This experience is one that the youth will carry with them for a lifetime, either as something they did and never knew the result of or a positively reinforced catalyst inspiring future practice.

Core Activity #4: Returning Partners

Partners returning year after year are a testament to the unique niche of the program and the relationship built with the partner leaders. This relationship decreases the effort needed to secure scheduled trips and associated fees. This practice should be

held firm as a means for future efficiency and a line to create partners that incorporate conservation lessons into their supporting group work.

Core Activity #5: Fund Solicitation

Grant writing and speaking engagements are key administrative tasks that need to be maintained and prioritized. River Quest is a valued program of Friends of the River, nonetheless the organization should seek avenues to secure the program's funding and to promote the unique nature and accomplishments of the program. Targeting at-risk youth with an outdoor education experience taps into many grant bearing Foundations' values seeking programs that enable a better life for youth, particularly for environmental based organizations. Alternatively, academic or middle-income community groups can be sought and charged with higher fees to supplement the more in need participants.

Core Activity #6: Volunteers

Volunteers are the lifeblood of this grassroots educational program. Today, there is difficulty recruiting, retaining, and training volunteer guides. Problematic scheduling of guides to fill the trip needs detracts from other administrative tasks. Guides that have little or no training cannot effectively reach out to at-risk youth and convey the important conservation messages (Tyana Maddock, personal communication, February 10, 2009; Susie Rivera, personal communication, February 24, 2009). The creation of a training manual, series of trainings, and leadership roles can encourage buy-in from volunteers as well as provide skills for effective program facilitation. Finally, as volunteers are key resources, recruitment of volunteer or intern leaders could ardently assist in the administration, success, and growth of the River Quest program.

Administrative Recommendation #1: Targeted & Transferable Curriculum

The curriculum must be targeted to the program's goals, conservation education and empowerment, and transferable based on the target audience(s). Per the Constructionist Learning Theory, the curriculum for each target audience should take into consideration the participants' mental frame and personal priorities. This can only be achieved by asking how the participants view nature before and after the experience. In addition, the issues of the environment need to be made personal and of priority to the target audience. For most youth, this is their first and only experience with nature; therefore, the curriculum should reflect this reality and setup lessons for application to an urban lifestyle as well as create continuing curriculum to reinforce the information given and empower future action. The curriculum should not end at the conclusion of one trip, rather efforts should be made to enable virtual communities and involvement through Facebook and text messages to continue the educational lessons and a relationship with these youths as they grow and develop their life ideals and priorities. Experiential Learning Theory also proposes activities that allow youth to test ideas and inspire action, which can be fueled by feedback on how they have or can make a difference through political action and personal behavior.

Administrative Recommendation #2: Program and Participant Assessment

Assessment of the program needs to occur as a priority activity before, immediately after, and months later to determine effectiveness, efficiency, and inspire resource support. For instance, Project Great Outdoors (Project GO) participants' are given surveys before the trip with the liability form and at the end of the day before the

participants pile onto the bus (Kurt Hoge, personal communication, February 12, 2009). In addition, Project GO has participants write a letter to themselves that is sent by staff months later along with an identical survey. Finally, parents and community group leaders should be assessed and recruited to incorporate the learning into future community activities. Best practices indicate these surveys should include conducted and planned goals including knowledge and change in behavior, as well as ideas for improving program implementation.

Administrative Recommendation #3: Increase Partner Engagement

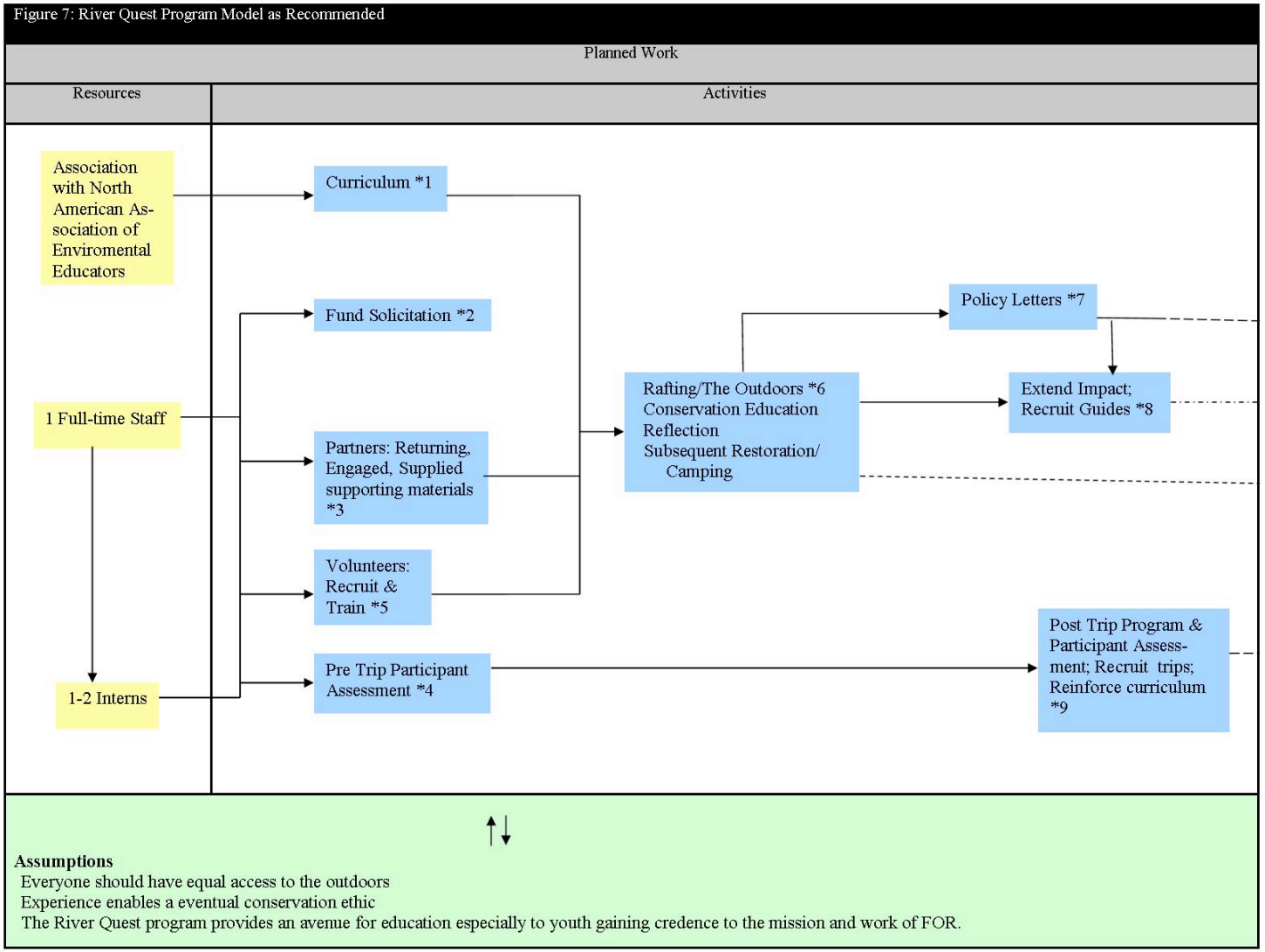
The program can also be more selective and insistent that partner organizations incorporate conservation curriculum prior and post experience (Kurt Hoge, personal communication, February 12, 2009; Tyana Maddock, personal communication, February 10, 2009; Paul Tebbel, personal communication, February 24, 2009). Repeated exposure to information and experience has been shown to increase the retention and application of the information. In addition, multiple experiences with Friends of the River and its volunteer guides can build a relationship with each participant that may last into the future and enable future support of the organization and its issues.

Administrative Recommendation #4: Extend Impact

In combination with the more selective partnerships, River Quest should seek ways to extend the impact of the information and the encouragement provided. Today, community partners use pictures to remind the participants of the experience and organically incorporate River Quest lessons into future activities (Susie Rivera, personal communication, February 24, 2009). These activities can be formalized through

providing curriculum and pictures to community partners. Like Project GO, participants can write letters to themselves, which can easily be sent in the mail months later (which can be combined with surveys and information on how their policy letters made a difference). If volunteers become more engaged or more staff time is devoted to this program, a speaker could visit the participants before or after the trip reinforcing messages and the relationship (Tyana Maddock, personal communication, February 10, 2009). Finally, a series of trips could be implemented to include camping and restoration and provide the subsequent experiences necessary for behavior change. Camping would allow bay area groups to extend educational time while providing a valuable camping experience to the youth. In addition, restoration work would give a tangible immediate impact for the youth, a benefit to the environment, and a more targeted environmental learning opportunity. Finally, adding activities, which teach preliminary guide skills, can serve as an introduction to guide training increasing the likelihood of participants utilizing guide training scholarships and then returning to River Quest or their community program as a leader. In any event, rafting should be incorporated into one or more of the trips as a core competency of Friends of the River and as a low cost fun activity, which initially inspires the participation of partners (Susie Rivera, personal communication, February 24, 2009).

Figure 7: River Quest Program Model as Recommended



Outputs

If River Quest were to increase the activities as recommended, four major outputs would exist. As before, youth would produce letters, trips would occur, and some inspired participants would return on scholarship to become guides. A new output would emerge as community programs change to include conservation educational components by increasing selectivity of partners and the creation and use of supplemental curriculum.

Outcomes

The outcomes derived from the outputs remain similar to the current model with increased ability to come to fruition. Letters will be written to influence a specific policy issue. The participants' knowledge of conservation issues will be enhanced through lessons and associated activities. If the activities are conducted to specification, there logically will be changes in the participants' behavior. Finally, the participants will value the unique experience.

Impact

The mission of the River Quest program should support, if not be the same as, the Friends of the River mission. Here, the River Quest program should directly and specifically provide an opportunity to influence a targeted public policy issue and its education efforts and experience should inspire citizen action.

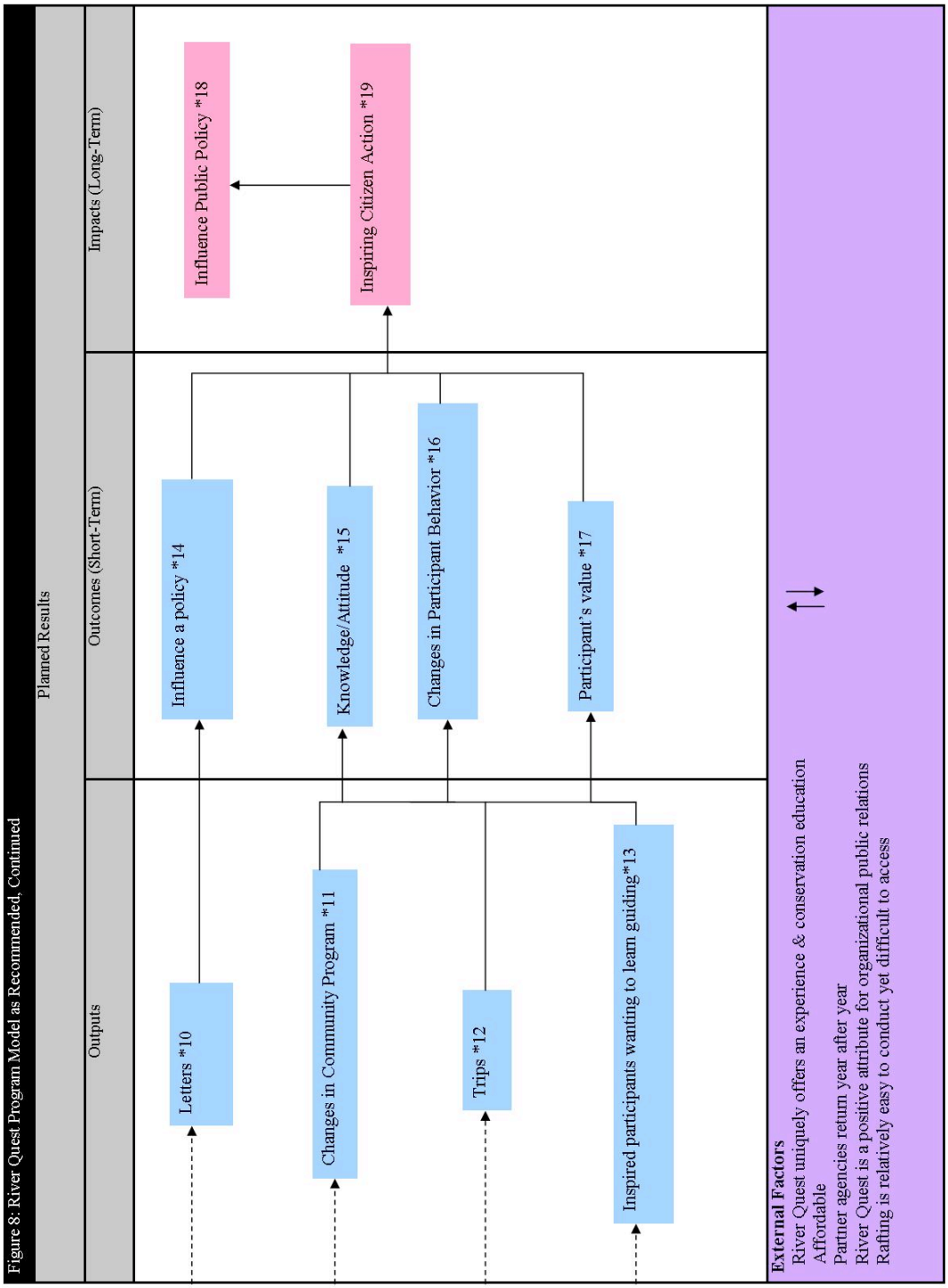


Figure 8: River Quest Program Model as Recommended, Continued
Planned Results
Outputs
Outcomes (Short-Term)
Impacts (Long-Term)
Letters *10
Changes in Community Program *11
Trips *12
Inspired participants wanting to learn guiding*13
Influence a policy *14
Knowledge/Attitude *15
Changes in Participant Behavior *16
Participant's value *17
Influence Public Policy *18
Inspiring Citizen Action *19
External Factors
River Quest uniquely offers an experience & conservation education
Affordable
Partner agencies return year after year
River Quest is a positive attribute for organizational public relations
Rafting is relatively easy to conduct yet difficult to access

Evaluation

The program, as currently planned and implemented, is operating at a basic level. The program provides the essential components of a conservation education program; however; some components are being minimally carried out with minimal measurement. Further, the benefits of experiential education are being used as key accomplishments, which do not directly support the organizational mission and perhaps detract from correlating activities. Clearly, with limited resources, no current actions of the program and its staff member are done superfluously. This chapter proposes a refined and augmented program plan for program growth and sustainability. This plan can only be successful if expanded diligently with benchmarks being compiled based on new attributes and the importance of each act.

Each determination to implement, tailor, or change the program should be based on systematic evaluation (see Table 6). The program implementation of resources as well as activities and outputs should be measured along with short-term outcomes and long-term impacts. The efficiency of resource use as well as the effectiveness of those resources and activities should be measured on a macro level for impact and micro level for review based on previous program performance. Each stage and aspect of the program should be measured quantitatively and qualitatively to promote resource leverage and program growth.

Table 6
Evaluation based on Logic Model (Poole, Nelson, Carnahan, Chepenick, & Tubiak, 2000; Priest, 2001)

	Review	Process Evaluation	Outcome Evaluation	Cost Analysis
Measures	Clear objectives and measures	Gap between plan and execution	Attainment of objectives and goals	Merit to value
Questions asked	What outcomes can/should be measured?	Is the plan/program working?	Are the objectives being achieved?	Does the benefit of the program outweigh the cost (based on organizational goals or community needs)? Should the program be continued?
Answers	Specific points and how to compile.	Monitor & recommend adjustments	Based on plan or industry standard	Data supporting impact of the program
Other Consider-ations	Resources for evaluation activities	Identify weaknesses & strengths	Baseline measures may be taken for future evaluation	Review & revisit planning and evaluation

Following the principles of evaluation a multitude of benchmarks can be set; however, again the benchmarks should be thorough enough to accord information on the efficiency and efficacy of the program while the data collection should not be an undue burden. Below are ranges of benchmarks that can be used:

Table 7
Recommended Benchmarks (*Current Benchmarks)

Component	Details	Program Efficient?	Program Effective?
Staff	Including volunteers	Is the program being implemented at or above minimum? Is the staff member recruiting and utilizing volunteer resources?	Is the current resource allocation sufficient for the plan? Are there opportunities for staff to increase skills?
1. Curriculum	Tailor curriculum (& post engagement) for target audience, create pre & post curriculum, recruit volunteers for pre & post visits, Send pre/post curriculum materials/speakers		
2. Fund Solicitation		Is the program spending grant money efficiently? Are grants or donations found to cover program costs?	# Of speaking engagements, audience members $ Total grant monies brought in $ Total donations brought in
3. Partners	Secure & maintain partners, fees	*# groups retained from Bay area	*# groups added in Sacramento area
4. Pre Assessment	Liability forms sent with pre-surveys		Establish participant baseline
5. Volunteers	Guide Recruitment, Guide Orientation, Subsequent Trainings	Set criteria for effective training & survey for competence % Of guides trained that volunteer % Of guides retained from previous season *# Of Guides trained	Survey partners for competence of guides # Of guides volunteering over the season

Table 7
*Recommended Benchmarks (Continued, *Current Benchmarks)*

Component	Details	Program Efficient?	Program Effective?
6. Rafting/ The Outdoors	Reflection: closing circle, pictures, letter to selves and others	*# Of participants	
7. Write Letters		% Of participants that wrote letters	Choose policy that can be impacted by action, establish criteria for success and mark if successful
8. Extend Impact	Multiple trip options, Online personal community/involvement	% Of additional trips utilized % Of participants that sign up for online community	% Positive change in participant survey results
9. Post Assessment, Recruit	Next trip recruitment	% Of groups that sign up for additional trips	
10. Letters		*# Of letters	
11. Changes in Community Program			% Of programs that adopt supplemental curriculum
12. Trips		% Of scheduled trips that occur *# Of trips	% of return participants
13. Inspired participants wanting to become Guides		*# Of participants returning for guide training	*# Of participants attending guide training that apply skills
14. Influence a policy			Was the letter campaign successful?
15. Knowledge/Attitude	Post surveys		% Positive change in participant survey results
16. Changes in Participant Behavior	Post surveys of students, parents, & community group		% Positive change in participant survey results

Table 7
*Recommended Benchmarks (Continued, *Current Benchmarks)*

Component	Details	Program Efficient?	Program Effective?
17. Participants value	Immediate post qualitative comments	Was there a change in how they view nature and can they cite ways to impact nature in their daily lives?	# Themes cited based on group goals
18. Influence public policy			# Of online community members that take action(s)
19. Inspiring Citizen Action			# FOR members that participated in River Quest as a youth

In the above-suggested benchmarks are pre and post assessments of the participants and corresponding survey of parents and community group leaders. Surveys can be useful showing change in each participant or groups of participants. If desired, this review can occur by empirical method increasing the salience of the information. These assessments should occur before the trip, immediately after the trip, and delayed post trip (approximately three to nine months later). The setup, to be described, would mimic the Flower's study as well as a study being proposed and implemented starting this year by Project GO. Mimicking this systematic approach enhances the legitimacy and applicability of the results for this and other analogous treatment programs.

Case selection and sampling procedure will occur within the program's annual review of partner organizations. Each year, partner organizations, such as after school programs, group homes, and boys and girls clubs, apply to participate by providing information on their surrounding community, organization, and potential participants.

The River Quest program strives to reach at-risk youth; therefore, the application information helps to assure the program is reaching the intended audience. Examples of circumstantial information traditionally included in the application are the percentage of youth receiving free/reduced school lunches, parent/guardian economic demographics, and statistics on the participants' race/ethnicity (Friends of the River, n.d.). To enhance legitimacy all participants or two similar treatment groups will be picked each season to complete surveys (consisting of four total treatment groups). Students selected will be from similar communities with representative demographic make-up. Two control groups could also be chosen, to be similar to the treatment groups, but not participating in the River Quest program. The control group will participate in the study by taking one survey, the same as the pre-treatment survey, to establish a comparative baseline for the eventual data set. The survey will be the only contact and the control groups will continue in their community program, but will not have the River Quest experience (see Table 8).

Table 8
Example of Collection of Data, Surveys

Group	Surveys	Notes
Treatment Groups	Pre: 1 month before trip Post: End of trip day Delayed Post: 3-9 months after trip	
Control Groups	Pre & Post: 2 months apart	Same Treatment Groups.
Guides	Pre: Before each season Post: End of each season	Test implementation for 2 areas of logic model: Resources (training needed vs. training received) and Outputs (Planned vs. Completed)
Program Coordinator	Pre: Before each season Post: End of each season	Test implementation for 2 areas of logic model: Resources (budgeted vs. actual expenses), and Activities Outputs (Groups sought vs. Groups solicited)
Partner Organizations	Pre: 1 month before trip Post: End of trip day Delayed Post: 1 month after trip	

Conclusion

River Quest is a valuable program directly satisfying the goals of the organization and utilizing an organizational core competency. In reflection of the programs efforts a logical program plan is needed to clarify, streamline, and validate their work. Today the River Quest program is operating at a minimum level with difficulty communicating the efficiency, effectiveness, and purpose of the program activities. Retaining and improving will to enhance the program. The Logic Model in this chapter along with the corresponding evaluation questions can be utilized to grow and sustain the program

giving enhanced benefit to Friends of the River organization and the River Quest participants.

Chapter 6

CONCLUSION

River Quest is a unique adventure program that imparts conservation education lessons. The River Quest program provides educational outreach and encourages civic action, but also provides a means to show the value of the environment through experiencing the outdoors. A rafting experience is priceless, but what are the measures of efficiency and effectiveness to articulate the value of the program. Before learning more about the program and direction of the Friends of the River organization, I wondered if the River Quest program provided significant benefit (above cost) to the mission. To methodically answer this question, I sought to review how the program was conducted administratively and realized in public policy. To assist in the planning, implementation, and evaluation of the program, I have also endeavored to propose a logical plan to enable an effective River Quest program that can be assessed through evaluation to increase the changes of the social change Friends of the River seeks.

Adventure programs include both experiential education and conservation educational genres. Experiential education is supported by many theories and empirical studies focusing on specified variables for statistically significant outcomes. Nonetheless, there is some concern among researchers that programs offering differing treatments are citing analogous outcomes and impacts warranting future study. Conservation education utilizes many of these theories and studies without much validation of the unique activities and outcomes from conservation education. Conservation education lacks supporting theories, best practices, and empirical studies

supporting corresponding outcomes and impacts. Most people would concur that experiences in the outdoors as well as safeguarding the environment are important; however there is a clear disconnect, warranting further research, on how to change concern into action.

Friends of the River has significant goals for itself and the River Quest program. However, these goals and the activities to reach those goals were not clear to me and could be clearer to the organization and all staff. Friends of the River seeks to address the complex social dilemma of politically active conservationists. This goal, for many non-profits, is being sought with little resources; nonetheless, success can be enhanced with a clear logical road map. The future of the program, growth, and sustainability, can only be enabled by reflection, logical planning, and communication of their work to garner financial and volunteer resources.

The River Quest program has been planned and preformed admirably by the sole staff member with limited supporting resources. With the clarification that Friends of the River seeks to influence public policy and conduct citizen engagement, the River Quest program clearly shares the same goals and therefore should continue to be supported. The breath of activities planned and conducted is ambitious and the sparse evaluation is minimal but realistic given the current plan and resources.

River Quest can be a cornerstone of Friends of the River's efforts to safeguard California rivers. Friends of the River provides access to an outdoors experience, which is the first intervention to educated empowered youth. The program's intervention can be enhanced by a clear conservation education focus throughout all stages and aspects of the

program increase partner engagement, creative resource cultivation, and refinement of target audiences. Refinement of the activities, reflection on the goals, and evaluation of the methods will go a long way to enhancing the plan and performance of the program.

Recommendations for Future Research

Future research is needed on the design and effects of conservation education adventure programs. Theories specific to conservation education need to be identified and utilized in future research. The theories may serve as a based for logical planning that supports strategic planning, utilizing limited resources, and enables communication of program planned to potential funding agencies. Additional examples of tested theories and program plans will enable other social organizations to utilize best practices. Finally and most importantly, the differing treatments being utilized by conservation education should be reviewed for efficacy particularly in the long-term impact in cognition retention, behavior, and attitude change.

Review of the program should include research on the social problems these programs seek to address. Social programs seek to change the lives, behaviors, and attitudes through intervention. An initial review of those participating in conservation education shows little change in these areas. Therefore, researchers need to step back, and here, ask, "How can social program make someone care and act?" Many people care about the environment; however, the limited research available indicates that this care does not necessarily lead to action. This is a key issue that spans the work of many non-profits and activist organizations. A key question for future social research is how to effectively and efficiency engage the community, particularly youth, in volunteerism and

activism. Finally, logical planning should also involve reflection on how the core competencies of different organizations lend to unique and differing interventions.

In my research, I was surprised at a few of my findings. First, after researching adventure programs thoroughly, the different terms used for the programs only became clear after speaking with an industry professional that explained that there are two genres of adventure programs (Kurt Hoge, personal communication, February 12, 2009). There is a clear divide between programs that focus on educating youth to become future conservationists and other programs that incorporate outdoor activities but the lessons are focused on personal growth. Also, in the few times I listened to the River Quest program manager describe the program, I was surprised to hear the theories and assumptions that I have learned in my research as fully incorporated into her implementation of the program. I was present when a Friends of the River Board Member once inquired, "What is River Quest?" The program manager answered describing teens that would show up defiant asserting individuality with behavior and dress that would leave at the end of the day smiling and laughing in groups. The manager continued to speak of the challenge and anxiety of rafting that gets the teens attention and that the activity necessitates trust building and cooperation. In addition, I was surprised that one person operated this program ambitiously but also that this was done without any formal relationships with other state and national organization performing similar programs.

I pursued a broad review of adventure programs and then narrow review of conservation education whereto some important information either does not exist, or I could not find it. Many researchers indicated the need for review of long-term impacts

and evaluation of differing treatments on impacts. Although many researchers have asserted this research direction, I could not find any entity that had preformed this research. When I focused in on the conservation education, I found that the foundational theories were taken from experiential education and that no unique conservation education theories (besides the "black box") were to be found.

Future research should add to the understanding of the practice of conservation education. Conservation education programs should be reviewed for their underlying theories and variables should be derived and evaluated by strict methodological principles. These variables also need to be reviewed in the long term to determine if a year after participation in a conservation program that there are statistically significant changes in cognition, attitude, and behavior. Further, understanding of peoples' motivations, priorities, and interests should be explored to establish best practices for intervention. Social organizations have taken on an arduous task to which researchers could exponentially assist in evaluating theories and long term variable outcomes by differing treatments.

APPENDICES

APPENDIX A

Definitions

Term	Definition
Activities	Actions of a program utilizing resources.
Adventure/Outdoor/Wilderness Education Programs	"Education in, about, and for the out-of-doors," which includes physical activities and challenge participants in ways that make them rely upon or develop personal and social resources (Ford, 1986, p. 2; Hattie et al, 1997; Ungar and McDonald, 2005).
Assumptions	Explain and qualify the program strategy.
"At-risk" youth	A subjective term describing teens that may or may not have the following personal issues or background: difficulty coping with stress, difficult home environment, socio-economic status, substance abuses, and violent or criminal behavior.
Benchmarks	Quantifiable measurements utilized to evaluate the design and implementation of the program.
Constructionist Learning Theory	Learning through own actions and experiences, which a constructed meaning combined within past experiences (Haluza-Delay, 2001; Hein 1991).
Cognitive Dissonance Theory	The gap between what is known and unknown, creating a constructive level of anxiety or perception of risk, which allows for learning and accepting new concepts (Atherton, 2005; McKenzie, 2000).
Day use fees	Cost of the use of the river defined by local authorities.
Experiential Learning Theory	"The process whereby knowledge is created through the transformation of experience" (Kolb 1984, p. 41 as cited in Kolb et al, 1999, p. 2).

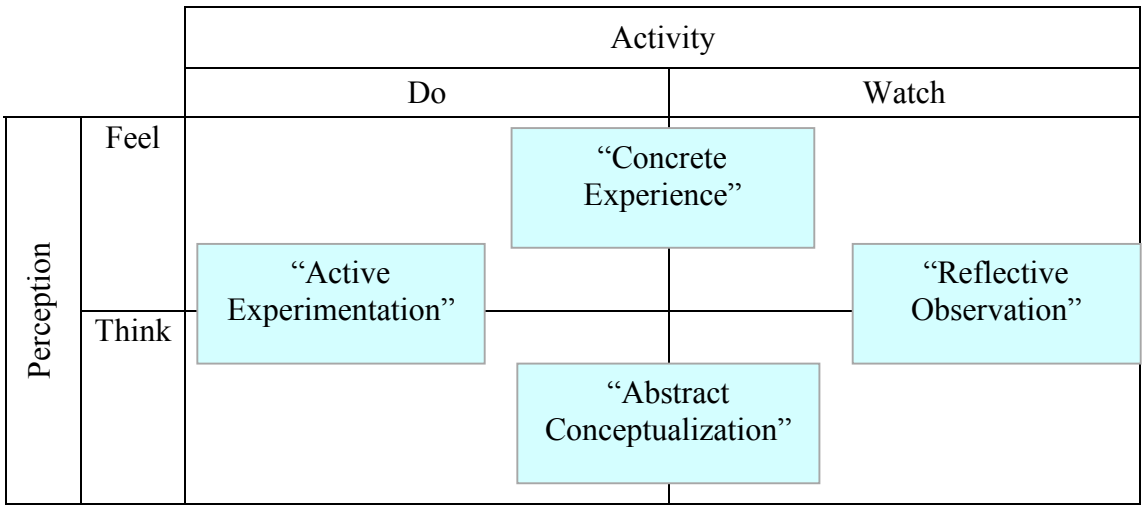
Term	Definition
External Factors	Barriers and support from environment.
Environmental/Conservation Education	A combination of science and humanities education programs with opportunities "to explore the environment firsthand, adventure based challenges, and develop stewardship skills in active outdoor settings" (Stern et al, 2008, p. 31).
Environmental/Conservation Knowledge	Acquired understanding of environmental issues and personal relationship to the environment, created through construction and assimilation based on past and current experiences (Haluza-Delay, 2001).
Impacts	Long term results.
Interpersonal Skills	Behaviors that influence our interactions with others such as trust, relationship building, cooperation, communication.
"Leave no trace"	A common outdoor activity and conservation principle that are most succinctly defined as "take only photos, and leave only footprints."
Outcomes	Qualitative results of activities.
Outputs	Direct results of activities, typically quantitative.
Problem Statement	A statement articulating the problem a program seeks to address.
Resources	Foundational supplies of the program such as staff, equipment, and community partnerships.
Self-Concept	Assessment of self, including physical attributes, social attributes, and self-ideals.
Stakeholder	Anyone who is affected or affects a program
Stewardship	"Attitudes toward environmental conservation and their intentions and actions regarding environmental behaviors" (Stern et al, 2008, p. 34).
Theory of Change	Statement as to how a program intends to bring about a change. Commonly stated as "If x, then y."

APPENDIX B

Kolb Learning Styles

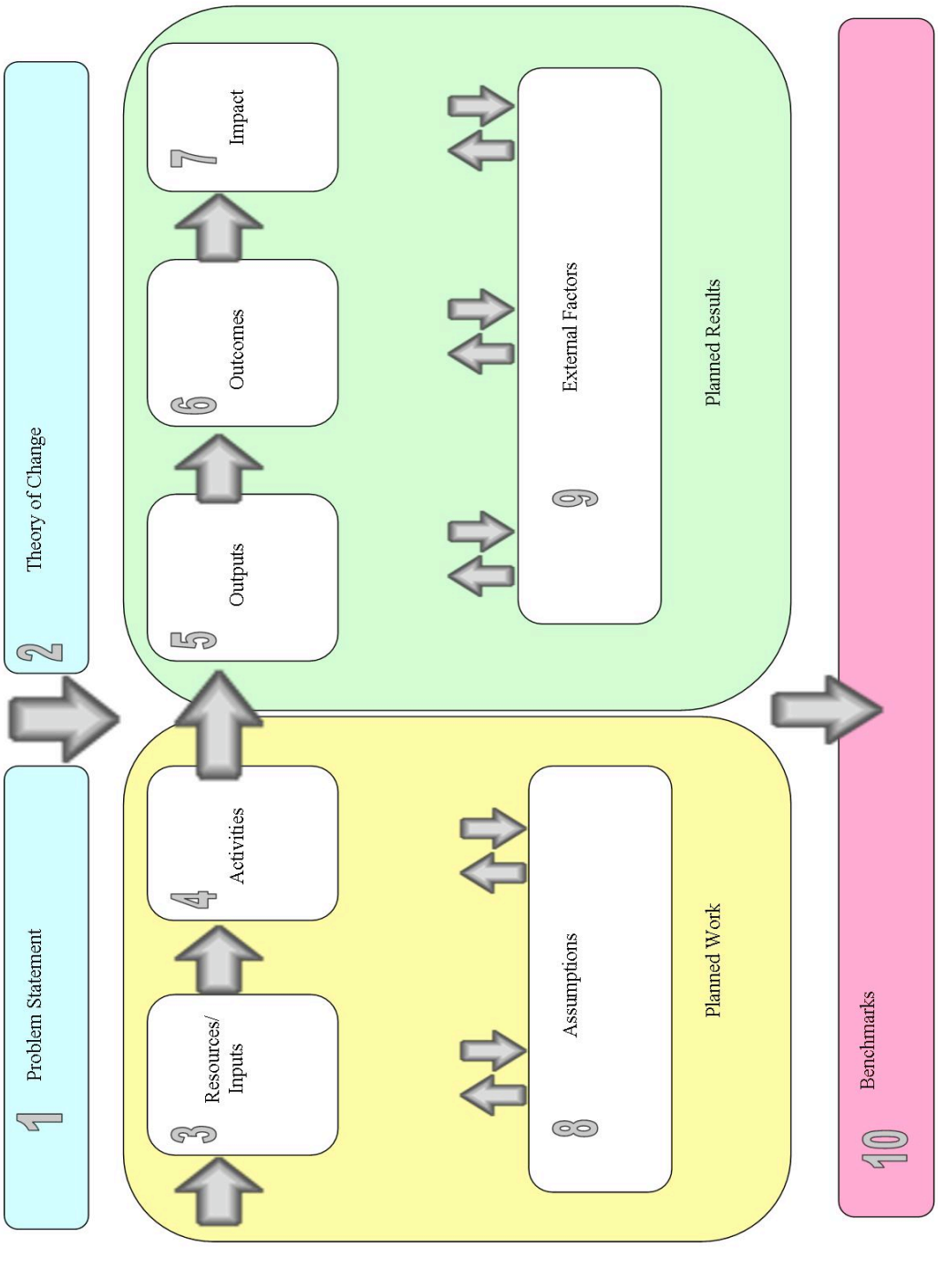
Experiential Learning Theory states that concrete experiences contribute to learning (Kolb as cited in Chapman, 2005). In the creation of this theory, David Kolb also formulated a diagram he called Experiential Learning Styles. This diagram illuminating the ways humans processes the experiences as a mental resolution of conflicts (or choices). Kolb's delineates and diagrams the cognitive choice, between two variables, on how to approach an experience (see Figure 9). As represented in the figure, a choice made to do or watch the activity. This choice affected by and accompanied by the choice (or tendency) to react logically or emotionally (Chapman, 2005). Kolb's includes psychological components by inferring that these combinations of choices manifest as learning styles (or preferences).

Figure 9
Kolb Learning Styles (Chapman, 2005)



APPENDIX C

Logic Model Components (Gale 2007; Kellogg, n.d.)



APPENDIX D

Logic Model Creation (Priest, 2001)

	Diagnosing (Problem Statement; Theory of Change)		Designing (Program Components)	
	Needs Assessment	Feasibility Study	Method A: Program Based	Method B: Problem Based
Measures	Needs of participants, organization, & community	Alternative interventions, external and internal pressures	Gap between program plan and execution	Gap between program plan and community/organizational needs
Questions	What are the objectives, priorities, & needs of the program?	Can the program succeed?	What are all the components of this program? Where do they fit in a process?	What are the preceding conditions?
Answers	Understand context	Gauge viability and resource allocation needs	Categorized components with links representing causal or hypothesized connections	Create problem model indicating all possible issues and interventions. Then highlight (or color in) components the program seeks to address
Other Consider-ations	Identify current program outcomes and indicators of success	Cost vs. benefit for organization	Sequence of learning experiences	Keep asking "why" to determine underlying rationale
Make adjustments: feedback from stakeholders, review of linkages, and determine which outcomes need benchmarks				

APPENDIX E

Summary of Recommendations

The Program

Mission Statement

River Quest provides an opportunity for youth to experience a fun and challenging outdoor adventure while providing engaging conservation lessons.

Vision Statement

River Quest combines the thrill and personal challenge of river running with hands-on educational activities designed to cultivate self-discovery, teamwork, and a conservation ethic.

Program Goals

- Make rivers and their surrounding natural environment more accessible to youth.
- Increase youth awareness of natural, ecological, and cultural history through environmental education.
- Provide opportunities for personal growth through fun and adventure.
- Empower youth to become environmental stewards at home.
- Recruit and train youth to become volunteer river guides and community leaders.

Benefits to Youth and Communities

- Increased knowledge of environmental and conservation issues.
- Activities that inspire personal growth and bonds between group members and group leaders.

- Experience and tools, such as problem solving and team building, for youth to become more involved in their community and impact public policy.
- A low cost experience of a lifetime.

Target Audience

River Quest collaborates with social service and academic agencies to provide a unique recreational opportunity and educational experience. Primarily serving groups in the Northern California, Sacramento and Bay areas.

Program Plan and Growth

Resources Recommendations

1. Increase staff time and recruit Interns
2. Join NAAEE

Activities

Key components.

1. Retain outdoor setting and activities allowing for incremental success, communal tasks, and educational lessons
2. Retain reflection activities
3. Retain activism activity, letter writing, while enhancing the experience through by follow-up information on its impact
4. Retain existing partnerships
5. Retain and enhance pursuit of funding
6. Retain and enhance relationships with volunteers and provide skill building opportunities

Administrative recommendations.

1. Create targeted curriculum and provide materials to partners for pre or post supplementation
2. Program and participant assessment for impact and effectiveness
3. Increase partner engagement through use of supplemental materials and creating a trip series
4. Extend impact through pictures, letters to participants, speakers, and additional trip opportunities

Evaluation

Based on program components, establish and compile benchmark data (see Table 7 for examples).

APPENDIX F

Interviews

Tyana Maddock, Friends of the River's Rafting Program Coordinator

The interview with the Program Coordinator is the basis of Chapter 4 (Personal Communication, February 10, 2009).

Kurt Hoge, Founder and Board Member of Project Great Outdoors

Project Great Outdoors (Project GO) is an experiential education program that was formed by volunteers of the River Quest program when River Quest was unsure of its future (Personal Communication, February 12, 2009). Project GO has distinguished itself by focusing on "changing kids," their outer and inner self. The outdoors and white water rafting is a vehicle for providing an experience and lessons that facilitate personal growth. Project GO has three strategic initiatives of note:

First, Project GO regularly evaluates the mission and attributes of its program. This year, Project GO revised their manual of best practices for their facilitators. Having their volunteers receive regular continuing education as well as basing their practices on theory and empirical evidence is a value of the organization.

Second, Project GO has recently instituted a series of three outings to extend and enhance the salience of the lessons by having a group of youth graduate through the series. The first outing is a trip down the Gorge Run of the South Fork of the American River and many on shore activities. The second outing involves camping as well as the Chili Bar Run (more challenging necessitating group cooperation) also on the South Fork of the American River. For the final outing the students are encouraged to step into the

guide seat and at the end of the trip each participant writes a letter to themselves and an also a letter to someone who is about to begin the program letting them know what they wish they would have known in the beginning.

Finally, Project GO has recruited a doctoral student to research the Project GO program, its treatment, and the results on its participants. It will start with a self-assessment bestowed upon the participants just before the trip along with the ceremonial liability form. Then a matching survey will be given immediately post-trip and again three to six months later. This process will also include sending the participant the letter from himself or herself approximately three months after the trip.

Paul Tebbel, Friends of the River's Executive Director

Going back to the roots of the organization, its newest Executive Director Paul Tebbel is focused on the stability of Friends of the River and the reach of its influence (Personal Communication, February 24, 2009). In the middle of hard fiscal and organizational times, Friends of the River's attention is on care of its members, fundraising to secure essential resources, and to continue to influence public policy while focusing on inspiring citizen action in all efforts and available mediums. The new mission of Friends of the River includes an underlying value to hold true to the grassroots beginning of Friends of the River while operating more efficiently and effectively.

Paul Tebbel views River Quest as a strategic program centered on education and is highly valuable with its specific outreach to youth. This program fits the direction of the organization, which would like to incorporate more grassroots and educational components. The organization would benefit most a logical program plan. River Quest

needs long-term goals and a clear concept on what the program seeks to accomplish. Further, how those accomplishments support the overall Friends of the River mission.

Susie Rivera, Catholic Charities

Susie Rivera leads a group of young leaders and she was attracted to the River Quest program as a low cost fun experience that has lead to personal growth in her youth group (Personal Communication, February 24, 2009). After a River Quest trip, she sees the youth become more "alive" and "trusting." Youths become more "alive" especially for those who were initially scared of water, there is a completely new world of activities that they can participate in. The youths create bonds with each other even across gang lines, which is reaffirmed later on though pictures from the day. Relationships are also solidified with the community group mentors that participate along with the youth.

Rivera has returned with her group year after year because of the conservation education her youth group receives. She has incorporated lessons from River Quest in a visit to a lake in which the youth picked up trash. Earlier, the youth viewed laws averse to littering as trifling, but after River Quest they stood at a lake and learned where this water comes from and goes to and that it is their responsibility to safeguard the watershed. Rivera recommended that River Quest facilitators bring bags for youth to use if they find trash, which would be an activity that can be easily translated into their daily lives. She claims that after a River Quest trip there is an observed change in behavior as her students refrain from littering.

As times are financially tough for community groups as well, Rivera is interested in having more of the groups she leads experience the low cost River Quest program.

She would be interested in any additional trips including multi-day restoration and camping, which would ease logistics for her group that travels from the bay area. In any event, Rivera asserted a strong need for the guides to have experience and skills in facilitating at-risk youth.

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