

THE UTILIZATION OF ADVENTURE-BASED PROGRAMS
IN CHRISTIAN EDUCATION

by

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(ABSTRACT)

Participants in a Christian adventure program (Liberty Expeditions) were tested to investigate the effectiveness of this type of program in causing spiritual change. Specific areas of spirituality measured in this study were identified in six study hypotheses. These areas were: sense of self-worth and purpose within God's creation, acceptance of doctrinal teachings, interest in Bible reading, intent to share religious faith, attitudes towards prayer, and perception of acceptance within the testing group. Pre- and post-program spirituality was self-reported using a 55-item Likert-type Scale instrument which was developed specifically for the study.

Paired t-test comparisons of pre-post test scores of the 4 groups comprising the sample showed slight, but not statistically significant, gains in 22 of 24 analyses. Hypotheses with the largest gains were the hypotheses addressing intent to share religious belief (mean gain for all groups), sense of self-worth and purpose, and interest

in Bible reading. Additional analyses included an analysis of variance between group scores and the Cronbach's test of instrument reliability.

Due to overall lack of statistical significance, conclusions were limited. Positive gain scores in 22 of the 24 analyses, however, implied that the program was effective. Limitations of the study and implications for Christian adventure-based programming are discussed.

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INTRODUCTION

Camping programs have been a part of the American church ministry for many years. The rationale for the usage of camping programs as a ministry of the church has historically been that the unique situation and environment intrinsic to camping was conducive to spiritual growth. More specifically, it has been theorized that time spent in natural surroundings would increase awareness of the person of God through observing His creation, that close contact with others through the camping experience would increase fellowship, and that the camping setting would provide opportunities for other aspects of Christian education.

Initially, centralized residential camps were the mainstay of this ministry. Within the last decade, however, the Church has taken notice of the increasing interest of the public in adventure activities and wilderness expeditions and has attempted to take advantage of that interest. Within the past few years many religiously oriented adventure-based camping programs have been initiated. Some are currently in operation; many have not survived. Through a simple informal search, the author was able to locate program literature from some 20 adventure-based ministries with national or regional visibility which are currently in operation.

It was immediately evident from this search that there exists a great diversity among religious adventure-based programs. A large portion of the programs were run as an adjunct to larger more traditional resident camps. Some were closely associated with the resident program and often consisted of nothing more than one day or even just afternoon climbing or canoeing excursions for campers within the resident program. Others, while still under the direct administration of a resident camp, were highly separate in their actual day to day programming. Many of these adventure programs utilized separate staff, equipment, brochures, and in some cases separate buildings and property.

Activities, of course, are extremely diverse also. Most adventure camps take advantage of the natural resources within their areas, and these resources play a major role in determining what adventure activities are offered. Some programs offer extended coast to coast bicycle trips, ocean kayaking expeditions off the coast of British Columbia, major mountaineering expeditions, whitewater rafting and canoeing trips, and many international hiking trips.

Denominational ties are an additional source of variability in many adventure-based programs. Many major denominations have their own adventure-based programs.

Others are not directly sponsored by any denomination but are extremely compatible in standards of conduct and theological dogma to a denomination and therefore are often recommended by them. Still others maintain a "non-denominational" standing and seek to cater to a diversity of religious groups.

Finally, the format in which religious education takes place also varies in the adventure programs. Some programs maintain that the mere exposure to creation provides an adequate catalyst for spiritual growth, while other programs provide an intensive format of devotional times, periods of Bible study and preaching services. The objectives are even more diverse. Some programs are strictly designed for the discipling and edification of persons who already believe the basic tenants of the denominational teachings, while others are evangelistic.

These programs seem to indicate that organized religion is heavily invested in the utilization of adventure-based programs in religious education. The question for those of us in religious education, which seems to have remained largely unanswered, is what the benefits of adventure activities are in this framework, and what program models exist which are designed to optimize these benefits. Is our utilization of new exciting activities in a beautiful

wilderness setting merely a marketing ploy? Are we merely looking for something different to attract people, something to replace more traditional religiously-oriented activities which have lost their appeal? Or do wilderness and/or adventure provide an environment which is somehow greatly conducive to religious teaching? If so, how?

The lack of research literature would indicate that possibly the current abundance of religiously oriented adventure programs is the result of the emulation of secular adventure programs which have been successful, rather than the by-product of a well thought out philosophy of ministry. There seems to be a lack of theoretical groundwork in the whole area of religious adventure-based programming. If we understand religiously oriented adventure-based programming at all, perhaps it is only its attractiveness and potential to draw crowds. There seems to be an untapped wealth of potential within adventure programming. There may be ways of utilizing adventure programming for spiritual education of which we are completely unaware.

Many religiously oriented programs have unquestioningly adopted the programming models of secular programs. An example of this is the widespread use of the Outward Bound model within religiously oriented programs. This model (OB) has certainly stood the test of time and has been used with

varying degrees of success in many secular programs. We must question, however, its use in religiously oriented programs. This inquiry is based for the most part on the differences in objectives between Outward Bound and spiritually oriented programs. The stated objectives of Outward Bound include: extending levels of self-awareness, communication skills, and awareness of group processes, development of environment awareness, and values clarification (Colorado Outward Bound School, 1977). Generally stated, Christian education objectives would include: increased awareness of one's relationship to God, increased commitment to serve God, gains in cognitive knowledge of scripture, and increased ability to function within the body of believers. Notwithstanding the marked differences in the purposes and objectives of Outward Bound and Christian adventure programs, many such programs continue to use the OB model. The author's recent program literature search has failed to locate a defense of the utilization of this model. More importantly, however, was the inability to locate an in depth program rationale designed for religiously oriented adventure programs.

The purpose of this study is to begin the process of determining whether adventure-based programs can be effective tools for accomplishing spiritual objectives.

Chapter II

LITERATURE REVIEW

Within the spectrum of church recreation, no area has been more widely studied than that of church camping. Regardless of this fact, there is still a great need for systematic research in many areas of church camping. The primary problem in any attempt to review the literature in this area is that of identification. Given the myriad of research pertaining to religious camping, what means do we use to select from that research findings which will have implications for Christian adventure-based programs?

There are few articles which address Christian adventure-based programs specifically. Therefore, I will first attempt to identify salient elements of the Christian adventure-based program and then review the literature on the effectiveness of those program elements in affecting positive change in participant characteristics. In conclusion, I will review several articles dealing with program objectives and frameworks.

Several salient elements of camping programs as they relate to the ministry of the church have been identified. These elements are: the extended time frame, the outdoor setting, and the opportunity for interaction with trained leaders, experiential learning, post-program follow-up and

spiritual curriculum. Harvey (1981) defined the Christian faith as a matter of relationships: man's relationship to himself, others and God. He contended that relationships are the product of accumulated knowledge and experience, attainable only through extensive shared periods of time. The outdoor setting, Harvey suggested, serves as a reminder of the fact that persons are creatures related to a Creator. The delicate balance and interworkings of eco-systems provide insight into the person and mind of God.

Concern for instructing participants in a Biblical view of man's interrelationships and responsibility for the environment was reflected not only by Harvey's research, but also by Little (1981). Little reviewed current misconceptions of what the Judeo-Christian ethic has to say about land management and points to the need for an ethical basis for dealing with environmental issues in this generation. Although environmental education can provide awareness and conviction, only the surrender of selfishness through the adoption of religious ideals will solve our ecological problems (Steffenson, 1975).

Interaction with trained leaders was also seen as vital to ministry because leaders role-model Christian life in a wide variety of conditions, activities and problems. The need for improved camp leadership was documented in a study

of leadership in a women's church camp (Johnson, 1959). Johnson concluded that there needed to be a general upgrading of trained leadership within the denomination.

The importance of small group leadership techniques was also documented in a study of Methodist camps (Needles, 1965). Needles found that there was a direct correlation between length of training and experience of the leaders and positive change in camper behavior. Needles also reported that camper changes were most reasonably explained as the influence of the counselors.

The experiential nature of the adventure-based program is an important aspect of the experience. Although not in an adventure program setting, McNeill and Paul documented the success of experiential education utilized for the purpose of theological teaching in his study of college level theology courses (McNeill and Paul, 1975). Fox (1983) continued the defense of experiential teaching within spiritual education and spiritual life. His report reviewed prevailing themes of dependency and faith in western spiritual tradition. The author noted that because spiritual faith is openness to reality, lack of faith cuts one off from experience. Fox examined how experiential education programs can be utilized as faith-building tools.

Written information, especially quantifiable research, concerning the effectiveness of specific programming techniques is scarce. It is generally agreed, however, that whatever spiritual progress may be experienced during a Christian camping program will be short-lived without adequate follow-up (Harvey, 1981). Although there is little research available pertaining to Christian adventure camp follow-up, it is widely held that such follow-up must be part of any Christian education endeavor. Documentation exists as to the importance of a close working relationship between the program and the church in order to utilize a follow-up plan (Ricketts, 1962).

A study of the Jewish Vacation Association central camp supports this documentation. In this study where pre- and post-treatment observations were utilized, results seemed to indicate a positive correlation between follow-up and long-term positive spiritual growth (Newman, 1948). These findings are supported by Totton in her operation manual for Christian camps (Totton, 1947).

Controversy surrounds the manner in which spiritual and religious aspects of the program should be approached. Literature in this area is highly inconclusive. Stevens (1947) emphasized the need for clear-cut methods and objectives. There have been suggested religious educational

frameworks for use in camping environments. Among them are programs which emphasize individualized instruction, using instructors as role-models of desired behavior (Strodel, 1952; Williams, 1966). Various objectives for adventure programs have been set forth by Christian educators.

Extended wilderness trips with teens from the Queen's Baptist Church provided Madsen (1983) with qualifiable experiences of personal growth. These included self-awareness, self-confidence, spiritual self-identity, and a heightened sense of appreciation. Self-awareness was defined by Madsen as a more accurate understanding of group interrelatedness and interdependency with factors influencing a given situation. Madsen observed a marked increase in self-confidence among trip participants. This increase was observed in areas relating to both physical and social confidence. Spiritual self-identity was defined by the author as viewing specific beliefs and values as one's own belief or value rather than the church's belief or value. Madsen reported that these individual values and beliefs did become more concrete for the participants. Finally, the author observed that the campers gained a new appreciation of self through personal testing and success; of others, through accepting leadership and followership; of the environment, through better understanding of ecology;

and of God through personal encounters with creation. In his evaluation of the First Community Church of Columbus, Spangler (1949) provided the following objectives of Christian camping: (1) To help each person gain insight into himself and his relationships with others, (2) To provide an experience of living in a democratic community, (3) To teach religious expression, (4) To guide the campers in the use of leisure time, and (5) To train leaders for the church program of the coming year. Cunningham presented basic spiritual philosophy and selected Scriptural principles that could be used in developing a creative Christian Camping program. The purpose of such a program would be to build the camper's spiritual maturity and Christian character (Cunningham, 1967).

While little has been written specifically on the utilization of adventure-based programs for religious education, we can draw some conclusions from literature written from a more general camping perspective. Elements which also exist in adventure-based programs have been evaluated in the context of resident camps, and it would not seem too far-fetched to expect that these evaluations would be appropriate within the context of adventure camps also. From the existing literature, however, it is impossible to determine if adventure programming has been, or is currently

being used effectively to fulfill the mission of the Christian Church. Specifically, there is a need to ascertain the extent to which Christian adventure programming is being used on a national or international scale; for an examination of what individual programs are doing; and finally, for a quantitative evaluation of spiritual change in a group of individuals participating in a specific Christian adventure program. The present study was an exploratory attempt to address the third need.

In conclusion, program components which have been identified as being desirable in a religiously-oriented camping program include: an extended time frame, the use of an outdoor natural setting for programming activities, close contact with leaders who role-model desirable behavior, experiential teaching methods, and post-program follow-up. Program objectives which have been identified in the literature are: increased self-awareness and self-confidence, a greater sense of spiritual self-identity, and appreciation for the natural world. It is also hoped that participants will gain a greater insight into themselves and others, that they will gain experience in functioning in a democratic community, and that they will learn appropriate ways to use leisure time. Finally, it is hoped that as an outcome of these types of programs, participants will develop more varied means of religious expression.

The hypotheses for this study were as follows:

1. Scores on sense of self-worth and purpose as a part of God's creation will be higher after exposure to a Christian adventure-based program than before.

2. Scores on acceptance of the doctrinal teachings of man's need of salvation will be higher after exposure to a Christian adventure-based program than before.

3. Scores on interest in Bible reading and study will be higher after exposure to a Christian adventure-based program than before.

4. Scores on participants' intent to share their religious beliefs with others will be higher after exposure to a Christian adventure-based program than before.

5. Scores on participants' attitudes toward the importance of seeking daily communication with God through prayer will be higher following exposure to a Christian adventure-based program than before.

6. Scores on participants' perception of their acceptance within the group will be higher following exposure to a Christian adventure-based program than before.

Chapter III

METHODOLOGY

The research design for this study was a pre-test/post-test exploratory field research design. The pre-test was administered just prior to the beginning of the programs. The post-testing was administered immediately following the programs. The test design required the participants to respond to bi-polar, Likert-type scales and to provide some numerical behavioral reports and demographic information.

The groups consisted of 15-34 year old, single and married males and females, most of whom were from church backgrounds.

The testing instrument was pilot tested. The pilot test took place during one of the week-long programs. Half of the test group were given a pilot test with 4 point Likert scales, the other half were given a test with a 5 point scale. The purpose of this procedure was to determine if there was a tendency for participants using the five point test to select the mid-point response. A comparison of the four- and five-point test groups showed no significant difference so the decision was made by the author to use the five-point scale for the remainder of the testing process.

Treatment Format and Sample

The sample for this study consisted of participants in the Liberty Expeditions adventure camp. The camp is operated under the auspices of the Thomas Road Baptist Church, Lynchburg, Virginia, and is baptistic in its doctrinal position.

Program literature states the major philosophical objectives of the program are evangelism and scriptural teaching. The test program specializes in providing week long multi-activity trips which include backpacking, technical rock climbing, canoeing, and whitewater rafting. The actual program format for the study groups was: a three day backpacking trip in the Cranberry Backcountry and Wilderness Area in West Virginia, followed by a one day technical rock climbing trip also in West Virginia. The expedition was concluded with a two day canoe/raft trip through the New River Gorge. A more detailed trip format is included as Appendix A. The format for religious teaching included one hour long devotional time periods each morning containing a brief scriptural message and a period of individual Bible study. There was also a devotional period and a time of personal group sharing each evening. This structured format was supplemented by individual one-on-one counseling time throughout the week.

There were 43 subjects in the sample who completed the program in four testing groups. The largest group was 13, the smallest, 6. The subjects evidenced a mixture of religious and non-religious backgrounds including Catholics, Baptists, Presbyterians, and non-churched subjects. While the majority of the subjects attended the camp as a part of an organized church group, there was also a group from a public school in the sample group. All of the subjects were between the ages of 15 and 39.

The use of this sample to study the issues of the utilization of adventure-based programming in Christian education is justified mainly by the fact that this program seems to be typical of most Christian adventure-based programs that were reviewed by the author. The following generalizations concerning the Christian adventure-based programming field are based on the author's active professional involvement in the field over a seven year period and on an informal study of program literature. The similarity of the Liberty Expeditions program to the field in general seems most evident in the areas of: program activities, program length, and structured religious format. Liberty Expeditions' program consisted of week-long trips as do many other adventure-based programs that were reviewed for this study. Program activities are also typical. As

with other adventure programs, backpacking seems to be the mainstay of the program. Rockclimbing and canoeing activities utilized in the Liberty program are also fairly common programming activities within the field. The specific doctrinal stand, goals and objectives of the Liberty Expeditions will be discussed in detail later in this chapter. Liberty Expeditions' structured religious format consists of group devotional periods and individual Bible study. This format has traditionally been used in Christian adventure-based programs, and this seems to be the case currently as well.

Testing Procedures

The pre-test was administered soon after the initial contact between the Liberty Expeditions staff and the participants. Attempts were made to ensure that the pre-test was administered before contact with the staff or participation in activities altered the possible pre-test scores. The author's intent was to pre-test the groups during the first day of the backpacking trip. This was only possible for two of the groups, however, due to bad weather and a bus break-down. The other two groups were pre-tested during the bus trip to the backpacking area and during the morning of the second day of the backpacking trip. The

author felt that the variation in testing location was not as great a detriment to the validity of the study as was the influence that the staff might have had on the participants through contact prior to a predetermined test location. Following the week-long treatment, an identical test was readministered. Logistical considerations were such that it was possible to administer the post-test at the same location for all groups. The post-test site was at the Liberty Expeditions headquarters approximately one hour after participants arrived there.

The test administrator informed the subjects that this test was not a direct evaluation of this specific program but rather a test of wilderness/adventure programming in general. Anonymity was assured to participants by the use of a numerical coding system rather than having the subjects put their name on the tests. These two procedures were included to reduce testing effects.

Instrument Development and Content

Given the diverse spectrum of religious beliefs, doctrinal positions and objectives, any instrument designed to measure spiritual growth would only be usable within a relatively narrow portion of that spectrum. In the development of such an instrument it would therefore be

necessary to first define the specific objectives of the program which is to be tested.

The objectives of Liberty Expeditions are generally in agreement with literature (Towns, 1972), (Dollar, 1983) which attempts to define Fundamentalism. Dollar (1983) divides Fundamentalists into two major groups: moderate Fundamentalists and militant Fundamentalists. The major distinction between these groups seems to be the practice of pointing out the errors of other religious groups and seeking to separate from them, a practice of the militant group which is not deemed important by the moderates. This distinction between groups of Fundamentalists is supported by individuals outside the Fundamentalist circle as well (Quebedeaux, 1974). These authors clarify the Liberty Organization as being moderate Fundamentalists.

Both Dollar (1983) and Towns (1972) contend that fundamentalism must be defined not only in terms of doctrinal issues but also in terms of characteristics which seem to typify the group as a whole. Characteristics which Dollar identifies as being typical of Fundamentalism are:

1. Strong charismatic leadership.
2. The use of "saturation" type methods of ministry.
3. Strong emphasis on Biblical inerrancy.

4. A belief that those who don't share their views are not "true Christians."

These characteristics are clearly evident in the Liberty organization as a whole, and based on the author's observation they are also existent, to a lesser degree, in the Liberty Expeditions program. Leadership within the program was centralized for the most part, to the program director and to a much lesser degree to the program instructors or "guides." The leadership style utilized in the program was strongly authoritarian, and followership on the part of the participants seemed to be more a reaction to the program director's personality than an understanding of, or agreement with, the director's decisions. While all members of the staff had leadership responsibilities, the vast majority of the decisions were made by the program director.

Saturation ministry, as defined by Towns, is the practice of utilizing every available means in every possible situation and aspect of life to present the evangelistic message. While saturation type ministry was not evident as a characteristic of the programs examined in this study, the Liberty program could be viewed as a method of saturation ministry by the Liberty organization.

The belief in Biblical inerrancy is, without question, an integral part of the program. The Bible is presented as

the authoritative Word of God. In conjunction with this, the belief that the Bible mandates one specific set of beliefs and actions in order to be a "true Christian," and that all beliefs and actions contrary to this are invalid, is clearly evident in the program, both by the nature of the teaching and the emphasis placed on converting the participants.

The consideration of these characteristics is important in that any attempt to generalize the findings of this study should be done with the understanding that these characteristics may vary between this and any other Christian group. Therefore, while spiritual growth may occur through adventure programming in a variety of doctrinal contexts, great care should be taken in any attempt to generalize the findings of this study to other programs.

The testing instrument was four-fold. The first section dealt with the affective domain. Questions in this section dealt with the importance of certain religiously-oriented concepts in the person's life (forgiveness, the love of God, etc.). The second section of the instrument contained questions dealing with behavior. The questions in this section assess frequency of performance of actions which are deemed desirable within Christian fundamentalist

circles (prayer, scripture reading, etc.). The third section dealt with perceptions of self-worth, acceptance within the group, and group unity. The fourth section contained demographic information.

For the sake of clarity the following objectives, hypotheses and instrument items will be stated emphatically as from the viewpoint of the fundamentalist position.

Objective 1

Program participants should have a cognitive belief that God loves them as an individual, that God has a purpose and plan for their lives, and that their lives are intrinsically valuable as children of God.

The basis for this objective is the Biblical teaching of the love of God for man. This love is most clearly evidenced in respect to God's creation of man, and God's provision of a method of atonement for sin in the Old Testament, (Leviticus 4:13-20). However, the outstanding Biblical example of God's continuing love for man is the provision of eternal salvation through the substitutionary death of his son, Jesus Christ (John 3:16). A complete understanding and acceptance of these principles would include belief that God is in control of all things, that his dealings with people are motivated by love and are in

their best interest, and that God has a definite plan for each individual (Romans 8:23).

Hypothesis 1:

Scores on sense of self-worth and purpose as a part of God's creation will be higher after exposure to a Christian adventure-based program than before. The following items were selected to measure change in this area.

Item #1: I believe that God has a definite purpose for my life.

Item #2: My life is significant to God.

Item #3: I can accept anything that happens to me as the will of God.

Item #4: I believe that God loves me as an individual.

Item #5: I believe that God sent His Son to earth as an indication of His love for me.

Objective 2

Program participants should accept Jesus Christ as their personal Savior from the penalties of sin.

This objective is based on the doctrine of salvation. The scriptures depict man's relationship with God as having at one time been one of close fellowship and harmony (Genesis:2). Because of man's disobedience and rebellion, however, God, being righteous and holy and unable to

tolerate sin, separated man from his presence, (Genesis:3). Nevertheless, God's love for man continues. Because of this love God provided a way to be reunited with him. This was by the sacrificial death of his Son, Jesus Christ (Romans 5:10-11). The death of Jesus Christ provided the atonement for the sins of all men for all time (John 10:7-18). However, this gift of salvation from separation from God must be personally acknowledged and accepted by each individual. This reacceptance into fellowship with God may only be received as a free gift by the grace of God and is not the result of "good works" (Ephesians 2:9).

Hypothesis 2:

Scores on acceptance of the doctrinal teachings of: 1) man's separation from God as the result of sin; 2) God's provision of salvation through his Son, Jesus Christ; and 3) the personal need of the individual to accept this provision will increase from before the program to after the program. The following items were selected to measure change in this area.

Item #5: I believe that God sent His son to earth as an indication of his love for me.

Item #6: I believe that people who die without having accepted Jesus Christ as their savior spend eternity separated from God.

Item #7: I believe that God has provided a way to be reunited with Him through His son Jesus Christ.

Item #8: I believe that all men have sinned and therefore are separated from God.

Item #9: I have accepted Jesus Christ as my personal savior.

Objective 3

Program participants should realize the importance of studying the scriptures as a tool to knowing more about God and his plan for their lives. This realization should be evidenced by daily reading of the scriptures.

The Bible is the verbally inspired word of God. It is a communication from God to man (2 Peter 1:21). Therefore, in the Christian's quest to know God and serve him, it is reasonable that the Christian read the Bible. The Bible contains practical advice on many of the age old problems of man, along with guidelines regarding the Christian's responsibilities to other Christians, non-Christians, and other aspects of his society.

Hypothesis 3:

Scores in interest in Bible reading and study will be higher after exposure to a Christian adventure-based program than before. The following items were selected to measure change in this area.

- Item #20: I believe that Bible reading/study is critical to growth as a Christian.
- Item #21: I believe that the Bible is a direct communication from God to man.
- Item #22: I have often found answers to problems in my life in the Bible.
- Item #23: I believe that the Bible is without error.
- Item #24: It seems to me that the more time that I spend reading the Bible, the more sense it makes to me.
- Item #25: The Bible is too hard for me to understand.
- Item #26: The Bible doesn't deal with many of the problems that I have.
- Item #27: In the past week I have used a principle from the Bible to deal with a situation.
- Item #28: During the past week I have suggested to someone else that they read the Bible.
- Item #46: How many times during the past week have you engaged in Bible reading/study?

Item #47: How much total time did you spend in Bible reading/study during the past week?

Objective 4

The program participants should seek to share their faith in Jesus Christ including the fact that without the salvation provided by Jesus Christ all people are doomed to eternal separation from God.

The very nature of the message of salvation demands that it be shared, to know the consequences of separation from God and the joy of fellowship with God and to refuse to tell others is the greatest of crimes. The Bible commands us to tell others about what we believe (John 15:27) yet regardless of this, the sharing of salvation through Jesus Christ would seem to be a natural occurrence. The scriptures are unapologetically dogmatic concerning the preaching of Jesus Christ's death being the only way to fellowship with God and heaven. Scripture in no way allows for the validity of any teaching contrary to this. The scriptures further contend that the message of salvation is for all people and every person.

Hypothesis 4:

Scores on participant's intent to share their religious beliefs with others will be higher after the program than before. The following items were selected to measure change in this area.

- Item #29: I am planning on telling other people about my faith in Jesus Christ.
- Item #30: I am concerned about my friends and family who don't know about Jesus Christ.
- Item #31: I am concerned about people in other countries who don't know about Jesus Christ.
- Item #32: I believe that telling people about my faith in Jesus Christ is a direct command from God to all Christians.
- Item #42: I am planning on sharing my belief in Jesus Christ with members of my family.
- Item #43: I am planning on sharing my belief in Jesus Christ with my close friends.
- Item #44: I am planning on sharing my faith in Jesus Christ with casual acquaintances.
- Item #45: I am planning on sharing my faith in Jesus Christ with anyone with whom I have the opportunity.

Item #48: How many times in the past week have you told someone about your belief in Jesus Christ?

Item #49: How many times have you ever told someone about your belief in Jesus Christ?

Objective 5

Participants should actively seek communion with God through prayer. Participants should realize that God has promised to answer our prayers according to his will, and that our prayers do have an effect on the outcome of situations.

Seeking communication with God through prayer is clearly mandated by scripture. This mandate is given both in the form of examples from the lives of Biblical characters and in the form of direct commands (I Samuel 7:5, I Thessalonians 5:17). One of the principle benefits of fellowship with God through Christ is the privilege of addressing God in prayer. Scripture indicates that the prayers of the faithful have a definite effect on the outcome of earthly situations (James 5:16). Also, we are commanded to thank God for material blessings and for the gift of salvation.

Hypothesis 5:

Scores on participants' attitudes towards the importance of seeking daily communication with God through prayer will be higher following the program than before the program. The following items were selected as measures of change in this area.

Item #33: I think prayer is vital to growth as a Christian.

Item #34: I think God hears my prayers.

Item #35: God has commanded us to pray.

Item #36: I like to pray.

Item #37: I consider prayer an important part of dealing with problems.

Item #38: I tend to thank God in prayer when good things happen to me.

Item #39: I often pray spontaneously.

Item #40: I feel that praying with other people makes me closer to them.

Item #50: How many times did you pray last week?

Item #51: how much total time did you spend in prayer during the past week.

Objective 6

The program participants should realize that God loves all people and therefore they should love all people. God's acceptance of us is unconditional, therefore our acceptance of others should be unconditional. This acceptance is based on the intrinsic worth of the person and our acceptance should not take into account outward appearance, abilities or actions.

Throughout the books of the New Testament the Christians of the day were admonished to love one another (John, 13:35), to help one another, and to accept each other as God had accepted them. These early believers were instructed to accept each individual as intrinsically worthwhile in and of himself and that other Christians were not to be evaluated on the basis of their social standing, wealth or appearance (Romans, 12).

Hypothesis 6:

Scores on participants' perception of their acceptance within the group will be higher following the program than before the program.

In an attempt to determine the participant's perception of his/her acceptance within the group, two series of questions were developed. In order to assess the

participant's feeling toward the whole group these two series of questions focused on the participant's feelings toward the person in the group whom he/she felt closest to, and the person in the group whom he/she felt least close to.

The following items were asked in regard to both the person in the group to whom the respondent felt closest and least close.

Item #13: I would consider this person a close friend.

Item #14: I would feel comfortable sharing personal feelings with this person.

Item #15: I feel that this person accepts me as an individual.

The following items relate to the group as a whole.

Item #16: I feel that the group accepts me as an individual.

Item #17: I feel that my acceptance in the group is based on my looks.

Item #18: I feel that my acceptance in the group is based on my performance in the activities: climbing, canoeing, etc.

Item #19: I feel that my acceptance in the group is based on my personality.

The following demographic items were included in the instrument to provide a basis for correlational analysis with overall test results.

Item #52: How old are you?

Item #53: Sex: M/F

Item #54: How many church services do you attend per week?

Item #55: Do your parents attend church on a regular basis?

This instrument was formulated on the basis of the stated objectives of Liberty Expeditions. The theological doctrines which constitute the basis of these objectives were identified through related literature and test items were then developed based on these theological doctrines. The specific items were then approved as indicative of the stated objectives by the program director, program staff and others in the Christian education field.

Overview of Data Analysis

Data was coded and verified by the investigator and analyzed using the Statistical Analysis System. Differences among the four test groups were examined using analysis of variance and the Duncan's test of means. Reliability of the scales designed to measure each of the study's six hypotheses were estimated through a Cronbach's alpha reliability coefficient. Finally, significance of pre-test, post-test gain scores for the six test scales were evaluated through paired t-tests.

Chapter IV

RESULTS

Sample Description

The sample was composed of four groups. They were: (1) a Catholic group which lived in a single community and attended the same church (n=9), (2) a group of three married couples who did not all attend the same church (n=6) (3) a church youth group (n=13) (4) and a group from a public school (n=6). These groups participated in the Liberty Expeditions program in this order respectively. Although the combined total number of test participants equaled 43, only 34 of the tests from the sample completed five-point scales for questionnaire items and were included in these analyses.

Demographic and church attendance information for the four groups is summarized in Table 1. Group 1 was the youngest group in the sample, with a mean age of 14.2 years. This group also had the highest ratio of males to females: 78% of the group were males. Scores on reported church attendance per week were very low in comparison with the other groups, with over 44% of the people in this group reporting 0 church services attended per week. This group continued to stand out from the rest of the sample in that they had the highest ratio of "no" responses to the question

Table 1

Demographic Characteristics and Church Backgrounds
of 4 Groups Participating in a Christian Adventure Program

Group	Mean Age	% Male/ % Female	Parents attend church % no/% yes	Mean number of church services attended per week by participant
1	14.2	78/22	56/44	1
2	35	33/67	33/67	1.5
3	15.8	54/46	0/100	2.6
4	14.8	50/50	17/83	2.7

regarding parental church attendance on a regular basis. Five of the responses to this question were "no", 4 were "yes".

Group 2 was the oldest group in the sample. Mean age of this group was 35. This group had the highest ratio of women to men: 66.7% of the group were women.

The mean age of group 3 was 14.8 years. This group had a high response to the question dealing with number of church services attended per week, with over 76% of the group reporting attending 3 church services per week. In addition to this, all the participants in this group reported that their parents attended church on a regular basis.

The mean age for group 4 was 14.8 years. This group of 6 was the only one with an equal number of males and females. A high percentage of this group (83%) reported attending 3 church services per week.

Because the four groups participated in the program and were tested at four different times, an ANOVA was run to indicate difference in mean gain scores in each of the six hypotheses across the four test groups. The ANOVAs revealed that at the .05 level of significance, the differences between groups on hypotheses 1, 4, and 5 were not significant. There were, however significant difference between at least two groups on hypotheses 2, 3, and 6.

The Duncan's test of the means was then used to determine which of the groups could be combined to test hypotheses 2, 3, and 6. The Duncan's test assigns different letters to groups that are significantly different from each other. Mean gain scores with the same letter are not significantly different. Scale gain scores, F-values and significance levels from the analysis of variance are listed in Table 2, as are the Duncan's groupings. Based on the lack of any consistent pattern in regards to the gain scores and the conflicting results concerning significant differences between groups and hypotheses, the decision was made to keep both groups and hypotheses separate when running the t-tests.

Instrument Description

The instrument used in this study was generated by the author specifically for use in this project. As with any unvalidated testing instrument, concerns regarding reliability were a major issue. As a result of these concerns, a Cronbach's test of internal instrument reliability was run. Results from this test range from 0-1, a score of 0 indicating that responses to items in a given scale are not correlated, and a score of 1 indicating high interrelatedness of responses. Results from this test

Table 2

Duncan's Test of Significant Differences of Means on
the Mean Gain Scores of 4 Groups Participating in a
Christian Adventure Program

Hypothesis	Group	N	Gain	F-Value (sig.)	Duncan's Grouping
Hypothesis 1 (self-worth and purpose)	2	6	.43	2.61(.07)	A
	4	6	.36		A B
	1	9	.31		A B
	3	13	.06		B
Hypothesis 2 (acceptance of doctrinal teaching)	1	9	.80	6.06(.003)	A
	4	6	.17		B
	2	6	.05		B
	3	13	.02		B
Hypothesis 3 (interest in Bible reading)	4	6	.81	3.41(.03)	A
	1	9	.57		A B
	3	13	.28		A B
	2	6	-.06		B
Hypothesis 4 (intent to share faith)	4	6	.77	2.5(.08)	A
	1	9	.66		A B
	2	6	.54		A B
	3	13	.12		B
Hypothesis 5 (importance of prayer)	1	9	.63	1.46(.25)	A
	4	6	.38		A
	2	6	.33		A
	3	13	.20		A
Hypothesis 6 (acceptance in group)	2	6	.61	3.75(.003)	A
	4	6	.60		A
	1	9	.30		A B
	3	13	-.10		B

*Means with the same letter are not significantly different.

varied from a low score of .77 for the collective items testing hypothesis 1, to a high score of .92 for the items in hypothesis 4. (Cronbach's scores for each hypothesis are included in Appendix C.) The scales assessing each of the study's hypotheses were thus treated as reliable measures.

Tests of Hypotheses

Means for each hypothesis for each group were calculated by first summing the pre-test scores on items relating to that hypothesis. The resulting value was then divided by the number of people in the group and then divided by the number of items under that hypothesis. The post-test mean was calculated in like manner. The post-test mean was then subtracted from the pre-test mean resulting in the mean gain. T-tests were then used to measure gain pre-test to post-test. Pre-test scores, post-test scores, gain scores, and t-test significance levels are summarized in Table 3. None of the pre-post differences were significant at the .20 level.

Hypothesis 1

This hypothesis dealt with the participants' sense of self-worth and purpose as a part of God's creation. Mean gain scores for all groups combined = .25, $t = 1.87$. Gain scores for individual groups ranged from low (.06) to

Table 3
Mean Gains and T-Scores of 4 Groups Participating in a
Christian Adventure Program

Hypothesis	Group	Pre- test Score ¹	Post- test Score	Gain Score	T-score	p > .10
Hypothesis 1 (self-worth and purpose)	1	1.73	1.42	.31	.37	p > .10
	2	1.63	1.20	.43	.36	p > .10
	3	1.26	1.20	.06	.19	p > .10
	4	1.43	1.07	.36	.33	p > .10
Hypothesis 2 (acceptance of doctrinal teaching)	1	2.58	1.78	.80	.54	p > .10
	2	1.40	1.35	.05	.09	p > .10
	3	1.37	1.35	.02	.06	p > .10
	4	1.21	1.04	.17	.29	p > .10
Hypothesis 3 (interest in Bible reading)	1	2.89	2.32	.57	.21	p > .10
	2	1.72	1.78	-.06	-.03	p > .10
	3	2.30	2.02	.28	.27	p > .10
	4	2.02	1.20	.82	.27	p > .10
Hypothesis 4 (intent to share faith)	1	2.82	2.16	.66	.22	p > .10
	2	2.63	2.08	.55	.24	p > .10
	3	2.25	2.18	.07	.08	p > .10
	4	1.94	1.17	.77	.23	p > .10
Hypothesis 5 (importance of prayer)	1	2.38	1.75	.63	.33	p > .10
	2	1.75	1.42	.33	.18	p > .10
	3	1.64	1.50	.14	.03	p > .10
	4	1.48	1.10	.38	.21	p > .10
Hypothesis 6 (acceptance in group)	1	2.51	2.21	.30	.21	p > .10
	2	2.18	1.56	.62	.20	p > .10
	3	2.14	2.24	-.10	-.03	p > .10
	4	2.22	1.61	.61	.21	p > .10

¹Results are from a 5-point Likert scale, 1 being the highest response, 5 being the lowest. Therefore, a lower score is a better score in relation to the concept being measured.

moderate (.43) relative to gain scores for other hypotheses. T-scores were also high compared to other hypotheses.

Hypothesis 2

This hypothesis dealt with the participants' acceptance of the doctrinal teachings of salvation. Mean gain scores for all groups combined = .27, $t = 1.24$. Gain scores for individual groups were very low for the most part in this hypothesis. The one exception to this was group 1 who had an unusually high gain score of .80. T-scores were widely ranged from .06 to .54.

Hypothesis 3

Hypothesis 3 addressed the participants' interest in Bible reading and study. Mean gain scores for all groups combined = .37, $t = 1.71$. Gain scores for individual groups were widely spaced, and contained both the highest gain, .82, and one of only two losses, -.06. T-scores were clustered closely in the .20s with one exception, a score of -.06 in group 2.

Hypothesis 4

This hypothesis dealt with the participants' intent to share their religious beliefs with others. Mean gain scores for all groups combined = .40, $t = .89$. Gain scores for individual groups were generally high. T-scores as in

hypothesis 3 were relatively the same with the exception of a low score for group 3.

Hypothesis 5

Hypothesis 5 tested gains on participants' attitudes toward daily prayer. Mean gain scores for all groups combined = .36, $t = .89$. Gain scores for individual groups were moderate to high in comparison with other hypothesis scores, again with the exception of group 3, whose score was .14. T-scores were widely scattered.

Hypothesis 6

This hypothesis tested perception of acceptance within the group. Mean gain score = .26, $t = .82$. Individual group gain scores were high to moderate with the exception of a score of -.1 for group 3. T-scores were closely clustered in the .20's except for a low score for group 3.

Table 3 summarizes gain scores and their t-scores by hypothesis by group. Although the gain was not significant at the .10 level, 22 of the 24 analyses (4 groups x 6 hypotheses) showed positive gain.

Although there was no statistical significance in any of the hypothesized gains for any of the groups, positive gains were most evident in groups 1 and 4, with total gains across all 6 hypotheses of 3.27 and 3.11 respectively. Group 2's gain was 1.85 and group 3's gain was 1.01.

Chapter V

CONCLUSIONS

Within the past fifteen years Christian education programs have increasingly made use of adventure activities. Literature describing this phenomenon, however, has not kept pace. Specific areas which lack support include: (1) rationale for the use of adventure activities; (2) philosophy of how to best make use of adventure activities to accomplish spiritual objectives, and (3) documentation as to the effectiveness of adventure activities in accomplishing spiritual objectives. It was the objective of this research to begin to provide such documentation.

This study measured change in test scores on 6 facets of spirituality as defined by Fundamentalist Christians. The "treatment" which is hypothesized to have caused this change was a week long Christian adventure-based program. Thirty-four subjects in four groups received the treatment. While t-tests showed no significance difference in the gain scores of the four groups, they showed a positive change in 22 of the 24 hypothesis measurements.

Because of the lack of literature and prior research in this area, and the lack of a proven scale for testing spiritual change, this study was highly exploratory in nature. As a result of this, some problems occurred which

suggest a more refined study in the future would be in order. By far, the most limiting problem was the small number of participants in the study (n=34). This small number limited the types of testing which could be done on the data, and greatly restricted the conclusions which could be drawn from that data. The small number of participants in the study also mandated that a large change among participants was required for the results to be considered statistically significant.

Another limitation was that the 34 participants underwent the treatment in four separate groups, with some uncontrolled variations in program content at different times. This problem was compounded by the fact that the groups were from quite different religious backgrounds. An ANOVA found significant differences between many of the groups' hypothesized gain scores, this precluding the combination of groups for pre-post comparisons. Another problem was the lack of a control group. Without the comparison that would be possible with a control group, and given the small gains recorded in the study, it is not possible to know if the gain was due to the program or to some other cause. A final problem is the possibility of a pre-test ceiling effect for some groups. Specifically, group 3 had pre-test scores near the top of the scale on

almost every item. This left them with little room for improvement on the post-test. It could be hypothesized that the cause for this high pre-test scoring was the fact that this group was highly "churched". This was the only group from a single church which was highly fundamentalist itself. This group scored highest on number of church services attended per week and highest on parental church attendance. This creates the possibility that the objectives of the program may have been largely met by the church environment prior to the treatment.

Conclusions

While recognizing the problems stated above, and the overall lack of statistical significance, some conclusions seem warranted. First of all, change did occur in every group in every hypothesis. Secondly, the great majority of the hypotheses changed in a positive direction. Out of a total of 24 hypothesis tests, all but two changed in the positive direction. While the reported change was statistically insignificant in all cases, sum total change was greatest in the participants' intent to share their religious beliefs, where gains equaled 2.05. It is possible that high gain scores under this hypothesis are at least partially due to the role modeling of the leaders sharing

their faith during the program. Gains on sense of purpose and self-worth as part of God's creation, and scores on interest in Biblical reading were also high relative to the remaining hypotheses, with gain scores of 1.70 and 1.61 respectively. Gain scores for the hypotheses concerning attitudes toward seeking daily prayer and perceptions of acceptance within the group were 1.48 and 1.43 respectively. Gain scores were lowest for the hypothesis measuring acceptance of the doctrinal teachings of salvation, with a gain score of .99. In light of this positive tendency, it seems reasonable to conclude that positive change did occur during the treatment. Whether or not this change was due to the treatment cannot be determined.

Overall positive gain scores in combination with the high reliability score from the Cronbach's test would seem to support the validity of the testing instrument.

Implications

Although statistically inconclusive, the overall results of the study are encouraging. A better, more refined research project is needed, however, before any substantive conclusions can be drawn.

Problems in this study included: (1) a very small sample size, (2) a largely unvalidated testing instrument,

(3) diverse groups, (4) ceiling effects on the pre-test, and (5) lack of a control group. Future research should seek to avoid these problems. Another warning concerning additional research would be that researchers should carefully specify the treatment variables under examination and the outcomes expected. The great amount of variability that is present in this type of program was not evident until after this study was underway. Differences in leadership styles, ability levels of instructors, doctrinal teachings, and manner in which these teachings were presented, and many other variables preclude the researcher from generalizing findings much beyond the actual test group.

The relative low gain scores for group 3, the highly churched group, would seem to suggest that this program is most effective for individuals who have not been under any kind of Fundamentalist teaching previously, i.e. those participants who are ignorant of even the basic Christian doctrines. This assumption is supported by the negative gain score for this group on the one hypothesis in the study which deals with a more complex doctrine--perception of acceptance within the groups and group unity. This hypothesis addresses the doctrine of the body of Christ or the body of believers, a fairly complex doctrine. As mentioned in the introductory chapter of this thesis, the

stated objectives of the program include both evangelism (the teaching of the basic doctrines of Christianity) and the edification (the teaching of deeper more complex doctrines). Given these objectives, it would seem that the administrators of the Liberty Expeditions program needs to evaluate the structure of the doctrinal teaching as it relates to the edification process.

As it relates to the use of adventure-based programs in Christian education, this study is encouraging. First of all, it would seem that it is possible to measure the effectiveness of programs of this nature, this in itself should be of help in a field where evaluation is virtually non-existent. Secondly, while gain scores were non-significant, the positive gain in the great majority of the hypothesis scores would seem to indicate that this program did effect positive spiritual change in the subjects.

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Appendix A
Daily Program Format

Day 1

Arrival at Cranberry Wilderness Visitors Center
Introductions of Staff
Pre-Test
Equipment Issue
Backpacking (3 mile hike)
Selection of Campsite
Instruction in Tentsite Location and Pitching
Instruction in Use of Backpacking Stoves and Cooking
Supper Preparation
Clean-up
Evening Campfire and Devotional

Day 2

Wake-up Call
Breakfast Preparation
Clean-up
Tent/Pack Pack-up
Morning Devotional
Backpacking (3 mile hike)
Lunch
Backpacking (3 mile hike)
Campsite Selection
Supper Preparation
Clean-up
Evening Campfire and Devotional

Day 3

Wake-up Call
Breakfast Preparation
Tent/Pack Pack-up
Morning Devotional
Backpacking (3 mile hike to trailhead)
Bus Ride to Picnic Area (2 miles)
Cookout (prepared by staff)
Bus Ride to Rockclimbing Area (90 minutes)
Tentsite Selection
Supper Preparation
Clean-up
Evening Devotional

Day 4

Wake-up Call
Breakfast Preparation

Clean-up
Morning Devotional
Instruction in Rockclimbing
Practice Climbs and Rapells (15-30 ft. top-ropes)
Lunch
100 Foot Rapell/Tyrolean Traverse
Supper Preparation
Clean-up
Evening Devotional

Day 5
Wake-up Call
Breakfast Preparation
Clean-up
Tent/Pack Pack-up
Morning Devotional
Bus Ride to New River (45 minutes)
Repacking of Gear from Backpacks to Dry Bags
Loading of Gear Raft
Start of Canoe Trip
Lunch
Canoeing Instruction
Canoeing (12 miles)
Campsite Selection on River Bank
Tent Pitching
Supper Preparation
Evening Devotional

Day 6

Wake-up Call
Breakfast Preparation
Clean-up
Campsite Pack-up
Morning Devotional
Canoeing (3 miles)
Rendezvous with Equipment Truck on River Bank
Exchange of Canoes for Rafts and Rafting Equipment
Rafting Instruction
Lunch
White Water Rafting (14 miles)
Campsite Selection on River Bank
Tent Pitching
Supper Preparation
Clean-up
Evening Devotional

Day 7

Wake-up Call

Breakfast Preparation
Campsite Pack-up
White Water Rafting (5 miles)
Bus Ride to Headquarters
Equipment Clean-up
Post-test
Departure

Appendix B
Instrument

1. I believe that God has a definite purpose for my life.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

2. My life is significant to God.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

3. I can accept anything that happens to me as the will of God.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

4. I believe that God loves me as an individual.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

5. I believe that God sent His son to earth as an indication of His love for me.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

6. I believe that people who die without having accepted Jesus Christ as their savior spend eternity separated from God.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

7. I believe that God has provided a way to be reunited with Him through His son Jesus Christ.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

8. I believe that all men have sinned and therefore are separated from God.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

9. I have accepted Jesus Christ as my personal savior.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

The next three questions relate to the person in the group whom you feel closest.

10. I would consider this person a close friend.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

11. I would feel comfortable sharing personal feelings with this person.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

12. I feel that this person accepts me as an individual.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

The next three questions relate to the person in the group whom you feel least close.

13. I would consider this person a close friend.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

14. I would feel comfortable sharing personal feelings with this person.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

15. I feel that this person accepts me as an individual.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

The next four questions relate to the group as a whole.

16. I feel that the group accepts me as an individual.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

17. I feel that my acceptance in the group is based on my looks.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

18. I feel that my acceptance in the group is based on my performance in the activities: climbing, canoeing, etc.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

19. I feel that my acceptance in the group is based on my personality.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

20. I believe that Bible reading/study is critical to growth as a Christian.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

21. I believe that the Bible is a direct communication from God to man.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

22. I have often found answers to problems in my life in the Bible.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

23. I believe that the Bible is without error.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

24. It seems to me that the more time that I spend reading the Bible, the more sense it makes to me.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

25. The Bible is too hard for me to understand.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

26. The Bible doesn't deal with many of the problems that I have.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

27. In the past week I have used a principle from the Bible to deal with a situation.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

28. During the past week I have suggested to someone else that they read the Bible.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

29. I am planning on telling other people about my faith in Jesus Christ.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

30. I am concerned about my friends and family who don't know about Jesus Christ.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

31. I am concerned about people in other countries who don't know about Jesus Christ.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

32. I believe that telling people about my faith in Jesus Christ is a direct command from God to all Christians.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

33. I think prayer is vital to growth as a Christian.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

34. I think God hears my prayers.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

35. God has commanded us to pray.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

36. I like to pray.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

37. I consider prayer an important part of dealing with problems.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

38. I tend to thank God in prayer when good things happen to me.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

39. I often pray spontaneously.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

40. I feel that praying with other people makes me closer to them.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

41. In the past week I have suggested a Biblical principle to someone else to help them deal with a situation.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

42. I am planning on sharing my belief in Jesus Christ with members of my family.

1	2	3	4	5
Strongly Agree			Strongly Disagree	

51. How much total time did you spend in prayer during the past week? (Circle a number.)

Number of hours: 0 1 2 3 4 5 More than 5

52. How old are you?

53. Sex: M/F

54. How many church services to you attend per week?

Circle a number: 0 1 2 3 4

55. Do you parents attend church on a regular basis?

Appendix C
Instrument Reliability Results

23 APR 86 RELIABILITY TEST (POSTTEST)

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21:02:36 V.P.I. & S.U. COMPUTING CENTER IBM 3084 VM/SP CMS

RELIABILITY ANALYSIS - SCALE

(H 1)

1. 01
2. 02
3. 03
4. 04
5. 05

RELIABILITY COEFFICIENTS

N OF CASES = 29.0

N OF ITEMS = 5

ALPHA=0.7723

23 APR 86 RELIABILITY TEST (POSTTEST)

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RELIABILITY ANALYSIS - SCALE

(H 2)

1. 06

2. 07

3. 08

4. 09

RELIABILITY COEFFICIENTS

N OF CASES = 29.0

N OF ITEMS = 4

ALPHA=0.8364

23 APR 86 RELIABILITY TEST (POSTTEST)

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21:02:36 V.P.I. & S.U. COMPUTING CENTER IBM 3084 VM/SP CMS

RELIABILITY ANALYSIS - SCALE

(H 3)

1. 020
2. 021
3. 022
4. 023
5. 024
6. 025
7. 026
8. 027
9. 028

RELIABILITY COEFFICIENTS

N OF CASES = 29.0

N OF ITEMS = 9

ALPHA=0.8193

23 APR 86 RELIABILITY TEST (POSTTEST)

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21:02:36 V.P.I. & S.U. COMPUTING CENTER IBM 3084 VM/SP CMS

RELIABILITY ANALYSIS - SCALE

(H 4)

1. 029
2. 030
3. 031
4. 032
5. 042
6. 043
7. 044
8. 045

RELIABILITY COEFFICIENTS

N OF CASES = 29.0

N OF ITEMS = 8

ALPHA=0.9273

23 APR 86 RELIABILITY TEST (POSTTEST)

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20:53:12 V.P.I. & S.U. COMPUTING CENTER IBM 3084 VM/SP CMS

RELIABILITY ANALYSIS - SCALE

(H 5)

1. 033
2. 034
3. 035
4. 036
5. 037
6. 038
7. 039
8. 040

RELIABILITY COEFFICIENTS

N OF CASES = 29.0

N OF ITEMS = 8

ALPHA=0.8828

23 APR 86 RELIABILITY TEST (POSTTEST)

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21:02:36 V.P.I. & S.U. COMPUTING CENTER IBM 3084 VM/SP CMS

RELIABILITY ANALYSIS - SCALE

(H 6)

1. 010
2. 011
3. 012
4. 013
5. 014
6. 015
7. 016
8. 017
9. 018
10. 019

RELIABILITY COEFFICIENTS

N OF CASES = 29.0

N OF ITEMS = 10

ALPHA=0.8151

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