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FEATURE

Measuring Spirituality: Toward Developing an Instrument for use in Adventist Schools

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Abstract: *Measuring spirituality is difficult and controversial. Some instruments that exist for this purpose are reviewed and found unsuitable. Therefore, the groundwork is laid for the development of an instrument suitable for self-assessing spirituality in Seventh-day Adventist teenagers. Preliminary testing is done, and the results are analyzed for their implications toward the further refining of both the constructs under study and the items in the questionnaire.*

Spirituality is a complex concept. It is also very personal. For that reason, most Adventist teachers are often reticent to attempt measuring the spiritual growth of their students even though they are keenly interested in it. The reasons for Christian educators' failure to attempt to measure spirituality include concerns about privacy, lack of appropriate instruments, and difficulties over how to judge the character of others. As a result, even though spiritual growth is one of the most important goals of Adventist schools, teachers rarely assess it or discuss it in any but the most general terms. In addition, the issue of judging others not only seems inappropriate, but carries a biblical mandate against such behavior.

Testing indicates what we value. If something is not measurable, it is difficult to describe and discuss at all, let alone objectively, and therefore tends to be ignored. Given these realities, the time has come to make an attempt to evaluate the spiritual conditions of students in Adventist schools. If helping our students grow in Christ is one of the major goals of Adventist schools, we must find some way of knowing whether or not we are reaching that goal. Baptism, while somewhat indicative of spiritual interest, simply does not include the depth of information which educators would like to have about students and their spirituality.

Existing Studies on Spirituality

Over the last few years, spirituality has become increasingly popular as a research topic, in spite of the difficulties of studying it objectively. These difficulties revolve around the fact that the operational definition of spirituality differs from person to person, and across groups. Neither are there agreed-on definitions as to indicators of spirituality (Moberg, 2002). A major division in the field is between studies on spirituality, which can be seen as more personal and internal, and studies on religiosity, which refers to more external and/or institutionalized forms of religion (see Hill & Hood, 1999, p. 5). In this reasoning, *spiritual* could be more related to *mystic*, and could include many aspects relating to ideas beyond the Christian concept of God. This current study does not attempt to resolve the longstanding terminology debate, but maintains a traditional view of spirituality as being a connection with the Christian God, and carefully seeks out internal criteria, not merely external measures of religiosity.

Different researchers have attempted to break into this area, in spite of the difficulties, and to find new ways of talking about spirituality. Many of these attempts include surveys and instruments which can be described and compared statistically. Some studies have attempted to measure spirituality for its possible use in teaching good behavior to the general public (Fox & Sandler, 2003). Given the personal nature of spirituality, and the high variability of the factors, however, many of the results have not produced very good numbers psychometrically speaking. Still, the research has given us some ways to compare ideas which before were only hunches or individual stories. Unfortunately, perhaps due to the fractured nature of the religious world into denominations, many of these measures which might have been used or adapted for use in a more global sense have been used only locally, or within a limited scope.

A huge step forward has been the publishing of a handbook of *Measures of Religiosity* (Hill & Hood, 1999). This book has pulled together not only the ideas from over 100 separate sources, but also has put the instruments themselves into the public realm, available for comparison, adaptation and use. Many of the instruments in this handbook were developed during the 1960s and 1970s, when the study of religiosity really began to heat up. Even though some of the materials may now be dated, Hill and Hood recommend that before developing new instruments, researchers should consult the available literature, to see if there is something already developed which meets their need. They carefully explain that most of these instruments were developed using Western, Protestant college students, so the results should not be applied to larger populations. The results, even so, are not as psychometrically robust as one might hope for. Given the nature of the variability of personal understanding of religion, this is not entirely surprising. Hill and Hood report that reliability,

while acceptable, in their collection of instruments rarely reaches .9, which could be considered excellent. Validity is even more complex. They understand that face validity is very important in matters of religion, but admit that many of the instruments they have collected do not even provide reliability and validity information. Some studies have been rigorous, with large samples and an eye to scientific method and validity (see for example Benson, Donahue, & Erickson, 1993), but these are not as common as the others. Many of these others were done on small samples, so even for those studies where statistical analyses existed, the numbers were often too small to be significant. In short, although there are now a wealth of scales available to choose from due to the nature of the field and of the researchers who work in it, most of these scales have not necessarily displayed strong psychometric properties.

Within some Adventist circles, Thayer's (1993) Faith Maturity scale has been used and re-used—a measure which does not appear in the handbook, but which is indexed in a more focused review of instruments on Faith Maturity (Admiraal, Ubels, De Jong, & Hugen, 2000). This reality check suggests that Adventist researchers perhaps need to be more open with the rest of the Christian world, both in sharing research instruments and results, and in finding, adapting, and using research instruments and results which others have developed.

Some researchers have recommended that it is important to measure and norm commitment and religious participation within a given religious group, as different groups have different norms. (Mockabee, Monson, & Grant, 2001). Behavior that would be unusual for one group would simply be normal for another. In order to compare groups, Mockabee, Monson, and Grant offer a point-scale index which "corrects" for these differences, and makes it possible to better compare results across different religions.

Within the area of spirituality, Hill and Hood (1999) divide their collection of instruments into those which measure any single aspect of spirituality (e.g., spiritual maturity, prayer, orthodoxy, etc.), and the few which set out to measure the multiple aspects of spirituality as a whole. Both types of instruments are useful, but for different purposes. For the purpose of this study, the multi-dimensional instruments are more appropriate, since an evaluation instrument for students would need to draw in broad strokes the idea of spirituality as a whole, rather than focusing on any single aspect of it. Unfortunately, most of these instruments are not large, multi-researcher, well-tested models, but rather smaller, researcher-developed instruments which are often denominationally bound.

Two of the instruments stand out, however, as models worth adapting or emulating. Glock & Stark's Dimensions of Religious Commitment produced 4 scales, some with multiple subscales (as cited in Hill & Hood, 1999, pp. 279-

292; see also Davidson, 1975). While this instrument was initially used on a sample of around 3000 church members, later it was chosen for a national study with nearly 2000 participants. Item intercorrelations were studied to see if there were logical connections between measures. Item analysis was the only reliability/validity data provided.

Another larger multiple-dimension study on religiosity is by King and Hunt (King, 1967; King & Hunt, 1969). They finished their study with a set of 10 scales which were grouped into six headings, expanding Glock & Stark, but not really going against the earlier model. According to Hill & Hood (1999), "researchers may have some confidence that the items do form internally consistent scales" (p. 335). The correlations for items and scales generally fell between .39 and .70, with intercorrelations between scales being very common.

Faulkner and De Jong also produced a Five-Dimensional Scale of Religiosity (as reviewed by Clayton, 1971; Hill & Hood, 1999) similar to the proposed categories for the current study. The multidimensional construct, however, was not proven as clearly as they might have expected. Others, in attempting to use factor analysis to establish dimensions of religiosity, have concluded that "religiosity is essentially a single-dimension phenomenon composed primarily of ideological commitment" (Clayton & Gladden, 1974, p. 141). Faulkner and De Jong later admitted that it might be wisest to consider "social consequences as primarily a dependent variable rather than an integral part of religiosity" (De Jong, Faulkner, & Warland, 1976, p. 883), and that the variation in number of dimensions (often from 4 to 12 or more) is really just a matter of level of abstraction, and whether details are lumped together or split apart.

Bridging the Gap in Spirituality Research

Churches have long used baptism as a way of translating spirituality into numbers. It is assumed that if you are baptized, then you are spiritual. If the church you attend is growing, then it must be healthy. This is not entirely untrue, since churches with a weak spiritual life rarely experience phenomenal growth, but, like the warning lights on the dash of the car, these numbers rarely tell us what the problem is, or what to do about it. Furthermore, the warnings often come too late to be effective initiators of timely change. We need other ways of talking about what is going on in our spiritual lives.

Because of the nature of spirituality, many of the instruments developed for discussing it have been qualitative. This allows for individual experience to be recorded, but it also limits the degree of comparison that can be done. If the goal is to find some simple way for teachers to measure their students' spiritual journey through the years, a qualitative instrument is simply likely to require more resources than most teachers have in order to do the appropriate follow-up.

A short survey is more efficient, and will produce results which can be easily compared.

The justification for a new instrument as opposed to using one from Hill & Hood's (1999) collection, or some other published source is important to clarify. First, most of the instruments in the Hill and Hood (1999) book are uni-dimensional, and do not attempt a broad, overall view of spirituality. Of the 15 multidimensional instruments in Hill & Hood's collection, only three have been tested extensively and seem broad enough to be used in the context of Adventist secondary school students. The second concern has to do with the nature of Adventism. Because Seventh-day Adventists tend to be highly committed, Biblically literate, and doctrinally conservative, the instruments available do not appear to fit well with the nature of the population for which this instrument was designed. A third concern has to do with age. Most of these instruments were designed for adults. While teenagers have many similar characteristics, a review of available studies found many of the questions to be seemingly irrelevant to an international group of Adventist teenagers. Within Adventist circles, Thayer's Faith Maturity Scale is the only instrument which is related, but it falls short for various reasons, mainly because it was designed for a much narrower scope and a different purpose.

For the above reasons, the purpose of this study is to develop and test an instrument which can be used with children from their early teens through adulthood to talk about their spiritual journey. This can help teachers understand and interpret behaviors they see in the classroom, and perhaps point to ways in which they can help. If repeated yearly, it can provide a sort of spiritual diary which could be discussed with each child individually.

In 1996 the General Conference Annual Council voted a document which called for "Total Commitment to God." This document had recommendations for many aspects of religious life, but the part which relates to this research is the suggestion that Adventist schools evaluate

> the achievement of the objectives outlined in the spiritual master plan by a faculty-developed, board-approved, comprehensive assessment program, designed with sufficient specificity to evaluate each element of campus life, to guide the college/university administration in taking affirming or corrective measures, and to serve as the basis for annual reports of the spiritual health of the institution to the governing board and various constituencies (General Conference of Seventh-day Adventists, 1999, Appendix A).

In response to this call for assessment of spirituality in our Adventist schools, a detailed document was produced by the General Conference Education Department, with suggestions on implementing spiritual master plans in schools, including the use of multiple methods of assessment. These include

interactive computer-based testing, standardized surveys, personal journaling, and many others. While this document is a laudable attempt to encourage schools to assess their strengths and weaknesses, many administrators do not have access to the kinds of tools that might make this assessment easier and more meaningful. If no instrument is available it is unlikely to get measured. For this reason, the development of an instrument which can be used in evaluating spirituality is both timely and appropriate if Adventist teachers are intent on finding better ways of talking about spirituality in schools.

The Adolescent's Experience of Spirituality

In a summary of his 10-year longitudinal study of American Adventist youth, Dudley (2000) suggests that as many as half of baptized youth leave the church, though some may eventually come back. His results show that rarely do youth leave because of doctrinal disagreements; rather, they feel rejected because of the way church members or pastors treat them, bored by the services, or restricted by the conservative lifestyle practices of the church. Dudley's book is full of stories of these youth which tell about their search for God, and their desire to be accepted. Many youth explain that they feel a need to look outside their church because they do not find God's love inside the Adventist doctrinal package which they know and accept.

What is not clear from Dudley's (2000) sizable study is whether the frustrations of these youth who leave the Adventist church are causes for their leaving the church, or merely symptoms of their growing secularity. That is, do youth leave the church because of its conservative stand on alcohol, drugs, and premarital sex, which they disagree with, for example, or do they fail to maintain a relationship with God, and therefore develop these habits, later leaving the church because it disapproves of their lifestyle? Put yet another way, do teens fail to develop a relationship with Christ, and therefore find no meaning in church, or do they have a meaningful relationship with Christ, but find that the church does not nurture it? There are no clear answers to these questions.

Children increase in negativity toward religion as they grow, particularly during their adolescent years (Tamminen & Ratcliff, 1992). In a somewhat parallel but more general study than Dudley's, a French priest (Babin, 1965) traced the development of faith through the adolescent years, and talks about how the children change from sitting on the front row, excited to be there, to moving further back, and eventually not even coming to church. In trying to deal with these adolescents, he asks teachers to try to understand the teenager from his/her point of view, rather than from their own adult mindset:

> to accompany the adolescent with compassionate optimism through this self-centered and chaotic passage to adulthood, aware that for the moment

> all creation and God himself are to be understood chiefly in terms of inner needs and sensate gratifications. Then, having survived these shoals and shallows together, he suggests we plumb, in deeper but calmer waters, those more profound and ultimate aspects of God's Good News which far transcend man's measure of himself. (p. 10)

Babin explains that boys and girls understand God in the same way as they understand most things: "Girls may be more attracted to a loving friend type of personality; boys are more impressed by God's superiority and power" (p. 10).

Fleck (1978) reviewed a large amount of older literature on adolescent religiosity, and suggests that most of what has been found parallels educational developmental stages such as those of Piaget. He shows the parallel construction between Spilka's (1976) committed/consensual dichotomy, and Allport's (1950) intrinsic/extrinsic religious orientation. These theories help to explain adolescent's differing attitudes toward religion, talking about whether it is more of a formal, meaningless experience, practiced largely at the insistence and approval of others, or more personal and meaningful.

The adolescent years are a time of turmoil, with teens struggling to understand who they are, and who they wish to be as independent thinkers, apart from their parents. Part of that choice process includes establishing their own personal values, which includes deciding what they will do with the religion of their childhood.

Some authors suggest that the way in which adolescents have been taught religion may well affect what they choose to do with it as they grow up. "Many youth have rejected biblical content because they have not had the opportunity to be involved in the learning process. Study of the learning process has shown the importance of teens' developing personal values, especially in relation to morality" (Johnson, 1978, p. 137). If students are not involved in the process, it will not become a part of them. If it is not their decision, it will not stick when parents and teachers are no longer around. The old saying tells us that values are caught, not taught (see for example Schulz, 2005). Unfortunately, "many teens have learned not to think in church, but to accept. Then when ideas have been accepted without thought and without values attached to them are challenged, youth often find them unacceptable" (Johnson, 1978, p. 131).

This is a frequent situation in today's churches: teenagers either tend to be rebellious and anxious to do things their way, or they are ominously quiet—detached and accepting, but not really participating. Wisdom suggests that adults need to be more aware of where teens are coming from, and what they're thinking as they sit in church. If we as adults can understand their needs and concerns, we can perhaps do more to assist them. If they can understand their own problems, perhaps they also can do something to help themselves.

Toward the Development of an Instrument

The danger of attempting to assess and judge levels of spirituality is real. In the wrong hands, this information could be very damaging. Trying to judge someone else would be akin to "playing God." Yet what are the dangers of NOT assessing? How can we know if our schools are achieving their spiritual goals? How can we compare the spirituality of one school versus another, except by "feel"? It seems that the dangers of evaluating spirituality may be outweighed by the danger of failing to measure it, so this study will proceed with caution.

The purpose of this study was to develop and do preliminary field testing on an instrument which would begin to give us a clearer picture of the spiritual condition of Adventist teens, though in reality, it could possibly be used with other age levels as well, with appropriate adaptations. This instrument could be made available to Adventist educators as one possible way of assessing spirituality in schools. This assessment, rather than being an external judgment of students' character, can be seen first of all as a way for students to understand their own strengths and weaknesses as a Christian (at this point, a non-Christian version of this instrument has not yet been developed, but it is a recommended next step). Teachers and administrators can also use this data in aggregate to understand the aspects of spirituality that the student body is struggling with, thereby giving them ideas as to how to help. Data from this sort of instrument could also be used with beginning and ending years of the school's program, to see the differences in spirituality of students who are about to graduate, compared with those who are just beginning high school.

Defining Spirituality

But before creating an instrument to measure spirituality, one must arrive at an operational definition for the term. The complexity of spirituality, as indicated earlier, makes this definition difficult. One definition sees spirituality as two-dimensional: "spirituality is a two-stroke process. The upward stroke relates to inner growth and the downward stroke relates towards manifesting improvements in the world/reality around us as a result of the inward change." (Divinitus Navitas Spiritus, 2004). Others see spirituality as having multiple dimensions beyond the inner and the outer:

> Evaluation in religious education is often problematic because objectives are often multilayered. The intellectual or cognitive consequences are the easiest to measure, but that is only one aspect of religious education and not necessarily the most important one. Of the other domains of readiness, the experiential/emotional and attitudinal areas would seem to be the most likely to need evaluation. (Tamminen & Ratcliff, 1992, p. 256)

The present study of spirituality divides it into four domains, which compare favorably to the three mentioned above: Spiritual Interest/Desire, Knowledge of Spiritual Things, Fruits of the Spirit, and Life Choices. A description of each follows:

Spiritual Interest/Desire: Some people have a strong faith in a God they cannot see, or a deep desire to know God, and they feel Him in their heart and see His work in their lives. Others are less sure as to whether the Bible is true, whether they are saved, and whether God really does things for them personally. This belief or personal faith in God does not always stem from more biblical knowledge, and it could even exist in the absence of much knowledge (as in the conversion of Saul). Some crave a knowledge of God; others are bored or repulsed by the subject.

Knowledge of Spiritual Things: This knowledge parallels Tamminen and Ratcliff's (1992) idea of the intellectual/cognitive domain being receptive to God's word. Some students know a great deal about the Bible, and others are relative neophytes. Some have heard Bible stories since childhood; others have trouble knowing the name of Moses' parents, why Abram's name was changed to Abraham, or where to find the story of Daniel and the lions' den. This knowledge is not the same as other aspects of spirituality, and sometimes students have this sort of information, yet fail to develop a saving relationship with Christ. Still, it is one important factor to measure, since an overall comprehension of the plan of salvation and an understanding of the Bible is necessary if one is to grow strong in one's faith in the long term.

Fruits of the Spirit: For some students, the knowledge of God brings about important changes in their behavior. Their character experiences a transformation, and they become more obedient, more kind, more Christ-like. Others, even though they make a decision to follow Christ, struggle terribly with sin in their lives, and often yield to temptation. This area of spirituality deals with evidences of Christ in one's life. It is not limited to the Biblical list of fruits of the spirit, but would include other character traits such as honesty, obedience, respect, etc.

Life Choices: Of all the areas of Spirituality that were considered, this is perhaps the most controversial. Many students may claim to rate themselves highly on the first three areas, and yet find themselves "wanting" here. What we do with our time tells something very important about our values. Life choices asks about what sorts of reading materials one chooses, choice of friends, use of computer, time spent studying God's word. It is about actually doing the things we say we believe in. There is a realistic suspicion that most of us are weaker in actually following through in spending time how God would have us spend it than in the other areas.

These four areas evolved out of this review of the literature on spirituality, and are the starting point for developing an instrument to measure spirituality. The design of this study is to have students anonymously self-assess their own spirituality, as that is conceivably the most accurate way of reporting. While this will not give teachers specific information about specific students, it is more likely to provide honest answers which can be useful to school administration, while protecting the identity of individual students. A similar instrument could be developed for teachers to assess individual students, for personal counseling/discussion sessions, but that is not the purpose of this present study.

Scoring the Instrument

The instrument is designed based on a 6-point modified Likert-type scale, but without descriptive attributes connected to each number on the scale. The uniqueness of this instrument is that each term is given in the left column, while the opposite of that term is listed in a column down the right side of the chart, with the 6 points in between. The student is instructed to place themselves somewhere on the continuum between the two extremes. This provides more context than is frequently given for such judgment calls, and is intended to increase the validity of the instrument. Once the instrument is filled out, the students add up their scores in each area based on the key given at the end, so they can compare their spiritual strengths and weaknesses. Another strength of this design is the self-scoring immediate feedback feature, designed so students can see their own spiritual life broken down into specific areas, and can consider the implications of their scores privately. This self-scoring characteristic provides immediate, individualized feedback, helping to make the instrument interesting and useful, and providing a teaching opportunity if administered in a class, and a "moment of truth" learning opportunity for the student.

This instrument need not identify the name of each individual or ever connect it to their data. Once students finish filling out their totals and have had time to each reflect (preferably with teacher assistance) as a class on the meaning of their personal scores, students' surveys may be gathered for group comparison. Since the data is anonymous, students should not feel they could be singled out for scrutiny. In fact, it is better for teachers to collect the anonymous surveys than for the students to take it home where parents, friends, or siblings might question the meaning of the scores on their paper.

One recommendation for the use of this instrument is with high school students, to assess the overall spirituality of the high school, and its effect on students. Students entering the school during their Freshman year could be surveyed as a group, and compared with those finishing school during their senior year. This could give insight into what changes the school produces over time, and could provide a useful picture of how that school is doing with the different aspects of spirituality. Entry versus exit values for spirituality could be

used for a school to assess itself. Particular areas of weakness could be identified, so teachers and administrators can be aware of areas that need to be worked on. The present study, however, merely proposes to design and test the instrument, and to put it out into an environment where it can be used by those who so desire.

Preliminary Results and Discussion

The current study pilots an instrument of 20 items with a group of 43 young teenage students (mainly 12- and 13-year-olds), most of mixed Asian nationalities, checking to see if the format for the activity is understandable and meaningful, as well as whether descriptive and inferential statistics confirm the existence of the 4 proposed domains. The main steps in further developing this instrument would be to develop more questions in each area, and to pilot test the study over a much larger sample, with sufficient numbers to test the domains properly and see which (if any) domains are statistically significant factors.

Use of this instrument as a tool for considering personal spirituality in religious meetings has generated a good deal of interest from both adult and teenage participants who find the experience meaningful. The activity is engaging, even for young teens, as well as for adults. Many adults have requested permission to use this instrument as it is in their school or church.

Descriptive data analysis for the pilot study shows some expected findings for an Adventist community (see Table 1). None of the teens had serious doubts about God's existence (Q1; 5.53), with 93% scoring a 5 or a 6 out of a possible 6 on that item. Other items that scored extremely high were related to having respect for holy things (Q7; 5.12), and knowledge of basic Bible stories (Q9; 5.23).

While most of the teens were generally positive about wanting to know God better and said they regularly spent time alone with God, there was a consistent negative minority, usually of one or two respondents per question, who evidently were not very interested in spiritual things. On the negative end of the scale, the lowest items mean scores were related to television watching (Q4; 3.49) and computer games (Q8; 3.93), where teens admitted that God would not necessarily approve of their choices in these areas. The full 6-point spread of the scale was used when students responded to these two questions. Nearly half of the students (42%) answered on the negative side, acknowledging that what they do would NOT be pleasing to God. This concept is different from earlier results which suggest that Christians tend to avoid doing things they believe are wrong. Strommen's (1970) study (as cited in Fleck, 1978) of religious lifestyles of Lutherans between 15 and 65 found that teens tended to be consistent in that if they believed something was wrong or questionable, they didn't generally do it. In the present study, the teens admitted they are actually not doing things they

know they should, as well as that they are doing things they know they shouldn't. This difference may be explainable, however. For one, these studies took place 30 years apart in time, and teens in the new millennium are much less concerned about conforming to societal, parental, or church norms than they were 30 years ago. The questions in this section also discuss mainly leisure activities, where it might be easy to justify that "no one will be hurt by my behavior," not clearer issues such as stealing or killing. Still, this should serve as a clear warning to us: our teens are telling us that they are making poor choices and doing things they know are wrong.

Table 1
Mean and Standard Deviation of Response Items

Question #	**N**	**Mean**	**Std. Deviation**
Q1	43	5.53	.631
Q2	43	4.23	.782
Q3	43	4.72	.882
Q4	43	3.49	1.502
Q5	43	4.56	1.119
Q6	43	4.28	1.098
Q7	43	5.12	1.096
Q8	43	3.93	1.502
Q9	43	5.23	.895
Q10	43	4.72	1.141
Q11	43	4.28	1.297
Q12	43	4.49	1.009
Q13	43	4.74	1.071
Q14	43	4.49	.960
Q15	43	4.00	1.175
Q16	43	4.53	1.120
Q17	43	4.93	1.078
Q18	43	5.26	.759
Q19	43	4.77	1.212
Q20	43	5.30	.964

The preliminary model of the questionnaire contains 20 questions, with 5 questions from each domain (see Appendix). Results show Cronbach's alpha scores for each scale ranging from .619 to .713 (see Table 2). The higher scores are within an acceptable range for use in measuring the proposed construct. The

alpha for the first two scales is marginal, however it still could be acceptable, particularly for a highly subjective measure such as Spiritual Interest/Desire. Knowledge of Spiritual Things may need to be refined. This is a self-report on knowledge items, which may need to be reconsidered as testing of actual knowledge unless the self-reporting can be equated with actual knowledge scores. Note that slightly higher alphas could be achieved in two of the scales by dropping from 5 to 4 items, but the differences were so small that a final decision was not made at this time.

Table 2
Cronbach's Alpha for Four Domains

	Spiritual Interest/Desire	Knowledge of Spiritual Things	Fruits of the Spirit	Life Choices/ Environment
Cronbach's Alpha	.619	.622	.709 (.715)	.713 (.718)
Items	5	5	5 (4)	5 (4)

The entire area of Life Applications was the lowest score on students' papers, significantly lower than each of the other areas (see Table 3). Not surprisingly, in an Adventist community made up of a large number of church workers' children, the area of Knowledge of Spiritual Things was the highest (see Table 3). One possible interpretation of this difference is that while they are learning Bible truths, students are not necessarily learning or choosing to translate those truths into a meaningful relationship with God. This is an area which definitely merits further study. If knowing more about God does not translate into wanting to do His will, we may need to rethink the way we teach children about God.

In order to analyze the four domains of spirituality separately, the scores for the corresponding questions are added, resulting in a single score which can be compared both across domains and across respondents. These composite scores are the Mean scores for each domain which are presented in Table 3. Since there were 5 questions in each domain and the questions had a 6-point Likert-scale response, the possible total for each area is 30. With one exception, the means from each of the 4 domains are significantly correlated with each other. The notable exception to this is the area of Life Choices, which is not correlated with Knowledge of Spiritual Things (see Table 3). Again, this suggests that knowing more does not necessarily translate into choosing to do what is right with one's free time. There is an important disconnect here. The high correlation between domains suggests that spirituality is not really compartmentalized, but rather, if a person is spiritual in one domain, he/she is also likely to be spiritual in other domains. While this does not bode well for

factor analysis, in real life it makes sense that a person who is spiritually inclined will show tendencies to be so in every aspect of their life, not in just a single dimension.

Table 3
Domain Means and Correlation Between Domains

N=43	Mean	Knowledge of Spiritual Things	Spiritual Interest	Fruits of the Spirit	Life Choices
Knowledge of Spiritual Things	25.23	1			
Spiritual Interest	24.33	.613 .000*	1		
Fruits of the Spirit	23.84	.561 .000*	.597 .000*	1	
Life Choices	20.98	.226 .146	.522 .000*	.455 .002*	1

*p < .01

Figure 1 shows significant correlations between specific questions. Rather than to invest time and space in further tables, however, since the data set is small and preliminary, a graphic representation was chosen which gives less detail, but a clearer pictorial view of which items have inter-item correlations. The circle size is representative of the number of items which correlate with that specific question. All lines represent a correlation significance of .05 or less, while the heavier lines represent a correlation of .01 or less. Note that question one, which is about fundamental faith in God, is at the center. Question ten, which has the strongest correlations of all, is about being kind, helpful, and polite. This leaves a lot of room for some interesting discussion as to why this item might be central to a discussion of spirituality. Also in this area of high correlations are question 11, about general like/dislike of religious meetings, and question 17, which refers to whether one's speech reflects respect for God and His name. Also of interest are the correlations with question 19, which is about whether one's friends are a positive or a negative spiritual influence (for identification of other questions, refer to the questionnaire in the Appendix).

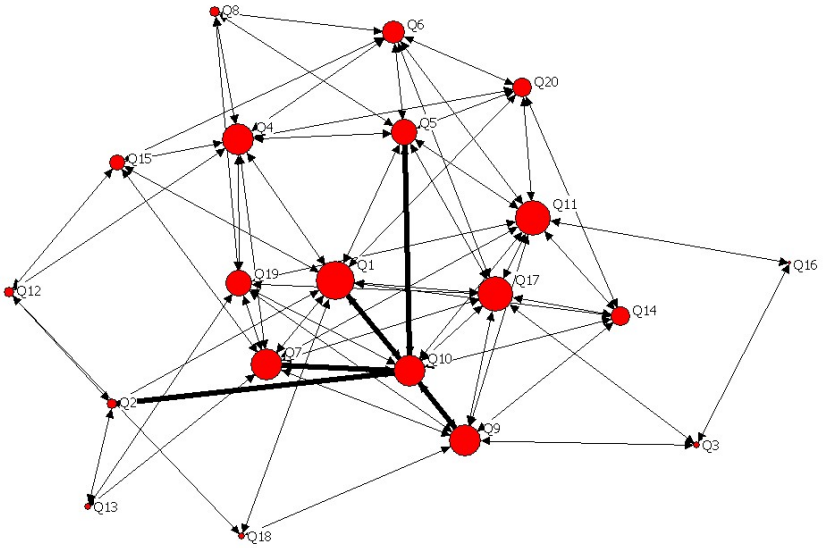

Figure 1. Inter-item correlations.

Preliminary factor analysis does not confirm the existence of four factors, but only one, which could be called spirituality. This perpetuates many years of discussions about whether spirituality is really a single factor, or multiple ones, with many studies falling on each side of the argument (see for example Clayton & Gladden, 1974; De Jong, Faulker & Warland, 1976; Hill & Hood, 1999). Given the logical division of spirituality into the four factors described in this study, an argument could be made for dividing the results into these domains even if factor analysis does not differentiate them in this way. This result is similar to some studies in the area of religiosity, which have maintained the groupings into conceptual themes even though there was no statistical basis for the separation (see Hill & Hood, 1999). A larger, more comprehensive study is needed to see if factor analysis can, in fact, derive factors that can be statistically separated from one another. Given the nature of spirituality, however, and how it affects the core of our being, which in turn affects everything we do, it is not a simple thing to statistically separate these ideas into factors using this method. Even the large studies which have done factor analysis have found overlap and correlation between the dimensions; some have even used the same items in more than one scale (see Hill & Hood, 1999).

Conclusions

This preliminary study generates more questions than it answers. It lays the groundwork and demonstrates the need for a larger study (which is already underway) which picks up where this introduction leaves off—in adding to the pool of instruments about religiosity by developing an instrument suitable for Adventist teenagers. This statistically validated instrument which can measure aspects or domains of spirituality will help us understand how spirituality can be differentiated, and when it simply needs to be understood as a whole. This instrument could be useful to help teens understand their own spirituality, as well as in aggregate to help schools and churches understand the spiritual issues faced by the teenagers they serve.

In conclusion, it is clear from this preliminary study that Biblical knowledge is not enough to influence students to do the right things. In Adventist schools, knowing about the Bible is common, and expected. But this knowledge is not enough. Those who know more do not necessarily become more spiritual in other senses. Spirituality is a concept where each part affects the other parts. We cannot have one diseased limb without the rest of the body suffering in some way because of it. Spirituality needs to be considered holistically. The correlations in this study do not reveal which aspects might cause other aspects to be stronger or weaker. Further study is needed to determine causal relationships. Finally, spirituality is incredibly complex. No single study or instrument can capture the essence of what it really involves. The best we can hope to do is to sketch the concepts a little more clearly so that perhaps by better understanding spirituality, we can achieve it more fully both in our lives and in the lives of our students.

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Appendix

Vyhmeister's Spirituality Inventory

Spirituality is a blend of knowing, valuing, doing, and choosing. If any of these parts is weak or missing, there will be a detrimental effect on the individual's spiritual life. This taxonomy is made to help you evaluate your own spiritual health. It is not something to show your friends, or even your parents, but it might help you see areas in your life where you need to make changes.

Mark an X in the appropriate column between the two extremes where you seem to be most of the time.

		1	2	3	4	5	6	
1.	I don't believe God exists							I have a strong faith in God
2.	I am more interested in myself than in others							I am more interested in others than in myself
3.	Know nothing about the Bible							Deep knowledge of the Bible
4.	On TV I watch what I want							On TV I watch what God wants
5.	I do nothing to develop a relationship with God							I regularly spend time alone with God
6.	I never mention spiritual topics							I freely bring up spiritual issues in conversation with friends
7.	I don't have respect for holy things							I have a high respect for spiritual things
8.	God would be ashamed of what I play on the computer							God would be proud of what I play on the computer
9.	I do not know basic Bible stories							I can explain details of even lesser known Bible stories
10.	I am impolite and impatient with others							I am kind, helpful, polite
11.	Dislike going to church							Enjoy religious meetings
12.	My reading choices lead me away from God							What I read draws me closer to God
13.	I do not understand the doctrines of the church							I have a clear understanding of the doctrines of the church
14.	I do not respond or participate in spiritual discussions							I ask questions and give answers, actively participating when spiritual themes are discussed

		1	2	3	4	5	6	
15.	I spend all my time in pursuit of secular interests							I spend much of my time pursuing spiritual interests
16.	I have no concept of how the Bible is organized							I can find basic Bible stories and doctrines in the Bible with a minimum of searching
17.	My speech patterns show disrespect for God							My speech patterns show careful avoidance of anything that might desecrate God's name
18.	I have no desire to learn about God							I seek answers to spiritual dilemmas; actively search for information
19.	My best friends are not interested in being Christians							My best friends encourage me to be a better Christian
20.	I find God's unexplained "mysteries" unacceptable							I know that there are truths we will not understand this side of heaven

Copy the numbers from above into the appropriate columns; add the results. The result in each column shows the strength or weakness of that trait. Totals above 25 are considered strong. Totals below 10 are considered quite low.

Spiritual Interest/Desire	Knowledge of Spiritual Things	Fruits of the Spirit	Life Choices/ Environment
1.	3.	2.	4.
6.	9.	5.	8.
11.	13.	7.	12.
14.	16.	10.	15.
18.	20.	17.	19.
Total:	Total:	Total:	Total:

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