

AN ABSTRACT OF THE THESIS OF

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Abstract approved:

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The purpose of this study was to evaluate a contextual model for integrating lessons from the LifeKnowledge curriculum into the agricultural science and technology (AST) course content. This was measured using the National FFA Organization's online precept indicator which is part of the LifeKnowledge™ 3.0 curriculum. Ninth grade students at an Oregon high school were given the pre-test for the Premier Leadership precept indicator. The resulting data was used to select four precept statement areas which students scored poorly in, and lessons from these precepts were taught over a period of 12 weeks. Post-test data using the same Premier Leadership indicator was compared to the pre-test results, and statistically significant gain ($p < 0.05$) was found in three of the four precept areas identified at the beginning of the study. In addition, it was found that teaching selected lessons had widespread effect on other related precept areas, and that not all lessons within a precept statement had to be taught in order for their to be significant gain in student scores. There was not enough evidence to attribute student gain to the contextual model, but did indicate that the LifeKnowledge™ lessons were successfully taught as part of the AST curriculum.

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A Contextual Model for the Integration of LifeKnowledge™ Curriculum into the
Agricultural Science and Technology Classroom

by
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I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Paul Wesley Crawford, Author

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A Contextual Model for the Integration of LifeKnowledge™ Curriculum into the Agricultural Science and Technology Classroom

CHAPTER 1: INTRODUCTION

Agricultural education encompasses the entire student learning experience which occurs in three areas: agricultural science and technology classroom instruction, supervised agricultural experience, and FFA. The classroom or laboratory component is the formal, in-class instruction based on performance objectives, technical content, and curricular requirements. Supervised agricultural experience is the student-directed, outside-the-classroom experience developed by managing their own entrepreneurship or working within an agriculture or related sector. FFA, formerly known as the “Future Farmers of America,” is the leadership aspect of agricultural education, sometimes referred to as the “leadership laboratory” (Friedel 2004). When these three components are integrated within one another, the student is able to gain the most skills and knowledge from the agricultural education program (Staller 2001).

Unfortunately, not every agricultural education student is engaged in all three components. When this happens, the student does not have the opportunity to learn knowledge and life skills. How these skills are reinforced in the agricultural education program is demonstrated in Figure 1:

Model of Agricultural Education

		<i><u>What We Teach</u></i>		
		Knowledge		
		Academic	Technical	Career
<i><u>How We Teach</u></i>	Classroom/ Laboratory			
	SAE			
	FFA			

Note: The darker the shading, the more intense the strength of learning the “what” via the “how”.

Source: National FFA Organization

Figure 1: A model of Agricultural Education (Staller 2001)

It is evident that within the areas of academic knowledge, technical knowledge, career knowledge, and life skills, students experience more intense learning when they are engaged in all three integral components of agricultural education. However, when one of the aspects of agricultural education is missing, the gain of knowledge or skill is lessened.

One particular example of this is FFA involvement. Students enrolled in the classroom/laboratory but not involved in FFA may have strong academic knowledge learning experiences, but they leave with very little development in life skills, such as

leadership or personal growth. The result is students exiting the agricultural education program without developing skills critical for successful post-secondary experiences, such as employment. When considering the American education system is still striving to meet the needs identified by the 1991 Secretary of Labor's Commission on Achieving Necessary Skills report, this seems to be a disservice to students in agricultural education.

Conversations within the professional field of agricultural education led to the question of how to instill leadership in all agricultural education students, not just those involved in FFA (Friedel 2004). The result of that question was the National FFA Organization's development of the LifeKnowledge™ curriculum. This curriculum was designed to be incorporated into the classroom instruction, teaching middle school through advanced high school students sixteen precepts known as Essential Learnings, developed from industry and government leaders (Friedel 2004). Agricultural education instructors everywhere now had a way to bring leadership and life skills instruction to all of their students (Dodson 2004).

The LifeKnowledge™ initiative has led to the development and distribution of a 267 lesson plan curriculum which can be utilized in multiple ways. The challenge of this life skills curriculum is the successful implementation of it by the local instructor in their agricultural science and technology courses.

Theoretical Framework

Contextual instruction is not new in education (Bond 2004). This type of teaching has often been present in career and technical courses, culminating in student

demonstration of skills through laboratory or workshop settings. Its use in academic courses has often been applied to lower-performing student groups with “watered-down” instruction of abstract concepts (Bond 2004).

Bond describes the characteristics of contextual teaching as the following: (1) centralization of pragmatic life/work issues, (2) integration of academics with real-life experiences, (3) personalization of instruction, (4) visualization of abstract ideas, (5) demonstration of utility, (6) provision of factual knowledge on a “need-to-know basis,” and (7) removal of the knowledge intimidation factor. Instruction designed with these seven characteristics is intended to be more accessible and relevant to students.

Contextual learning has been found to be more effective in teaching many abstract ideas and knowledge information than other methods, and the skills gained from contextual learning are multi-dimensional and transferable (Johnson 1994, Giddens & Stasz 1999). The learning context impacts how the students approach the learning (Jackling 2005); when students do not receive information within their primary modality or learning style, those students who are “low-motivated and/or students with lesser academic abilities” are less engaged unless they are able to adapt (Bond 2004).

The LifeKnowledge™ curriculum is based on abstract concepts of leadership, personal development, and career preparation. Therefore, a contextual approach to incorporating the lessons into the course teaching could be more effective and relevant to student learning. This involves using the context of the course unit and students to

teach the LifeKnowledge™ content. This is the theoretical framework used in the design of this study.

Rationale and Statement of the Problem

The incorporation of life skills into the classroom curriculum has been a challenge to education as well as agricultural education, highlighted by the 1991 SCANS report (Dailey 2001). The LifeKnowledge™ curriculum was designed and developed to do just that within the agricultural science and technology (AST) classroom (Akers 2004). Complete lesson plans were created which instructed students within 16 identified precepts of essential learning that apply towards the National FFA Organization's objectives of premier leadership, personal growth, and career success for students. The resulting curriculum was first distributed to AST teachers in 2004 and subsequent updates have been available since.

However, a library of 267 lesson plans is a large resource to manage, and teachers were challenged by the size of the resource as well as adapting it into their classes (Crawford 2006). The two updated versions released since the initial distribution have focused on the teacher's use of the lesson plan resource, including suggestions for where to incorporate LifeKnowledge™ lessons into the existing curriculum. However, there is little support for *how* to incorporate the lessons into the course work. Teachers are faced with the challenge of making lessons outside the context of their classes fit into their curriculum. If an effective and useable method existed for incorporating this instruction for life skills, teachers would be better able to utilize it for the benefit of their students.

Purpose of the Study

This study seeks to test a model for successfully integrating the life skills lessons in the LifeKnowledge™ curriculum into the agricultural science and technology classroom. The efficacy of the model in developing specific leadership precepts is evaluated by pre- and post-testing using the LifeKnowledge™ 3.0 online Precept Indicator for premier leadership. With this type of model, instructors may be better able to seamlessly incorporate the LifeKnowledge™ lessons they determine will best serve the preparation needs of their secondary students.

The model is designed to adapt Hunter's elements of effective instruction, which are built into the lessons, using the context of the course for students. A survey of Oregon agricultural science and technology instructors found that teachers were challenged by how to incorporate the LifeKnowledge™ lessons into their lessons in a relevant manner (Crawford 2006). This model will attempt to use the context of the instructional course while utilizing the objectives and instructional activities from the LifeKnowledge™ lessons.

The objectives for this study are:

- 1) Evaluate the contextual model for incorporating LifeKnowledge lessons into the agricultural science and technology (AST) curriculum.
- 2) Determine the amount of gain by students from the LifeKnowledge curriculum using pre-test and post-test data.
- 3) Analyze the effects of teaching select lessons from the LifeKnowledge curriculum upon student knowledge of the Essential Learnings precepts.

Definition of Terms

The following terms are used throughout this study:

Agricultural education – all-encompassing realm of educating people about the agricultural industry. Emphasis is typically in secondary and post-secondary education, but also is found in elementary and adult education.

Agricultural science and technology (AST) program – the local department or segment of the school institution which instructs secondary students with academic, technical, and career knowledge within the sectors of agriculture. A complete AST program includes classroom/laboratory instruction, FFA, and supervised agricultural experience (SAE).

Agricultural science and technology (AST) instructor – secondary educator in a school endorsed in and teaching agricultural sciences.

LifeKnowledge™ – initiative of the National FFA Organization. LifeKnowledge™ refers to the LifeKnowledge™ Center, the LifeKnowledge™ curriculum, and related activities.

FFA – the student leadership organization and component of agricultural education. FFA is an integral part of the agricultural science and technology program and facilitates the development of leadership and life skills.

Limitations of the Study

This study will be limited by the following factors:

- 1) The pre-test and post-test are administered within less than 90 days apart due to school schedules and availability of the online assessment tool.

- 2) The length of the assessment requires more than one period of instruction in order for the student to complete it.
- 3) Each period of instruction is not observed to confirm the instructor teaches every part of the lessons using the fidelity model.
- 4) There is no way to tell if outside experiences lead to changing scores for an individual student.

Assumptions of the Study

The following assumptions were made for execution of this study:

- 1) Any change in a student's specific precept indicator score pertinent to this study is the result of the instructional units selected and taught and unaffected by other experiences or learning.
- 2) Students purposefully and honestly answer the questions on the pre-test and post-test.
- 3) Students consistently spend equal time and effort throughout the entire assessment.
- 4) The teacher uses the model of integration and the fidelity model in teaching the LifeKnowledge™ lessons in the classroom.
- 5) Each class taking the assessment is taught in an equally effective and complete manner.

CHAPTER 2: LITERATURE REVIEW

This chapter explores the literature surrounding skills for post-secondary experiences taught in secondary education; preparing students for careers through education and agricultural education; FFA, the Essential Learnings, and LifeKnowledge™; and how brain-based learning and teaching is incorporated into the LifeKnowledge™ curriculum.

An electronic database search was conducted through the Oregon State University Library website, the EbscoHost database engine, and the ERIC database search engine. In addition, relevant texts were utilized for expanded background information. Keywords utilized in the search included LifeKnowledge, Life Knowledge, life skills, teaching life skills, SCANS, Secretary's Commission on Achieving Necessary Skills, leadership, contextual instruction, contextual learning, brain-based learning, brain-based teaching, brain research, FFA, Essential Learnings, Eric Jensen, Howard Gardner, Madeline Hunter, effective instruction, elements of effective instruction, and multiple intelligences.

Career Preparation in Education and Agricultural Education

The changing roles of society have led to subsequent changes in the way schools prepare students. Recent reform has focused on the development of workplace and life skills in students, most likely because of the 1983 report *A Nation At Risk* and the subsequent 1991 report by the Labor Secretary's Commission on

Achieving Necessary Skills (SCANS), which identified several leadership and life skills needed by works for “productive and meaningful employment in today’s workforce” (Dormody 1994). Educational reform has taken many forms, most recently in the implementation of expanded graduation requirements by many states across the nation. In Oregon, this includes the demonstration by students of their ability to meet what are known as career related relearning standards (CRLS), six life skill areas related to the findings of SCANS (Oregon Department of Education 2007).

Agricultural education and FFA involvement have long been considered as ways students develop leadership and life skills (Dormody 1994, Talbert 2004, Dailey 2001, Friedel 2004). Being part of what was once known as vocational education, the term used today nationwide is career and technical education. This expands beyond the technical knowledge of how to perform tasks or complete jobs but perhaps more importantly, and certainly more universal, is the development of basic skills necessary for workplace success. Particularly within agricultural education and FFA, leadership development is a traditional “hallmark” of the program (Friedel 2004). Additionally, the supervised agricultural experience (SAE) component provides students opportunities for directly applying classroom knowledge and transferring that into real-world situations and skills (Dailey 2001).

FFA, Essential Learnings, and LifeKnowledge™

Although involvement in FFA as part of the agricultural education model is widely respected as being beneficial to students, not all agricultural education students are engaged in FFA; of the estimated 800,000 students enrolled in agricultural

education courses, about 450,000 of those were members of the National FFA Organization in 1999 (Talbert 2004).

It was these statistics that led to the development of the LifeKnowledge™ curriculum. Friedel describes the initial development of LifeKnowledge™ beginning with the question “How can we teach leadership to every student in agricultural education?” in 2001 (2004). This initial question led to the curriculum now available to teachers. The process involved seven steps of revision and development (Akers 2004). All writers were agricultural educators or related individuals who applied for and were hired to fill positions. After the initial draft, lessons were reviewed by quality team leaders (Akers 2004). When reviewed, the lesson was taught in the author’s classroom and adjustments were made as needed. The third step of the process asked another, non-agricultural science, teacher to teach the lesson in their classroom for feedback. More revisions were made, followed by an English teacher checking the lesson for grammar, spelling, and format, before final approval from the quality team leader and the lesson forwarded on to the National FFA staff (Akers 2004).

The final steps of the seven iterations involved pilot teachers, more adjustments, and final approval. Once complete, the final product was meant to be taught by any teacher to any type of student, specifically designed to engage all types of learners (Akers 2004). This is described in more detail in the next section of this chapter.

Every lesson in the curriculum was based on the Essential Learnings, standards developed by the National FFA Organization between 1999 and 2001 (Croom 2004). Essential Learnings was the product of the FFA Evaluation Task Force, in an effort to better define the FFA mission. The resulting 16 precepts, the foundational concepts of the LifeKnowledge curriculum, are based on the three central objectives of the mission statement: premier leadership, personal growth, and career success (Croom 2004). These precepts were “validated by frontline industry managers, human resource managers, and professional educators” in a study conducted by the University of Illinois (LifeKnowledge).

LifeKnowledge was made available to all agricultural teachers in 2004. The first released version was followed by an updated interface and integration guide with LifeKnowledge 2.0 in 2005, and now is being released through the online interface of LifeKnowledge 3.0.

Brain Based Learning and LifeKnowledge

Education is old (Jensen, 1998). The act of knowledge transcending between individuals and generations has allowed for the forward progression of civilization. The methods and strategies employed to teach and the theory behind how it is learned, however, have changed greatly. The most recent major phase our education has entered is, quite appropriately, the focus of education on the brain (Jensen, 1998).

Today, educational materials exist which hinge their effectiveness on cutting-edge strategies to engage the brain (Lowery, 1998). The *LifeKnowledge* program is one of these. The curriculum utilizes “E-Moments,” or engaging moments, meant to

“[build] the necessary neural pathways for comprehension, recall, and transfer” (Reardon, 2004). These are short activities which can be inserted into a lesson plan to create personal connections with the students to the content. The incorporation of E-Moments into every lesson, as well as the availability of E-Moments to be incorporated into any existing curriculum or lesson, are crafted to engage all eight of Gardner’s multiple intelligences, to appeal to the kinesthetic, visual, and auditory learners that exist in every classroom, and stimulate higher order thinking (Reardon, 2004).

In order to understand the way *LifeKnowledge* stimulates the learner’s learning, as well as the teacher’s teaching, it is necessary to understand the theories, neurology, and models it is based on. Much has been written on these topics, both in favor of and opposing, the incorporation of brain-based learning theories into the modern classroom.

Today’s education enjoys an explosion in knowledge of the human brain and how it works (Wolfe, 1998). What used to be a dark area of our understanding has slowly entered the twilight as realization dawns: how does the brain learn? Today, this rapidly developing knowledge allows educators to begin to move their strategies towards better engagement and education of the brain. This is occurring so fast that what is learned about the brain today becomes “old news” within two years (Wolfe, 1998). The ideas of how the brain remembers, analyzes, and synthesizes information have translated to learning modalities, multiple intelligences, higher order thinking, and methods to engage them. While only the surface has been penetrated, knowledge

of the brain has been greatly advanced. The last two decades have seen theories and publications debating both sides of the issue of brain-based learning, progressively implementing and questioning the value of these new ideas (Jensen, 1998). While some educators maintain the values of their techniques to enhance learning, others contradict the viability of brain-based theory in the classroom (Hall, 2005).

Brain research and neuroscience does not assume to know how students should be taught; it cannot prove that one strategy for teaching will increase understanding more than another (Wolfe, 1998). However, understanding how the brain functions can lead to curriculum and strategy development which can play to the brain's strengths (Lowery, 1998). Eric Jensen describes interpreting brain research in the same method the military categorizes surveillance information. This model defines Level 1 as the Brain/Learning Theory, which includes any theory about learning; Level 2 as Laboratory Discovery, done through any method such as experiments, autopsies, or related methods; Level 3 as Clinical studies, typically conducted through university support; and Level 4 as In-Context Applications, where the knowledge can be applied in action research (1998).

Pat Wolfe reports that findings of how the brain learns can be incorporated into education in order to maximize students' potential. These findings include the physiological change occurring in the brain as a result of experience and the environment, the IQ is not fixed at birth, some abilities are acquired more easily during sensitive periods referred to as "windows of opportunity," and learning is strongly influenced by emotion (1998).

Caine and Caine take this further with their mind and learning principles. They define twelve principles on how the brain learns: the brain is a complex adaptive system; the brain is a social brain; the search for meaning is innate; the search for meaning occurs through “patterning”; emotions are critical to patterning; every brain simultaneously perceives and creates parts and wholes; learning involves both focused attention and peripheral perception; learning always involves conscious and unconscious processes; we have at least two ways of organizing memory; learning is developmental; complex learning is enhanced by challenge and inhibited by threat; every brain is uniquely organized (1998). In terms of actually teaching, Caine and Caine describe possibilities for instructional approaches, such as the traditional stand-and-deliver model; a model where teachers are “in charge but create richer and more complex experiences for students;” and a third model representing more of a partnership between the teacher and the student, which can be very complex (D’Arcangelo, 1998).

LifeKnowledge™ seeks to engage all types of learners, including all of Gardner’s multiple intelligences (Dodson, 2004). Gardner points out that brain research has suspected and supported the theory of multiple intelligences for more than 20 years, which essentially eclipses the history of the field (1999). The E-Moments used in LifeKnowledge™ are designed to engage students with eight identified intelligences: Visual-Spatial, Verbal-Linguistic, Interpersonal, Musical-Rhythmic, Naturalistic, Bodily-Kinesthetic, Intrapersonal, and Logical-Mathematical (Reardon, 2004). While every E-Moment does not engage all of the multiple

intelligences, the collection together does; Reardon and Derner emphasize that while identified as individual intelligences, these eight multiple intelligences do indeed work cohesively together (2004). Gardner also points out that the brain theory behind multiple intelligences is not a quick prescription for how to teach students; in fact he does not support any attempts of “scatter-shot” education, trying to teach all of the intelligences at once, or even labeling students by their intelligences. Instead, educators must approach the classroom with the best method of teaching, understanding that so many different intelligences exist in the room (1999).

Another avenue E-Moments use to engage students is through learning modalities (Reardon, 2004). Michael Grinder’s study of nonverbal communication and rapport indicates the ability of verbal, auditory, and kinesthetic methods to enhance the learning experience for students. In addition, Dawna Markova identified six “personal learning patterns” which show how a student might use all three modalities in tandem: VAK, VKA, AKV, AVK, KAV, and KVA (Reardon, 2004). Markova suggests that every learner has a different preference for the combination of visual, auditory, and kinesthetic modalities. Reardon and Derner maintain rapport and learning are strengthened when all three are engaged, which is what E-Moments are designed to do (Reardon, 2004).

The third area each E-Moment addresses is high-order thinking. Benjamin Bloom’s original taxonomy has been modified and adapted over the years, but still emphasizes the six levels of cognitive learning: knowledge, comprehension, application, analysis, synthesis, and evaluation (Goodwater 2006). E-Moments

emphasize high-order thinking, such as analysis, evaluation, and synthesis; these levels seem to result in better learning in students (Reardon, 2004).

While there are many facets of brain-based learning used to help guide educators, there are many who are skeptical of the purported trends to jump on board with anything that regards “the brain” (Jensen, 2000). John Hall points out the neuroscientists themselves do not suggest that neuroscience can be directly translated into education (2005). He points out there has been almost a backlash against brain-based learning as “[skeptics]...claim that the enthusiasts have over-simplified neuroscientific research and over-interpreted its findings, generating a number of ‘neuromyths’ in the process” (Hall, 2005). Hall also states that much of brain research is based on experimentation with rats, particularly in comparing “enriched” environments and synaptic density. However, due to obvious challenges no one has proven this same result is true in humans, although many authors of new educational material point to it as fact (2005).

Eric Jensen agrees that at times brain-based learning does need a “reality check” (Jensen, 2000). He points out many issues that have arisen from speculation to overexcitement because of one study suggesting one new idea, the implication immediately becomes the reference for new theories and models. He admits some people do misrepresent findings, and emphasizes that it cannot be said that, “Brain research proves...” because it does not prove anything in terms of education (2000). Jensen points out that research can instead “suggest a particular pathway” (2000). He also makes the argument that “educators should not run schools solely on the basis of

the biology of the brain. However, to ignore what we do know about the brain would be irresponsible” (2000). The balance of sound practices founded on proven principles of how the brain learns can allow education to continue to meet the needs of students.

CHAPTER 3: METHODOLOGY AND PROCEDURES

The previous chapter provided the knowledge background of the factors involved with LifeKnowledge™ and agricultural education, and using both to help students prepare for post-secondary experiences. This chapter outlines the design used for this study, the LifeKnowledge Precept Indicator, and the contextual and fidelity models used in the teaching.

The focus of this study was to evaluate a contextual model for incorporating LifeKnowledge™ lessons into the course curriculum. This was done by using the LifeKnowledge online assessment with a group of ninth grade students enrolled in an agricultural sciences academic science course. Establishing a model for successful integration of LifeKnowledge™ into the agricultural science class helps to prepare students for roles and responsibilities they will need in post-secondary experiences.

The objectives for this study are:

- 1) Evaluate the contextual model for incorporating LifeKnowledge™ lessons into the agricultural science and technology (AST) curriculum.
- 2) Determine the amount of gain by students from the LifeKnowledge curriculum using pre-test and post-test data.
- 3) Analyze the effects of teaching select lessons from the LifeKnowledge curriculum upon student knowledge of the Essential Learnings precepts.

Research Design

This research study was designed as a pre-test and post-test assessment of four specific FFA Essential Learnings precept statements which are taught using a model for integrating LifeKnowledge™ lessons into the agricultural science and technology course. The study design required: 1) developing the model of integration and the fidelity test model, 2) identifying a population for testing and instruction, 3) administering the premier leadership online precept indicator pre-test, 4) analyzing the pre-test results and selecting the two lowest average scoring premier leadership precepts, 5) identifying the LifeKnowledge lessons addressing those two precepts, 6) teaching the lessons over several weeks using the integration and fidelity models, 7) administering the premier leadership online precept indicator post-test, and 8) comparing the pre- and post-test data for the premier leadership precepts for analysis.

The model of integration was developed using the theoretical frameworks of effective elements of teaching and contextual learning. The goal was to develop a method of utilizing the resources in the LifeKnowledge curriculum by incorporating it into the classroom instruction. By using the context of the course and/or instructional units, the instructor is better able to draw relevance from the content and make it applicable to students (Bond 2004). This model was reviewed by Oregon State University teacher educators before it was used in the instruction. This model is shown in Figure 2.

Effective Elements of Instruction Integration Model

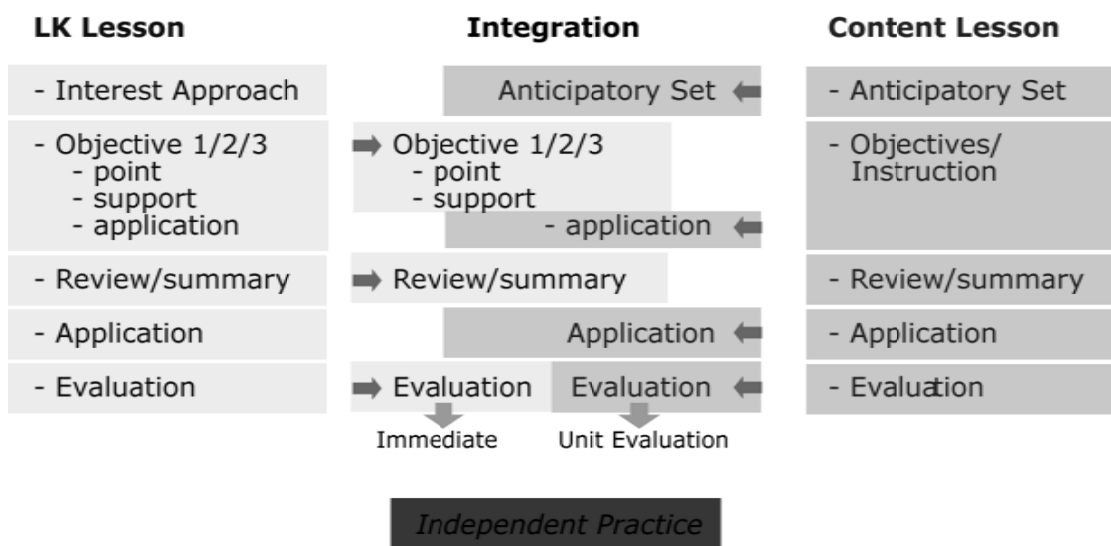


Figure 2: Integration model for LifeKnowledge into the AST instructional unit

The fidelity test model was designed using information from the LifeKnowledge instructional materials. The background and foundational material identified four core tenets upon which the lessons were built: effective elements, learning modalities, multiple intelligences, and cooperative learning. The components of a LifeKnowledge lesson that address each of these tenets were identified as an essential part of the lesson which should be included in the teaching. This model is shown in Figure 3.

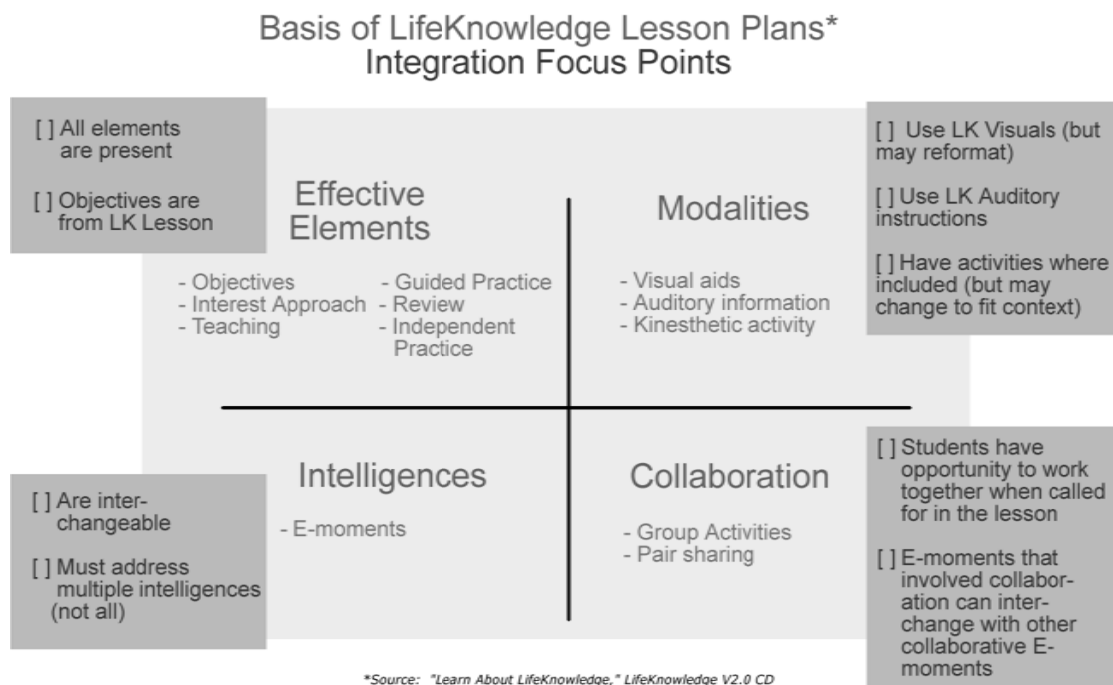


Figure 3: Fidelity model

This study used all students enrolled in the same secondary agricultural science and technology course. For this, 75 ninth grade students, enrolled in three different instructional periods, completed the pre-test and post-test assessments. All of the students were taught by the same instructor. The high school these students were enrolled in provided ninth-grade level science credit to all students enrolled in this AST course. Many, but not all, of the students enrolled in the course were active FFA members. This group of students provided a large testing population without significant inconsistencies between age, course, or their experiences in the AST program.

The premier leadership online precept indicator pre-test was administered the last week of February 2007 using classroom computers. Students were given two full 72-minute periods of instruction to complete the assessment online. Instructions were provided verbally and in written form on how to access and take the assessment.¹ Students were able to pause during the completion of the test and continue where they left off on the second day.

The online precept indicator developed a report of all the completed pre-test assessments for the students enrolled in the course. A student's performance determined their level of competence in each of the six precept areas measured by the premier leadership indicator. Students fell into one of the following categories: Pre-Awareness, Awareness, Interaction, and Mastery, with pre-awareness being the lowest category and Mastery being the highest (Indicator Technical Manual, 2006). The pre-test results showed that, on average, students scored much lower in the precept areas of Vision and Continuous Improvement than in the other four: Action, Teamwork, Awareness, or Character. These precepts were then selected to follow up with the instructional lessons, as an instructor would be more inclined to use those LifeKnowledge lessons that address the topics their students are less competent in.

Once the two precepts were identified for follow-up, the appropriate lessons were then selected. Accessing LifeKnowledge online, users are able to search the lessons by precept area. All of the lessons which fell under Vision and Continuous Improvement were accessed. Under each, specific precept statements were chosen

¹ Please refer to the appendices for the instructions handout

based upon availability of lessons in order to focus the teaching. After review, eight lessons were selected which addressed the identified precepts and selected precept statements. The selected lessons are outlined in Table 1:

Table 1: Identified Precepts, Precept Statements, and Corresponding LifeKnowledge Lessons Selected for Teaching

Precept/Precept Statement	LifeKnowledge Lesson
Vision - Conceptualize ideas (C2)	AHS.12 – Conceptualizing Ideas
Vision - Adapt to opportunities and obstacles (C4)	HS.83 – Introduction to Situational Leadership
Vision – Persuade others to commit (C5)	AHS.10 – Understanding Leader/Follower Dynamics AHS.11 – Building Followership: The Leadership Challenge HS.82 – Skills for Consensus Building
Continuous Improvement – Implement a leadership and personal growth plan (F1)	HS.46 – Develop a Plan Using Goals HS.47 – Evaluating Plans and Goals AHS.9 – Long-Term Goals and Opportunities

The lessons were taught over the course of eight weeks. The instructor was given the integration and fidelity models to utilize when teaching the lessons. No

order was specified for the lessons or into what contextual areas to incorporate each one into; those decisions were left up to the instructor.

The premier leadership precept indicator post-test was administered in mid May over a three day period. Students again received verbal and visual instructions on how to access and complete the post-test. Students were encouraged to do their best work on the assessment.

Analysis was completed utilizing the statistics program SPSS and Microsoft Excel. A paired t-test was used in order to compare the pre-test and post-test averages of the two groups for the total pre-test score. The null hypothesis for this analysis was that there would be no significant difference between the pre-test and post-test results for each precept area. For the analysis, the scores for all precept areas (total of 32 areas) were compared to determine if a significant difference existed. The area each set of questions evaluated was identified by the National FFA Organization in development of the instrument.²

Description of the Population

The population selected was the ninth grade freshman agricultural sciences courses at a rural high school in northeastern Oregon. According to the local Chamber of Commerce, the city itself is comprised of 15,030 people. The city is a central location where many businesses serve the large and diverse agriculture industry which dominates the area. The city also exists at the junction of two interstate highways.

² Please see “Chapter 3: Description of the Assessment Instrument” on page 26

Over 25% of the city population is under the age of 19. The largest employers are distribution centers and agricultural processing facilities.

There is only one high school in this district, with a reported enrollment of 1,324 students. It is estimated that approximately 30% of the student body is Latino/Latina, as many of their family members and parents are employed in agricultural jobs in the area. The agricultural education department had an enrollment in excess of 300 students in 2006, and is comprised of three full-time teachers. Subjects include introduction to agricultural sciences, plant and animal science, veterinary medicine, agricultural business, agricultural issues, horticulture, metal fabrication, and agricultural mechanics.

The population was made up of ninth grade students enrolled in the introduction to agricultural sciences academic science courses (n=55). The ninth grade agricultural sciences classes include all demographics of gender, ethnicity, socioeconomic status, students with individualized education plans (IEP's), and high achieving students present within the school, although not at representative levels. Students enrolled in this course received their ninth grade science required credits, making this one of their core academic courses. The use of the LifeKnowledge online assessment was incorporated into this course as part of the normal instruction. Since the pre-test and post-test occurred in two separate academic terms, and the high school operated on a trimester schedule, not all students were enrolled and available for all of the instructional lessons and the post-test assessment, leaving them out of the study.

Description of the Assessment Instrument

The assessment instrument used in this study is the commercial LifeKnowledge 3.0 online assessment. This instrument was developed by the LifeKnowledge Center for Agricultural Education, an outreach of the National FFA Organization, in 2006 and released in 2007. This was created with the idea of giving teachers a method of assessing their students' leadership and employability skill level within the precepts of Essential Learnings (Indicator Technical Manual, 2006). The instrument was developed with the National Occupational Competence Testing Institute (NOCTI), and a total of three assessments were created: one for Premier Leadership, one for Personal Growth, and a third for Career Success. This was done using questions from the NOCTI databases as well as additional development by fourteen identified Subject Matter Experts from various fields. The assessment was based on the rubric developed by the National FFA, referred to as the "signs of success" (Indicator Technical Manual, 2006).

Fourteen test pilot schools were identified through teacher participation in the Delta conference. The test pilot population was such where students represented the overall demographics of the National FFA Organization in terms of gender, ethnicity, age, and related factors (Indicator Technical Manual, 2006). The data from this was then evaluated with guidance from NOCTI to select which questions to use. In addition, the JAGER method was used to evaluate each question, determining the level which question tested at in regards to the four levels of pre-awareness,

awareness, interaction, and mastery used by the reporting feature of the LifeKnowledge 3.0 online program (White 2007).

The reporting method and data warehousing used with the LifeKnowledge 3.0 Online Precept Indicator does not report individual student responses to questions. Because of this, reliability for the instrument cannot be determined in this study. The LifeKnowledge Center for Agricultural Education, however, determined these statistics for each part of the Indicator. Within the Premier Leadership assessment, a reliability rating of 0.935 α was found (Indicator Technical Manual, 2006). For the overall assessment of 112 questions, the mean score was 62.370 with a standard deviation of 18.372 (Indicator Technical Manual, 2006).

CHAPTER 4: RESULTS

The research design, description of the population, and description of the assessment instrument were discussed in Chapter 3. The pre- and post-test results and statistical analysis are outlined in this chapter.

The focus of this study was to evaluate a contextual model for incorporating LifeKnowledge™ lessons into the course curriculum. This was done by using the LifeKnowledge online assessment with a group of ninth grade students enrolled in an agricultural sciences academic science course. Establishing a model for successful integration of LifeKnowledge™ into the agricultural science class helps to prepare students for roles and responsibilities they will need in post-secondary experiences.

The objectives for this study are:

- 1) Evaluate the contextual model for incorporating LifeKnowledge™ lessons into the agricultural science and technology (AST) curriculum.
- 2) Determine the amount of gain by students from the LifeKnowledge curriculum using pre-test and post-test data.
- 3) Analyze the effects of teaching select lessons from the LifeKnowledge curriculum upon student knowledge of the Essential Learnings precepts.

Pre- and Post-Test Results

The pre-test and post-test results were collected through an online assessment developed by National FFA Organization. Initially, all students enrolled in the ninth grade agricultural sciences course (n=94) were assigned the indicator. Sixty-nine students completed the pre-test for the six precept areas within the Premier Leadership assessment: Action, Teamwork, Vision, Character, Awareness, and Continuous Improvement. The instrument revealed that average student scores were most deficient in the precepts of Vision and Continuous Improvement.

With these two areas identified, the lessons in each area were reviewed by precept statement. The intent was to teach all of the lessons available for specific precept areas. In the example of Continuous Improvement, there are five precept statement areas. However, only two of these areas have available LifeKnowledge lessons. Based on resulting data, the three lessons available for the precept “F1: Implement a leadership and personal growth plan” were selected for use. In the Vision area, all lessons available for precept “C2: Conceptualize ideas” and “C4: Adapt to opportunities and obstacles” were chosen. For the precept statement “C5: Persuade others to commit,” three lessons were selected from the five available, as one lesson had similar objectives to the others, and the other was intended for a middle school audience.

Those questions measuring the precepts identified were isolated and the scores were analyzed, with a total n=55. Not all students completed both the pre-test and

post-test assessments. The pre-test scores and post-test scores are outlined by precept and total score for the study are outlined in Table 2.

Table 2: Focus Pre-Test and Post-Test Scores by Student

Precept	Pre-Test Scores (Individual Precepts and Total Pre-Test)				Post-Test Scores (Individual Precepts and Total Post-Test)					
	C2	C4	C5	F1	Pre	C2	C4	C5	F1	Post
AVERAGE	2.3	0.8	2.6	1.8	7.4	2.5	1.2	2.9	2.2	8.9
POSSIBLE	4	2	5	4	15	4	2	5	4	15

Key: C2 – LifeKnowledge Precept C2: Conceptualize ideas
 C4 – LifeKnowledge Precept C4: Adapt to opportunities and obstacles
 C5 – LifeKnowledge Precept C5: Persuade others to commit
 F1 – LifeKnowledge Precept F1: Implement a leadership and personal growth plan
 Pre – Total Pre-Test score
 Post – Total Post-Test score

A standard t-test for like means was used to analyze the findings in this study. The average pre-test score was 7.4 points out of a possible 15, and a post-test average of 8.9 out of possible 15 (SD=3.70). The total pre- and post-test results showed a statistically significant difference ($p < 0.001$). Overall, student scores increased approximately 10% between the pre-test and post-test within the four specific precept areas.

Statistical analysis was completed for each individual precept statement within the LifeKnowledge Precept Indicator using the standard t-test for like means. It is

important to note that within the four precept areas which were the focus of this study, significant statistical difference was found for three precepts: “C4: Adapt to opportunities and obstacles,” “C5: Persuade other to commit,” and “F1: Implement a leadership and personal growth plan” ($p < 0.05$). There was marginally significant difference between the pre- and post-test scores for precept “C2: Conceptualize ideas” ($p < 0.10$). In addition, there was a statistically significant difference ($p < 0.05$) in positive gain for five of the other twenty-eight precept areas which were not targeted. In the precept area of “B5: Participate effectively as a team member” there was statistically significant negative change between pre- and post-test scores ($p < 0.05$). The results of the precept statement test scores analyses can be found in Tables 3-8.

The first precept in the Premier Leadership objective is the precept Action. Within this area the precept indicator tested eight statements with a varying number of questions. Of these eight, two of the areas showed statistically significant difference ($p < 0.05$) between the average pre-test and post-test scores: precept “A2 – Focus on results” and “A6 – Take risks to get the job done.” One other area, “A5 – Communicate effectively with others” showed marginal statistical difference ($p < 0.10$) between the two average scores. None of the other precept areas registered any statistically significant difference. These scores are summarized in Table 3.

Table 3: Pre-test and Post-test Scores Comparison for Precept (A) Action

Precept Statement	Pre-Test	Post-Test	P-Value
A1: Work independently and in groups to get things done.	2.27	2.33	0.71
A2: Focus on results	1.53	2.04	0.00
A3: Plan effectively	2.02	2.16	0.41
A4: Identify and use resources	1.82	1.85	0.78
A5: Communicate effectively with others	4.4	4.82	0.06
A6: Take risks to get the job done	0.93	1.6	0.00
A7: Invest in others by enabling and empowering them	1.93	2.00	0.58
A8: Evaluate and reflect on actions taken and make appropriate modifications	1.11	1.02	0.47

The second precept in the “Premier Leadership” objective is Teamwork (Table 4). Within this precept area, three areas resulted in statistically significant gain between the pre-test and post-test scores: “B3 – Develop others,” “B4 – Eliminate barriers in building relationships,” and “B5 – Participate effectively as a team member.” The gain for “B5” was negative, not positive, gain. The other two areas showed no statistical significance. Of the three areas which do show difference, no Life Knowledge lessons currently exist which directly address the precept statement “B4.”

Table 4: Pre-test and Post-test Scores Comparison for Precept (B) Teamwork

Precept Statement	Pre-Test	Post-Test	P-Value
B1: Practice human relations skills including compassion, empathy, unselfishness, trustworthiness, reliability, and listening	1.75	1.82	0.63
B2: Interact and work with others	1.69	1.82	0.20
B3: Develop others	1.84	2.33	0.01
B4: Eliminate barriers in building relationships	1.87	2.22	0.02
B5: Participate effectively as a team member	1.38	1.15	0.03

The third precept within Premier Leadership is Vision (Table 5). Within this precept area were three of the four targeted precept statements for this study. Of these, two showed a positive statistically significant difference ($p < 0.05$) between pre-test and post-test scores: “C4 – Adapt to opportunities and obstacles” and “C5 – Persuade others to commit.” The other precept statement, “C2 – Conceptualize ideas,” taught showed marginally significant positive gain ($p < 0.10$). The other two precept areas showed no statistically significant gain between test scores.

Table 5: Pre-test and Post-test Scores Comparison for Precept (C) Vision

Precept Statement	Pre-Test	Post-Test	P-Value
C1: Contemplate the future	1.65	1.87	0.13
C2: Conceptualize ideas	2.29	2.55	0.075
C3: Demonstrate courage to take risks	2.16	2.24	0.58
C4: Adapt to opportunities and obstacles	0.76	1.18	0.00
C5: Persuade others to commit	2.56	2.91	0.045

The fourth precept of the Premier Leadership objective is Character (Table 6). None of the precept areas showed statistically significant differences ($p < 0.05$) between the pre-test and post-test scores. The precept area of “D4 – Respect others” did have marginally significant difference ($p < 0.10$) between scores.

Table 6: Pre-test and Post-test Scores Comparison for Precept (D) Character

Precept Statement	Pre-Test	Post-Test	P-Value
D1: Live with integrity	2.07	2.20	0.44
D2: Accurately assess my values	1.62	1.85	0.10
D3: Accept responsibility for personal actions	2.09	2.20	0.42
D4: Respect others	2.15	2.44	0.09
D5: Practice self-discipline	1.98	2.09	0.41

Awareness is the fifth precept within this objective (Table 7). Of the three precepts, “E3 – Participate in activities that promote appreciation of diversity” showed positive statistically significant difference ($p < 0.05$) while “E2 – Perform leadership tasks associated with citizenship” showed marginal statistical difference ($p < 0.10$) between pre-test and post-test scores.

Table 7: Pre-test and Post-test Scores Comparison for Precept (E) Awareness

Precept Statement	Pre-Test	Post-Test	P-Value
E1: Address issues important to the community	1.85	1.67	0.26
E2: Perform leadership tasks associated with citizenship	1.55	1.78	0.09
E3: Participate in activities that promote appreciation of diversity	2.69	3.24	0.00

The final precept in the Premier Leadership objective is Continuous Improvement (Table 8). Within this precept, one statement was selected and taught in the course of this study: “F1 – Implement a leadership and personal growth plan.” This area showed positive, statistically significant improvement between the pre-test and post-test scores, as did “F5 – Acquire new knowledge.” Marginally significant difference was seen in “F2 – Seek mentoring from others” and “F4 – Adapt to emerging technologies.”

Table 8: Pre-test and Post-test Scores Comparison for Precept (F) Continuous Improvement

Precept Statement	Pre-Test	Post-Test	P-Value
F1: Implement a leadership and personal growth plan	1.82	2.18	0.04
F2: Seek mentoring from others	1.64	1.89	0.06
F3: Use innovative problem-solving strategies	1.67	1.78	0.51
F4: Adapt to emerging technologies	1.09	1.31	0.09
F5: Acquire new knowledge	1.18	1.18	0.00

CHAPTER 5: DISCUSSION

The previous chapter described the results from the pre- and post-tests and the statistical analysis. This chapter discusses the findings and considerations of the data collected.

The focus of this study was to evaluate a contextual model for incorporating LifeKnowledge™ lessons into the course curriculum. This was done by using the LifeKnowledge online assessment with a group of ninth grade students enrolled in an agricultural sciences academic science course. Establishing a model for successful integration of LifeKnowledge™ into the agricultural science class helps to prepare students for roles and responsibilities they will need in post-secondary experiences.

The objectives for this study are:

- 1) Evaluate the contextual model for incorporating LifeKnowledge™ lessons into the agricultural science and technology (AST) curriculum.
- 2) Determine the amount of gain by students from the LifeKnowledge curriculum using pre-test and post-test data.
- 3) Analyze the effects of teaching select lessons from the LifeKnowledge curriculum upon student knowledge of the Essential Learnings precepts..

Discussion

The initial data from this study demonstrates an impact from the teaching of the selected LifeKnowledge lessons on the students enrolled in the agricultural sciences science course. The statistical significant difference found between pre-test and post-test scores for the entire test as well as for three of the precept areas taught to (C4, C5, and F1) shows there was significant gain from the lessons taught. In addition, there is a practical difference of 10% between the two scores on these four precept areas.

For the fourth area, C2, while the p-value failed to reject the null hypothesis at the determined level of significance ($p < 0.05$), there was some difference shown, and would have been significant at a level of $p < 0.10$, which is sometimes used in statistical analysis. While it cannot conclusively be said that there was a difference between the pre-test and post-test scores in this area, from a practical aspect it could be maintained there was still benefit to the students because of the percent gain between scores.

In the comparison among all of the precept areas, several intriguing results are seen. Of the 32 total precept areas, positive significant gain was seen in eight areas. Negative significant gain was recorded in one area, but not in an area selected to be taught to, nor was it within one of the two precepts taught. This could be the result of conflicting concepts within the LifeKnowledge curriculum, or perhaps from other instructional or shared experiences within the population.

Comparing the eight areas with positive significant gain shows interesting relationships. Of these, three were targeted specifically by lessons which address the precept area, as designed by the National FFA Organization in the development of the curriculum. However, as the 265 lessons in the curriculum were not designed to all be taught to the same students in sequence, these results suggest some reinforcement and overlap may exist. As an example, all three lessons for the precept area “F1: Implement a leadership and growth plan” were taught within this study. Those lessons are:

- HS.46: Develop a Plan Using Goals
- HS.47: Evaluating Plans and Goals
- AHS.9: Long-Term Goals and Opportunities

The data shows a positive significant gain between the pre-test and post-test results for this precept area. In addition, a significant statistical gain was seen for precept area “A2: Focus on results.” The “A2” precept area was not taught to, but the LifeKnowledge curriculum identifies 11 lessons which could be taught to meet this area. Those lessons are:

- HS.44: The Benefits of Goal Setting
- HS.45: Goal Setting Strategies
- HS.79: Setting Team Expectations
- HS.88: Using Key Messages
- HS.96: Determining End Products of Process
- HS.98: Brainstorming Solutions
- HS.99: Selecting a Strategy
- AHS.30: Results Without Jeopardizing Relationships
- MS.14: Developing Goals
- MS.15: Setting Goals
- MS.41: Forming Key Messages

Within the “A2: Focus on results” precept area, four lessons have the word “goals” within the lesson title, and four others have related themes, such as “setting expectations” and “selecting strategy,” which are components of goals. It seems reasonable, if not expected, that students should have some improvement in this precept area because of the instruction in what appears to be a related area, which was the lessons for precept area “F1.”

Correlations and overlapping themes are also the case for some of the other precept areas. Students showed gain in precept area “A6: Take risks to get the job done.” For this area, one lesson exists: “MS.13: Trying New Ideas.” Significant gain could be related to the lesson taught about conceptualizing ideas (AHS.12: Conceptualizing Ideas). For precept area “B3: Develop others,” the content in the lessons taught for the precept “C5: Persuade others to commit” is a likely correlation in developing other individuals, or even the goal-setting and evaluation could be transferred from focusing on the individual to focusing on others. No lessons currently are available for precept area “B4: Eliminate barriers in building relationships,” but again this precept area seems to share themes with some of the other areas mentioned already.

The resulting data of the crossover ability of the LifeKnowledge lessons provides valuable insight into the significant impact teaching just a few lessons can have. The AST course curriculum is typically quite full of material and content, and many teachers do not have time to incorporate additional material into their already existing units. However, the data from this study indicates students will benefit not

only in the areas that the lessons may be selected for, but rather gain knowledge and ability across several areas. Such gain means a small number of lessons can be used to significantly increase students career and life skills abilities.

One area which shows significant statistical gain but was not the objective of any of the lessons selected and taught as part of this study was “E3: Participate in activities that promote appreciation of diversity.” The lessons within this precept area have common themes of diversity on team and responsible citizenship. It is indiscernible if this is the result of some other relating factors in lessons taught, or if there is an external factor influencing results. The high school involved in this study includes a higher than average percentage of minority students; it is conceivable other instruction or experiences gained from this situation of diversity may be making an impact on students in ways similar to how the LifeKnowledge curriculum seeks to instruct and assess students.

In evaluating the effect of the contextual model on student performance, there is not much which can be discerned from these results. Limitations set by the Institutional Review Board (IRB) approval did not allow for further data collection from students regarding perceptions of the lessons taught, or other information. The process of using the LifeKnowledge Precept Indicator, teaching the lessons using the contextual model while utilizing all aspects of the lessons, and giving the post-test show there was a positive impact on the areas targeted, as well as additional gain in other, related areas. However, it is difficult to determine how much the contextual model influenced these outcomes.

Overall, this study demonstrates a gain and benefit to students in the areas measured by the precept indicator through the teaching of LifeKnowledge lessons. These areas are not limited to those specific to each lesson, but rather can benefit student learning in multiple areas. When teachers are able to successfully integrate the lessons into their curriculum, the benefit is not only student academic, technical, and career knowledge gain but life skills knowledge as well.

Considerations

This study was affected by several factors over the course of completion. This type of research in a real-world classroom setting involves many considerations which should be included in the discussion of the results from this study.

The availability of the online instrument limited the time frame between the pre-testing and post-testing. A greater period of time between the pre-test and post-test would better show student retention and gain from the teaching of the LifeKnowledge lessons. However, due to the time of release of the online assessment and the time the school year ends, there was no possibility of having an extended timeline. The 12 weeks between the two tests allow for enough time to 1) show gain from the testing and 2) represent student retention of content and knowledge.

The results showed only marginally significant gain ($p < 0.10$) for the LifeKnowledge precept statement of “C2: Conceptualizing Ideas.” This precept area had only one lesson available in the curriculum which prepared. The limited availability of lessons for instruction in this precept area may be one reason why students did not show the gain that was evident in other precept areas that were taught.

However, there was also only one lesson available and taught for the precept area of “C4: Adapt to opportunities and obstacles,” yet there was significant gain ($p < 0.05$) in the results from this area.

Some of the precept areas tested with the Premier Leadership Indicator showed positive significant difference that were not the described objective of the eight selected lessons taught. It was previously discussed in the findings how connections between the lessons taught and these areas existed, with similar themes in the precept areas and the lessons available for each. However, there were at least one other area which did not appear to have any relation with the lessons taught. Overall, the clear distinctions between lessons which showed significant difference, of which most were taught towards or related to those that were taught, and the majority of precept areas which did not show significant difference, indicates the lessons were taught successfully and met their objectives in preparing students in those areas.

For one of the precept areas selected for this study, “C5: Persuade others to commit,” six lessons were available for the teaching; however, only three of the lessons were selected and taught. This was based on several factors, including 1) the targeted audience age for the lesson (middle school versus high school), 2) time available, and 3) redundancy in themes/objectives. Despite not teaching all lessons, students showed positive significant difference between pre-test and post-test scores within this precept area. Only teaching some of the available lessons yet still seeing statistically significant gain suggests not all lessons need be taught in order for students to become more skilled and competent within an precept area.

The length of the instrument presents a challenge of keeping student engagement. The 108 questions found on the Premier Leadership precept indicator required a significant amount of time in order for students to fully complete it. While it is assumed students tried their best in completing the pre-test and post-test assessments, the length of the indicator may have negative effects on student performance. Ideally, a practical application of the indicator in the classroom would be to give the entire pre-test assessment, then select the areas to teach towards, teach the lessons, and post-test the students only in the precept areas which were taught to with LifeKnowledge lessons. In this study, there was the benefit of comparison in order to see differences between the precept areas taught to and those which weren't, as students took the entire pre-test and the entire post-test.

The questions are organized by precept area and not randomized; meaning that the questions for the sixth precept always are at the end of the assessment. While this maintains consistency between the two tests, it may be more accurate to randomize the questions throughout the assessment so that expiring attention spans do not result in artificially low scores for the later precepts in that area.

The contextual model developed for this study sought to validate a method for successfully integrating LifeKnowledge lessons into the classroom curriculum. The availability of students and the difficulties of comparing unlike groups of students did not allow for the teaching of some students with the model and some without in order to have a valid comparison group to measure true gain from the model. However, the successful use of the model in teaching the lessons and the positive significant

difference in test scores indicates the model did benefit students. An ideal study would measure student perceptions and teacher perceptions of the lessons which were taught and the learning experience; however, the Institutional Review Board (IRB) approval for this study did not allow for the collection of this data.

Comparing student gain among different demographic groups would also provide valuable insight into the ability of using the contextual model to increase student skills in precept areas. These demographic areas could include gender, ethnicity, FFA membership, student leadership involvement, or other factors. The Institutional Review Board (IRB) approval did not allow for the collection of this data in this study.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

The previous chapter discussed the results from this study and the consideration of factors which may have affected those results. This chapter outlines the conclusions and recommendations for future research.

The focus of this study was to evaluate a contextual model for incorporating LifeKnowledge™ lessons into the course curriculum. This was done by using the LifeKnowledge online assessment with a group of ninth grade students enrolled in an agricultural sciences academic science course. Establishing a model for successful integration of LifeKnowledge™ into the agricultural science class helps to prepare students for roles and responsibilities they will need in post-secondary experiences.

The objectives for this study are:

- 1) Evaluate the contextual model for incorporating LifeKnowledge™ lessons into the agricultural science and technology (AST) curriculum.
- 2) Determine the amount of gain by students from the LifeKnowledge curriculum using pre-test and post-test data.
- 3) Analyze the effects of teaching select lessons from the LifeKnowledge curriculum upon student knowledge of the Essential Learnings precepts.

Conclusions

The following conclusions are surmised from the completion of this study:

1) Teaching LifeKnowledge lessons improves students' knowledge and ability, specifically within the precept areas they have been designed for. The results of this study clearly indicate positive gain in test scores within precept areas that were taught using LifeKnowledge lessons targeting those precept areas, and overall not in the areas which were not.

2) The LifeKnowledge lessons can be successfully integrated into the normal course curriculum using the context of the instructional unit to teach the LifeKnowledge. The results showing positive significant gain in three of the four areas taught demonstrate successful use of the lessons. However, it cannot be determined how much difference (positive or negative) there may be between using this type of contextual model.

3) Teaching specific LifeKnowledge lessons within a precept area increases students' knowledge in that area as well as boosts knowledge and comprehension in other related areas. This "overlap" means teachers can prepare students for multiple life skills by teaching just a few selected lessons.

4) Teachers can increase student knowledge in a precept area without having to teach all of the lessons available in that area. The data clearly shows positive significant gain in areas where not all lessons are lesson themes were taught, meaning a larger instructional time commitment is not necessary in order to see student gain. It is not required that teachers teach all lessons as a unit.

Recommendations for LifeKnowledge

The LifeKnowledge Precept Indicator and curriculum are available to all agricultural science and technology (AST) instructors. This study utilized both components into the AST classroom in the course of research, and the resulting data and findings can be applied to incorporating these materials into the classroom as well as recommend enhancements to the materials.

The LifeKnowledge lessons can be incorporated into most any class, particularly agricultural education courses. Integration is most successfully done when the context of the instructional unit is used to apply the content of the lesson. Using context can be done in or outside the agricultural science and technology (AST) courses. All students may benefit from LifeKnowledge when integrated into the instruction they receive.

The LifeKnowledge™ Precept Indicator can be used to validate the leadership, personal growth, and career preparation taught within the AST program. This strengthens the need for support of the AST program and validates not only the inclusion of such instructional content in the classroom but also the value of experience gained through the FFA and SAE programs and their necessity within the AST program.

Recommendations for Future Research

This initial study of using context to teach LifeKnowledge lessons, as well as the use of the LifeKnowledge Precept Indicator as an instrument, opens up many possibilities of using these materials and concepts in order to prepare students for

future experiences. While this study may have been limited by logistical requirements and Institutional Review Board (IRB) approval specifications, there are several avenues and areas that could be pursued in future research.

One area that could be further researched is the gain by different demographics of students. This could be by gender, age, rural or urban background, or ethnicity. There is a strong emphasis on increasing the ability of agricultural education to engage minority students. Measuring the effect of the LifeKnowledge curriculum in preparing minority students for future experiences could provide insight into methods and strategies for advancing these students, as well as all students.

The effect of outside experiences on students could be further studied. Using the pre-test and post-test results and comparing students of different experiences in and out of the class may provide insight in what opportunities help students gain skills in these areas the most. The courses taken, involvement in sports, community activities and service participation, or other experiences could all positively affect students' preparation for post-secondary experiences. Comparing these experiences and their impact to AST courses and FFA or SAE participation could provide insight into the benefit of such programs for secondary students.

Another area which could be further researched is comparing the leadership abilities and the gain from LifeKnowledge instruction between students who are FFA members, students with supervised agricultural experience, and students who are not involved with either. Those students who are engaged in FFA and/or SAE may have more application and therefore greater gain and retention of principles found in

the Essential Learnings precepts, reinforcing the value of these programs to student success. In addition, the current emphasis on career related learning and preparing students for further education could be enhanced and supported by the incorporation of LifeKnowledge into the curriculum.

Further research may be conducted in incorporating LifeKnowledge not only into the agricultural science and technology (AST) course curriculum but into other academic areas as well. In this case, the contextual model could be utilized so that the lessons could be incorporated into the other courses even though it is outside the context of agricultural education – expanding the influence of LifeKnowledge. Using the contextual model allows the lessons to be utilized in a huge range of subject areas and course content.

The LifeKnowledge Precept Indicator may also be used in other forms of research. Students in AST courses could be pre-tested and post-tested at the beginning and end of the year, then compare those results to students in the same school who are not enrolled in AST courses to determine if there is a gain by students in these areas just through their experience in agricultural science classroom instruction, FFA, and SAE.

The need for well-prepared students has not diminished. Agricultural education can use tools such as the LifeKnowledge Precept Indicator in order to measure and plan the growth and development of its students by tailoring the instruction of its courses and the goals of FFA and SAE programs by accurately assessing where students are when they enter the program. Successful implementation

of such directed instruction will only increase the value of agricultural education in preparing students for the challenges and opportunities they will experience in the future.

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APPENDICES

Hermiston High School



Agricultural Education Department

Name _____ Period _____
Date _____

LifeKnowledge Online Leadership Assessment

You will find out what areas of leadership you are strong in and where you can improve. Follow these instructions to get started! **Read all directions before beginning.**

Once you are in the lab, go to the following website:

<http://www.orst.edu/~crawforp/aqIV>

And click on the link to LifeKnowledge in the middle of the page (only blue link).

This will open a new window that says “LifeKnowledge” – click on the link right in the middle of the page “Launch LK Online.”

The login space is to the left. You will have your own login:

Your UserID: **or0034FirstnameLastname**

Example: Mr. Crawford’s login would be or0034WesCrawford

IMPORTANT – Uppercase/lowercase MATTERS; capitalize your name

Password: **same as UserID**

Once you login it will ask you to pick a new password. **DON'T FORGET IT!**

Click on the assigned assessment and begin! If you have questions raise your hand for help.



Name _____ Period _____
Date _____

LifeKnowledge Online Leadership Assessment

You will find out what areas of leadership you are strong in and where you improved from last time. Follow these instructions to get started!

Read all directions before beginning!

Once you are on the computer, go to the following website:

<http://www.orst.edu/~crawforp/aglV>

And click on the link to LifeKnowledge in the middle of the page (only blue link).

This will open a new window that says “LifeKnowledge” – click on the link right in the middle of the page “**Launch LK Online.**”

The login space is to the left. You already have your own login:

Your UserID: **or0034FirstnameLastname**

Example: Mr. Nelson’s login would be or0034NickNelson

IMPORTANT – Uppercase/lowercase MATTERS; capitalize your name

Password: **whatever you changed it to last time!**

Click on the assigned **PREMIER LEADERSHIP POST-TEST** assessment and begin! If you have questions raise your hand for help.