THE EFFECT OF SET INDUCTION ON STUDENT KNOWLEDGE,

ATTITUDE, AND ENGAGEMENT LEVELS OF HIGH SCHOOL

AGRICULTURAL SCIENCE STUDENTS

A Thesis

by

TIFFANY SARAH LAVERNE JOHNSTON

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

December 2008

Major Subject: Agricultural Education

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Approved by:

Chair of Committee, T. Grady Roberts
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ABSTRACT

The Effect of Set Induction on Student Knowledge, Attitude, and Engagement Levels of

High School Agricultural Science Students. (December 2008)

Tiffany Sarah Laverne Johnston, B.S., Texas A&M University

Chair of Advisory Committee: Dr. T. Grady Roberts

The purpose of this study was to determine if applying set induction to the beginning of a lesson would have an effect on student knowledge, attitude, and/or engagement levels throughout the lesson. Researchers addressed specific objectives in this report to determine if using a set induction at the beginning of a lesson will have a significant effect on students' attained knowledge levels, to determine if using a set induction at the beginning of a lesson will have a significant effect on students' attitudinal perspectives towards the lesson, to determine if using a set induction at the beginning of a lesson will have a significant effect on student's engagement levels throughout the lesson. To address these objectives, a quasi–experimental study using four separate agricultural education classrooms was conducted. Descriptive and comparative analyses were then performed on all participating groups.

The results of this study illustrate the following conclusions: (a) there is no significant difference in student knowledge between the treatment and control groups; (b) there is no significant difference in student attitude between the treatment and control

groups; (c) the group that received the set induction was more engaged than the group that did not.

These findings have implications to agricultural educators in designing lesson plans that can better engage students from the start. The results are also significant to researchers in this field in that they may choose to further their studies in this area of focus. Additional collected data could be to be extremely useful to those studying the use and effects of set inductions in classroom methodologies.

DEDICATION

To my family

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

This thesis is organized using four chapters. Chapter I will provide an overview of the research problem and the study. Chapter II is structured as a standalone journal article focused on the effects of a set induction on student knowledge and attitudes. Chapter III is a standalone journal article focused on the effects of a set induction on student engagement. Chapter IV provides overall conclusions, recommendations, and implications from this research.

Since the early 1980's, American secondary schools have been criticized for their poor curriculum and even more poor is the neglect of higher–order thinking and problem solving efforts within that curriculum (Newmann, 1992). The studies that support this criticism have swarmed local, state, and national forums with proposals for reform. No Child Left Behind (NCLB) has been put in place nationwide to establish accountability in all public schools, for teachers and students.

In the challenging and changing world of education, educators are constantly working to discover ways to keep students motivated and engaged with the hopes that this will increase learning and yield more favorable attitudes of the learning experience.

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This thesis follows the style of *The Journal of Agricultural Education.*

According to Bruner (1960), "the best way to create interest in a subject is to render it worth knowing, which means to make the knowledge gained usable in one's thinking beyond the situation in which it has occurred" (p.31).

Set inductions in a lesson are a variety of different techniques used at the beginning of a lesson in effort to pique interest or prepare learners for learning (Oman, 2002). These set inductions, sometimes referred to as an interest approach or anticipatory sets, can be defined as a event to focus and grab the students attention and normally takes place, but does not have to be, toward the beginning of the class period; can be put into place when introducing a new or unfamiliar topic (Oman, 2001). It is thought that "to enable learners to reach higher intellectual standards, we will have to improve our ability to provoke thought, curiosity, and drive" (Wiggins & McTighe, 2005, p.202). Schuck (1970a) responds to the topic of set inductions by claiming the readings and studies claim set as a crucial variable in determining classroom learning styles and that teachers are the primary agent in bringing forth curiosity in a student and introducing a student's set in the direction of learning.

According to Kraus (1995), the concept of attitude and its effect on behavior has obtained a vital role in understanding human thought for scientists and practitioners. Fishbein and Ajzen (1975) referred to attitude as a concept that "represents a person's general feeling of favorableness or unfavorableness toward some stimulus object" (p. 216). They also spoke of the connection between beliefs and attitudes in relation to the formation of those attitudes as a result of observations and inferences throughout one's life. Creating better attitudes in students is a lifelong process which at times lies in the

hands of the teacher. For the past decade, researchers, educators and law makers have been analyzing research in efforts of finding ways to keep all students engaged in the sciences (Knapp, 1997). According to the National Science Foundation (2002), special attention should be paid to methods in which to engage underrepresented groups due to the low numbers of professionals from that group in scientifically–based fields.

The engagement level of a student is crucial to the motivational level of the student during the learning process. An educator's passion for the subject can be the source behind motivation and engagement (Hunter, 1994). An abnormally high level of care can lead to anxiousness in some learners, whereas others may excel when in that mental state (Hunter). The more motivated a student, the higher the likelihood of their efforts for success (Beeland, 1992). Many have heard the reference made of good teaching as an art and a science. In relation to agricultural education programs, Phipps and Osborne (1988) drew conclusions that a critical element to a well rounded education is one of meaning and practical application. Learning becomes an easier and more enjoyable process as meaning becomes greater in the mind of the learner (Hunter, 1976).

The purpose of this study is to determine the effect of set inductions on student knowledge, attitude, and engagement levels. In theory, when students are exposed to a lesson approach that draws their interest and that makes positive connections within their schema, it will have more meaning to them and in turn, they will then maintain better engagement levels throughout the lesson. In the text *Methods of Teaching Agriculture*, Newcomb, McCracken, Warmbrod, and Whittington (2004) made reference to the idea

that agricultural education teachers should include a methodology of creating need and interest at the beginning of a lesson. This study tested that theory.

Statement of the Problem

Agricultural education text books (Newcomb, et al., 2004) advocate the use of set inductions in a lesson. However, the effect of using a set induction at the beginning of a lesson on the knowledge, attitude, and engagement levels of students in a high school agricultural science classroom has not been empirically documented.

Objectives

This study was guided by the following objectives:

1. Determine if using a set induction at the beginning of a lesson will have a significant effect on students' attained knowledge levels

2. Determine if using a set induction at the beginning of a lesson will have a significant effect on students' attitudinal perspectives towards the lesson

3. Determine if using a set induction at the beginning of a lesson will have a significant effect on student's engagement levels throughout the lesson

Definition of Terms

For the purpose of this study, the following definitions of pertinence were employed:

Set – a cognitive process perceived or activated by stimulus from a person in an environmental situation with the agenda of determining how one is predisposed to what is attended to in any given scenario or situation.

Set induction – Deliberately establishing a frame of reference in an educational environment for the sole purpose of attaining attention and/or engagement and reaching desired behavioral objectives from that learning experience. Set inductions are often induced by the teacher. Set inductions are also often referred to as interest approaches or anticipatory sets.

Summary

From a theoretical perspective, set inductions should have an effect on student learning. From a practical standpoint, set inductions are advocated as an important component in agricultural education lessons. However, the literature is void of empirical data that examined the effect of set inductions in agricultural education. This study will begin to fill that void. Chapter II will outline findings related to student knowledge and attitudes. Chapter III will provide findings related to student engagement. Chapter IV will give an overall set of conclusions, recommendations, and implications.

CHAPTER II

THE EFFECT OF SET INDUCTION IN A LESSON ON KNOWLEDGE AND

ATTITUDE OF HIGH SCHOOL AGRICULTURAL SCIENCE STUDENTS

Overview

This purpose of this quasi–experimental study was to investigate the effects of using a set induction at the beginning of a lesson on student knowledge and attitude. A total of four classes were randomly assigned and administered one lesson with a set induction and one lesson without a set induction. Following each lesson, the students' knowledge and attitude were assessed. The content of the lessons was adapted from the LifeKnowledge curriculum (National FFA Organization, 2004) and included Personal Growth and Career Success. Overall, there was no difference in knowledge from the students who were exposed to set inductions to those who received no set induction. In addition, as a whole, there was no difference in attitude between the students who received exposure to a set induction and those who did not. Several suggestions are discussed concerning improvements for instructional design in relation to student knowledge and attitude.

Introduction

American secondary schools have long been criticized for poor curricula and neglect of higher–order thinking and problem solving. This criticism has led to local, state, and national calls for reform (Newmann, 1992). In this ever–changing world of education, educators are constantly working to discover new ways to keep students

motivated and engaged that will ultimately cause higher levels of learning and better attitudes of the learning experience. "The teaching approach used by educators is very important to the success of the learning process" (Dyer & Osborne, 1999, p. 11). A study by Schuck (1981) revealed that in determining student retention and achievement, set induction is a vital variable to investigate.

Set inductions in a lesson, also referred to as interest approaches, are a variety of different techniques used at the beginning of a lesson in effort to peak interest or switch the learners mind to a different thought process (Oman, 2002). Schuck (1971) explains the main point of a set induction by stating the following:

> The purpose of the set induction procedure is to focus pupil
> attention on some commonly known experimental referent
> (orientation) that becomes the vehicle by which the teacher
> makes the passage from the known to new material
> (transition) and builds continuity from lesson to lesson.
> The induced set lends meaning to new material through the
> use of analogy rather than by simple association
> (operation) and encourages pupil involvement in the lesson
> as judged by the teacher (evaluation). (p. 406)

According to Kraus (1995), the concept of attitude and its' effect on behavior has obtained a vital role in understanding human thought for scientists and practitioners. Fishbein and Ajzen (1975) referred to attitude as a concept that "represents a person's general feeling of favorableness or unfavorableness toward some stimulus object" (pg.

216). They also spoke of the connection between beliefs and attitudes in relation to the formation of those attitudes as a result of observations and inferences throughout one's life (Fishbein & Ajzen, 1975). Creating better attitudes in students is a lifelong process which at times lies in the hands of the teacher. Myers & Dyer (2004) made reference to good teaching as an art and a science. In relation to the agricultural education programs, Phipps and Osborne (1988) drew conclusions that a critical element to a well–rounded education program is one of meaningfulness and practical application. In theory, when students are exposed to a set induction that draws their attention and makes connections within their existing schema, it will have more meaning to them and in turn, they will then acquire positive attitudes towards that teaching style. Schuck (1970b) supports this theory with the thought that the induction of a set is the teachers' initial instructional act with the purpose of creating a frame of reference purposefully designed to assist in the creation of a connection between the experiential field of the learner and the lesson's behavioral goals. Newcomb, McCracken, Warmbrod, and Whittington (2004) advocated that agricultural education teachers should create need and interest at the beginning of every lesson. This study tests that theory.

Theoretical Framework

The theoretical framework for this topic encompasses cognitive learning theories, constructivism, experiential learning, and brain–based learning. Learners construct new knowledge through assimilation and accommodation with every experience (Roberts, 2006). This assertion is also consistent with brain–based learning, in that learning consists of schematic connections that take place in the brain and then determine how

learners interact with the environment. Experiential learning theory also applies due to

the personal cognitive connections that take place during the reflective process in the

experiential learning cycle (Roberts, 2006).

Conceptually, the model proposed by Dunkin and Biddle (1974) provides a visual

representation of how the variables in this study relate to each other. In this adaptation of

Dunkin and Biddle's model, as seen in figure 1, the presage and context variables are

held constant. The process variable of interest is if a lesson included a set induction. The

product variables are student knowledge and attitudes.
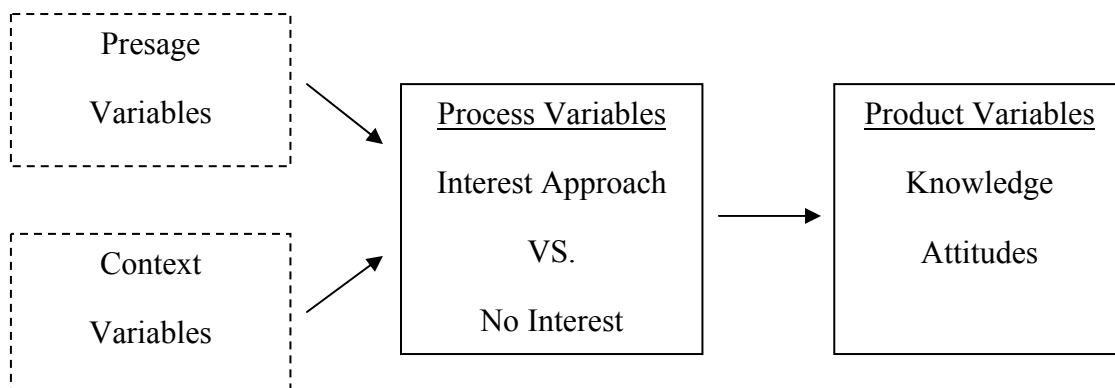
Figure 1. Adaptation of Dunkin & Biddle's model #1

Previous research in agricultural education is deficient in the examination of the effects of set inductions. However, other literature provides some insight. In 2002, Oman examined the impact of set inductions on student interest in technology education. The results of the study suggest that set inductions are favored by educational technology students. In an earlier study, Schuck (1981) investigated the use of set induction and its effect on student knowledge retention. He concluded that students taught by teachers trained to use set inductions will have greater achievement and attainment than those taught by teachers not receiving training for the implementation of set inductions into a lesson. In 1982, Schuck also wrote of research completed dealing with a quasi-experimental setup and how it was important to examine the effects that the independent variables (teacher training & class size) would have in a classroom setting.

In relation to transfer of knowledge, analogies can be a risky avenue for set inductions due to the risk of students being "functionally fixed" on the simpler concepts (Solomon,1994, p. 371). Solomon also spoke of the importance as to how one could assist in the transfer of knowledge in the science classroom through using multiple analogies and an understanding of the student's prior knowledge to help them relate and better understand. Although, in some states, science achievement improves with enrollment in the school's agriscience program (Ricketts, Duncan, & Peake, 2006), other states might be seeking other avenues for improvement of standardized tests scores.

Purpose of Study

This purpose of this study was to examine the effects of using a set induction at the beginning of a lesson on student knowledge and attitude. Therefore, two objectives were used to guide this investigation:

1. Determine if using a set induction at the beginning of a lesson will have a significant effect on students' attained knowledge levels.

2. Determine if using a set induction at the beginning of a lesson will have a significant effect on students' attitudinal perspectives towards the lesson.

Methodology

This study used a quasi–experimental design to test the effects of using a set induction at the beginning of a lesson on student knowledge and attitude. The interest approach was the independent variable in this study. The dependant variables were knowledge and attitude. Quantitative analysis was used to study the relationships between student knowledge and attitude of groups given a set induction lesson delivery versus a lesson delivered without a set induction. Each group was randomly exposed to a treatment and a control. Accordingly, a post–test control group design, as illustrated in figure 2, was implemented (Campbell & Stanley, 1963).

$$
\begin{array}{ccc}
R & X & O_1 \\
\hline
R & & O_2
\end{array}
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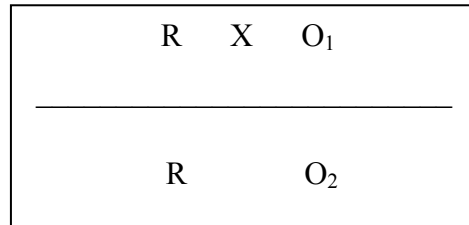
Figure 2. Campbell & Stanley's model of post–test control group #1

Population and Sample

      The population for this study was all student enrolled in an introductory agricultural education course in Texas. A sample was purposely selected based on the ability of the teacher to effectively deliver both teaching approach treatments. The reason for choosing an introductory course was in order to attempt to alleviate the probability for prior knowledge of the subject matter that was being measured. Schools for participation were chosen under the following criteria: proximity to Texas A&M University, teachers who had at least one year of experience teaching the introductory agricultural education course, and availability of two sections of the course at each school. The study was conducted as a part of normal class activities.

      The sample contained a total of four classes; two from school one and two from school two. The sample included a total 55 subjects. Each class was observed twice. All

four classes received one lesson with the treatment and one lesson without. A summary of the four classes is as follows (Table 1):

1. Applied agricultural science and technology class with students from ninth to twelfth grade; 18 students participated in both the experimental and control group. This class consisted of ten (10) male students and eight (8) female students. This class received a set induction with lesson one and no set induction with lesson two.

2. Applied agricultural science and technology class with students from ninth to twelfth grade; 14 students participated in both the experimental and control group. This class consisted of seven (7) male and seven (7) female students. This class received a set induction with lesson two and no set induction with lesson one.

3. Applied agricultural science and technology class with students from ninth to tenth grade; 12 students participated in both the experimental and control group. This class consisted of eight (8) male students and four (4) female students. This class received a set induction with lesson two and no set induction with lesson one.

4. Applied agricultural science and technology class with students from ninth to twelfth grade; 14 students participated in both the experimental and control group. This class consisted of five (5) male students and nine (9) female students. This class received a set induction with lesson one and no set induction with lesson two.

Table 1. Summary of Sample

		Gender		Protocol	
				Lesson 1	Lesson 2
	Male	Female		Personal Growth	Career Success
School 1					
Class 1 (N=18)	10	8		Treatment	Control
Class 2(N=14)	7	7		Control	Treatment
School 2					
Class 1(N=12)	8	4		Control	Treatment
Class 2(N=14)	5	9		Treatment	Control

Procedures

The lessons used in this study were adapted from the Life Knowledge curricula. The lessons were formatted so that each section of students would be exposed to one lesson with an obvious set induction and one without a set induction. The lesson plans for the control and treatment were identical, with the exception of including a set induction.

One lesson was dealing with the topic of personal growth. The objective of the lesson was that students would be able to define personal growth and be able to describe the importance of personal growth. The set induction for that lesson was described as a time machine activity. The purpose of the activity was to have the teacher step out of the room and return moments later in full official dress in the role of an FFA officer. The instructor would then play the role of a guest speaker and talk about their own personal growth through their involvement in the FFA. The other lesson was on the topic of career success. The objective for that lesson was that the students would be able to define career success and identify skills necessary to create career success. The set induction for that lesson involved assessing pictures of professionals in attire and discussing if they are "dressed for success" in their career.

The researcher met with the teachers participating in the study to insure proper implementation/delivery of the protocol. At this meeting, a few changes were made in order to insure feasibility and ownership of the lessons by the teachers. Also, at this meeting, the treatment was randomly assigned to the classes in such a manner that each class would receive one lesson with a set induction and one without and also that each lesson would be delivered to one class with a set induction and the other without (Figure 3).

School 1	Lesson 1	Lesson 2
Class 1	R X O	R O
Class 2	R O	R X O
School 2		
Class 1	R O	R X O
Class 2	R X O	R O

Figure 3. Quasi–experimental design of the study #1

Prior to data collection, the researcher visited the classes in order to minimize any situations that would fall under the Hawthorne Effect. Upon data collection in participating classrooms, the researcher made sure to place herself in the same location in the classroom as she did during the observatory visit. This was done in effort to minimize any extraneous variables.

In addition, prior to any data collection, all subjects were informed of the study and what to expect during the days of data collection. Each student was provided appropriate consent paperwork to be completed by their parents. All subjects were given the opportunity to ask questions pertaining to the study and were also allowed to decline participating in the study without penalty. All participating subjects for this study turned in a document, signed by themselves and a parent/guardian, allowing the researcher to collect and publish data gathered during the research study.

Implementation

During each lesson, the researcher observed the class to verify protocol implementation. At the conclusion of each lesson, student knowledge and attitude were assessed. Knowledge was assessed using adaptations of the assessment tool included in the LifeKnowledge curricula. For lesson one, Personal Skills, the knowledge assessment consisted of eight matching questions that included a word bank. For lesson two, Career Success, the knowledge assessment had five questions that included multiple choice and ranking items. These instruments were deemed valid due to the LifeKnowledge development process. The number of multiple choice items in each knowledge assessment (8 items in the Personal Skills assessment and 3 items in the Career Success assessment) did not allow for using internal consistency as a measure of reliability. However, treating total knowledge scores on the Personal Skills assessment and Career Success assessment as parallel forms yielded a correlation of .81. The attitude instrument was adapted from a thesis paper on student attitudes towards career education in high school (Wright, 2001). The instrument version used in the current study consisted of seven items accompanied by five–point a summated rating scale of 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agrgee, and 5 = strongly agree. Post–hoc reliability analysis yielded Cronbach alpha values of .86.

Observation of each class revealed that each teacher followed the protocols for proper implementation with the following exceptions: (a) school one, class one, lesson one – the class was unable to complete the "Taking it to The Streets" portion of the lesson before the assessment due to time constraints; (b) school one, class two, lesson

one – the instructor showed less enthusiasm during implementation; (c) school two, class one, lesson one – the definition of career success was left on the front board during the assessment; and (d) school two, class one, lesson two – the instructor failed to proper implement the planned lesson by not wearing the official dress when acting out the role playing set induction at the beginning of the lesson. These inconsistencies in implementation could have played a role in the variation of knowledge and attitude data between the different classes.

Data Analysis

Given that two different knowledge assessments were used, the data taken from the knowledge assessments was converted into T–scores for the paired samples analysis to allow for accurate comparisons. Measures of effect size were also calculated for each comparison. The nature of the design of this research lends itself to multiple comparisons. Each class was compared to itself since they received one lesson with a set induction and one without (pairwise comparisons). Pairwise t-tests were used for these comparisons. Additionally, since at each school, each lesson was delivered to one class with a set induction and one without, classes were compared to each other (independent comparisons). Independent t-tests were used for these comparisons. Finally, all data from treatment classes was compared with all data from control classes.

Findings

The first objective was to determine if using a set induction at the beginning of a lesson will have a significant effect on students' attained knowledge levels (Table 2). School one/Class one had a mean of 47.93 for the control with a standard deviation of 12.29 and a mean of 46.67 for the treatment with a standard deviation of 11.63. The $t =$ .26, $p =$ .80 and effect size for this class was .08. School one/Class two had a mean of 49.43 for the control with a standard deviation of 11.27 and a mean of 48.04 for the treatment with a standard deviation of 10.04. The $t =$ .40, $p =$ .70 and effect size for this class was marked at .11. For the control lesson of School two/Class one, the mean was 50.10 with a standard deviation of 8.96 and the treatment lesson had a mean of 48.71 with a standard deviation of 8.50. The $t =$ .77, $p =$ .45 and effect size for this class was .18. School two/Class two had a control mean of 55.40 with a standard deviation of 8.56 and a treatment mean of 53.29 with a standard deviation of 8.35. The $t =$ .87, $p =$ .40 and effect size for this class was .23.

Table 2. Differences in Knowledge T–Scores for Paired Samples

| | Lesson 1 | | | | Lesson 2 | | | | | | Effect |
| | Control | | Treatment | | Control | | Treatment | | | | |
	T	*SD*	*T*	*SD*	*T*	*SD*	*T*	*SD*	t^1	*p*	*Size*
School 1/Class 1 (*n* = 12)			46.67	11.63	47.93	12.29			.26	.80	.08
School 1/Class 2 (*n* = 14)	49.43	11.27					48.04	10.04	.40	.70	.11
School 2/Class 1 (*n* = 18)	50.10	8.96					48.71	8.50	.77	.45	.18
School 2/Class 2 (*n* = 14)			53.29	8.35	55.40	8.56			.87	.40	.23

Note. [1]Paired Samples t–Test

When comparing knowledge scores of different classes taught the same lesson (with and without treatment), raw scores were used in the tables (Table 3). School one/Class one had a mean of 85.71 for the control with a standard deviation of 18.25 and a mean of 81.25 for the treatment with a standard deviation of 18.84. The $t = -.61$, $p = .55$ and effect size for this class was .12. School one/Class two had a mean of 86.81 for the control with a standard deviation of 14.52 and a mean of 91.96 for the treatment with a standard deviation of 13.52. The $t = 1.03$, $p = .31$ and effect size for this class was

marked at .18. For the control lesson of School two/Class one, the mean was 58.33 with a standard deviation of 26.23 and the treatment lesson had a mean of 58.57 with a standard deviation of 21.43. The $t = .03$, $p = .98$ and effect size for this class was .01. School two/Class two had a control mean of 74.29 with a standard deviation of 18.28 and a treatment mean of 60.00 with a standard deviation of 18.15. The $t = -2.02$, $p = .04$ and effect size for this class was .37. This class also had a significance value of .04 which indicates a statistical difference. When comparing all the control groups to the treatment groups, the control group had a mean of 77.63 with a standard deviation of 21.72 and the treatment group had a mean of 71.77 and a standard deviation of 22.78. The $t = -1.42$ and $p = .16$. Due to the qualitative nature of scoring the assessment tool, standard reliabilities could not be performed. The A correlation test was conducted and yielded a result of .89. For the first dependent variable (knowledge), only one of the eight comparisons yielded a significant difference. However, as noted earlier the instructor for this class failed to properly implement the protocol.

Table 3. Differences in Knowledge for Independent Samples

	Control			Treatment					Effect Size
	n	*M*	*SD*	*n*	*M*	*SD*	*t[1]*	*p*	*Effect Size*
Lesson 1/School 1	14	85.71	18.25	12	81.25	18.84	−.613	.55	.12
Lesson 1/School 2	18	86.81	14.52	14	91.96	13.52	1.03	.31	.18
Lesson 2/School 1	12	58.33	26.23	14	58.57	21.43	.03	.98	.01
Lesson 2/School 2	14	74.29	18.28	18	60.00	18.15	−2.02	.04	.37
Overall	58	77.63	21.72	58	71.77	22.78	−1.42	.16	.13

Note. [1]Independent Samples t–Test

The second objective was to determine if using a set induction at the beginning of a lesson will have a significant effect on students' attitudinal perspectives towards the lesson. The results showed no significant difference in attitude. Researchers used a paired sample report to show differences in attitude from the control lesson to the treatment lesson for each class (table 4). School one/Class one had a mean of 3.83 for the control with a standard deviation of .70 and a mean of 3.92 for the treatment with a standard deviation of .82. The $t = .74$, $p = .48$ and effect size for this class was .22. School one/Class two had a mean of 3.26 for the control with a standard deviation of 1.10 and a mean of 3.16 for the treatment with a standard deviation of .83. The $t = .56$, p

= .59 and effect size for this class was marked at .15. For the control lesson of School two/Class one, the mean was 4.00 with a standard deviation of .56 and the treatment lesson had a mean of 3.81 with a standard deviation of .52. The $t = 1.98$, $p = .07$ and effect size for this class was .43. School two/Class two had a control mean of 3.54 with a standard deviation of .59 and a treatment mean of 3.79 with a standard deviation of .73. The $t = 1.53$, $p = .15$ and effect size for this class was .39.

Table 4. Differences in Attitudes for Paired Samples

| | Lesson 1 | | | | Lesson 2 | | | | | | |
| | Control | | Treatment | | Control | | Treatment | | | | |
	M	SD	M	SD	M	SD	M	SD	t^1	p	Effect Size
School 1/Class 1 (n = 12)			3.92	.82	3.83	.70			.74	.48	.22
School 1/Class 2 (n = 14)	3.26	1.10					3.16	.83	.56	.59	.15
School 2/Class 1 (n = 18)	4.00	.56					3.81	.52	1.98	.07	.43
School 2/Class 2 (n = 14)			3.79	.73	3.54	.59			1.53	.15	.39

Note. [1]Paired Samples t–Test

Researchers also calculated the differences in attitude between classes in the same school (Table 5). School one/Class one had a mean of 3.26 for the control with a standard deviation of 1.10 and a mean of 3.91 for the treatment with a standard deviation of .82. The $t = 1.72$, $p = .10$ and effect size for this class was .33, therefore classifying this effect size as small. School one/Class two had a mean of 4.00 for the control with a standard deviation of .56 and a mean of 3.79 for the treatment with a standard deviation of .73. The $t = -.96$, $p = .35$ and effect size for this class was marked at .17. For the control lesson of School two/Class one, the mean was 3.83 with a standard deviation of .7 and the treatment lesson had a mean of 3.16 with a standard deviation of .83. The $t = -2.19$, $p = .04$ and effect size for this class was .41, therefore classifying this effect size as small. This class also had a slight significance reading (.04). School two/Class two had a control mean of 3.54 with a standard deviation of .59 and a treatment mean of 3.81 with a standard deviation of .52. The $t = 1.38$, $p = .18$ and effect size for this class was .24. Overall, the control group had a mean of 3.68 and a standard deviation of .79. The treatment group had a mean of 3.67 and a standard deviation of .76. The $t = -.03$ and $p = .97$. The effect size was 0.

Table 5. Differences in Attitudes for Independent Samples

| | Control | | | Treatment | | | | | Effect |
	n	M	SD	n	M	SD	t^1	p	Size
Lesson 1/School 1	14	3.26	1.10	12	3.91	.82	1.72	.10	.33
Lesson 1/School 2	18	4.00	.56	14	3.79	.73	−.96	.35	.17
Lesson 2/School 1	12	3.83	.70	14	3.16	.83	−2.19	.04	.41
Lesson 2/School 2	14	3.54	.59	18	3.81	.52	1.38	.18	.24
Overall	58	3.68	.79	58	3.67	.76	−.03	.97	.00

Note. [1]Independent Samples t–Test

Conclusions

Based on the findings of this study, the following conclusions are made:

1. The use of a set induction at the beginning of a lesson had no effect on the students'
   level of attained knowledge. This finding contradicts many learning theories.
   Theoretically speaking, it is thought that if a student becomes meaningfully engaged
   at the very beginning of a lesson and can positively apply the given information to
   their lives, then their attitudes with be positive towards the lesson. This,
   subsequently, will affect the students' level of knowledge. This conclusion also
   stands in contrast to that of Schuck (1985). The variance in implementation, or

inconsistencies of the protocol, could account for the incongruence between observations and theory.

2. Based on the findings of this study, it was also concluded that a set induction has no effect on student attitudes. This conclusion contradicts the theoretical importance of set inductions and the work of Oman (2002). However, as indicated above, implementation of this protocol may explain why no difference was found.

Recommendations

Although theory would support the use of a set induction in a classroom in order to improve student knowledge and attitude, the data from this study does not support this. Upon analysis of the measured data on attitude and knowledge levels of the participants, the researcher recommends that further data be collected in efforts to further examine the findings of this study. As different subjects and topics are taught and measured, and different approaches to gain interest are used, subsequent studies may show differences. The information from this study and further studies could prove to be very useful to teacher preparation programs and in–service programs alike.

On another note, the researcher would recommend that due to the nature of this study, further research be implemented on the effects of a set induction on student motivation. Also, researchers would recommend a similar study in another location in an effort to support or disprove and similarities of the data found in this study. There is an extensive amount of literature available to support a study of that nature.

CHAPTER III

THE EFFECT OF SET INDUCTION IN A LESSON ON ENGAGEMENT

LEVELS OF HIGH SCHOOL AGRICULTURAL SCIENCE STUDENTS

Overview

This quasi–experimental study was designed to investigate and determine if the use of a set induction, also referred to as interest approach, at the beginning of a lesson will have an effect on student engagement levels throughout that lesson. Four chosen introductory agricultural education courses were randomly assigned and administered lesson with and without set inductions. During each lesson, students were measured for their engagement levels throughout that lesson. Engagement levels were then compiled and analyzed. The topics of the lessons were Personal Growth and Career Success and were adaptations of the LifeKnowledge Curricula. Based on the findings of this study, using a set induction at the beginning causes students to be more engaged throughout the lesson. These findings are of significant importance in the role of instructional design and educational methodology and implementation in agricultural education.

Introduction

As education as a whole changes, so do the students. "With the onset of the MTV era, teachers have found themselves in daily competition with professional entertainers to motivate and hold students' interest" (Dyer & Osborne, 1999, p.11). Educators strive to continue evolving in their methods to retain the attention and engagement levels of their students. Today's learners are not of the same mind set as yesterday's learners.

Student engagement in the sciences has been a topic of discussion and research analysis among educators, researchers, and law makers for years (Knapp, 1997). According to the National Science foundation (2002), there are a noticeably low number of underrepresented groups in professionally science–based fields and therefore, special attention should be targeted towards engaging that group.

Engagement levels of students are critical to the motivational levels of the students during the learning process. Educators should place a certain level of concern on the subject of compassion for a subject when contemplating student motivation and engagement. An abnormally high level of care can lead to anxiousness in the learner, whereas other may excel when in that mental state (Hunter, 1995). The connections between emotions and learning are supported by Zull (2002, p.74), who said that "our emotions influence our thinking more than our thinking influences our emotions." An emotion–tying interest approach would definitely fall into this category of cognition.

The higher the level of motivation in a student, the higher the likelihood of their efforts for success (Beeland, 2002). Myers & Dyer (2004) made reference to good teaching as an art and a science. In relation to agricultural education programs, Phipps and Osborne (1988) concluded that meaningfulness and practical application are critical elements to a well rounded education. Learning becomes an easier and more enjoyable process as meaning becomes greater in the mind of the learner (Hunter, 1976). This may sound like a fairly simply principle, but the crucial nature of this statement should not be handle lightly by those in the world of educating young minds. As the generations change, ways to make the lesson meaningful to the members of that generation can often

become a common and daunting challenge. A set induction, sometimes referred to as a

interest approach or anticipatory set, can be defined as an event to grab and focus

students attention and typically takes place at or towards the beginning of a class period

but does not have to be limited to; can be put in place when introducing a topic (Oman,

2001).

The purpose of this study was to determine the effect of set inductions on student

engagement levels. In relation to learning, engagement can be defined as "students'

behavioral, cognitive, affective, and social involvement in instructional activities with

their teachers and classmates" (Lutz, Guthrie, & Davis, 2006, p.3). Theoretically

speaking, when students are exposed to a lesson introductory approach that draws their

attention and that makes positive connections within their schema, it will mean more to

them and therefore maintain better engagement levels throughout the lesson. Hunter

(2004) made a connecting point in that the degree of meaning of the material to the

student is a factor of major importance and that educators should use experiences that

student's can relate to their lives in order to make better connections and transfer more

easily. In the text *Methods of Teaching Agriculture*, Newcomb, McCracken, Warmbrod,

and Whittington (2004) make reference to the idea that agricultural education teachers

should include a methodology of creating need and interest at the beginning of a lesson.

This study examines that concept.

Theoretical Framework

"Several psychologists have contended that one of the essential conditions in learning is that the learner be actively engaged in the process in order to maximize the possibility of new behavioral responses" (Schuck, 1970, p. 223).Although the precious statement sounds as if it were behavioral theory based, this topic encompasses many cognitive learning theories for its theoretical framework. Cognitively speaking, when information is learned, knowledge is constructed and reconstructed in the learners' brain where structures are acquiring new content and relating existing content to existing knowledge for understanding (Herschbach, 1998). Many may refer to this as a type of scaffolding. Scaffolding is the process of connecting new information to existing information with the intent of being able to retrieve that information easier when needed in the future (National Research Council, 2000). Set inductions lend themselves to the support of scaffolding through providing that connecting and transferable piece of knowledge. In a cognitive constructivist viewpoint, "The learner's construction of knowledge is a reconstruction of what truly exists" (Roberts, 2006, p.18). As an educator, one must assess what a student already knows and understands. Then, in attempt to reach the edge of their zone of proximal development, "help them identify ways that they can answer their own questions" (Barell, 2003, p.27). In 1974, Dunkin and Biddle made reference to a model based off of previous research dealing with teaching students and retaining knowledge. The following model (figure 4) could be considered an adaptation of Dunkin and Biddle's model.
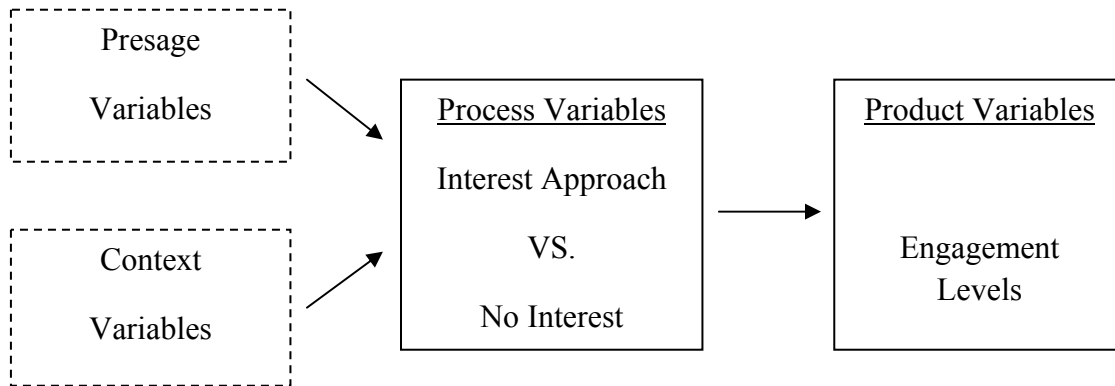
Figure 4. Adaptation of Dunkin & Biddle's model #2

Conceptually, the model proposed by Dunkin and Biddle (1974) provides a visual representation of how the variables in this study relate to each other. In this adaptation of Dunkin and Biddle's model, the presage and context variables are held constant. The process variable of interest is if a lesson included a set induction. The product variable is engagement levels.

Purpose of Study

This purpose of this study was to determine the effects of using a set induction at the beginning of a lesson on student engagement levels. A single objective was used to guide this investigation.

1. Determine if using a set induction at the beginning of a lesson will have a significant effect on student's engagement levels throughout the lesson.

Methodology

To test the null hypothesis, a quasi–experimental design was implemented. The independent variable was if a set induction was included with the lesson. The dependant variable engagement levels of the students.

Population

The population of interest was all students enrolled in an introductory agricultural education class. A sample was purposely selected based on proximity to Texas A&M University, teachers who had at least one year of experience teaching the introductory course, and availability of two sections of the course. Ultimately, two schools were chosen, each having two sections of the course, for a total of four classes in the sample. The sample consisted of 55 students. The rationale for choosing an introductory course was to alleviate the probability for prior knowledge of the subject matter that was being measured therefore creating a blank slate so to speak. All four classes rotated through the opportunity to serve as both control and treatment groups. During the control class, the students were exposed to a designed lesson that would not involve any type of attention grabber or hook at the beginning of the lesson delivery. During the treatment class, students were exposed to a set induction at the beginning of the lesson.

Each class of students served as both a treatment group and a control group in order to allow the researches to study the correlation of the dependent variable. The breakdown of each class is a follows (Table 6):

1. Applied agricultural science and technology class with students from ninth to twelfth grade; 18 students participated in both the experimental and control group. This class

consisted of ten (10) male students and eight (8) female students. This class received the treatment in lesson one and was a control for lesson two.

2. Applied agricultural science and technology class with students from ninth to twelfth grade; 14 students participated in both the experimental and control group. This class consisted of seven (7) male and seven (7) female students. This class received the treatment in lesson two and was a control for lesson one.

3. Applied agricultural science and technology class with students from ninth to tenth grade; 12 students participated in both the experimental and control group. This class consisted of eight (8) male students and four (4) female students. This class received the treatment in lesson two and was a control for lesson one.

4. Applied agricultural science and technology class with students from ninth to twelfth grade; 14 students participated in both the experimental and control group. This class consisted of five (5) male students and nine (9) female students. This class received the treatment in lesson one and was a control for lesson two.

Table 6. Demographic Distribution

			Protocol	
	Gender		Lesson 1	Lesson 2
	Male	Female	Personal Growth	Career Success
School 1				
Class 1 (N=18)	10	8	Treatment	Control
Class 2(N=14)	7	7	Control	Treatment
School 2				
Class 1(N=12)	8	4	Control	Treatment
Class 2(N=14)	5	9	Treatment	Control

Each class was exposed to a treatment and a control, based on random assignment. Each assignment is denoted in Table 6. As seen in figure 5, Campbell & Stanley (1963) speak much on the effects of treatment and control groups in relation to post–test control group only designs. A common model used to describe this research could appear as follows:

$$R \quad X \quad O_1$$

_____

$$R \qquad O_2$$
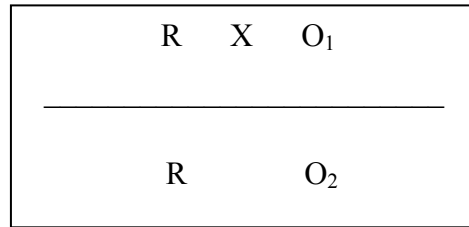
Figure 5. Campbell & Stanley's model of post–test control group #2

Both lessons were adapted from the LifeKnowledge curricula. One lesson was

dealing with the topic of personal growth. The objective of the lesson was that students

would be able to define personal growth and be able to describe the importance of

personal growth. The set induction for that lesson was described as a time machine

activity. The purpose of the activity was to have the teacher step out of the room and

return moments later in full official dress in the role of an FFA officer. The instructor

would then play the role of a guest speaker and talk about their own personal growth

through their involvement in the FFA. The other lesson was on the topic of career

success. The objective for that lesson was that the students would be able to define career

success and identify skills necessary to create career success. The set induction for that

lesson involved assessing pictures of professionals in attire and discussing if they are

"dressed for success" in their career. Accordingly, the design of the study is portrayed in

Figure 6.

School 1	Lesson 1	Lesson 2
Class 1	R X O	R O
Class 2	R O	R X O
School 2		
Class 1	R O	R X O
Class 2	R X O	R O

Figure 6. Quasi–experimental design of the study #2

Procedures

  A meeting was held with the teachers to insure proper implementation/delivery of the developed lesson plans. At this meeting, a few changes were made in order to insure feasibility and ownership of the lessons by the cooperating teachers. Before implementing the protocol, the researcher visited each of the classes to minimize any situations that would fall under the Hawthorne Effect. In addition, prior to any data collection, all subjects were informed of the study and what to expect during the days of data collection. Each student was given an informational sheet for them and their parents in order to better educate them on the up and coming research study that they would be asked to partake in. All subjects were given the opportunity to ask questions pertaining to

the study and were also allowed to decline participating in the study without penalty. All participating subjects for this study turned in a document, signed by themselves and a parent/guardian, allowing the researcher to collect and publish data gathered during the research study.

Implementation

Observation of each class revealed that each class instructor followed protocol for proper implementation. The following deviations from the protocol were observed: (a) school one, class one, lesson one – the class was unable to complete the "Taking it to The Streets" portion of the lesson before the assessment due to time constraints; (b) school one, class two, lesson one – the instructor showed less enthusiasm during implementation; (c) school two, class one, lesson one – the definition of career success was left on the front board during the assessment; and (d) school two, class one, lesson two – the instructor failed to proper implement the planned lesson by not wearing the official dress when acting out the role playing set induction at the beginning of the lesson.

Data were collected by visual observation by the researcher. Students were placed in assigned seats during all data collection classes to allow for easy identification. The researcher attempted to make as little eye contact as possible with participants as well as not draw any attention to herself. There was also no verbal communication made between any of the subjects and the researcher. The researcher coded each student's engagement level in four minute intervals. The codes used included: level 0: zero engagement; examples are sleeping, unrelated conversations with peers, level 1: slight

engagement; examples are texting, drawing, reading off–topic book, writing notes, level 2: mild engagement; examples are quietly and partially talking with friends, partially daydreaming, level 3: moderate engagement; examples are listening to teacher but not involved in or participating in discussions or activities, level 4: engagement; participating in discussions and activities because asked or instructed to and asking knowledge based questions, level 5: active engagement; examples are asking thought–provoking questions, eager to participate in activities, showing signs of wanting to understand the information at high Bloom's levels.

Data Analysis

Data were summarized using descriptive statistics. Comparisons between groups were accomplished by using repeated measures analysis of variance. When comparing data from a control group (no set induction) to a treatment group (set induction), the timing of observations was aligned to account for the amount of time it took for the interest approach. This process allowed for four comparable points at which engagement was measured.

Findings

The objective of this study was to determine if using a set induction at the beginning of a lesson will have a significant effect on student's engagement levels throughout the lesson (Table 7). The analysis of the data, when comparing a class to itself as a control, showed that School 1, Class 1 ($n = 19$), Lesson 1 (treatment), at interval 1 had an engagement mean of 2.89 with a standard deviation of .74. At interval 2, the engagement mean was 3.74 with a standard deviation of .56. At interval 3, it had

an engagement mean of 4.00 with a standard deviation of .00 and at interval 4 it had an

engagement mean of 2.79 with a standard deviation of .79. School 1, Class 1 (n = 19),

Lesson 2 (control), at interval 1 had an engagement mean of 2.79 with a standard

deviation of .71. At interval 2, it had an engagement mean of 3.16 with a standard

deviation of .96. At interval 3, the engagement mean was calculated to be 3.53 with a

standard deviation of .70 and at interval 4 it had an engagement mean of 2.74 with a

standard deviation of 1.82. When comparing the two lessons for School 1, Class 1, there

was no significant difference between the classes (p = .07). The F ratio was marked at

3.59 and the effect size (partial eta squared) was .09.

Table 7. Differences in Engagement for Individual Classes

		Interval						
		1	2	3	4			
		M	M	M	M			
		(SD)	(SD)	(SD)	(SD)	F	p	η_p^2
School 1	Lesson 1	2.89	3.74	4.00	2.79	3.59	.07	.09
	(Treatment)	(.74)	(.56)	(.00)	(.79)			
Class 1	Lesson 2	2.79	3.16	3.53	2.74			
(*n* = 19)	(Control)	(.71)	(.96)	(.70)	(1.82)			
School 1	Lesson 1	2.43	4.00	1.43	3.00	19.62	.00	.43
	(Control)	(.85)	(.00)	(.94)	(1.18)			
Class 2	Lesson 2	3.36	4.14	3.86	3.29			
(*n* = 14)	(Treatment)	(1.28)	(.36)	(.36)	(.73)			
School 2	Lesson 1	2.83	2.92	2.50	2.83	69.94	.00	.76
	(Control)	(.58)	(.29)	(.52)	(.84)			
Class 1	Lesson 2	4.25	4.17	3.42	4.00			
(*n* = 12)	(Treatment)	(.45)	(.84)	(.79)	(.00)			
School 2	Lesson 1	3.57	2.71	2.71	2.50	3.37	.08	.12
	(Treatment)	(.85)	(.83)	(.47)	(.52)			
Class 2	Lesson 2	3.50	2.79	3.36	3.64			
(*n* = 14)	(Control)	(1.02)	(1.42)	(1.01)	(.50)			

Note. Scale = 0: zero engagement, 1: slight engagement, 2: mild engagement, 3: moderate engagement, 4: engagement, 5: active engagement

School 1, Class 2 (*n* = 14), Lesson 1 (control), at interval 1 had an engagement mean of 2.43 with a standard deviation of .85. At interval 2, it had an engagement mean of 4.00 with a standard deviation of .00. At interval 3, it had an engagement mean of 1.43 with a standard deviation of .94 and at interval 4 it had an engagement mean of 3.00 with a standard deviation of 1.18. School 1, Class 2 (*n* = 14), Lesson 2 (treatment), at interval 1 had an engagement mean calculated at 3.36 with a standard deviation of 1.28. At interval 2, it had an engagement mean of 4.14 with a standard deviation of .36. At interval 3, it had an engagement mean of 3.86 with a standard deviation of .36 and at interval 4 it had an engagement mean of 3.29 with a standard deviation of .73. When comparing the two lessons for School 1, Class 2, there was a significant difference between the classes (*p* = .00). The F ratio was marked at 19.62 and the effect size (partial eta squared) is marked at .43.

School 2, Class 1 (*n* = 12), Lesson 1 (control), at interval 1 had an engagement mean of 2.83 with a standard deviation of .58. At interval 2, it had an engagement mean of 2.92 with a standard deviation of .29. At interval 3, the engagement mean was calculated to be 2.50 with a standard deviation of .52 and at interval 4 it had an engagement mean of 2.83 with a standard deviation of .84. School 2, Class 1 (*n* = 12), Lesson 2 (treatment), at interval 1 had an engagement mean of 4.25 with a standard deviation of .45. At interval 2, it had an engagement mean of 4.17 with a standard deviation of .84. At interval 3, it had an engagement mean of 3.42 with a standard deviation of .79 and at interval 4 it had an engagement mean of 4.00 with a standard deviation of .00. When comparing the two lessons for School 2, Class 1, there was a

significant difference between the classes ($p = .00$). The F ratio was marked at 69.94 and the effect size (partial eta squared) is marked at .76.

School 2, Class 2 ($n = 14$), Lesson 1 (treatment), at interval 1 had an engagement mean of 3.57 with a standard deviation of .85. At interval 2, the calculated engagement mean was 2.71 with a standard deviation of .83. At interval 3, it had an engagement mean of 2.71 with a standard deviation of .47 and at interval 4 it had an engagement mean of 2.50 with a standard deviation of .52. School 2, Class 1 ($n = 14$), Lesson 2 (control), at interval 1 had an engagement mean of 3.50 with a standard deviation of 1.02. At interval 2, it had an engagement mean of 2.79 with a standard deviation of 1.42. At interval 3, it had an engagement mean of 3.36 with a standard deviation of 1.01 and at interval 4 it had an engagement mean of 3.64 with a standard deviation of .50. When comparing the two lessons for School 2, Class 2, there was no significant difference between the classes ($p = .08$). The F ratio was marked at 3.37 and the effect size (partial eta squared) is marked at .12.

Table 8. Differences in Engagement for Individual Lessons

		Interval						
		1	2	3	4			
		M	*M*	*M*	*M*			
		(SD)	*(SD)*	*(SD)*	*(SD)*	*F*	*p*	η_p^2
Lesson 1 School 1	Class 1 (Treatment) (*n* = 19)	2.89 (.74)	3.74 (.56)	4.00 (.00)	2.79 (.79)	14.87	.00	.32
	Class 2 (Control) (*n* = 14)	2.43 (.85)	4.00 (.00)	1.43 (.94)	3.00 (1.18)			
Lesson 1 School 2	Class 1 (Control) (*n* = 12)	2.83 (.58)	2.92 (.29)	2.50 (.52)	2.83 (.84)	.32	.58	.01
	Class 2 (Treatment) (*n* = 14)	3.57 (.85)	2.71 (.83)	2.71 (.47)	2.50 (.52)			
Lesson 2 School 1	Class 1 (Control) (*n* = 19)	2.79 (.71)	3.16 (.96)	3.53 (.70)	2.74 (1.82)	9.11	.01	.23
	Class 2 (Treatment) (*n* = 14)	3.36 (1.28)	4.14 (.36)	3.86 (.36)	3.29 (.73)			

Table 8. continued

		Interval						
		1	2	3	4			
		M	*M*	*M*	*M*			
		(SD)	*(SD)*	*(SD)*	*(SD)*	*F*	*p*	η_p^2
Lesson 2 School 2	Class 1 (Treatment) (*n* = 12)	4.24 (.45)	4.17 (.84)	3.42 (.79)	4.00 (.00)	7.71	.01	.24
	Class 2 (Control) (*n* = 14)	3.50 (1.02)	2.79 (1.42)	3.36 (1.01)	3.64 (.50)			
Overall	Control (*n* = 59)	2.88 (.87)	3.22 (.98)	2.78 (1.16)	3.03 (1.27)	16.97	.00	.13
	Treatment (*n* = 59)	3.44 (.99)	3.68 (.86)	3.54 (.68)	3.08 (.82)			

Note. Scale = 0: zero engagement, 1: slight engagement, 2: mild engagement, 3: moderate engagement, 4: engagement, 5: active engagement

As depicted in Table 8, comparisons were also made between separate classes taught the same lesson. School 1, Class 1 (*n* = 19), Lesson 1 (treatment) had an interval 1 engagement mean of 2.89 and a standard deviation of .74. The interval 2 engagement mean was calculated as 3.74 with a standard deviation of .56. The engagement mean for interval 3 was 4.00 with a standard deviation marked at .00. Interval 4 showed an engagement mean of 2.79 with a mean of .79. School 1, Class 2 (*n* = 14) Lesson 1

(control), showed and interval 1 mean of 2.43 and a standard deviation of .85. Interval 2 had an engagement mean of 4.00 with a standard deviation of .00. Interval 3 had an engagement mean of 1.43 with a standard deviation of .94 and interval 4 had a mean for engagement at 3.00 with a standard deviation of 1.18. Comparing the two classes to each other offered up the conclusion that there was a significant difference ($p = .00$), and had an F ratio of 14.87 with an effect size (partial eta squared) of .32.

School 2, Class 1 ($n = 12$), Lesson 1 (control) had an interval 1 engagement mean of 2.83 and a standard deviation of .58. The interval 2 engagement mean was 2.92 with a standard deviation of .29. The engagement mean for interval 3 was 2.50 with a standard deviation marked at .52. Interval 4 showed a calculated engagement mean of 2.83 with a mean of .84. School 2, Class 2 ($n = 14$) Lesson 1 (treatment), showed and interval 1 mean of 3.57 and a standard deviation of .85. Interval 2 had an engagement mean of 2.71 with a standard deviation of .83. Interval 3 had an engagement mean of 2.71 with a standard deviation of .47 and interval 4 had a mean for engagement at 2.50 with a standard deviation of .52. Comparing the two classes to each other offered up the conclusion that there was no significant difference ($p = .58$), and had an F ratio of .32 with an effect size (partial eta squared) of .01.

School 1, Class 1 ($n = 19$), Lesson 2 (control) had an interval 1 engagement mean of 2.79 and a standard deviation of .71. The interval 2 engagement mean was 3.16 with a standard deviation of .96. The engagement mean for interval 3 was calculated at 3.53 with a standard deviation marked at .70. Interval 4 showed an engagement mean of 2.74 with a mean of 1.82. School 1, Class 2 ($n = 14$) Lesson 2 (treatment), showed and

interval 1 mean of 3.36 and a standard deviation of 1.28. Interval 2 had an engagement mean of 4.14 with a standard deviation of .36. Interval 3 had an engagement mean of 3.86 with a standard deviation of .36 and interval 4 had a mean for engagement at 3.29 with a standard deviation of .73. Comparing the two classes to each other offered up the conclusion that there was a significant difference ($p = .01$), and had an F ratio of 9.11 with an effect size (partial eta squared) of .23.

School 2, Class 1 ($n = 12$), Lesson 2 (treatment) had an interval 1 calculated engagement mean of 4.24 and a standard deviation of .45. The interval 2 engagement mean was 4.17 with a standard deviation of .84. The engagement mean for interval 3 was 3.42 with a standard deviation marked at .79. Interval 4 showed an engagement mean of 4.00 with a mean of .00. School 2, Class 2 ($n = 14$) Lesson 2 (control), showed and interval 1 mean of 3.50 and a standard deviation of 1.02. Interval 2 had an engagement mean of 2.79 with a standard deviation of 1.42. Interval 3 had an engagement mean of 3.36 with a standard deviation of 1.01 and interval 4 had a mean for engagement at 3.64 with a standard deviation of .50. Comparing the two classes to each other offered up the conclusion that there was a significant difference ($p = .01$), and had an F ratio of 7.71 with an effect size (partial eta squared) of .24.

Overall, when comparing the control group engagement levels to the treatment group engagement levels, there was a significant difference ($p = .00$). Overall control data can be described as interval 1 with an engagement mean of 2.88 with a standard deviation of .87. Interval 2 had an overall calculated engagement mean of 3.22 with a standard deviation of .98. Interval 3 had an overall engagement mean calculated at 2.78

with a standard deviation mean of 1.16 and interval 4 had an overall engagement mean of

3.03 with a standard deviation of 1.27. The overall treatment group data showed that

interval 1 had an engagement level of 3.44 with a standard deviation of .99. Interval 2

showed an average engagement level of 3.68 with a standard deviation of .86. Interval 3

had an engagement level of 3.54 with a standard deviation of .68 and interval 4 held an

average engagement level of 3.08 with a standard deviation of .82. The F ratio for this

comparison was 16.97 and the effect size (partial eta squared) was marked at .13.

Conclusions

Based on the findings, it was concluded that having a set induction at the

beginning of a lesson could play a role in students being more engaged throughout a

lesson. The results of this study support many theoretical constructs. Theoretically

speaking, it is thought that is a student becomes engaged in a lesson at the very

beginning, their engagement will remain high throughout the lesson. The conclusions

would then fall in line with many educational and methodological beliefs and is

consistent with past studies by Schuck (1970, 1971, 1981, 1982, & 1985) and Oman

(2001 & 2002).

Recommendations and Implications

Agricultural educators should value the findings of this study in reference to the

designing of their lesson plans. An obvious set induction at the beginning of the lesson

should prove to be helpful as a mental shifting agent, in the strict terms of engagement of

students, and as a way to keep students actively participating throughout the remainder of

the lesson therefore, enabling a better opportunity to transfer new knowledge and make schematic connections.

In addition to the data from this study, much theory supports the use of a set induction, or set induction, in an effort to improve student engagement levels throughout a lesson. Upon analysis of the measured data on engagement levels of the participants, researchers would recommend that similar studies be conducted in order to further validate the findings of this research study. As different topics and subjects are taught and measured, and different inductions are used in effort to gain interest, studies may find different data apparent. This study is pertinent to all who engage themselves in studies dealing with methodologies and student engagement. This study could prove useful in such programs as preparation and in–service workshops alike.

It is recommended, due to the nature of this study, that further research be conducted on this topic in relation to student motivation. Also, conducting this study in another geographic location or culture may also prove to be beneficial through any similar or contrasting data that may be collected from that study. There is an extensive amount of literature available on keeping student engaged and on the use of set inductions.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Chapter I provided an overview of this thesis. Chapter II provided an examination of the effects of a set induction on knowledge and attitudes. Chapter III provided a summary of the effects of a set induction on student engagement. This chapter will provide an overall summary of this research.

Agricultural education text books (Newcomb, et al., 2004) advocate the use of set inductions in a lesson. However, the effect of using a set induction at the beginning of a lesson on the knowledge, attitude, and engagement levels of students in a high school agricultural education classroom has not been empirically documented.

Three objectives guided this inquiry: (a) determine if using a set induction at the beginning of a lesson will have a significant effect on students' attained knowledge levels, (b) determine if using a set induction at the beginning of a lesson will have a significant effect on students' attitudinal perspectives towards the lesson, and (c) determine if using a set induction at the beginning of a lesson will have a significant effect on student's engagement levels throughout the lesson.

The study took place in high school agricultural introductory courses with a total of 55 students participating. The instructors conducted class as scheduled. However, the lesson alternated as a treatment lesson that was designed with an obvious interest approach at the beginning. The lesson designation was randomly assigned. Since participants were all minors, required parental permission was obtained for each

participating students. Students who were not present for each day of instruction were removed from the participant pool.

Following each lesson, the students were assessed for their attained knowledge and surveyed for their attitudes towards the lesson. The students were also measured during the entire lesson, by the researcher, on their engagement levels. The researcher took all needed precautions to eliminate as many extraneous variables as possible during all data collection. Following the collection of data, all data was quantitatively analyzed for central tendencies and variability. Campbell & Stanley's (1963) post–test only control group design was used as a guiding model in the study.

The conclusions of this study are based on the research objectives that were stated in Chapter I. The following conclusions were drawn:

1. Determine if using a set induction at the beginning of al lesson will have a significant effect on students' attained knowledge levels. The results suggest that there is no effect on a student's attained knowledge levels by exposing them to a set induction at the beginning of a lesson. Theoretically speaking, this finding contrasts many theoretical constructs dealing with educational methodologies. A few noticeable infractions to the planned lesson took place during data collection that may have compromised the data and therefore need to be noted.

2. Determine if using a set induction at the beginning of a lesson will have a significant effect on students' attitudinal perspectives towards the lesson. The results of this study indicated that there is no effect on student attitude by exposing them to a set induction at the beginning of a lesson. This too does not

fall in line with many educational theories. It is fair to note that the same methodological infractions may have played a role in failure to reject the null hypothesis for this objective.

3. Determine if using a set induction at the beginning of a lesson will have a significant effect on student's engagement levels throughout the lesson. The results of this research study suggest that there is a significant effect on student's engagement levels throughout the lesson when they are exposed to a set induction at the beginning of the lesson. This result falls in line with many educational theory constructs. This does not mean that variables did not play a role, but overall effectiveness was established through the data.

The engagement level data suggest that using a set induction at the beginning of a lesson could be beneficial in the classroom when trying to obtain high levels of student engagement. The attitude and knowledge data does not support any changes in the mind of the learner and therefore should not be of a major concern to teachers in relation to their lesson methodologies. However, it is recommended that further studies be conducted on these subjects in effort to better validate these findings. Further studies could benefit the educational arena more with adjustments such as: (a) a larger population, (b) additional topics and subjects, (c) different cultures, and (d) geographic locations.

The researcher took on this study in order to study the effectiveness of set inductions in the agricultural classroom. However, the researcher understands the importance in this study in other realms of education. Set inductions have been present in

education for many years and seem to appear as an effective method of mentally shifting the learners' mind which can be extremely useful in many educational scenarios. Further studies are needed to determine the effectiveness of set inductions in different subjects and the characteristics of set inductions that make them so effective.

Agricultural educators, and educators in all realms, should find the results of this study pertinent and helpful when designing their lesson. As this study offers up empirical data to support a method of retain student engagement levels, it opens up the opportunity for teachers to catch the interest of their students early, maintain that interest and benefit through the rate of cognitive transfer.

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APPENDIX A

LESSON PLAN FOR DEFINING PERSONAL GROWTH TOPIC WITH

INTEREST APPROACH

IDENTIFICATION

INSTRUCTOR: Robinson/Taylor⎯⎯

UNIT TOPIC: Personal Skills⎯⎯⎯

LESSON TITLE: Defining Personal Growth (with intro)⎯⎯

CLASS: Applied Ag Science & Tech⎯⎯⎯   DATE BEST TAUGHT: 1/8 (A&M) or 1/15 (Waller)

TEKS: 119.13(C)(1)(B)⎯⎯⎯⎯⎯

OBJECTIVES (TSWBAT⎯⎯The student will be able to…)

Define Personal Growth

Describe the importance of personal growth

TEACHING MATERIALS AND RESOURCES (What do you need to bring?)

Official FFA dress

Note–taking worksheet

Defining personal growth worksheet

Embarking on a great adventure worksheet

Defining personal growth assessment

TEACHING PROCEDURES⎯⎯Preparation, Presentation, Application, Evaluation

Preparation (Interest Approach/Motivator)	***Anticipated # of Minutes***
Key Points	Methods
Time Machine Activity:	Guest Speaker

Tell the students that they are having a guest speaker today. Slip out and put on your official dress. Come in as you were as an FFA member. Tell about what you were like before you joined the FFA and about your journey through the FFA and who you have become. During this activity, give a short amount	
During the presentation, have the students create a profile using the given handout titled " Guest Speaker Profile".	
Ask some questions to stimulate discussion.	Individual Work
What happened in between where they were and where they are that helped them accomplish their goals?	
	Teacher–Led Discussion
Are they a special case?	
Can anyone accomplish all that they have?	
Why or why not?	
Explain that they aren't a special case. Anyone may accomplish what they have. Set up that today is for discovery about how to accomplish goals and dreams.	
Today we will dive into the distance between where they were and where they are now. That will help us to uncover the secret to accomplishing our own dreams and goals. I	

am not a special case. We are all capable of going from where we are to where we want to be. Let's take a look at what it takes to get there.

Ask the students the following questions:

What comes to mind when you hear the phrase personal growth?

While engaged in conversation on the above question, pass out the "defining personal growth" worksheet.

Have the students work in pairs to complete the "defining personal growth" worksheet. Then, once completed, allow some students to share their findings.

Teacher–Led Discussion

Paired work

Presentation (The Meat!)   *Anticipated # of Minutes*

Key Points

Methods

Go over the Note–taking worksheet with the students allowing time for questions and discussion.	Note–Taking and Discussion
Pause after "E". Roman numeral II will be continued after the next activity.	
Pass out the "Embarking on a great adventure". While passing out the activity sheets engage students in an on–task discussion about examples of personal growth.	
How does this information apply to you? As these sheets go around, hold a discussion with your neighbor. As partners, generate examples of an activity you've been a part of that has resulted in personal growth.	Paired work
Allow students time to discuss the question that has been posed to them. Have student pairs share some examples once all papers are passed out. Listen for activities like these: career development events, sports, clubs and organizations, camps, religious activities, conferences, school, etcetera. Use the following instructions to have students begin the activity sheet.	
You are about to embark on an adventure—a great adventure to be exact. As you begin the activity, remind yourself that you are unique, capable and ready. Each of you has something to contribute. Work by yourself as you complete this adventure. You have 10 minutes, go!

Allow time for students to complete the activity sheet. | Individual work |

Monitor progress as they work. Explain that the experience is meant to be personal and private.	Note–taking & discussion
Following the activity, finish the note–taking worksheet; again, allowing time for questions and discussion.	

Application (What will they do with what you taught?)   Anticipated # of Minutes

Key Points	Methods
Apply to their thoughts from previous activity	

Evaluation/Summary (How do you know they learned it?)Anticipated # of Minutes

Key Points	Methods
Defining personal growth assessment	Individual work
References	

REFERENCES:

National FFA Life Knowledge Program

APPENDIX B

LESSON PLAN FOR DEFINING PERSONAL GROWTH TOPIC WITHOUT

INTEREST APPROACH

IDENTIFICATION

INSTRUCTOR: Robinson/Taylor___

UNIT TOPIC: Personal Skills_____

LESSON TITLE: Defining Personal Growth (without intro)_____

CLASS: Applied Ag Science & Tech_____   DATE BEST TAUGHT: 1/8 (A&M) or 1/15 (Waller)

TEKS: 119.13(C)(1)(B)_____

OBJECTIVES (TSWBAT⸺The student will be able to…)

Define Personal Growth

Describe the importance of personal growth

TEACHING MATERIALS AND RESOURCES (What do you need to bring?)

Official FFA dress

Note–taking worksheet

Defining personal growth worksheet

Embarking on a great adventure worksheet

Defining personal growth assessment

TEACHING PROCEDURES⸺Preparation, Presentation, Application, Evaluation

Preparation (Interest Approach/Motivator)	***Anticipated # of Minutes***
Key Points	Methods

There will be no interest approach in this version

Presentation (The Meat!)	*Anticipated # of Minutes*
Key Points	Methods
Go over the Note–taking worksheet with the students allowing time for questions and discussion.	Note–Taking and Discussion
Pause after "E". Roman numeral II will be continued after the next activity.	
Pass out the "Embarking on a great adventure". While passing out the activity sheets engage students in an on–task discussion about examples of personal growth.	
How does this information apply to you? As these sheets go around, hold a discussion with your neighbor. As partners, generate examples of an activity you've been a part of that has resulted in personal growth.	Paired work
Allow students time to discuss the question that has been posed to them. Have student pairs share some examples once all papers are passed out. Listen for activities like these: career development events, sports, clubs and organizations, camps, religious activities, conferences,	

school, etcetera. Use the following instructions to have students begin the activity sheet.	
You are about to embark on an adventure—a great adventure to be exact. As you begin the activity, remind yourself that you are unique, capable and ready. Each of you has something to contribute. Work by yourself as you complete this adventure. You have 10 minutes, go!	Individual work
Allow time for students to complete the activity sheet. Monitor progress as they work. Explain that the experience is meant to be personal and private.	
Following the activity, finish the note–taking worksheet; again, allowing time for questions and discussion.	Note–taking & discussion

Application (What will they do with what you taught?)   Anticipated # of Minutes

Key Points	Methods
Apply to their thoughts from previous activity	

Evaluation/Summary (How do you know they learned it?)Anticipated # of Minutes

Key Points	Methods
Defining personal growth assessment	Individual work
Student Attitude Survey	Individual work
References	

REFERENCES:

National FFA Life Knowledge Program

APPENDIX C

SUPPLEMENTAL MATERIALS FOR DEFINING PERSONAL GROWTH

LESSON

Name:_____

DEFINING PERSONAL GROWTH

Make your own definition of personal growth:

_____
_____
_____

Identifying Personal Growth in Leaders

Choose a student leader in your school. Think about officers, council members, and captains of athletic teams. Find out what he or she has done and currently does to grow in each area of the total person. Write a paragraph explaining how personal growth has helped this person to achieve his or her goal of becoming a leader.

_____
_____
_____
_____
_____
_____
_____
_____
_____

Name: _____

PERSONAL GROWTH—

EMBARKING ON A GREAT ADVENTURE!

"THE KEY TO PERSONAL GROWTH IS KNOWING WHERE YOU ARE AND WHERE YOU WANT TO GO."

Directions:

Complete this personal growth adventure journal about each of the following questions:

1. Who am I?

2. How do I currently spend my free time outside of school? Make a list of all your extra–curricular activities. *For instance, sports, clubs, time with friends, time with family, etcetera.*

Label each of your activities with body, mind, spirit and social, depending upon what part of your total self the activity develops.

3. Draw a square. Make sure each side is equal in length. Label each side with one of the parts of the total self. This represents balanced personal growth.

4. Draw a shape using four straight lines that represents the time you spend developing each area of the total self. *For instance, if you spend most of your time developing your body then use a longer line to represent that side of the shape. If you spend the least amount of time developing your spirit then use a short line to represent that side of the shape. Don't worry if your four–sided shape is not balanced. That just means you are normal. Feel free to use the back of this paper for more space if needed.*

5. Would you say that you have achieved balanced personal growth? Why or why not?

6. What areas of the total self do you excel (do great) at developing?

7. What areas of the total self do you need to focus on to be more balanced?

Name: _____

Note–taking worksheet

I. Defining personal growth

A. _____ _____—the development of any part our total self.

B. _____ _____—four distinct parts of our life that make us a well balanced person

C. Four parts to the total self

1. _____—our physical well–being

2. _____—our mental well–being

3. _____—understanding our values and beliefs

4. _____—our relationships with others

D. A key to our success in getting from where we are to where we want to be is maintaining balance in our personal growth.

1. _____ _____ _____ is developing each of the four parts of the total self in proportion.

E. Personal growth requires both _____ and _____.

EMBARKING ON A GREAT ADVENTURE ACTIVITY

II. Importance of personal growth

A. The development of the total self directly affects the _____ we will make.

B. The development of the total self directly affects the _____ and _____ we have.

C. The development of our mind, body, spirit and social connections uncaps our _____.

1. _____ _____—the ability each person possesses that allows him or her to experience success.

Name: _____

Note–taking worksheet –Key

I. Defining personal growth

A. *Personal growth*—the development of any part our total self.

B. *Total self*—four distinct parts of our life that make us a well balanced person

C. Four parts to the total self

1. Body—our physical well–being

2. Mind—our mental well–being

3. Spirit—understanding our values and beliefs

4. Social—our relationships with others

D. A key to our success in getting from where we are to where we want to be is maintaining balance in our personal growth.

1. *Balanced personal growth* is developing each of the four parts of the total self in proportion.

E. Personal growth requires both planning and action.

Pass out Embarking on a great adventure handout. While passing out the activity sheets engage students in an on–task discussion about examples of personal growth. Complete this activity before moving on to the next section of notes.

II. Importance of personal growth

A. The development of the total self directly affects the decisions we will make.

B. The development of the total self directly affects the goals and dreams we have.

C. The development of our mind, body, spirit and social connections uncaps our potential.

1. *Personal potential*—the ability each person possesses that allows him or her to experience success.

APPENDIX D

ASSESSMENT AND KEY FOR DEFINING PERSONAL GROWTH

Name:_____

DEFINING PERSONAL GROWTH – ASSESSMENT

Matching:

Match the correct definition with the corresponding word by placing the letter of the word on the blank line next to the definition.

A. Personal growth   E. Body

B. Personal potential   F. Mind

C. Total self   G. Social

D. Spirit   H. Balanced personal growth

_____1. The ability each person possesses that allows them to experience success.

_____2. Four distinct parts of our life that make us a well–balanced person.

_____3. Our relationships with others.

_____4. Our physical well–being.

_____5. Developing each of the four parts of the total self in proportion.

_____6. Our mental well–being.

_____7. Understanding our values and beliefs.

_____8. The development of any part of our total self.

Name:_____

DEFINING PERSONAL GROWTH – ASSESSMENT (KEY)

Matching:

Match the correct definition with the corresponding word by placing the letter of the word on the blank line next to the definition.

A. Personal growth   E. Body

B. Personal potential   F. Mind

C. Total self   G. Social

D. Spirit   H. Balanced personal growth

___B____1. The ability each person possesses that allows them to experience success.

___C____2. Four distinct parts of our life that make us a well–balanced person.

___G____3. Our relationships with others.

___E____4. Our physical well–being.

___H____5. Developing each of the four parts of the total self in proportion.

___F____6. Our mental well–being.

___D____7. Understanding our values and beliefs.

___A____8. The development of any part of our total self.

APPENDIX E

LESSON PLAN FOR DEFINING CAREER SUCCESS TOPIC WITHOUT

INTEREST APPROACH

IDENTIFICATION

INSTRUCTOR: Robinson/Taylor__

UNIT TOPIC: Personal Skills_____

LESSON TITLE: Defining Career Success (without interest approach)___

CLASS: Applied Ag Science & Tech_____   DATE BEST TAUGHT: 1/7 (A&M) or 1/14 (Waller)

TEKS:119.13(C)(1)(B)&(D)_____

OBJECTIVES (TSWBAT——The student will be able to…)

Define Career Success

Identify skills necessary to create career success

TEACHING MATERIALS AND RESOURCES (What do you need to bring?)

Pictures of good and bad attire

Silhouette worksheet

Crayons/Markers/Colored Pencils

Note–taking worksheet

Assessment

TEACHING PROCEDURES——Preparation, Presentation, Application, Evaluation

Preparation (Interest Approach/Motivator)   Anticipated # of Minutes

Key Points	Methods

There will be no interest approach in this version

Presentation (The Meat!)   *Anticipated # of Minutes*

Key Points	Methods
Using the Definition of Career Success worksheet, have the students make their own definition of career success.	Individual Work
Now, the teacher will provide the correct definition of career success.	Teacher Given
Guide the students through the note–taking worksheet providing opportunities for questions and discussions.	Teacher–Led Note–taking and Discussion

Application (What will they do with what you taught?)   Anticipated # of Minutes

Key Points	Methods

Taking it to the Streets Activity:	Paired Activity
Have the students work in pairs to complete the "Taking it to the Streets" activity/worksheet.	
Wrap up the learning if time permits.	Teacher–Led Discussion

Evaluation/Summary (How do you know they learned it?)Anticipated # of Minutes

Key Points	Methods
Distribute the lesson assessments.	Individual Work
Distribute the attitude survey	Individual Work

REFERENCES:

National FFA Life Knowledge Program

APPENDIX F

LESSON PLAN FOR DEFINING CAREER SUCCESS WITH INTEREST

APPROACH

IDENTIFICATION

INSTRUCTOR: Robinson/Taylor__

UNIT TOPIC: Personal Skills_____

LESSON TITLE: Defining Career Success (with interest approach)_____

CLASS: Applied Ag Science & Tech_____   DATE BEST TAUGHT: 1/7 (A&M) or 1/14 (Waller)

TEKS:119.13(C)(1)(B)&(D)_____

OBJECTIVES (TSWBAT——The student will be able to…)

Define Career Success

Identify skills necessary to create career success

TEACHING MATERIALS AND RESOURCES (What do you need to bring?)

Pictures of good and bad attire

Silhouette worksheet

Crayons/Markers/Colored Pencils

Note–taking worksheet

Assessment

TEACHING PROCEDURES——Preparation, Presentation, Application, Evaluation

Preparation (Interest Approach/Motivator)	*Anticipated # of Minutes*
Key Points	Methods
Students will look at the presented pictures of good and	Teacher–led Discussion

bad attire and will draw their own conclusions on which picture is more properly dressed for career success.	
Put students into groups of 3–4.	
Next, in groups, the students will use the "build the employee" worksheet and the silhouette handout to list 10–12 skills necessary to create career success in a particular scenario and create an illustration of a successful career person.	Group/cooperative work

Presentation (The Meat!)   *Anticipated # of Minutes*

Key Points	Methods
Using the Definition of Career Success worksheet, have the students make their own definition of career success.	Individual Work
Now, the teacher will provide the correct definition of career success.	Teacher Given
Guide the students through the note–taking worksheet providing opportunities for questions and discussions.	Teacher–Led Note–taking and Discussion

Application (What will they do with what you taught?)   Anticipated # of Minutes

Key Points	Methods
Taking it to the Streets Activity: Have the students work in pairs to complete the "Taking it to the Streets" activity/worksheet.	Paired Activity
Wrap up the learning if time permits.	Teacher–Led Discussion

Evaluation/Summary (How do you know they learned it?)Anticipated # of Minutes

Key Points	Methods
Distribute the lesson assessments.	Individual Work
Distribute the attitude survey	Individual Work

REFERENCES:

National FFA Life Knowledge Program

APPENDIX G

SUPPLEMENTAL MATERIALS FOR DEFINING CAREER SUCCESS LESSON

Name: _____

DEFINITION OF CAREER SUCCESS

Create your own definition for career success:

_____

_____

_____

Now, write the definition given by the teacher:

_____

_____

_____

How does your definition differ from the teachers? Why?

DEFINITION OF CAREER SUCCESS

Career success is continuously demonstrating those qualities, attributes and skills necessary to succeed and further prepare for a chosen profession while effectively contributing to society.

Note–Taking Worksheet

I. Basic Career Success Skills

A. Communication

    1. _____. Producing a flyer with information about a product.

    2. _____. Speaking with a customer to determine their needs.

    3. _____. Communication is more than just speaking, listening or writing. It involves non–verbal communications. ***Non–verbal*** means communicating in ways other than with _____.

        a. Facial expressions

        b. _____ _____

        c. _____ _____—direct stares, no eye con tact, rolling of eyes, etc.

        d. Sighs

    4. _____ non–verbal. Could be maintaining eye con tact when visiting with customer or fellow employees

    5. _____. To find out a customer's problem, you must first listen to what they have to say.

B. _____—the ability to respond to change or new situations

    1. Open to _____. Being able to work with people from different cultures.

    2. Adaptable to changes in _____. Learning a new computer program affecting your business.

    3. Ability to face risk and adversity. Political problems in another country _____ impact the ability to market your product.

C. _____ _____

1. Identify the _____. Last quarter sales dropped by 10%; you must find out why.

2. _____ _____. Contact customers to find out what they need.

3. _____ _____. Shall we give a price break to customers who buy large quantities?

4. Establish a _____. We will schedule our advertising two weeks prior to the start of the sale.

D. _____ _____

1. Identify and _____ technical skills

2. Feed sales man will need _____ and _____ related to animal nutrition

E. Other

1. _____ _____. Both personal and business team goals

2. Embraces _____. Deal with others in an honest, sincere, manner

3. _____. Simply showing up to work on time or admitting ones mistakes

4. Continuous _____. Continually training to meet the needs of the work place

Note–Taking Worksheet (key)

I. Basic Career Success Skills

A. Communication

1. Written. Producing a flyer with information about a product.

2. Oral. Speaking with a customer to determine their needs.

You need to spend a few minutes explaining the importance of non–verbal skills. Use HS.3.TM.B or write the information on a writing surface

3. Non–verbal. Communication is more than just speaking, listening or writing. It involves non–verbal communications. ***Non–verbal*** means communicating in ways other than with words.

a. Facial expressions

b. Body posture

c. Eye con tact—direct stares, no eye con tact, rolling of eyes, etc.

d. Sighs

4. Positive non–verbal. Could be maintaining eye con tact when visiting with customer or fellow employees

5. Listening. To find out a customer's problem, you must first listen to what they have to say.

B. ***Flexibility and Adaptability***—the ability to respond to change or new situations

1. Open to diversity. Being able to work with people from different cultures.

2. Adaptable to changes in technology. Learning a new computer pro gram affecting your business.

3. Ability to face risk and adversity. Political problems in another country negatively impact the ability to market your product.

C. Decision Making

1. Identify the problem. Last quarter sales dropped by 10%; you must find out why.

2. Gather information. Contact customers to find out what they need.

3. Consider options. Shall we give a price break to customers who buy large quantities?

4. Establish a plan. We will schedule our advertising two weeks prior to the start of the sale.

D. Technical Skills

1. Identify and develop technical skills

2. Feed sales man will need skills and knowledge related to animal nutrition

E. Other

1. Goal Set ting. Both personal and business team goals

2. Embraces *Integrity*. Deal with others in an honest, sincere, manner

3. Responsibility. Simply showing up to work on time or admit ting ones mistakes

4. Continuous learning. Continually training to meet the needs of the work place

APPENDIX H

ASSESSMENT AND KEY FOR DEFINING CAREER SUCCESS

Name:_____

DEFINING CAREER SUCCESS – EVALUATION

1. Place an X by the definition of career success as presented in this lesson.

_____a. Working efficiently to provide goods and/or services that will make the most money possible.

_____b. Earning enough money to buy the material possessions needed by your family.

_____c. Career success is continuously demonstrating those qualities, attributes and skills necessary to succeed and further prepare for a chosen profession while effectively contributing to society.

_____d. Developing the skills necessary to build and expand your business in order to gain the largest market share possible in order to increase profits from year to year.

2. Producing a flyer with information about a product is an example of _____ communication.

3. Which of the following is NOT an example of non–verbal communication?

   a. sighs   b. listening   c. body posture   d. eye contact

4. Place the numbers 1–4 next to the following descriptions of the process of decision making in order with #1 next to the first step and #4 next to the last.

_____ Establish a Plan

_____ Gather Information

_____ Identify the Problem

_____ Consider Options

5. Dealing with others in an honest and sincere manner is known as _____.

Name:_____

DEFINING CAREER SUCCESS – EVALUATION (KEY)

1. Place an X by the definition of career success as presented in this lesson.

_____a. Working efficiently to provide goods and/or services that will make the most money possible.

_____b. Earning enough money to buy the material possessions needed by your family.

___X____c. Career success is continuously demonstrating those qualities, attributes and skills necessary to succeed and further prepare for a chosen profession while effectively contributing to society.

_____d. Developing the skills necessary to build and expand your business in order to gain the largest market share possible in order to increase profits from year to year.

2. Producing a flyer with information about a product is an example of _____written_____ communication.

3. Which of the following is NOT an example of non–verbal communication?

     a. sighs   **b. listening**   c. body posture   d. eye contact

4. Place the numbers 1–4 next to the following descriptions of the process of decision making in order with #1 next to the first step and #4 next to the last.

__4___ Establish a Plan

__2___ Gather Information

__1___ Identify the Problem

__3___ Consider Options

5. Dealing with others in an honest and sincere manner is known as ___integrity_____.

APPENDIX I

IRB APPROVAL FORM

TEXAS A&M UNIVERSITY
VICE PRESIDENT FOR RESEARCH - OFFICE OF RESEARCH COMPLIANCE

1186 TAMU   979.458.1467
College Station, TX 77843-1186   FAX 979.862.3176
1500 Research Parkway, Suite B-150   http://researchcompliance.tamu.edu

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Institutional Biosafety Committee   Institutional Animal Care and Use Committee   Institutional Review Board

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DATE: 12-Nov-2007

MEMORANDUM

TO: JOHNSTON, TIFFANY

       77843-3578

FROM: Office of Research Compliance

       Institutional Review Board

SUBJECT: Initial Review

Protocol Number: 2007-0694

Title: The Effects of Lesson Interest Approach on Student Knowledge, Attitude, and Engagement

Review Category: Expedited

Approval Period: 12-Nov-2007 **To** 11-Nov-2008

Approval determination was based on the following Code of Federal Regulations:

45 CFR 46.110(b)(1) - Some or all of the research appearing on the list and found by the reviewer(s) to oinvolve no more than minimal risk.
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(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation or quality assurance methodologies.

(Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b) (3). This listing refers only to research that is not exempt.)

Provisions:

This research project has been approved for one (1) year. As principal investigator, you assume the following responsibilities

1. **Continuing Review:** The protocol must be renewed each year in order to continue with the research project. A Continuing Review along with required documents must be submitted 30 days before the end of the approval period. Failure to do so may result in processing delays and/or non-renewal.
2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB Office.
3. **Adverse Events:** Adverse events must be reported to the IRB Office immediately.
4. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB Office for review. The Amendment must be approved by the IRB before being implemented.

5. **Informed Consent:** Information must be presented to enable persons to voluntarily decide whether or not to participate in the research project.

This electronic document provides notification of the review results by the Institutional Review Board.

APPENDIX J

ATTITUDE SURVEY INSTRUMENT

Student Attitude Survey

Name: Date:

School: Period:

Did you choose to be placed in this
class?   Yes   No

**Please answer the following
questions appropriately to the
degree in which you agree with the
number 1 meaning least agree and 5
meaning most agree. Answer them as
honestly and accurately as possible.**

	Disagree ☹				Agree ☺
1. I enjoy being in this Agriscience course.	1	2	3	4	5
2. I look forward to coming to this class.	1	2	3	4	5
3. I enjoyed the lesson today.	1	2	3	4	5
4. I especially enjoyed the very beginning of today's lesson.	1	2	3	4	5
5. I feel as though I learned something in today's lesson.	1	2	3	4	5
6. I would say that I was an engaged (actively participating) student in class today.	1	2	3	4	5
7. I would like to have more lessons taught this way.	1	2	3	4	5

Disagree   Agree

☹   ☺

APPENDIX K

AGENDA DOCUMENT FOR THESIS PLANNING MEETING

Thesis Work School Visit #1

School: _____   Date: _____

Teacher: _____

Class times

Implementation dates (possible)

Demographics

      Girls

      Boys

      Freshman

      Sophomores

      Juniors

      Seniors

 2 lessons

      2 separate formats

            1 with interest approach

            1 without interest approach

Group planning date

Consent letter on school letterhead

School district IRB

Measuring Knowledge, Engagement and Attitude (teacher & student)

      Make quiz in comparable format

      Observe/measure student engagement

            Will need seating chart

      Attitude questionnaire for teacher & student completion

Visit classes prior to collection

Lesson plan format??????

APPENDIX L

CONSENT LETTERS FROM PARTICIPATING SCHOOL DISTRICTS

College Station Independent School District

Success....each life....each day....each hour

December 12, 2007

Ms. Tiffany Johnston
107 Scoates Hall
Texas A&M University
MS 2116
College Station, TX 77843-2116

Dear Ms. Johnston:

The College Station ISD Research Review Committee met today to review your research proposal and accompanying documentation. The committee chose to allow your research to be conducted in the district as it was proposed.

Please make sure to contact Mr. Ron Fox, principal of A&M Consolidated High School, and Ms. Britina Robinson prior to beginning your data gathering. If you should need any additional information, please contact my office at 764-5569.

Truly,

Clark C. Ealy, Ph.D.
Research Review Committee
College Station ISD

cc: Greg McIntyre
        Research Review Committee
        Ron Fox

Waller
Independent School District

2214 Waller Street
Waller, Texas 77484

Phone: 936/931-3685   Fax: 936/372-5576

January 10, 2008

To Whom It May Concern:

Re: Letter of Consent to Conduct Data Research at Waller High School

Waller ISD gives Tiffany Johnston permission to conduct data research at Waller High School that will be applied towards her graduate agricultural science thesis document.

Please feel free to call me at (936) 931-3685 with questions regarding this matter.

Sincerely,

Danny Twardowski
Assistant Superintendent for Administration
Waller ISD

VITA

Name: Tiffany Sarah Laverne Johnston

Address: Texas A&M University
                 Scoates Hall
                 Mail Stop 2116
                 College Station, TX 77845-2116

Email Address: tjohnston@aged.tamu.edu

Education: B.S., Agricultural Education, Texas A&M University, 2000

                 M.S., Agricultural Education, Texas A&M University, 2008