


2015

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Recommended Citation

Riley, Gina (2015) "Differences in Competence, Autonomy, and Relatedness between Home Educated and Traditionally Educated Young Adults," *International Social Science Review*: Vol. 90: Iss. 2, Article 2.
Available at: <http://digitalcommons.northgeorgia.edu/issr/vol90/iss2/2>

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Differences in Competence, Autonomy, and Relatedness between Home Educated and Traditionally Educated Young Adults

Cover Page Footnote

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Differences in Competence, Autonomy, and Relatedness between Home Educated and Traditionally Educated Young Adults

Richard Ryan and Edward Deci define intrinsic motivation as performing an activity solely for inherent satisfaction.¹ An intrinsically motivated individual is energized about the task they are performing, and upon completion, feel a sense of satisfaction or fulfillment. The concept of intrinsic motivation can be understood within the theoretical framework of Deci and Ryan's Self Determination Theory (SDT).² According to SDT, the source of intrinsic motivation is innate and refers to the "natural human tendency to learn and assimilate."³

Although research points to intrinsic motivation as a quality humans are born with, the maintenance and enhancement of this motivation is somewhat dependent upon social and environmental conditions.⁴ Deci and Ryan's Cognitive Evaluation Theory (CET), a sub theory of SDT, specifically addresses the social and environmental factors that facilitate rather than undermine intrinsic motivation and points to three significant psychological needs that must be present in the individual in order to foster self motivation. These needs are competence, autonomy, and relatedness.⁵

The purpose of this study is to assess whether home schooled young adults' needs for competence, autonomy, and relatedness are better satisfied as compared to young adults who were not home schooled. This study comes at a time when home schooling is quickly joining the ranks of private schools and charter schools as an acceptable alternative to public education.⁶ The words *alternative* or *choice* are frequently associated with home schooling in regard to both curriculum decisions and future plans.⁷ In many home school environments, to a large extent students choose what they want to learn,⁸ while parents serve as facilitators, rather than

conductors of the students' educational experience. Sheena Iyengar and Mark Lepper have previously linked the nature of choice to intrinsic motivation.⁹ It has become evident in recent years that the American government's idea of educational reform rests in increased test scores and better grades.¹⁰ However, according to Edward Deci and Richard Ryan's Self Determination Theory, a more salient reform may be to instill in students a love for learning and a yearning for authentic, self-chosen success.¹¹ Motivational orientation is associated with academic, occupational, and social success,¹² and a collection of motivations can influence behavior.¹³

This study focuses on intrinsic motivation and its facilitation. If the three tenets of competence, autonomy, and relatedness are required to facilitate intrinsic motivation, then it becomes important to study whether or not home schooled young adults' need for competence, autonomy, and relatedness are better satisfied as compared to young adults who were not home schooled. Hence, the research question for this study is, "What, if any, differences exist in the current competence satisfaction, autonomy satisfaction, and relatedness satisfaction of young adults who were home schooled compared to young adults who were not home schooled?"

The first section of this study will provide a brief review of the literature on Self Determination Theory, Cognitive Evaluation Theory, and Home Schooling. The second section will discuss the methodology and statistical results of the study. Finally, a brief discussion regarding the results of the study will be presented, along with a summary of the importance of intrinsic motivation and self determination in educational environments.

Significance of Study

According to Richard Ryan and Edward Deci, intrinsic motivation is an innate concept.¹⁴ It is an energy orientation, a display of the positive attributes of humanity which include

curiosity, vitality, and self-determination. It is the opposite of apathy, a trait both children and adults can exhibit.¹⁵ Extrinsic motivation is the desire to engage in behavior for external reasons.¹⁶

Curiosity and engagement are essential to academic success.¹⁷ How to encourage those traits within an educational environment is an issue of great debate. Mainstream educational institutions seem to rely on the use of rewards and/or incentives as a way to enhance student performance and motivation.¹⁸ Students are frequently given rewards for good behavior in class, high test scores, and academic achievement or improvement.¹⁹ Recognition, competition, and grades are all highly valued within the academic arena. For some students, extrinsic motivation can be important, giving the individual something to aim for when a specific task does not create internal enjoyment.²⁰ Many educators believe that extrinsic motivators may work more quickly and powerfully than intrinsic motivation.

Intrinsic motivation creates a different forum for learning. Instead of learning for the grade or the recognition, students begin to learn because they desire the knowledge. Due to curriculum and time constraints, intrinsic motivation may be difficult to facilitate within traditional classrooms. It is this predicament in contemporary education that persuades some parents to home school their children. One of the most impressive strengths of home education lies in the fact that, in many cases, the entire process revolves around a child's intrinsic motivation to learn.

The benefits of intrinsically motivated learning are seen in the home schooled population, as their academic accomplishments tend to be better than or equal to their traditionally schooled peers.²¹ Michael Cogan concurs, stating that home schooled students tend to have stronger

standardized test scores and higher graduation rates as compared to their traditionally schooled peers.²²

Some researchers have already examined why parents choose to home school,²³ while other researchers have explored the academic and life outcomes of home schooled graduates.²⁴ However, this particular study is the first to compare levels of competence, autonomy, and relatedness in those who have been home educated compared to those who have been educated through the traditional school system.

Self Determination Theory

Edward Deci and Richard Ryan state that motivation is what moves individuals to think, act, and develop.²⁵ The central focus of Deci and Ryan's research is intrinsic motivation and the conditions and processes that enhance performance, increase persistence, and facilitate growth. The concept of intrinsic motivation can be understood within the theoretical framework of Deci and Ryan's SDT.²⁶ According to SDT, the source of intrinsic motivation is an innate pattern of development and assimilation.²⁷

Not all psychologists or educational researchers believe that intrinsic motivation exists. According to Edward Deci, Richard Koestner, and Richard Ryan, the term intrinsic motivation is somewhat abstract to those who subscribe to behavioral theory.²⁸ For example, Angelique Akin-Little and her colleagues state that intrinsic motivation is an unobservable construct and that "a definition of intrinsic motivation that all can agree upon has yet to be written."²⁹ She also writes that the term lacks clarity, primarily because it cannot be observed or measured in a purely scientific sense.³⁰ Steven Reiss agrees, calling intrinsic motivation an "invalid construct" in many cases.³¹

It is difficult to discuss intrinsic motivation without referring to extrinsic motivation. According to Robert Vallerand, extrinsic motivation can be defined as doing something as a means to an end, or doing something for reinforcement or reward.³² Extrinsic motivation is frequently used within mainstream educational institutions, as most classroom teachers use incentive systems based on reinforcement.³³ These reinforcements include grades, “gold stars,” and token economies. Some districts even award cash incentives to students for high achievement test scores, an idea which is gaining momentum across the United States.³⁴ Multiple researchers support the effectiveness of rewards, stating that rewards may increase achievement and behavior.³⁵

In one study, Edward Deci provided a comparison of intrinsic and extrinsic motivation.³⁶ He utilized a puzzle game called SOMA to measure intrinsic motivation in college students. He promised one group an extrinsic reward – money – for solving the puzzles; the second group was promised nothing. Deci and his team measured intrinsic motivation by recording the amount of free time the students spent doing the puzzles after the experiment was deemed over and the researcher left the room. According to the results, the group rewarded with money spent little or no time with the puzzles, while the unrewarded group seemed intrigued by them.³⁷ For the first group, the promise of money succeeded in shifting their view of the puzzle from a satisfying activity in its own right to an activity that was instrumental to obtaining a reward.³⁸ This free choice measure is a classic experiment on the construct of intrinsic motivation.³⁹

SDT has evolved since its beginnings in the early 1970s.⁴⁰ Early SDT focused on the difference between intrinsic motivation and extrinsic motivation. In recent years, there has been more research and discussion on what Deci and Ryan call the “continuum of SDT.”⁴¹ The continuum proposes six motivational states, ranging from amotivation (completely lacking self-

determination) to intrinsic motivation, with four different types of extrinsic motivation making up the middle of the arc. These four types of extrinsic motivation are external regulation (controlled type), introjected regulation (moderately controlled type), identified regulation (moderately autonomous type), and integrated regulation (autonomous type).⁴²

The two types of motivation that gain the most attention within Self Determination Research are autonomous motivation and controlled motivation.⁴³ Autonomous motivation involves doing something with a full sense of choice and freedom. Controlled motivation is defined as doing something because of external pressure or demand. Autonomous motivation is associated with “greater persistence, more positive effect, enhanced performance, and greater psychological well being.”⁴⁴ Judy Cameron, W. David Pierce, Katherine Banko, and Amber Gear add that the more autonomous extrinsic motivation is, the less the extrinsic motivation will undermine intrinsic motivation experienced during the task at hand.⁴⁵

Intrinsic motivation can be measured by the use of self-reports and scales, which quantify levels of interest and enjoyment while engaging in a specified activity. This research study utilizes the Basic Psychological Needs Scale (BPNS). The BPNS assesses levels of competence, autonomy, and relatedness as designed by Edward Deci and Richard Ryan’s CET.⁴⁶ Scholars in the field agree the BPNS is a valid and reliable measure within the field of motivational science.⁴⁷

Cognitive Evaluation Theory

Although researchers point to intrinsic motivation as an inherent quality, the maintenance and enhancement of this motivation is dependent on social and environmental conditions.⁴⁸ Deci and Ryan’s CET specifically addresses the social and environmental factors that facilitate versus

undermine intrinsic motivation and point to three significant psychological needs that must be present in the individual in order to foster self-motivation.

Competence

According to Edward Deci and Richard Ryan, a sense of competence comes from successful experiences and overall positive feelings about an activity.⁴⁹ Competence is intertwined with the concept of optimal challenge, and can best be explained by observing young children explore their environment. Children, by nature, are driven by a need for competence.⁵⁰ Children experiment with and manipulate objects around them, and the joy on their faces when they figure it all out is demonstrative of intrinsic satisfaction.⁵¹ Children also constantly test their knowledge by assimilating concepts they have already mastered with new stimuli, creating personal challenges for themselves.⁵² For example, once children master a puzzle skill with one puzzle, they will tend to attempt another, slightly more difficult puzzle. A sense of competence and the ability to take on optimal challenges all foster the development of intrinsic motivation.⁵³ Conversely, any negative intrusion toward this process, whether it is in the form of criticism or control, may undermine feelings of intrinsic motivation.⁵⁴

Autonomy

In order for intrinsic motivation to flourish, a sense of competence must also be accompanied by a sense of autonomy.⁵⁵ When an individual is given a sense of choice, an acknowledgement of feelings, or an opportunity for self direction, feelings of intrinsic satisfaction are enhanced. However, when a reward is offered as an incentive, learning and autonomy decrease, as do feelings of self motivation.⁵⁶

During the school years, the role of a parent or teacher is to support a child's innate intrinsic motivation. By taking the child's perspective and encouraging a child's initiative, the

educator is providing what Edward Deci and Richard Ryan term “autonomy support.”⁵⁷ Tim Kasser and Richard Ryan add that autonomy support can also be provided by supporting an individual’s sense of choice, and by being responsive to thoughts, questions, and ideas.⁵⁸ Creating choice and an opportunity for self-direction are one of the many ways educators can provide autonomy support, thereby enhancing a student’s intrinsic motivation.⁵⁹ By creating learning opportunities that take into consideration a student’s personal interests, and by providing choice, those responsible for a child’s education can reap the benefits of intrinsic motivation in their students.⁶⁰

Guy Roth, Avi Assor, Christopher Niemiec, Richard Ryan, and Edward Deci performed a study with 156 teenagers (mean age = 14.6) from Israel.⁶¹ The purpose of the study was to compare the parenting practices of positive and negative conditional regard as well as autonomy support. Those teens who reported feelings of autonomy support also reported feeling an increased sense of choice and were observed by their teachers as having a high level of interest focused academic engagement.

Edward Deci, Allan Schwartz, Louise Sheinman, and Richard Ryan spent several years observing the difference between autonomy supportive versus control orientated educators and found that those teachers who were autonomy supportive had a more positive impact on their students than those who were control orientated.⁶² Statistically significant differences demonstrated that students of the autonomy supportive teachers were seen as more self-determining and intrinsically motivated to learn, and also exhibited higher levels of self esteem. Wendy Grolnick and Richard Ryan found similar results, noting that conceptual learning was also optimized in autonomy supportive learning environments.⁶³

John Mark Froiland completed a seven-week quasi-experimental study with a group of elementary school students ($n = 15$) and their parents ($n = 15$).⁶⁴ Within this study, a group of parents were taught autonomy supportive communication techniques to use with their children to support them in their learning goals with regards to homework completion. At the end of the study, the students whose parents provided them with autonomy supportive messages showed higher autonomous motivation ($F = 7.69$; $p < .05$) as well as a more positive affect regarding their homework ($F = 5.35$; $p < .05$).

Catherine Ratelle, Frederic Guay, Robert Vallerand, Simon Larose, and Caroline Senecal demonstrate how important autonomy is as a child matures into a teenager.⁶⁵ In their study, high school students who were more autonomous in their academic work also tended to be more dedicated to their education. Geoffery Williams, Elizabeth Cox, Viking Hedberg, and Edward Deci performed two studies examining adolescent risk behaviors and extrinsic versus intrinsic aspirations.⁶⁶ In the second study, 271 high school students were asked to complete a series of questionnaires regarding health related behaviors. Geoffery Williams and his colleagues conclude that adolescents who perceived their parents to be autonomy supportive had stronger intrinsic aspirations for personal growth, meaningful relationships, and work within the community.⁶⁷

Relatedness

Autonomy support and relatedness go hand in hand, as both needs influence cognitive and affective outcomes of education.⁶⁸ Those who research interpersonal involvement in education have stressed that parents and teachers who are more involved with their children have children who are highly motivated and self directed.⁶⁹

David Stanley and Jonathan Plucker noted while exploring ways to improve high school graduation rates, the establishment of relationships within education is key to academic reform.⁷⁰ They discovered that it is essential that every student feels connected to his or her learning community. This connection can include being involved in afterschool clubs or sports, creating and maintaining friendships with peers, and having cordial working relationships with the individuals that teach them each and every day. That connection increases engagement in educational settings; and in many cases, is an important indicator of academic and personal success.

Catherine Ratelle and her colleagues conducted a study with 729 young adults in Canada (mean age = 17.0 years).⁷¹ The focus of the study was to determine how perceived parental involvement and support would affect student persistence in science. Results indicated that perceived parental support and relatedness predicted higher levels of persistence in a student's science coursework.

Early evidence of the impact a sense of relatedness has on intrinsic motivation is seen when reviewing John Bowlby's theory of infant attachment.⁷² According to Bowlby, an infant's intrinsic motivation to explore is more evident when the infant shows a secure attachment to his or her parents. By allowing the child to balance his or her attachment needs with the need to explore, a parent is paving the way for later development of self-esteem, self-concept, and competence.⁷³ A similar dynamic can be seen throughout a person's lifespan, as an individual's intrinsic motivation is more likely to flourish when individuals feel a sense of security and relatedness.⁷⁴ Edward Deci and Richard Ryan state that relatedness is based upon "interpersonal affiliation, authentic care, and the sharing of enriching experiences."⁷⁵ In students who are educated at home, this affiliation is strong, even through the teen years.⁷⁶

Home Schooling

Home schooling is not a new concept. Before the advent of compulsory education, most children were schooled at home.⁷⁷ Education was part of daily living and life skills were considered as important as reading skills.⁷⁸ In fact, the modern word “education” comes from the Latin “educare,” which means to rise, or bring up.⁷⁹ Richard Ryan and Cynthia Powelson note that during the previous century, education was not isolated from everyday tasks.⁸⁰ Children were nurtured and taught by the adults who raised them.

Although the first common schools in the United States were established in the 1840s, it was not until the early twentieth century that most states mandated compulsory education.⁸¹ By the mid-twentieth century, however, some parents, for varying reasons, sought alternatives. The 1960s and 1970s saw numerous ideas on educational reform unfold, and theorists such as Paul Goodman,⁸² John Holt,⁸³ and A.S. Neill⁸⁴ caused an uproar by suggesting that children should have freedom to choose their educational goals. Paul Goodman and his colleagues even went so far as to suggest that attendance at school was not the best use of a child’s time, thereby fueling the rise of the home schooling movement.⁸⁵

During the same period, educational researchers Raymond and Dorothy Moore launched a campaign against formal education in the early grades. The Moores were religious conservatives who thought that schools were too rigid and impersonal to meet the individual academic and emotional needs of the young child. Their message of bringing children home was embraced by many conservative Christians who were increasingly worried about the secular nature of public schools.⁸⁶ According to Margaret Talbot, it was those Christian home schoolers who brought energy, organization, and passion to home education. They fought and continue to fight for educational freedom and the legal right to home educate.⁸⁷

With the advent of technology, and the proliferation of educational resources available to teachers and non-teachers alike, home schooling continues to grow. Online learning activities, online subject-based courses, and even online diploma-based programs are now available to home schooled students. There are numerous virtual online support groups and home education websites, making information on home education available to the masses.⁸⁸

Approximately two million children are home schooled in the United States today, and the number of families choosing to home school is steadily rising.⁸⁹ With more and more people becoming interested in home education every day,⁹⁰ it becomes clear that “the history of home schooling is still being written.”⁹¹

Methodology

This study is a quantitative comparison of levels of competence, autonomy, and relatedness in young adults who have been home schooled compared to young adults who have not been home schooled. In order to justify the sample size, power calculations were performed using PASS 2008 software.⁹² Five hundred young adults (ages 18-25) were proposed to be recruited for participation in this study, 250 participants home educated and 250 traditionally educated. Although response rates for surveys vary considerably,⁹³ an approximately 20 percent survey response rate was expected.⁹⁴ It was anticipated that a sample size of 100 (50 home schooled young adults and 50 non home schooled young adults) was achievable.

Eligible participants had to be between eighteen and twenty-five years of age, and must hold at least a high school diploma or have the equivalent education. These individuals could have been schooled in a public, private, or home setting. Those participants who defined themselves as home schooled must have been home educated for at least six years. The researcher encouraged young adults of all social, ethnic, cultural, or economic strata to

participate in the study. Young adults were recruited via listservs, Yahoo groups, and the Walden University Participant Pool.

Instrumentation and Materials

To test competence, autonomy, and relatedness, the study used the *Basic Psychological Needs Scale (BPNS)*.⁹⁵ The *BPNS* is a reliable and valid measure of testing needs associated with Self Determination Theory and Cognitive Evaluation Theory.⁹⁶ The *BPNS* is a twenty-one item, Likert-type scale that measures the extent to which the needs of autonomy, competence, and relatedness are generally satisfied in a subject's life.⁹⁷ The actual scale is a minor adaptation of the *Psychological Needs at Work Scale*.⁹⁸ Reliability for the subscale is as followed, using scale Alpha (A) reliability: Autonomy ($A = .72$, $A = .73$); Competence ($A = .73$); and Relatedness ($A = .82$; $A = .83$).⁹⁹

Data Collection

A total of 100 students responded to the invitation to participate in the study and agreed to informed consent. Of the 100 students that participated in the study, 58 (58.6 percent) were in the home schooled group, 41 (41.4 percent) were in the traditionally schooled group, and 1 (1 percent) failed to report their type of schooling. The one student that did not report their type of schooling was omitted from the analysis. There were 32 (32.3 percent) males, 66 (66.7 percent) females, and 1 (1 percent) study participant who omitted his or her gender.

Results

Table 1 shows descriptive statistics for the dependent variables. Considering the smallest possible score for each of the variables was 1 and the maximum possible score was 7, all of the scores had an average that was well above the midpoint of 4.0, indicating a relatively high level of satisfaction with competence, autonomy, and relatedness.

Table 1: Descriptive Statistics for the Dependent Variables

	N		Mean	Std. Deviation	Min.	Max.
	Valid	Missing				
Competence Satisfaction	93	6	5.8495	1.18899	1.83	7.00
Autonomy Satisfaction	94	5	5.5015	1.04826	2.43	7.00
Relatedness Satisfaction	91	8	5.9808	.89519	3.13	7.00

Cronbach's Alpha for the Dependent Variables

Cronbach's alphas were calculated for each of the dependent variables. Table 2 shows that all of the Cronbach's alphas were above .70, indicating good reliability. The Cronbach's alphas ranged from .81 (Autonomy) to .87 (Competence). The sample size varies among the different scores due to the fact that some study participants failed to answer all of the survey questions that comprise the scale scores.

Table 2: Cronbach's Alpha Reliability for the Dependent Variables

Variable	Sample Size	Cronbach's alpha	Number of items
Competence Satisfaction	93	0.87	6
Autonomy Satisfaction	94	0.81	7
Relatedness Satisfaction	91	0.83	8

A multivariate analysis of variance was used to determine if any of the three dependent variables were statistically significantly different between the two study groups (home schooled versus traditionally schooled). Tables 3 and 4 show there was a statistically significant difference between the two groups for at least one of the three scores, $F(3, 87) = 19.6; p < .001$. Table 5 shows that the home schooled group had a statistically significantly larger average competence satisfaction, and autonomy satisfaction score, compared to the traditionally schooled students. There was no evidence of a difference in relatedness satisfaction between the two groups.

Table 3: Descriptive Statistics for the Dependent Variables by Type of Education

	Type of Education	N		Std.			
		Valid	Missing	Mean	Deviation	Minimum	Maximum
Competence Satisfaction	Home Schooled	53	0	6.2862	.86317	3.50	7.00
	Traditional	38	0	5.3026	1.33719	1.83	7.00
Autonomy Satisfaction	Home Schooled	53	0	6.0350	.65280	4.29	7.00
	Traditional	38	0	4.7857	1.10195	2.43	6.29
Relatedness Satisfaction	Home Schooled	53	0	6.0708	.71367	3.88	7.00
	Traditional	38	0	5.8553	1.09804	3.13	7.00

Table 4: MANOVA to Compare the Joint Distribution of the Dependent Variables by Type of Education

Effect	Value	Hypothesis			
		F	df	Error df	Sig.
Group Wilks' Lambda	.597	19.582	3.000	87.000	<.001

Table 5: Post-hoc ANOVA's to Determine Which Dependent Variables Were Different between the Two Types of Education

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	p-value
Group	Competence Satisfaction	21.409	1	21.409	18.164	<.001
	Autonomy Satisfaction	34.544	1	34.544	45.826	<.001
	Relatedness Satisfaction	1.028	1	1.028	1.287	.260

A limitation of the preceding MANOVA analysis is that it requires non-missing data for all of the dependent variables for all study participants. If a study participant was missing any one of the three dependent variables, they were dropped from the analysis. Among the ninety-nine students that participated in the study, eight were missing one or more of the dependent variables. Thus, the sample size for the MANOVA analysis was only ninety-one. To better understand how the missing data may have affected the analysis, three separate two-sample t-tests were performed to compare each dependent variable individually, between the two groups.

Tables 6 and 7 show there was a statistically significant difference between the two groups. The average (and standard deviation) competence satisfaction score was 6.27 (.86) versus 5.27 (1.34) for the home schooled and traditionally schooled groups respectively, $t(91) = 4.38; p < .001$. Thus, the null hypothesis was rejected and it was concluded that on average, home schooled students tend to have a higher level of competence satisfaction compared to traditionally schooled students.

Table 6: Descriptive Statistics for the Competence Satisfaction Score by Type of Education

Type of Education	N		Mean	Std. Deviation	Min.	Max.
	Valid	Missing				
Home Schooled	54	4	6.2685	.86476	3.50	7.00
Traditional	39	2	5.2692	1.33586	1.83	7.00

Table 7: Two-sample t-test to Compare the Average Competence Satisfaction Score by Type of Education

	t-test for Equality of Means		
	t	Df	p-value
Competence Satisfaction	4.376	91	<.001

Tables 8 and 9 show there was a statistically significant difference between the two groups. The average (and standard deviation) autonomy satisfaction score was 6.02 (.65) versus 4.75 (1.08) for the home schooled and traditionally schooled groups respectively, $t(90) = 7.03$; $p < .001$. Thus, the null hypothesis was rejected and it was concluded that on average, home schooled students tend to have a higher level of autonomy satisfaction compared to traditionally schooled students.

Table 8: Descriptive Statistics for the Autonomy Satisfaction Score by Type of Education

Type of Education	N		Mean	Std. Deviation	Min.	Max.
	Valid	Missing				
Home Schooled	54	4	6.0238	.65185	4.29	7.00
Traditional	38	1	4.7519	1.08171	2.43	6.29

Table 9: Two-sample t-test to Compare the Average Autonomy Satisfaction Score by Type of Education

	t-test for Equality of Means		
	T	Df	p-value
Autonomy Satisfaction	7.025	90	<.001

Tables 10 and 11 show there was not a statistically significant difference between the two groups, $t(90) = 1.06$; $p > .001$. Thus, null hypothesis was not rejected and it was concluded that on average, there is no difference in the level of relatedness satisfaction between home schooled and traditionally schooled students.

Table 10: Descriptive Statistics for the Relatedness Satisfaction Score by Type of Education

Type of Education	N		Mean	Std. Deviation	Min.	Max.
	Valid	Missing				
Home Schooled	53	5	6.0708	.71367	3.88	7.00
Traditional	36	3	5.8646	1.12018	3.13	7.00

Table 11: Two-sample t-test to Compare the Average Relatedness Satisfaction Score by Type of Education

	t-test for Equality of Means		
	t	df	p-value
Relatedness Satisfaction	1.061	87	.292

Summary

This study includes two types of analyses in order to test hypotheses 1 through 3. The results of the MANOVA analysis are in agreement with the individual two-sample t-tests. This study shows strong evidence that on average, home schooled students tend to have a higher level of competence and autonomy satisfaction compared to traditionally schooled students. There was no evidence to suggest there is a difference in the level of relatedness satisfaction between the two groups.

Discussion

The study utilizes a quantitative design to assess whether or not home schooled young adult's needs for competence, autonomy, and relatedness were better satisfied as compared to young adults who were not home schooled. Competence, autonomy, and relatedness are necessary conditions for intrinsic motivation to lead to successful outcomes.¹⁰⁰ Specifically, the research questions asked whether the separate measures of competence, autonomy, and relatedness were better satisfied in young adults that were home schooled as compared to young adults who were not home schooled. Findings from this study suggest that on average, home schooled students tend to have a higher level of autonomy satisfaction and competence satisfaction as compared to traditionally schooled students. There was no difference in the level of relatedness satisfaction between home schooled and traditionally schooled students, as measured by the *Basic Psychological Needs Scale*.

Limitations of the Study

This study's methodology faces limitations due to the possibility that home schoolers and non home schoolers may be different in some concrete way that would affect the dependent variable. The sample size of this study was statistically calculated, and the distribution met basic statistical postulates. However, the small sample size may have limited the generalizability of results. Because this study was based on a volunteer sample, participants who chose to complete the study may have been enthusiastic regarding their schooling experience, possibly affecting the results. Also, in terms of demographic data, this study only asked for gender and age. Sociodemographic variables such as ethnicity, higher education level, and parental education level were not specifically collected.

Another limitation was the measurement utilized. There are few instruments other than the *Basic Psychological Needs Scale* that measure levels of competence, autonomy, and relatedness as defined by Edward Deci and Richard Ryan's CET.¹⁰¹ The one other instrument available to measure the three dependent variables listed is at the research stage and reliability and validity is still being established.¹⁰²

Implications for Social Change

Home schooling has grown exponentially in the past decade. Researchers estimate that almost two million students are home educated, accounting for almost 3 percent of the school-aged population in the United States.¹⁰³ An interest in home based education is growing in many other parts of the world as well.¹⁰⁴ As the home schooled population continues to increase, it becomes important to study the workings of this educational choice. Previous research has linked the nature of choice inherent in home schooling with increased rates of intrinsic

motivation.¹⁰⁵ Intrinsic motivation tends to be highly correlated with academic, occupational, and social success.¹⁰⁶ If intrinsic motivation is an essential element of educational success, and if levels of competence, autonomy, and relatedness are required to facilitate levels of intrinsic motivation,¹⁰⁷ it then becomes important to compare levels of competence, autonomy, and relatedness in both home and traditionally schooled students. This study is the first of its kind to isolate levels of competence, autonomy, and relatedness in home schooled and traditionally educated young adults. The results of this study has implications for parents considering home schooling for their child, as well as for researchers studying the effectiveness, benefits, and challenges of a home learning environment. In essence, it has been demonstrated that home education can provide equal if not higher levels of competence, autonomy, and relatedness than more traditional forms of education. Broader implications can be extended to any and all stakeholders within the world of education and educational reform.

Although home schooling is quickly joining the ranks of private schools and charter schools as an acceptable alternative to public education,¹⁰⁸ literature on young adult outcomes of home schooling is scarce. In a world that loves data and numbers, many wonder how those who are home schooled compare in overall readiness to their schooled peers. To date, there have been only a handful of published academic articles on life outcomes of those who have been home schooled.¹⁰⁹ There have, however, been several instances of young adult home schoolers relaying stories within mainstream visual, auditory, and print media. This academic research adds to the minimal research on outcomes of young adult home schoolers as compared to those who were traditionally educated. This study also adds to the literature on intrinsic motivation and education, specifically focusing on Edward Deci and Richard Ryan's Cognitive Evaluation Theory.¹¹⁰

Home schooling is a growing educational movement, and the first generation of home schoolers have come of age. It is reassuring to note that those who have been home educated have had positive outcomes when it comes to levels of competence, autonomy, and relatedness in their educational environment, almost equal to or exceeding the outcomes of their traditionally schooled peers. Although the history of home schooling is still being written, the results from this study relay its positive, bright future within the realm of American education.¹¹¹

Endnotes

¹ Richard Ryan and Edward Deci, "Self Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well Being" *American Psychologist* 55 (1) (2000): 68-78.

² Edward Deci and Richard Ryan, *Intrinsic Motivation and Self Determination in Human Behavior* (New York: Plenum Press, 1985).

³ Ryan & Deci, "Self Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well Being."

⁴ Richard Ryan and Edward Deci, "When Rewards Compete with Nature: The Undermining of Intrinsic Motivation and Self-Regulation" in *Intrinsic and Extrinsic Motivation: The Search for Optimal Motivation and Performance*, edited by Carol Sansone & Judith M. Harackiewicz, (Orlando, FL: Academic Press, 2000), 14-56.

⁵ Deci & Ryan, *Intrinsic Motivation and Self Determination in Human Behavior*.

⁶ Eric Isenberg, "What Have We Learned About Homeschooling?" *Peabody Journal of Education* 82(2) (2007): 1789-805.

⁷ Janice Aurini and Scott Davies, "Choice without Markets: Homeschooling in the Context of Private Education" *British Journal of the Sociology of Education* 26 (4) (2005): 461-74.

⁸ Paula Wasely, "Home Schooled Students Rise in Supply and Demand" *The Chronicle of Higher Education* 54 (2007): A1-A3.

⁹ Sheena Iyengar and Mark Lepper, "Rethinking the Value of Choice: A Cultural Perspective on Intrinsic Motivation" *Journal of Personality and Social Psychology* 76 (3) (1999): 349-66.

¹⁰ Susan Engel, "Let the Kids Rule the School." *New York Times*, March 15, 2011.

¹¹ Deci & Ryan, *Intrinsic Motivation and Self Determination in Human Behavior*.

¹² Engel, "Let the Kids Rule the School."

¹³ Kylie Stanelly and Jonathan Plucker, "Improving High School Graduation Rates." (Manuscript, Center for Evaluation and Educational Policy, 2008).

¹⁴ Ryan & Deci, "Self Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well Being."

¹⁵ Robert Balfantz, Lisa Herzog, and Douglas MacIver, "Preventing Student Disengagement and Keeping Students on the Graduation Track in High Poverty Middle Grade Schools: Early

Identification and Effective Interventions." Last modified 2007.

<http://web.jhu.edu/sebin/q/b/PreventingStudentDisengagement.pdf>.

¹⁶ David Silver, Melissa Saunders, and Estela Zarate, "What Factors Predict High School Graduation in the Los Angeles Unified School District," University of California Dropout Research Project, 2008.

¹⁷ Deci & Richard Ryan, *Intrinsic Motivation and Self Determination in Human Behavior*.

¹⁸ Malhotra Yogesh, Dennis Galletta, and L.J. Hirsch, "How Endogenous Motivations Influence User Intentions: Beyond the Dichotomy of Extrinsic and Intrinsic User Motivations" *Journal of Management Information Systems* 25(1)(2008): 267-99.

¹⁹ Richard Ryan & Edward Deci, "Self Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well Being."

²⁰ Jeff Marshall, *Overcoming Student Apathy: Motivating Students for Academic Success* (New York: Rowman & Littlefield Education, 2005).

²¹ Yi Cai, Johnmarshall Reeve, and Dawn Robinson, "Home Schooling and Teaching Style: Comparing the Motivating Styles of Home School and Public School Teachers," *Journal of Educational Psychology* 94, no. 2 (2002): 372-80.

²² Michael Cogan, "Exploring Academic Outcomes of Homeschooled Students" *Journal of College Admissions* 6, (2010).

²³ National Center for Education Statistics, *Homeschooling in the United States: 2006*.

(Washington, D.C.: National Center for Education Statistics, U.S. Department of Education, 2006). Brian D. Ray, "Homeschooling Grows Up," *National Home Education Research Institute & Home School Legal Defense Association* (2003); Ray, Brian; Brian D. Ray, "Homeschoolers on to College: What Research Shows us" *The Journal of College Admission* (Fall 2004): 5-11.

²⁴ Cogan, "Exploring Academic Outcomes of Homeschooled Students"; Ray, Brian.

"Homeschoolers on to College: What Research Shows Us" (2004); Travis Reindel, "Homeschooling in the United States: Growth...and Growing Pains" *College and University* 80 (2005), 35.

²⁵ Edward Deci and Richard Ryan, "Facilitating Optimal Motivation and Psychological Well Being across Life's Domains" *Canadian Psychology* 49, no. 1 (2008): 14-23.

²⁶ Edward Deci and Ryan Richard, "The 'What' and 'Why' of Goal Pursuits: Human Needs and the Self Determination of Behavior" *Psychological Inquiry* 11 (2000): 227-68.

²⁷ Ibid.

²⁸ Edward Deci, Richard Koestner, and Richard Ryan, "A Meta Analytic Review of Experiments Examining the Effects of Extrinsic Rewards on Intrinsic Motivation" *Psychological Bulletin* 125, no. 6 (1999): 627-68.

²⁹ Angelique Akin Little, Tanya Eckert, B.J. Lovett, and Steven Little, "Extrinsic Reinforcement in the Classroom; Bribery or Best Practice" *School Psychology Review* 33 (2004): 344-62.

³⁰ Ibid.

³¹ Steven Reiss, "Extrinsic and Intrinsic Motivation at 30: Unresolved Scientific Issues" *The Behavior Analyst* 28 (2005): 1-14.

³² Robert J. Vallerand, "Intrinsic and Extrinsic Motivation in Sport and Physical Activity" in *Handbook of Sport Psychology*, edited by Gershon Tennenbaum & Robert C. Eklund, (New York: John Wiley & Sons, 2007) 60-83.

³³ Judy Cameron and W. David Pierce, "Reinforcement, Reward, and Intrinsic Motivation: A Meta Analysis" *Review of Educational Research* 63, no. 3 (1994): 363-423.

-
- ³⁴ Ibid.
- ³⁵ Little, Eckert, Lovett, & Little, "Extrinsic Reinforcement in the Classroom; Bribery or Best Practice."
- ³⁶ Edward Deci, "Effects of Externally Mediated Rewards on Intrinsic Motivation" *Journal of Personality and Social Psychology* 18 (1971): 105-15.
- ³⁷ Edward Deci, *Intrinsic Motivation* (New York: Plenum Publishing, 1975).
- ³⁸ Edward Deci and Richard Flaste, *Why We Do What We Do: Understanding Self Motivation* (Penguin Books, 1996).
- ³⁹ Deci & Ryan, "The 'What' and 'Why' of Goal Pursuits: Human Needs and the Self Determination of Behavior."
- ⁴⁰ Fabio Alivernini, Fabio Lucidi, and Sara Manganeli, "Assessment of Academic Motivation: A Mixed Methods Study" *International Journal of Multiple Research Approaches* 2, no. 1 (2008): 71-82.
- ⁴¹ Marylene Gagne, and Edward Deci, "Self Determination Theory and Work Motivation" *Journal of Organizational Behavior* 26, no. 4 (2005): 331-62.
- ⁴² Ibid.
- ⁴³ Deci & Ryan, "The 'What' and 'Why' of Goal Pursuits: Human Needs and the Self Determination of Behavior."
- ⁴⁴ Ibid., 117
- ⁴⁵ Judy Cameron, W. David Pierce, Katherine Banko, and Amber Gear, "Achievement Based Rewards and Intrinsic Motivation: A Test of Cognitive Mediators" *Journal of Educational Psychology* 97, no. 4 (2005): 641-55.
- ⁴⁶ Richard Ryan and Edward Deci. "Basic Psychological Needs Scale." Last modified 1998. <http://www.selfdeterminationtheory.org/questionnaires/10-questionnaires/53>.
- ⁴⁷ Frederic Guay, Catherine Ratelle, and Julien Chantal, "Optimal Learning in Optimal Contexts: The Role of Self Determination in Education" *Canadian Psychology* 49, no. 3 (2008): 233-40.
- ⁴⁸ Deci & Ryan. *Intrinsic Motivation and Self Determination in Human Behavior*.
- ⁴⁹ Ibid.
- ⁵⁰ Ibid.
- ⁵¹ John Caldwell Holt, *How Children Fail* (New York: Pitman, 1964).
- ⁵² Jean Piaget, *The Origin of Intelligence in a Child* (London: Routledge and Kegan Paul, 1953).
- ⁵³ Ryan & Deci. "Self Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well Being."
- ⁵⁴ Deci & Ryan. *Intrinsic Motivation and Self Determination in Human Behavior*.
- ⁵⁵ Ibid.
- ⁵⁶ C. Scott Rigby, Edward Deci, Brian Patrick, and Richard Ryan, "Beyond the Intrinsic - Extrinsic Dichotomy: Self Determination and Motivation in Learning" *Motivation and Emotion* 16, no. 3 (1992): 165-77.
- ⁵⁷ Deci & Ryan, *Intrinsic Motivation and Self Determination in Human Behavior*.
- ⁵⁸ Tim Kasser and Richard Ryan, "Further Examining the American Dream: Differential Correlates of Intrinsic and Extrinsic Goals" *Personality and Social Psychology Bulletin* 22 (1996): 80-7.
- ⁵⁹ Richard Ryan and C.L. Powelson, "Autonomy and Relatedness as Fundamental to Education" *Journal of Experimental Education* 60 (1991): 49-66.

-
- ⁶⁰ Diana Cordova and Mark Lepper, "Intrinsic Motivation and the Process of Learning: Beneficial Effects of Contextualization, Personalization, and Choice" *Journal of Educational Psychology* 88, no. 4 (1996): 715-30.
- ⁶¹ Guy Roth, Avi Assor, Christopher Niemiec, Richard Ryan, and Edward Deci, "The Emotional and Academic Consequences of Parental Conditional Regard: Comparing Conditional Positive Regard, Conditional Negative Regard, and Autonomy Support as Parenting Practices" *Developmental Psychology* 45, no. 1 (2009): 1119-42.
- ⁶² Edward Deci, Allen Schwarz, Louise Sheinman, and Richard Ryan, "An Instrument to Assess Adult's Orientations Toward Control Versus Autonomy with Children: Reflections on Intrinsic Motivation and Perceived Competence" *Journal of Educational Psychology* 73 (1981): 642-50.
- ⁶³ Wendy Grolnick and Richard Ryan, "Parent Styles Associated with Children's Self Regulation and Competence in School" *Journal of Educational Psychology* 81, no. 2 (1989): 143-54.
- ⁶⁴ John Mark Froiland, "Parental Autonomy Support and Student Learning Goals: A Preliminary Examination of an Intrinsic Motivation Intervention" *Youth and Child Care Forum* 40, no. 2 (2011): 135-49.
- ⁶⁵ Catherine Ratelle, Frederic Guay, Robert Vallerand, Simon Larose, and Caroline Senecal, "Autonomous, Controlled, and Amotivated Types of Academic Motivation: A Person Orientated Analysis" *Journal of Educational Psychology* 99, no. 5 (2007): 734-46.
- ⁶⁶ Geoffery Williams, Elizabeth Cox, Viking Hedberg, and Edward Deci, "Extrinsic Life Goals and Health Behaviors in Adolescents" *Journal of Applied Social Psychology* 30 (2000): 1756-71.
- ⁶⁷ Ibid.
- ⁶⁸ Ryan & Powelson, "Autonomy and Relatedness as Fundamental to Education."
- ⁶⁹ Catherine Ratelle, Simon Larose, Frederic Guay, and Caroline Senecal, "Perceptions of Parental Involvement and Support as Predictors of College Students Persistence in a Science Curriculum" *Journal of Family Psychology* 19, no. 2 (2005): 286-93.
- ⁷⁰ David Stanley and Jonathan Plucker, "Education Policy Brief: Improving High School Graduation Rates" *Center for Education Policy*, 7, (2008).
- ⁷¹ Ratelle, Guay, Vallerand, Larose & Senecal, "Autonomous, Controlled, and Amotivated Types of Academic Motivation: A Person Orientated Analysis."
- ⁷² John Bowlby, *The Making and Breaking of Affectional Bonds* (United States: Taylor & Francis, 1979).
- ⁷³ Ellen Moss and Diane St Laurent, "Attachment at School Age and Academic Performance" *Developmental Psychology* 37 (2001).
- ⁷⁴ Ryan & Deci, "Self Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well Being."
- ⁷⁵ Edward Deci and Richard Ryan, *Self Determination Theory: A Consideration of Human Motivation Universals* (New York: Cambridge University Press: as referenced in *The Cambridge Handbook of Personality Psychology*, 2009), 570.
- ⁷⁶ Susie Aasen, "New Followers of an Old Path - Homeschoolers" *Journal for Quality and Participation* 32 (2010): 12-5.
- ⁷⁷ Ibid.
- ⁷⁸ Margaret Talbot, "The New Counterculture" *The Atlantic Monthly*, 288 (2001) 136-44.
- ⁷⁹ David Carlson, "Homeschooling and Bilingual Education: A Well Kept Secret" *Encounter: Education for Meaning and Social Justice* 22, (2009) 10-2.
- ⁸⁰ Ryan & Powelson, "Autonomy and Relatedness as Fundamental to Motivation in Education."

-
- ⁸¹ Margaret Talbot, "The New Counterculture."
- ⁸² Paul Goodman, *Compulsory Mis-Education* (New York: Horizon Press, 1964).
- ⁸³ Holt, *How Children Fail*.
- ⁸⁴ Alexander Sutherland Neill, *Summerhill: A Radical Approach to Child Rearing* (New York: Hart Publishing, 1960).
- ⁸⁵ Goodman, *Compulsory Mis-Education*.
- ⁸⁶ Talbot, "The New Counterculture."
- ⁸⁷ Ibid.
- ⁸⁸ Michelle Wichers, "Homeschooling: Adventitious or Detrimental for Proficiency in Higher Education" *British Journal of Sociology in Education* 26, (2005) 461-5.
- ⁸⁹ National Center for Education Statistics, *Homeschooling in the United States: 2009*. (Washington, D.C.: U.S. Department of Education, 2011).
- ⁹⁰ Tamar Lewin, "After home schooling, pomp and traditional circumstances," *The New York Times* June 19, 2011.
- ⁹¹ Pat Farenga, "John Holt and the origins of contemporary homeschooling" *Paths of Learning: Options for Families and Communities* 1, (1999) 8-13.
- ⁹² Ralf Hinze, Functional Pearl: Streams and unique fixed points. In Peter Thiemann, editor, Proceedings of the 13th ACM SIGPLAN International Conference on Functional Programming (ICFP '08), pages 189–200. ACM Press, September 2008.
- ⁹³ Timothy P. Johnson and Linda Owens, "Survey Response Rate Reporting in the Professional Literature," *Paper Presented at the American Association for Public Opinion Research* (2003).
- ⁹⁴ Ibid.
- ⁹⁵ Ryan & Deci, "Basic Psychological Needs Scale." Last modified 1998. <http://www.selfdeterminationtheory.org/questionnaires/10-questionnaires/53>.
- ⁹⁶ Jennifer G. LaGuardia, Richard Ryan, Charles E. Couchman, and Edward Deci, "Within-person Variation in Security of Attachment: A Self-Determination Theory Perspective on Attachment, Need Fulfillment, and Well-being" *Journal of Personality and Social Psychology* 79 (2000): 367-84.
- ⁹⁷ Ryan & Deci. "Basic Psychological Needs Scale." Last modified 1998. <http://www.selfdeterminationtheory.org/questionnaires/10-questionnaires/53>.
- ⁹⁸ Barbara C. Ilardi, Dean Leone, Tim Kasser, and Richard Ryan, "Employee and Supervisor Ratings of Motivation: Main Effects and Discrepancies Associated with Job Satisfaction and Adjustment in a Factory Setting" *Journal of Applied Social Psychology* 23, no. 21 (1993): 1789-805.
- ⁹⁹ Christopher Niemiec and Richard Ryan, "Autonomy, Competence, and Relatedness in the Classroom" *Theory and Research in Education* 7, no. 2 (2009): 133-44.
- ¹⁰⁰ Deci & Ryan. *Intrinsic Motivation and Self Determination in Human Behavior*.
- ¹⁰¹ Ibid.
- ¹⁰² Kennen Sheldon and Jonathan Cullen Hilpert, "The Balanced Measure of Psychological Needs (BMPM) Scale: An Alternative Domain General Measure of Need Satisfaction" *Unpublished Manuscript: University of Missouri, Indiana University, Purdue University* (2011).
- ¹⁰³ Tamar Lewin, "After Home Schooling, Pomp and Traditional Circumstance."
- ¹⁰⁴ David Carlson, "Homeschooling and Bilingual Education: A Well Kept Secret" *Encounter: Education for Meaning and Social Justice* 22 (2009): 10-2.

¹⁰⁵ Iyengar & Lepper, "Rethinking the Value of Choice: A Cultural Perspective on Intrinsic Motivation."

¹⁰⁶ Ryan & Deci, "Self Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well Being."

¹⁰⁷ Deci & Ryan, *Intrinsic Motivation and Self Determination in Human Behavior*.

¹⁰⁸ Eric J. Isenberg, "What Have We Learned About Homeschooling?" *Peabody Journal of Education* 82, no. 2 (2007): 387-409.

¹⁰⁹ Cogan, "Exploring Academic Outcomes of Homeschooled Students"; Cynthia K. Drenovsky and Isaiah Cohen, "The Impact of Homeschooling On The Adjustment of College Students" *International Social Science Review* 87, no. 1 & 2 (2012): 19-33.

¹¹⁰ Deci & Ryan, *Intrinsic Motivation and Self Determination in Human Behavior*.

¹¹¹ Farenga, "John Holt and the Origins of Contemporary Homeschooling."