Bethel University

2021

The Impact of Life Skills Education on Secondary Students

Austin B. Riedeman
Bethel University

Recommended Citation

THE IMPACT OF LIFE SKILLS EDUCATION ON SECONDARY STUDENTS

A MASTER'S THESIS

SUBMITTED TO THE FACULTY

OF BETHEL UNIVERSITY

BY AUSTIN RIEDEMAN

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTER OF ARTS

AUGUST 2021

BETHEL UNIVERSITY

THE IMPACT OF LIFE SKILLS EDUCATION

Austin Riedeman

August 2021

Approved

Advisor: Bill Kron, M.A.

Program Director: Molly Wickam, MBA Ph.D.

Table of Contents

ABSTRACT

The main goal of education is to prepare students to navigate adulthood as independent and responsible members of society. In order to achieve this, individuals need to develop abilities such as making decisions, solving problems, thinking creatively and critically, communicating effectively, building interpersonal relationships, being self-aware and empathic, and coping with emotions and stress. All of these skills are essential to an individual's wellbeing, and are all taught and developed over time. Because of this, schools should center their curriculum around teaching students these essential life skills. Secondary education programs that are designed in this way produce graduates who are more socially, emotionally, and cognitively capable of meeting the challenges they will encounter in college, their career, and life in general.

CHAPTER I: INTRODUCTION

People are not born with all the knowledge and skills they need to navigate their way through life. A person's ability to make decisions, solve problems, think creatively and critically, communicate effectively, build interpersonal relationships, be self-aware and empathic, and cope with emotions and stress are essential to an individual's wellbeing, and are all taught and developed over time. A critical part of each person's journey to adulthood is learning these life skills and gaining confidence in utilizing them. Parents, role models, community members, cultural leaders, educators, and peers are all sources for individuals to draw from throughout their developmental years. Eventually, they reach the time where they are expected to use the life skills they have learned to seamlessly integrate into society. Obviously, people will continue to learn and grow throughout their lifetime, but upon entering adulthood, society expects an individual to be capable of dealing with the demands and challenges of life while positively contributing to their community.

One of the issues society faces is that homelife structures are constantly changing, leaving many adolescents without the guidance and support system at home to learn the necessary skills to thrive as an adult (Cassidy et al., 2018). If adolescents are not learning the life skills needed to deal with the demands of adulthood at home, they need to learn it from somewhere else. I believe this burden falls on our schools. Our education system's primary goal is to prepare students to navigate adulthood as independent and responsible members of society (Cassidy et al., 2018). In this paper I will talk about how research shows that in order to achieve this goal in our modern society schools need to incorporate instruction on life skills in their curriculum and if schools continue to ignore this fact they will leave their graduates ill-equipped to navigate life post graduation.

The reason why I chose this topic is because I see education as a way to help individuals and society as a whole. I am still young, but as I have gained more world experience and perspective I have begun to see how many issues individuals and society face in all aspects of life, and believe that we can do better. I think education, specifically secondary education, is a great place to start because if done right, it can have a strong and lasting impact on students going through a phase of life in which they are developing and growing so much.

When I got to the portion of my teaching program where I started to go to different schools and observe classrooms and even into my first year of teaching, I found myself often wondering "What is the point of this?" and "Is this what our students need?" From the perspective of a teacher I really was able to see how damaging schools could be. There is a lack of empathy at all levels of our educational system. I saw education boards developing standards that have little to no relevance for students' futures, administrators hyper focused on grades over learning, and teachers constantly overworking their students with little regard for what is going on in their other classes or in their lives outside of school. All of this made me believe that this can't be "education done right" and made me want to figure out what that would be.

An impactful part of my teaching program was the idea of backwards design; looking at our end goal and working backward to scaffold the steps to get there. I think this approach would also be a logical way to analyze the education system. I believe that educators need to take a step back and think about what the goal of education is: to prepare students to navigate adulthood as independent and responsible members of society. Next, they need to ask "how does each aspect of school, such as courses and curriculum, contribute to that goal?" If something is not contributing to that goal it should be changed or taken out completely to be replaced with something that does.

Throughout this process, I could see everything that education was not and I had this idea in my head of everything that it could be. I wanted to learn more about what experts in the field had to say about these ideas because I figured I wasn't alone in my thinking, but I wasn't sure if I was right or if there even was a better way to do education. I wanted to see what research has been done, which methods have been tried, and most importantly what the outcomes were for students. This led me to the idea of life skills education. If the research backed the idea that education needs to change because students are more successful with life skills incorporated into their curriculum I needed to know, so that I could be someone that promotes that change and the better future for our students that comes along with it.

Definition of Terms

Here are definitions of commonly-used terms used in this paper:

Adjustment: The ability an individual has to understand and make adaptations to their emotions, values, or behaviors to manage or cope with the challenges and demands of a given situation (Yadav & Iqbal, 2009).

College and Career Readiness: College and career readiness refers to how prepared an individual is socially, emotionally, and cognitively to handle the responsibilities, tasks, and challenges they will encounter in their career or throughout their college experience.

Holistic Education: Holistic education is a style of teaching that engages the student cognitively, socially, and emotionally while relating to their life experiences.

Life Readiness: Life readiness refers to how prepared an individual is socially, emotionally, and cognitively to handle the responsibilities, tasks, and challenges of everyday life.

Life Skills: Life skills are abilities an individual possesses that allows them to change their behaviors so that they are able to more effectively deal with the demands and challenges of

everyday life. These core life skills include things like decision making, problem solving, creative thinking, critical thinking, effective communication, interpersonal relationship skills, self-awareness, empathy, coping with stress, and coping with emotions (World Health Organization, 1997).

Profile of a Graduate: The Profile of a Graduate, developed by Virginia's Board of Education, is a list of the life skills, knowledge, competencies, and experiences students should attain throughout their secondary education so that they are able to handle the demands of life after graduation (Atkinson, 2017).

Project-Based Learning: Project-Based Learning is an educational model in which students develop projects to answer questions, explore new ideas, or pursue knowledge through research under the guidance of a teacher.

Psychosocial Competence: Psychosocial competence is an individual's ability to effectively handle the demands and challenges of everyday life (World Health Organization, 1997).

SMART Goals: SMART goals are goals that are specific, measurable, attainable, relevant, and time-based.

Context and Rationale

The idea that schools need to provide more direct education in the area of life skills has been around for decades. In 1997, the World Health Organization (WHO) recognized "That with changes in many cultures and lifestyles, many young people are not sufficiently equipped with life skills to help them deal with the increased demands and stresses they experience" (World Health Organization, 1997, p. 5). As a result, the WHO started to promote psychosocial competence: the ability to effectively handle the demands and challenges of everyday life (World

Health Organization, 1997). They made the connection that psychosocial competence plays a crucial role in the physical, mental, and social well-being of an individual because health problems in these areas are related to a negative behavior, and the behavior is related to an inability to deal effectively with stresses and pressures in life (World Health Organization, 1997). The World Health Organization concluded that the most direct way to promote psychosocial competence is to teach individuals life skills that give them the ability to make positive adaptations to their behaviors so that they can effectively navigate everyday life (1997).

These ideas still hold true today. Even though the notion that life skills need to be taught in schools is not new, we have yet to see the widespread shift in curriculum necessary to support students' futures. That is not to say that the American Public Educational system has not been taking steps in the right direction, but rather that the steps many schools have taken have not been sufficient. Among many others, the Virginia Board of Education recognized that many high school graduates lacked the knowledge and skills necessary to be successful in the workforce or in college, and as a result, they concluded graduates were not prepared to meet the demands of the present or the future (Atkinson, 2017). In response to this realization, the Virginia Board of Education developed the Profile of a Graduate; a list of the life skills, knowledge, competencies, and experiences students should attain throughout their secondary education so that they are able to handle the demands of life after graduation (Atkinson, 2017). Skills in critical thinking, creative thinking, collaboration, communication, and citizenship are at the core of Virginia's Profile of a Graduate (Atkinson, 2017).

Another example of a type of program that works toward integrating life skills into the curriculum and has shown positive outcomes for its graduates across multiple schools is the Project-Based Learning program. Project-Based Learning is an educational model in which

students develop projects to answer questions, explore new ideas, or pursue knowledge. Students design their projects by choosing topics or concepts that spark their interest, forming a question around the idea, and researching it under the guidance of a teacher. The focus of PBL is for students to gain the knowledge surrounding key concepts outlined by educational standards while concurrently developing skills that can be applied to other areas of their life as well.

Minnesota New Country School is an example of a school that uses a Project-Based Learning program in an effort to incorporate life skills into their curriculum. Because of this shift in focus, graduates on average rate their skills in math, writing, note taking, and test taking as below average (Wurdinger & Rudolph, 2009). Conversely, they rate their skills in creativity, finding information, problem solving, and learning how to learn much higher than average (Wurdinger & Rudolph, 2009). Even though the skills these students rated lower are typically attributed to college success, students graduating from Minnesota New Country School graduate from college at a higher rate than the national average (Wurdinger & Rudolph, 2009). Graduating from college is just one type of success however. A further testament to the benefits of a Project-Based Learning program is that students also identified that they felt successful in terms of happiness, reaching personal goals, meeting learning requirements, personal growth, and lifelong learning (Wurdinger & Rudolph, 2009).

Guiding Questions

The guiding questions that will be addressed in this thesis are:

GQ1: What does research show about how life skills education impacts student learning and outcomes in terms of college readiness, career readiness, and life readiness?

GQ2: Does research show that students participating in Project-Based Learning programs learn life skills and gain the benefits that come with them?

CHAPTER II: LITERATURE REVIEW

The databases used in the process of finding relevant studies to be discussed in this thesis included ERIC, EBSCO MegaFILE, JSTOR, and Google Scholar. While conducting the online searches, the keywords used included: "life skills education," "college readiness," "career readiness," "character education," and "Project-Based Learning." The goal of this chapter is to present and critique the literature about the impact life skills education has on secondary students. The structure of this chapter is as follows. First, the role education has in society is described. Next, life skills are defined and how they are taught is discussed. Then, the impact life skills education has on students' ability to handle the challenges of everyday life, their careers, and further education is explored. Finally, Project-Based Learning programs are analyzed in an effort to understand the effects of a program that incorporates life skills education in its curriculum.

The Role of Education: Addressing the Issues Adolescents Face

The 21st century has been defined by the rapid changes that continually take place throughout our society. Globalization, industrialization, urbanization, science, and technology are all advancing quickly and our way of life is being reshaped as a result (Prajapati et al., 2017). Many issues have emerged along with all of these changes. Society has to combat global warming, racial injustices, poverty, homelessness, hunger, suicide, and a lack of medical care and resources for social, emotional, physical, and psychological issues. The impact of these issues are affecting our entire society, including adolescents (Prajapati et al., 2017).

Adolescence is one of the most critical phases of an individual's development; denoting the transitional stage from childhood to adulthood, and signified by concurrent physical, cognitive, emotional, and social changes (Pillai, 2012). As adolescents experience and learn

more about these issues, they also realize they are approaching adulthood; the time that they will have to face these issues. Furthermore, adolescents need to worry about entering the modern day, ultra-competitive working sector that is riddled with unemployment and a lack of job security (Prajapati et al., 2017). The realities of modern students have heightened the amount of stress they experience, causing an increase in multiple mental health issues such as depression, anxiety, loneliness, rejection, diffidence, anger, conflict in interpersonal relationships, and fear of failure (Pillai, 2012). Schools need to respond to the challenges modern students face as individuals, future workers, and a society as a whole.

Although education is constantly evolving, it has one primary goal: to prepare students to navigate adulthood as independent and responsible members of society (Cassidy et al., 2018). As society changes, how children are educated needs to change as well, in order to meet this goal. Cassidy et al. challenged the notion that education is meant solely for academic purposes (2018). Through their research, they found:

> Concepts like communication skills, goal setting, how to prepare a meal, budgeting, and time management are often expected to be 'picked up along the way' as students grow up. However, today's constantly evolving 'home life' structure, means many of our students lack a support system at home to teach the life skills necessary to thrive after graduation.
>
> (Cassidy et al., 2018, p. 34)

Life Skills

High school graduates need to know how to create and maintain positive relationships with their family and friends, build up their community, take care of their physical, mental, social, and emotional well being, and manage their finances and possessions responsibly. Balancing all of these aspects of life utilizes a variety of skills (life skills) that can be taught to

students. "Life skills enable individuals to translate knowledge, attitudes, and values into actual abilities" (Yadav & Iqbal, 2009, p. 62). In this way, life skills can be adapted and applied to a variety of different situations (Pillai, 2012).

Life skills fall into three broad categories: thinking skills, social skills, and emotional skills (Prajapati et al., 2017). Thinking skills enhance an individual's ability to make decisions, effectively solve problems, and think creatively, critically, and analytically (Prajapati et al., 2017). Social skills promote healthy relationships with others by developing an individual's ability to communicate, co-operate, and lead (Prajapati et al., 2017). Emotional skills involve understanding and being comfortable with oneself signified by managing and coping with feelings, emotions, stress, and pressure from family and peers. (Prajapati et al., 2017).

The World Health Organization states there is no set number of life skills (1997). However, they were able to define a core set of skills targeted at promoting the health and wellbeing of adolescents (World Health Organization, 1997). These ten core skills are: self-awareness, critical thinking, creative thinking, decision making, problem solving, effective communication, interpersonal relationships, empathy, coping with stress, and coping with emotion (World Health Organization 1997). Self-awareness, coping with stress, and coping with emotion all fall into the emotional skills category. Effective communication and interpersonal relationships are social skills. Empathy fits as both a social and emotional skill. Critical thinking, creative thinking, decision making, and problem solving correspond with the thinking skills category.

These skills are designed to promote psychosocial competence; "a person's ability to deal effectively with the demands and challenges of everyday life" (World Health Organization, 1997, p. 1). They help individuals resist peer pressure and be more confident in who they are

(Pillai, 2012). Life skills promote mental well-being so when an individual experiences personal, emotional, or social difficulties they are able to cope with them (Pillai, 2012). The psychosocial competency achieved through the development of life skills helps "students to make right decisions, solve problems, think critically and creatively, communicate effectively, build healthy relationships, empathize with others, and manage their lives in a healthy and productive manner" (Prajapati et al., 2017, p. 3).

Life Skills Education

Life skills can be designed to be taught to young people (World Health Organization, 1997). Various theories were used to develop the foundation of the life skills approach to education and have continued to be used to contribute to its enrichment (Pillai, 2012). Social learning is the most prominent theory, emphasizing the importance of modeling, observing, and imitating the behaviors, attitudes, and emotions of others while considering how both environmental and cognitive factors interact to influence human behavior and learning (Bandura, 1977). Other theories utilized in the development of life skills education include child and adolescent development theory, cognitive problem solving theory, social influence theory, multiple intelligences theory, problem behaviour theory, and risk and resilience theory (Pillai, 2012).

These theories helped develop the methodology of teaching life skills. The social learning theory specifically made a profound impact on the development of life skills education; when teaching life skills in the classroom, it is important to give students activities that allow them to practice and develop the skills that are being taught (Pillai, 2012). Different activities that can be used to enhance life skills in students are: classroom discussions, brainstorming, role plays, working in groups, educational games and simulations, analysis of situation and case studies,

storytelling, and debates (Prajapati et al., 2017). Classroom discussions provide students with the opportunity to build interpersonal relationship skills, communication skills, empathy, and critical thinking skills by listening to each other and working as a team to solve problems . Brainstorming is a way for students to use their imagination, evaluate pros and cons, and generate new ideas in an effort to hone creative and critical thinking skills . Role plays are an engaging way for students to experience how they might handle a situation in real life, which helps them become more self-aware, cope with their emotions, and become more empathetic toward others (Prajapati et al., 2017). Group work allows students to know one another better and work as a team which enhances interpersonal relationship and communication skills . Educational games and simulations promote fun, active learning in which students practice making decisions, solving problems, and thinking critically and creatively . During activities where students perform an analysis of simulation or case studies they get to break apart and explore challenges and dilemmas in an effort to promote their critical thinking and decision making skills (Prajapati et al., 2017). Storytelling can help students think about local problems and lends itself to draw analogies or make comparisons while enhancing listening and communication skills and creative and critical thinking. Debates provide students the opportunity to delve into a particular topic or issue in depth and creatively, offering them the chance to practice some higher thinking skills and communicate ideas or defend positions that they are passionate about (Prajapati et al., 2017).

Unlike the lecture method that is practiced in many traditional classrooms, these methodologies arouse and sustain attention and interest, ensure participation and teamwork, and often facilitate learning through fun and humor (Pillai, 2012). Implementing these activities in a classroom will enhance a student's understanding and ability to use the life skills they learn

(Prajapati et al., 2017). While the insight gained from these theories and methodologies indicate life skills can be taught and utilized effectively by students, numerous studies take our understanding a step further and have proven the positive outcomes of life skills education.

These outcomes can be split into two main categories: life readiness and career and college readiness. Life readiness refers to how prepared an individual is socially, emotionally, and cognitively to handle the responsibilities, tasks, and challenges of everyday life. Career and college readiness refers to how prepared an individual is socially, emotionally, and cognitively to handle the responsibilities, tasks, and challenges they will encounter in their career or throughout their college experience.

Life Readiness

Yadav and Iqbal started their research to analyze the impact of life skills training on self-esteem, adjustment, and empathy among adolescents (2009). Their study included 60 students aged 15-17 (Yadav & Iqbal, 2009). Before the study began, and after students had five months of life skills training they administered three tests: a self-esteem inventory, the Adjustment Inventory for School Students (AISS), and an empathy quotient (Yadav & Iqbal, 2009). They used the difference in the scores before and after the life skills training to see what effect the life skills training had on the students' self-esteem, social adjustment, emotional adjustment, educational adjustment, and empathy (Yadav & Iqbal, 2009).

In the area of self-esteem, the mean score of the students went from 53.93 before the life skills training to 69.06 after the training, indicating an increase in the self-esteem of the students (Yadav & Iqbal, 2009). Yadav and Iqbal contributed this increase to the students' improved ability to interact with others, strengthened communication skills, gain in creative thinking skills, enhanced ability to make their own decisions and manage their resources, and greatly improved

their ability to effectively work in groups to accomplish group goals that were developed through the life skills training (2009).

The next area that students were tested in was adjustment. Adjustment is the ability an individual has to understand and make adaptations to their emotions, values, or behaviors to manage or cope with the challenges and demands of a given situation (Yadav & Iqbal, 2009). This is broken into three main aspects of life; social adjustments (dealing with adaptations to behaviors and values in an effort to be accepted, live and work harmoniously with others, and engage in satisfying interactions and relationships), emotional adjustments (dealing with adaptations to attitudes and expressing emotions), and educational adjustments (dealing with adaptations to actions and mindset toward learning and growth). The AISS is scored in a reverse direction, meaning the lower scores show a student is more capable in the area of adjustment (Yadav & Iqbal, 2009). The students' scores for emotional adjustment were 13.51 before the training and 7.53 after the training (Yadav & Iqbal, 2009). For social adjustment the scores were 11.53 before the training and 10.93 after the training (Yadav & Iqbal, 2009). For educational adjustment the scores were 13.1 before the training and 6.13 after the training (Yadav & Iqbal, 2009). These scores signify an increase in students' abilities in each of these areas after the life skills training, although the increase in social adjustment is miniscule (Yadav & Iqbal, 2009). Yadav & Iqbal attribute these results to the training's promotion of skills for coping with emotion, self management, controlling stress, managing disagreements and conflict, developing a support network, and learning from previous experiences (2009).

The last characteristic students were tested on was empathy. The mean score for students before the training was 40.71, whereas after the training the mean score was 54.26 (Yadav & Iqbal, 2009). Once again, the life skills training showed an increase in the students' ability.

Yadav & Iqbal found that the portions of the life skills training where real life role models demonstrated empathy and role plays in which students had the opportunity to practice empathic responses to characters in stressful situations helped build habits of thinking and caring about other people's perspectives and feelings (2009).

A different study by Sobhi-Gharamaleki and Rajabi randomly split 40 students into two groups: an experimental group that received 8 sessions of like skills training, and a control group that did not receive any life skills training over the course of the study (2010). The students selected for this study all gained a score of 28 or more on the Depression Anxiety Stress Scales questionnaire, indicating that they struggle with anxiety, depression, and stress (Sobhi-Gharamaleki & Rajabi, 2010). The purpose of this study was to analyze how life skills training affects the anxiety, depression, and stress of students that have symptoms of mental health disorders (Sobhi-Gharamaleki & Rajabi, 2010). The experimental and control groups were both given pretests and posttests to measure self-esteem, anxiety, depression, and stress (Sobhi-Gharamaleki & Rajabi, 2010).

The results showed that there was a significant difference between the average scores of each posttest for the experimental group and the control group (Sobhi-Gharamaleki & Rajabi, 2010). Additionally, the experimental group received an R coefficient of 0.51 for the stress variable, 0.28 for the anxiety variable, 0.11 for the depression variable, and 0.12 for the self-esteem variable (Sobhi-Gharamaleki & Rajabi, 2010). These values symbolize that life skills instruction has a positive effect on all of the mental health disorder symptoms, with the greatest impact on managing stress (Sobhi-Gharamaleki & Rajabi, 2010). Sobhi-Gharamaleki and Rajabi concluded that the life skills taught in the training such as problem solving, feelings expression, setting goals, decision making, planning, identification, registration the negative thought and

replacing the positive ones, mental relation, positive imaging, use of supported systems, and not being avoider, contributed to an increase in the students' ability to cope with stress, anxiety, and depression, leading to stronger mental health (Sobhi-Gharamaleki & Rajabi, 2010).

After a literature review, Cassidy et al. came to the understanding that "graduating high school with limited knowledge of concepts including goal setting, budgeting, time management, proper communication, ways to apply for a job, finance tactics, and more, is a detriment to success" (2018, p. 37). They wanted to test how students responded to direct instruction on these topics while adhering to district standards (Cassidy et al., 2018). Their study took place across two charter schools, where they infused life skills education into their social studies curriculum (Cassidy et al., 2018). To analyze the impact of this change, they relied on feedback in the form of surveys, interviews, notes, and reflections from the students and educators (Cassidy et al., 2018).

Cassidy et al. found that by incorporating student interests and potential future needs into the curriculum, the lessons became more engaging and meaningful to the learners (2018). In the students' reflections, many stated that they felt confident that they had the social skills to make connections with other people (Cassidy et al., 2018). Throughout the program, the educators saw this in action, reflecting that the students became more expressive with each other, were more self-aware, and capable of resolving arguments (Cassidy et al., 2018). Additionally, learning how to develop SMART goals led to the students being more confident in their ability to follow through and complete tasks (Cassidy et al., 2018). Goals that are specific and measurable help students fully grasp what their task is and when they have completed it. Keeping the goal attainable, relevant, and time-based helps them remain on task. At the end of the program, students stated that the practical skills they learned contributed to a sense of ease around their

futures, but also gave them a sense of frustration that life skills weren't taught normally in classes (Cassidy et al., 2018).

The social, emotional, and cognitive challenges of adulthood can be overwhelming for many, especially for those that are ill equipped to manage them. These studies show that life skills training is proven to help individuals not only effectively manage those challenges, but also cope with the emotions like anxiety and stress that come along with them. By teaching high school students how to make decisions, set goals, communicate effectively, think critically, cope with emotion, control stress, manage disagreements and conflict, develop a support network, and learn from previous experiences, they were able to build stronger social relationship, their mental health improved, they became more self-aware and confident, and they altogether became better prepared to navigate the challenges of life after graduation.

Career and College Readiness

One concern with recentering secondary education around life skills is that students will have less practice developing academic and job-specific skills before graduating, and as a result their performance in these areas post-graduation will suffer. This is an important matter to address as vocation and continuing education are both crucial aspects of life for which schools need to prepare their students. The following studies show that the traditional education system centered around teaching academic knowledge is a disservice to its students, and leads to many graduates lacking the abilities to succeed in college or the workforce of today. In addition, the studies reveal how schools that incorporate life skills into their curriculum produce graduates that are better prepared not only for life after graduation, but also for college and the workforce.

Rateau et al. describe the modern workforce as highly competitive and rapidly changing (2015). As a result, it is increasingly critical that those entering the workforce have the skills

necessary to find lasting success (Rateau, 2015). However, employers report hiring substantial numbers of new entrants who are poorly prepared, requiring additional company investment to improve their work readiness, revealing that even many college graduates are venturing into the workforce without the skills necessary to meet the demands of employers (Casner-Lotto et al., 2009). Education largely focuses on basic skills: memorization of content-based knowledge or job-specific skills (Rateau et al., 2015). Employers have shifted their focus from looking for graduates with basic skills to graduates that possess life skills (Rateau & Kaufman, 2011). The life skills employers are looking for include creative and critical thinking, interpersonal skills such as leadership, communication, and collaboration, lifelong learning, and social responsibility (Finch et al., 2013). Graduates with these skills are more competitive and find more success in their vocation, and as a result, employers are more satisfied with their performance (Rateau et al., 2015). Despite the broad consensus that these life skills are essential for graduates to find success in their vocation, schools resist altering their curriculum to address these needs. Until they do, graduates will remain unprepared for the workforce that awaits them (Rateau et al., 2015).

The Virginia Board of Education also recognized the need for education to change and decided to act in 2017. They estimated that 500,000 jobs would be created in Virginia over the five coming years, many of them in the scientific, technical, or healthcare fields, and some of them would be new jobs that have never existed before (Atkinson, 2017). After interviewing many colleges and businesses within the state, they found that some graduating students required remedial classes in English and Math upon entering college, and many students entering the workforce lacked the abilities to communicate effectively, solve problems, and navigate a team environment (Atkinson, 2017). The students of Virginia were not being prepared to meet the needs of the present day, or more importantly, the needs of the future.

As the Virginia state board began revising their educational system, they developed a Profile of a Graduate. This profile was meant to encompass all of the knowledge, skills, competencies, and experiences students should attain to make them "life-ready" (Atkinson, 2017). While this was their stated goal, it is abundantly clear that their focus was preparing their students to be "work-ready." Most of their changes are geared toward preparing their students for work or college rather than life as a whole.

In order to build their Profile of a Graduate, Virginia's Board of Education gathered input about this skills needed to be life-ready from stakeholders throughout the community including local school boards, administrators and teachers, school support staff, parents, students, community members, businesses, two-year and four-year colleges, education associations, the governor, the secretary of education, members of the legislature (Atkinson, 2017). Using this input, they developed a Profile of a Graduate that shows:

> Four overlapping areas for student learning and achievement that are essential for the life-ready student: 1) content knowledge based on statewide standards and its application; 2) workplace skills and behaviors that promote productivity, relationship building, and problem solving; 3) understanding of the opportunities within civic organizations for community engagement and civic responsibility; and 4) participation in career exploration, planning, and preparation. (Atkinson, 2017, p. 29-30)

In order to be successful in these areas of achievement, students need to develop and apply foundational skills in critical thinking, creative thinking, collaboration, communication, and citizenship (Atkinson, 2017). Virginia then redesigned their high school standards to focus on teaching students how to apply these skills in the four areas of achievement so that they would be prepared to navigate life after graduation effectively (Atkinson, 2017).

Minnesota New Country School (MNCS) utilizes a Project-Based Learning program that prioritizes teaching students life skills over knowledge in core disciplines. Wurdinger and Rudolph researched the effects of this style of program on students and alumni that attended the school (2009). They collected data on a variety of students' skills that fell into four main categories: basic academic skills, college preparation, thinking skills, and personal qualities (Wurdinger & Rudolph, 2009).

The data showed that the four lowest scores for alumni were in math, writing, note taking, and test taking (Wurdinger & Rudolph, 2009). All these skills are what society typically contributes to college success, however MNCS alumni managed to graduate from four-year colleges/universities without having as much practice of these skills in high school when compared to their traditionally educated peers . They also graduate at a higher rate than the national average (Wurdinger & Rudolph, 2009).

On the other hand, alumni's top scoring skills were creativity, finding information, problem solving, and learning how to learn. All these skills fall under personal qualities or thinking skills. Wurdinger and Rudolph concluded that the academic skills society normally associates with college success have less of an impact than many life skills (2009). Additionally, these life skills are more applicable to other areas of life outside of the academic sector when compared to traditional academic skills. Students that chose to enter the workforce directly after graduation also found that the life skills they learned helped lead them to success in their careers and personal lives (Wurdinger & Rudolph, 2009).

A study done by Conley that looked into the characteristics of a college ready student revealed some similar findings. In his study, he identified content knowledge over a range of disciplines, the ability to study independently or in a group, and reading and writing skills as

necessary characteristics that lead to college success (Conley, 2007). These are all characteristics that are commonly identified as essential for students in order to be successful in college. However, his research also identified a list of other characteristics that lead to a successful college experience. These characteristics included: understanding the process of learning, the ability to think critically, the ability to accept and apply critical feedback, self-reflection, and building relationships with teachers and peers (Conley, 2007).

These studies all found that academic knowledge is obviously an important factor that leads to success in college. However, academic knowledge is not the only relevant factor. Teaching life skills such as critical thinking, creative thinking, time management, learning how to learn, collaboration, communication, applying critical feedback, self reflection, and relationship building in unison with academic skills leads to better outcomes for students, whether they are pursuing further education or entering the workforce. The studies showed that these life skills are just as important, if not more important, than the academic skills that are the center of most educational programs, and if schools ignore these skills, students are left unprepared to navigate life post-graduation.

Project-Based Learning

Project-Based Learning (PBL) programs are a model of an educational program that successfully integrates life skills into its curriculum. Life skills are not at the center of PBL programs, but rather are developed concurrently with content knowledge. PBL programs adhere to standards while guiding the development of valuable life skills that students will need post graduation. This section will discuss what the research says about how life skills are incorporated into PBL programs and what impact that has on graduates.

Project-Based Learning is an educational model in which students develop projects to answer questions, explore new ideas, or pursue knowledge. PBL is student-led and teacher facilitated (Bell, 2010). Students are given the opportunity to choose topics or concepts that spark their interest, form a question around the idea, and research it under the guidance of a teacher. The teacher oversees the choices that students make throughout the projects, approving the ideas before students move forward. The students set goals for themselves, coming up with a timeline for when tasks need to be completed and what resources they will need. The process of allowing students to choose what to research and set their own goals provides students with a sense of responsibility and ownership of their project and gives them the feeling that they are taking charge of their own learning (Harada et al., 2008).

The Need for Project-Based Learning

The need for a program like this stems from society's increased emphasis on providing every student with a quality education, specifically one that encourages the development of skills students need to be successful in the 21st century. Students that dropout of high school state that the two of the most profound reasons they choose to leave are that the curriculum is disconnected from life after graduation and they feel a lack of connection to others at school (Wagner, 2002). PBL provides connections between the curriculum and what is happening in the world or the students' community. It also encourages collaboration among students and between teachers and students.

Additionally, PBL provides an alternative form of assessment than standardized tests. Toch describes that quantitative standardized assessments are limited in their ability to measure student achievement and skills, explaining that they can only measure basic skills and rote memorization (2011). For example, high school courses, such as algebra, often teach content

such as factoring equations by using rote memorization of algorithms because it is easier to assess, rather than engaging students in problem solving and critical writing exercises that develop both deeper knowledge of the content and the general logical and analytical thinking skills that are valued at the postsecondary level (Venezia & Jaeger, 2013). Meyer and Wurdinger further this notion, expressing that performance-based assessments, like those used in PBL, give a more holistic picture of students' understanding and abilities, and provide insight of their more abstract skills like critical thinking, synthesizing, problem solving, and creativity (2016).

Bell compiled a variety of studies comparing PBL students to their traditionally educated peers and found that PBL students consistently outperformed their traditionally educated peers on standardized tests (2010). The conclusion from this analysis was that a PBL program's focus on the process of learning did not come at the expense of their understanding of the concepts, but rather benefited the students' comprehension. In addition to PBL students outscoring their peers on standardized assessments, they also gained valuable skills that are not measured by those assessments (Bell, 2010).

The Skills Developed Through Project-Based Learning

Developing projects is not a new idea in education, but the Project-Based Learning model is designed to be a more holistic instructional approach (Railsback, 2002). The focus of PBL is for students to gain the knowledge surrounding key concepts outlined by educational standards while concurrently developing the skills associated with the thought process to get there. Essentially, through PBL students learn the material and also learn how to learn (Wurdinger & Rudolph, 2009). The strategies used in PBL are influential in creating independent thinkers and learners that can solve real-world problems. These strategies include: allowing students to design

their own inquiries, plan their learning, organize their research, apply tools and technology to their research, collaborate with peers and adults, implement a multitude of learning strategies, and create a quality product that they are responsible for (Bell, 2010).

According to research by Bell, students flourish under this student-driven, motivating approach to learning that PBL provides, and through this process they gain valuable skills that are a strong foundation for their future in the rapidly changing world they will enter post-graduation (2010). Beyond that, PBL students are more confident in their ability to learn and direct themselves to completing the task on which they are working (Meyer & Wurdinger, 2016). Wurdinger and Rudolph's research also shows that PBL students are more self aware and have a better understanding of how they define success along with the goals they need to achieve to be successful (2009).

Bell's research showed that as students spent more time in PBL, they developed the following skills: responsibility, independence, discipline, and accountability (2010). Students learned these skills through the different phases of PBL. In the first phase, students come up with an inquiry question. Then, they brainstorm a procedure for research and identify the materials they need. Next, they come up with a project as a way to display what they learned. Finally, they complete the project and display it to an audience. Because each of these phases must be completed in a timely manner, planning, goal setting, and organization are essential to a student's success (Harada, 2008). Throughout these phases students reflect on their progress toward their goals (Bell, 2010). This self-reflection and awareness promotes the growth of the highlighted skills in the students (Bell, 2010).

Meyer and Wurdinger's research showed that students found that students perceived an increase in communication, collaboration, time management, and self-directedness (2016). Time

management and self-directedness skills are developed in similar ways as outlined above in Bell's study; through goal setting and self-reflection (2010). Communication and collaboration skills are built in a variety of ways in a PBL program. PBL students are encouraged to work in groups with students that have similar questions or project ideas in mind (Meyer & Wurdinger, 2016). By doing so, they can bounce ideas off of and learn from each other. Additionally, as a result of the teacher acting as a facilitator in the PBL model, student communication with the teacher is critical to achieving their goals, discovering new opportunities, and staying on track to finish their project (Meyer & Wurdinger, 2016). The final way PBL students build these skills is through their presentation of their project. They could present to peers, administrators, teachers, or parents. In addition to communicating their ideas to this audience, they receive feedback from the audience that helps them to continue to grow and develop (Meyer & Wurdinger, 2016).

Wurdinger and Rudolph's research showed that PBL students believed that their creativity, problem solving, and critical thinking skills were greater than their traditionally educated peers as a result of their program (2009). Meyer and Wurdinger's study echoed this sentiment (2016). PBL students noted that the process of coming up with an inquiry question and designed a project around that question helped them develop these skills. Furthermore, when carrying out their project, they would need to make edits and think of creative solutions to ensure that their final product functioned as intended.

Other skills that Project-Based Learning models help students hone are effectively using technology to answer questions, discover new information, and solve problems. Many aspects of life in today's society are reliant on technology and because of this, knowing how to navigate the internet and use technology effectively gives students a big advantage. A significant part of PBL relies on using technology to do research, often through online databases, in an effort to access,

retrieve, and produce information (Harada, 2008). The research is essential for students to understand the concept and apply it to their project. Bell's research shows technology use is highly engaging for students because it taps into their fluency with computers, and as a result, students learn how to navigate the internet and differentiate reliable and unreliable sources (2010).

This research shows that PBL programs enhance students' development of skills in creativity, problem solving, critical thinking, communication, collaboration, time management, and self-directedness. As discussed in the section about life skills, this is extremely beneficial for students and sets them up well to handle the challenges of everyday life, postsecondary education, and their careers. Wurdinger and Rudolph's research supports this notion (2009). In their study, Wurdinger and Rudolph found that 92% of alumni surveyed said the skills they gained through their Project-Based Learning program in high school gave them an advantage over their college classmates (2009). Additionally, 83% of alumni said they were better prepared to enter the workforce than their co-workers (Wurdinger & Rudolph, 2009).

Although continuing education and vocation are important elements of life, they are not the only important elements. This idea can get lost to many employees and students as they become overly centered on their job or their education, and no longer live a balanced life. PBL helps students in this area as well, as it teaches students how to set goals and find success (Wurdinger & Rudolph, 2009). PBL students are encouraged to evaluate what success means to them. Wurdinger and Rudolph found that PBL students and alumni identified things like happiness, personal growth, learning, helping others, and developing relationships as being successful more than things like finding a job or getting good grades (2009). In addition to

helping students identify what success means in their own life, PBL programs also help students build the life skills to get there.

CHAPTER III: APPLICATION OF THE RESEARCH

To apply this research to the field of education, I developed a research project for students to complete in one of the classes I teach; ninth grade physical science. The goal in developing this project was to use the same strategies a Project-Based Learning program uses to help students develop life skills. For the students, the goal of this project is to complete in-depth research about how one type of energy resource can be converted into electricity, and present their findings to the class. The project is attached in Appendix A.

Explanation of the Project

This project is a summative research project. It is designed for students to complete in pairs or groups of three, but it can be modified for individual students or larger groups. The story used to introduce students to the project is that the Minnesota Legislative branch is planning to construct a new power plant and they are seeking information on which types of energy resources will be the best choice for our community. The students are challenged to research the different types of energy resources and to create a short presentation to the legislature (rest of the class) about their findings and why one type of energy resource is the best choice. In the introduction, there is a summary of which resources Minnesota currently uses to generate electricity, a link to where students can learn more about Minnesota's electricity consumption, and videos giving a brief overview about how each of the types of energy resources can be converted into electricity.

Next, students complete some background research in part one. This research is structured for them, and they are given the literature to review. Students are tasked with reading

the text and taking notes to help them remember key concepts and ideas. The goal of this text is to help students gain an overall understanding of all of the different types of energy resources, how those resources can be converted into electrical energy, and how society uses that electrical energy. To finish this part, students reflect on what they learned, ask questions, and look ahead to plan what they will need to do next.

In part two, students will use the knowledge they gained from part 1 to choose the type of energy resource they think is the best for Minnesota or are the most interested in learning more about. They then use the internet to research information about that type of energy resource, how it can be converted into electricity and its benefits and risks in comparison to other types of energy resources. They record the websites they used to find this information. To finish this section the students reflect on what they researched, ask any lingering questions, and prepare for the next part of the project.

In part three of the project, students plan out how they are going to present their research. Students get to choose how they want to present their findings. There is a list of different formats students can use to guide the class through their information. This includes narrating a google slide presentation or large poster, giving a TED talk, recording an interview, making a television commercial or a music video, or creating flyers that can be passed out. If they wish, students are allowed to present in a format not on this list, but approval from the teacher is needed. The goal of their presentation is to communicate how the energy resource is converted into electricity, and why their method is better than the other forms of energy resources. They do this by highlighting the benefits and risks of their energy resource and comparing it to the other resources. Students come up with a plan for how they are going to accomplish this, create any materials they will need, and write out what they will say.

Finally, the students present their findings to the class in their chosen format. Each group takes a turn to present. As the students are watching the presentations they are taking notes about each of the different types of energy resources. After each presentation, there is a chance for the students to ask the presenters questions. After all the presentations, students reflect on what they found interesting and which type of energy resource they think is the best choice for Minnesota to use in its new power plant.

Research Based Rationale

This project follows the format of projects in a Project-Based Learning model. It adheres to the standards for the class set up by the state's board of education, but also concurrently encourages the development of life skills. A limitation of this project is that it needed to be designed to fit into a class that is not part of a PBL program. While the elements of PBL are incorporated in this assignment, some of them may not be to the same extent as they would be in a PBL program.

The first aspect of PBL programs this assignment incorporates is the element of student choice. Students make three significant choices throughout the project. The first choice is which type of energy resource they are going to focus their research on. The second is what method of converting that resource into electricity they are going to focus their research on. The final major choice they make is the format in which they will present their research to the class. The purpose of this is to provide students with a sense of responsibility and ownership of their project and gives them the feeling that they are taking charge of their own learning (Harada et al., 2008). Their increased commitment to the project along with the fact that they will need to present their information to their peers helps them develop accountability and responsibility (Bell, 2010).

This project is also designed to provide students with a connection to something that is impactful to their community (Atkinson, 2017). Students use electricity in their everyday lives, and this project gives them scientific knowledge about how that electricity is generated, while also promoting awareness about the benefits and risks associated with the different energy resources that are used in the state that they live in. They analyze how financially, environmentally, and morally responsible each of the different resources are in terms of their effects on the community (Atkinson, 2017). This helps them develop their critical and analytical thinking skills while giving them practice solving real-world problems (Wurdinger & Rudolph, 2009; Meyer & Wurdinger, 2016).

Communication and collaboration skills are built in a variety of ways throughout this project. Students work in small groups so that they can bounce ideas off and learn from one another (Meyer & Wurdinger, 2016). Additionally, the teacher helps facilitate the project, so when students need concepts clarified or advice on how to proceed and reach their next goal they need to connect with the teacher (Bell, 2010). The presentation at the end of the project also helps students practice communicating ideas and concepts to other people. The questions students ask and feedback from the teacher help them further progress in this area (Meyer & Wurdinger, 2016).

The reflections at the end of each part of the project help students focus on two main factors: reviewing what they just learned and planning out next steps. When students reflect on what they just learned they not only retain the information better but also build a better understanding about the processes that work best for them to learn (Wurdinger & Rudolph, 2009). While this project provides general guidance for when and what students will need to do next, it still encourages them to think ahead and make a plan for when they will need to finish

each of the next steps. This helps students develop time management and goal setting skills while boosting their confidence in their ability to learn and direct themselves to completing the task they are working on (Meyer & Wurdinger, 2016).

Audience

The research project is designed for a ninth grade Physical Science class. The project is meant to be a summative assessment at the end of a unit on energy and electricity. Students need to apply the background knowledge they gain throughout the unit to this project. The project will help them build off their general understanding of energy and electricity, focusing specifically on how one type of energy resource can be used to generate electricity. Though they will gain an in-depth understanding of only one method of energy being converted into electricity (the one they choose to research for their project), students will get an overview of all of the other methods as they listen to their classmates' presentations about the other types of energy resources.

Resources

Depending on the class, five to six days of forty-five minute class periods will be needed for the students to complete the project. The project is broken up into four parts, each of which should take about a day of class time for the students to complete. To start the project, the teacher will give an introduction, overview of the project, and a timeline. Once the project is introduced, students can start on part one. They can communicate with each other or work independently on this part. The next day, students will be able to finish part one and reflect on which energy resource is the most interesting to them. This is intentionally done before students choose their groups so that students can weigh the pros and cons to picking a group of people that have similar interests compared to a group of friends that they are potentially more comfortable and confident working with. If necessary, parts three and four together can take up

three days instead of two. The extra time can be used if there is a large class and more time is needed for presentations, if students need more time to finish part three (preparing their presentations), or a combination of the two.

Sustainability

How electricity is generated from energy resources is constantly evolving and changing. For the foreseeable future, society will continue to use electricity, even if how we get that electricity changes. The relevance of this project will remain throughout future years, but the choices for what students research may change as the way electricity is generated does. The introduction and background research (part one) are the largest portions of this project that will need to be modified for it to remain relevant.

CHAPTER IV: DISCUSSION AND CONCLUSION

A person's ability to make decisions, solve problems, think creatively and critically, communicate effectively, build interpersonal relationships, be self-aware and empathic, and cope with emotions and stress are essential to an individual's wellbeing, and are all taught and developed over time. A critical part of each person's journey to adulthood is learning these life skills and gaining confidence in utilizing them. If adolescents are not learning the life skills needed to deal with the demands of adulthood at home, they need to learn it from somewhere else. One of the issues individuals face on this journey is that homelife structures are constantly changing, and as a result, many adolescents are left without the guidance and support system at home to learn the necessary skills to thrive as an adult (Cassidy et al., 2018). Our education system's primary goal is to prepare students to navigate adulthood as independent and responsible members of society (Cassidy et al., 2018). Because of this, our schools need to be revolutionized in an effort to teach students these essential life skills.

Summary of the Literature

The idea that schools need to provide more direct education in the area of life skills has been around for some time. In 1997, the World Health Organization recognized "That with changes in many cultures and lifestyles, many young people are not sufficiently equipped with life skills to help them deal with the increased demands and stresses they experience" (World Health Organization, 1997, p. 5). They made the connection that an individual's ability to effectively handle the demands and challenges of everyday life plays a crucial role in their physical, mental, and social well-being (World Health Organization, 1997). As society changes, the demands and challenges of everyday life change as well. This has become increasingly complicated as the 21st century has been defined by the rapid and continual changes in areas such

as globalization, industrialization, urbanization, science, and technology (Prajapati et al., 2017).

Many issues have emerged along with all of these changes. Society has to combat global

warming, racial injustices, poverty, homelessness, hunger, suicide, and a lack of medical care

and resources for social, emotional, physical, and psychological issues. With the issues facing

society continuing to evolve, teaching students the life skills needed to combat them are more

important than ever.

Following the idea of backwards design, the first step in understanding what students

need to be taught is understanding what students need to know and be capable of doing upon

graduating from high school and entering society as adults. High school graduates need to know

how to create and maintain positive relationships with their family and friends, build up their

community, take care of their physical, mental, social, and emotional well being, and manage

their finances and possessions responsibly. Balancing all of these aspects of life utilizes a variety

of thinking, social, and emotional life skills that can be taught to students. The ten life skills

identified as being the most crucial for students to develop so that they can handle the challenges

and demands of everyday life are: self-awareness, critical thinking, creative thinking, decision

making, problem solving, effective communication, interpersonal relationships, empathy, coping

with stress, and coping with emotion (World Health Organization 1997). "These life skills enable

individuals to translate knowledge, attitudes, and values into actual abilities" (Yadav & Iqbal,

2009, p. 62).

The Virginia State Board of Education followed this same process in the development of

their Profile of a Graduate. They came up with a list of the life skills, knowledge, competencies,

and experiences students should attain throughout their secondary education so that they are able

to handle the demands of life after graduation (Atkinson, 2017). In order to build their Profile of

a Graduate, Virginia's Board of Education gathered input about this skills needed to be life-ready from stakeholders throughout the community including local school boards, administrators and teachers, school support staff, parents, students, community members, businesses, two-year and four-year colleges, education associations, the governor, the secretary of education, members of the legislature (Atkinson, 2017). Using this input, they developed a Profile of a Graduate that shows four areas for student learning and achievement that are essential for the life-ready student. These areas include content knowledge based on statewide standards and its application, workplace skills and behaviors that promote productivity, relationship building, and problem solving, understanding of the opportunities within civic organizations for community engagement and civic responsibility, and participation in career exploration, planning, and preparation (Atkinson, 2017). In order to be successful in these areas of achievement, students need to develop and apply foundational skills in critical thinking, creative thinking, collaboration, communication, and citizenship. Virginia then redesigned their high school standards to focus on teaching students how to apply these skills in the four areas of achievement so that they would be prepared to navigate life after graduation effectively (Atkinson, 2017).

Many other schools have used ideas similar to Virginia's, focusing their curriculum on life skills education. A variety of studies have been conducted in these schools that show the positive effects teaching life skills in secondary schools has on students and their future's. A study done by Yadav and Iqbal revealed that students attending a life skills education program saw an increase in their self-esteem, empathy, and ability to understand and make adaptations to their emotions, values, and behaviors (2009). A study done by Sobhi-Gharamaleki and Rajabi found that the life skills taught in the training such as problem solving, feelings expression, setting goals, decision making, planning, identification, registration the negative thought and

replacing the positive ones, mental relation, positive imaging, use of supported systems, and not being avoider, contributed to an increase in the students' ability to cope with stress, anxiety, and depression, leading to stronger mental health (2010). Cassidy et al.'s research showed that students involved in life skills education programs became more expressive with each other, were more self-aware and capable of resolving arguments, and expressed a greater confidence in their ability to complete tasks (2018).

The social, emotional, and cognitive challenges of adulthood can be overwhelming for many, especially for those that are ill equipped to manage them. These studies show that life skills training is proven to help individuals not only effectively manage those challenges, but also cope with the emotions like anxiety and stress that come along with them. Life skills education teaches high school students how to make decisions, set goals, communicate effectively, think critically, cope with emotion, control stress, manage disagreements and conflict, develop a support network, and learn from previous experiences. Upon learning these skills, students were able to build stronger social relationships, their mental health improved, they became more self-aware and confident, and they altogether became better prepared to navigate the challenges of everyday life.

In addition to being prepared for everyday life, life skills education also helps prepare students for college and the workforce. Rateau and Kauffman describe employers as shifting their focus from looking for graduates with basic skills to graduates that possess life skills (2011). This correlates with Rateau et al.'s study that found graduates with these skills are more competitive and find more success in their vocation, and as a result, employers are more satisfied with their performance (2015). Minnesota New Country School focuses on teaching their students creativity, finding information, problem solving, and learning how to learn (Wurdinger

& Rudolph, 2009). As a result, they produce graduates that are more successful in college than the national average, despite the fact their curriculum focuses less on skills that are traditionally contributed to college success such as math, writing, note taking, and test taking (Wurdinger & Rudolph, 2009). In addition to content knowledge over a range of disciplines, Conley's study found that understanding the process of learning, the ability to think critically, the ability to accept and apply critical feedback, self-reflection, and building relationships with teachers and peers were characteristics that led students to a successful college experience (2007).

These studies all found that academic knowledge is obviously an important factor that leads to success in college. However, academic knowledge is not the only relevant factor. Teaching life skills such as critical thinking, creative thinking, time management, learning how to learn, collaboration, communication, applying critical feedback, self reflection, and relationship building in unison with academic skills leads to better outcomes for students, whether they are pursuing further education or entering the workforce. These studies show that the traditional education system centered around teaching academic knowledge is a disservice to its students, and leads to many graduates lacking the abilities to succeed in college or the workforce of today. In addition, these studies reveal how schools that incorporate life skills into their curriculum produce graduates that are better prepared not only for life after graduation, but also for college and the workforce (Conley, 2007; Rateau et al., 2015; Rateau & Kauffman, 2011; Wurdinger & Rudolph, 2009).

Project-Based Learning (PBL) programs are a model of an educational program that successfully integrates life skills into its curriculum. Life skills are not at the center of PBL programs, but rather are developed concurrently with content knowledge. In PBL programs, students develop projects to answer questions, explore new ideas, or pursue knowledge.

Research done by Bell, Harada, Meyer andWurdinger, and Wurdinger and Rudolph shows that through this process, PBL programs enhance students' development of skills in creativity, problem solving, critical thinking, communication, collaboration, time management, and self-directedness (2010; 2008; 2016; 2009).

These skills lead to students being set up well to handle the challenges of everyday life, postsecondary education, and their careers. This statement is supported by Wurdinger & Rudolph's study that showed 92% of alumni think they have an advantage over their college classmates and 83% said they were better prepared to enter the workforce than their co-workers (2009). Furthermore, PBL programs help graduates develop a better understanding of what success means in their own life, and build the skills they need to make that success a reality (Wurdinger & Rudolph, 2009).

Limitations of the Research

There are limitations to this literature review. Because the literature specifically focused on secondary students, any research about life skills education in elementary schools or postsecondary institutions was not included. Additionally, these ideas have been around for decades, despite not being widely implemented. This led to a limited body of recent research. Sources used vary from within the past few years to over fifteen years. An argument in favor of the relevance of these older sources is that these ideas are still being researched today. In addition, the American Public Education system has begun to make changes to reflect these ideas, just not at the rate necessary to support students in the rapidly changing 21st century.

Implications for Future Research

The implications for future research build off the idea that although life skills education has been researched and promoted for decades, schools within the American Public Education

system do not seem to be able to make changes at the rate students need in order to keep up with how quickly society is changing. This prompts the question: What does education reform in an effort to incorporate the life skills that are essential for student success look like? Project-Based Learning is just one example of a program that makes an effort to incorporate life skills into the curriculum, so answering this question would involve looking at other types of educational programs, how they incorporate life skills into their curriculum, and comparing student outcomes between programs. Another factor to take into consideration is the origins of these programs. What prompted educational boards and administrators to incorporate life skills education in their own schools? The final step is researching how awareness about these ideas can be spread so similar changes can be implemented elsewhere.

Conclusion

The purpose of this thesis was to analyze the impact life skills education has on secondary students. The guiding questions I explored in this paper:

> *GQ1:* What does research say about how life skills education impacts student learning and outcomes in terms of college readiness, career readiness, and life readiness?

> *GQ2:* Does research show that students participating in Project-Based Learning programs learn life skills and gain the benefits that come with them?

A review of the literature found that teaching life skills such as self-awareness, critical thinking, creative thinking, decision making, problem solving, effective communication, interpersonal relationships, empathy, coping with stress, and coping with emotion in secondary schools had a positive impact on students' abilities to effectively manage the demands they will experience in college, their careers, and everyday life. These life skills enable students to translate knowledge, attitudes, and values into actual abilities, and they are clearly better off because of this (Yadav &

Iqbal, 2009). The research also showed that Project-Based Learning programs can effectively

teach their students these life skills. Even though life skills are not at the center of PBL

programs, they are developed concurrently with content knowledge throughout the program, and

as a result, students gain the benefits that come along with them.

REFERENCES

Atkinson, D. (2017). Virginia rethinks high school in its Profile of a Graduate. *National*

  Association of State Boards of Education.

Bandura, A. (1977). *Social learning theory.* Prentice-Hall.

Bell, S. (2010). Project-Based Learning for the 21st century: Skills for the future. The

  Clearing House: *A Journal of Educational Strategies, Issues and Ideas, 83(2),*

  39-43. doi:10.1080/00098650903505415

Casner-Lotto, J., Rosenblum, E., & Wright, M. (2009). *The ill-prepared US workforce:*

  Exploring the challenges of employer-provided workforce readiness training. New York,

  NY: The Conference Board, Inc.

Cassidy, K., Franco, Y., & Meo, E. (2018). Preparation for adulthood: A teacher

  inquiry study for facilitating life skills in secondary education in the United

  States. *Journal of Educational Issues, 4(1), 33.* doi:10.5296/jei.v4i1.12471

Conley, D. (2007). Redefining College Readiness. *Educational Policy Improvement*

  Center.

Finch, D. J., Hamilton, L. K., Baldwin, R., & Zehner, M. (2013). An exploratory study of

  factors affecting undergraduate employability. *Education + Training, 55(7)*, 681–704.

  https://doi.org/10.1108/et-07-2012-0077

Georghiou, C. (2015). *Power Generation Illustration* [Image]. National Geographic.

  https://www.nationalgeographic.org/activity/right-balance-mixing-energy-resources/

Harada, V., Kirio, C., & Yamamoto, S. (2008). Project-Based Learning:

  Rigor and relevance in high schools. *Library Media Connection, 14-20.*

Retrieved from: https://web-b-ebscohost-

com.ezproxy.bethel.edu/ehost/pdfviewer/pdfviewer?vid=1&sid=726e5eea-7a77-

4bab-ad49-bfca2a30f76e%40pdc-v-sessmgr02

Meyer, K., & Wurdinger, S. (2016). Students' perceptions of life skill development in

Project-Based Learning schools. *Journal of Educational Issues, 2(1), 91.*

doi:10.5296/jei.v2i1.8933

Pillai, R. (2012). The importance of life skills education for children and adolescents.

Souvenir-cum-Scientific Update for the 22nd Annual Conference of Indian

Psychiatric Society, Assam State Branch. Guwahati: ABSCON, 21-24.

Prajapati, R., Sharma, B., & Sharma, D. (2017). Significance of life skills education.

Contemporary Issues in Education Research (CIER), 10(1).

doi:10.19030/cier.v10i1.9875

Railsback, J. (2002). *Project-Based Instruction:* Creating excitement for learning.

Northwest Regional Educational Laboratory.

Rateau, R. J., & Kaufman, E. K. (2011). Understanding the employability of college graduates

for success in the workplace. *Virginia Polytechnic Institute and State University.*

Rateau, R. J., Kaufman, E. K., & Cletzer, D. A. (2015). Innovative classroom strategies

that prepare college graduates for workplace success. *Journal of Agricultural*

Education, 56(3), 52-68. doi:10.5032/jae.2015.03052

Sobhi-Gharamaleki, N., & Rajabi, S. (2010). Efficacy of life skills training on

increase of mental health and self esteem of the students. *Procedia - Social*

and Behavioral Sciences, 5, 1818-1822. doi:10.1016/j.sbspro.2010.07.370

Toch, T. (2011). Beyond basic skills. *Phi Delta Kappan, 92(6), 72-73.*

http://dx.doi.org/10.1177/003172171109200617

Venezia, A., & Jaeger, L. (2013). Transitions from high school to college. *The Future of*

Children, *23*(1).

Wagner, T. (2002). *Making the grade: reinventing America's schools.*

RoutledgeFalmer: London.

World Health Organization (1997). Life skills education in schools. *Geneva: World*

Health Organization - Program on Mental Health.

Wurdinger, S., & Rudolph, J. (2009). A different type of success: Teaching important

life skills through project based learning. *Improving Schools, 12(2), 115-129.*

doi:10.1177/1365480209105576

Yadav, P., & Iqbal, N. (2009). Impact of life skill training on self-esteem,

adjustment and empathy among adolescents. *Journal of the Indian Academy of*

Applied Psychology, 35(Special Issue), 61-70.

APPENDIX A

Power Plants: Converting Energy Into Electricity - Research Project

(Georghiou, 2015)

Table of Contents

Introduction

Part 1 - Research
    CK12 Note Taking
        14.6 Nonrenewable Energy Resources
        14.7 Renewable Energy Resources
        14.8 Energy Use
        14.9 Energy Conservation

Part 2 - Choose and Research an Energy Resource
        Independent Research

Part 3 - Preparing for your Presentation

Part 4 - Submit your Presentation
        Grading Rubric

Introduction

The Minnesota Legislative branch is planning to construct a new power plant and they are seeking information on which types of energy resources will be the best choice for our community.

Your challenge is to research the different types of energy resources and to create a short video to present your findings to the legislature.

Minnesota currently obtains its electricity from the following resources:
- 29.5% by burning coal
- 17% is generated by natural gas
- 24.1% comes from nuclear power
- 27.8% by renewables (such as solar, wind, and biomass)
- 1.6% comes from hydroelectric

Part 1 - Research

Read the textbook sections linked in the table below to take notes about any information that you find interesting or helps your understanding of the question or main idea listed.

CK12 Note Taking

Essential Question(s):
- What are nonrenewable resources?
- What are renewable resources?
- How is energy used?
- How can energy be conserved?

14.6 - Nonrenewable Energy Resources	
Question/Main Ideas:	**Notes:**
● What are nonrenewable resources?	
● Types of fossil fuels	
● How fossil fuels formed	
● Fossil fuels and the environment	
● Nuclear Energy	
● Summary	
● Review	
14.7 - Renewable Energy Resources	
● What are renewable resources?	
● Wind	
● Sunlight	
● Moving Water	

● Biomass	
● Geothermal Energy	
● Summary	
● Review	
● Explore More	
14.8 - Energy Use	
● Use of energy resources	
● Oil use by nation	
● Summary	
● Review	
14.9 - Energy Conservation	
● Conserving Energy	
● Conserving energy in transportation	
● Conserving energy at home	
● Summary	
● Review	
Overall Summary:	

Have you completed all of part 1? If not, please go back and finish before reflecting on the material then proceeding to part 2.

Part 1 Reflection:	
What is the most important thing you learned from this section?	
What concept are you curious to learn more about?	
Look ahead to part 2. How are you going to structure your class time tomorrow? Is there anything you need to wrap up or come back to from part 1?	
If there is anything from this section that you don't quite understand or need clarified, connect with a classmate and see if they can help you understand it better. If you still have questions, connect with your teacher.	

Part 2 - Choose and Research an Energy Resource

Today you will...

❖ Choose which one type of energy resource you will research.

➢ Your options are:
- Coal
- Natural Gas
- Nuclear
- Solar
- Wind
- Biomass
- Hydroelectric

❖ Choose 1-2 classmates to work with that are interested in researching the same energy

resource as you

❖ Identify the most significant benefits of that type of energy resource.

❖ Identify any risks associated with that type of energy resource.

❖ Explain how that type of energy resource is converted into electricity. (They are multiple

ways this can happen for some types of energy resources. For example, when people think of wind power they typically picture large turbines on a wind farm, but there are other ways of harnessing wind energy like smaller, bladeless turbines. Look into the different ways your chosen type of energy can be harnessed and focus on the one that interests you the most).

❖ Why is this type of energy resource better for Minnesota than other forms?

❖ You MUST include links to every resource you use to find your information. There is a

dedicated place to include all of your links, but it may also be helpful to you to include the

links with your notes so you can reference them later.

Independent Research

Essential Question(s):
- What are the most significant benefits?

- What are the risks?
- How does this type of energy resource get converted into electricity?

Independent Research:
In this section you will use outside resources and materials (the internet) to go more in depth with learning about one specific type of energy resource. The *Question/Main Ideas* provided are only a starting point and much more information should be researched and added to the additional research portion to earn full credit for this section.

Question/Main Ideas:	Notes:
● Which type of energy resource are you researching?	
● What are the benefits?	
● What are the risks?	
● How does it work? (Explain a method for how your energy resource is converted into electricity).	
● Why would this form of energy resource be better for Minnesota than any other type?	
● Additional research not included above:	

Overall Summary: (what is your reason that we should use this type of energy?)

Resources: Include links to all resources that you used for this part of your research below. This is essential to receive full credit on this part of the project. You should use at least 3 different sources but may use more. These sources should be used to collect relevant data AND should be used to verify the information you find from other resources.
1.
2.
3.

Have you completed all of part 2? If not, please go back and finish before reflecting on the material then proceeding to part 3.

Part 2 Reflection:	
What piece of information was the most helpful for your understanding of your energy resource or how it is converted to electricity?	
What concept was the most interesting for you to research?	
Look ahead to part 3. How are you going to structure your class time tomorrow? Is there anything you need to wrap up or come back to from part 1?	
If there is anything from this section that you don't quite understand or need clarified, connect with a classmate and see if they can help you understand it better. If you still have questions, connect with your teacher.	

Part 3 - Preparing for your Presentation

Now that you have chosen a form of energy production and completed in depth research, it is time to start organizing yourself to present your findings. You will need to select a method for presenting and create a transcript or outline of what you will say. The ultimate goal is to communicate your findings effectively to your classmates and the teacher. You will have a maximum of 4 minutes to present and should include information on each of the topics below:

- ❖ Identify the most significant benefits of that type of energy resource.
- ❖ Identify any risks associated with that type of energy resource.
- ❖ Explain how that type of energy resource is converted to electricity.
- ❖ Why is this type of energy resource better for Minnesota than other forms?

You may format your presentation in any manner that communicates the required information and engages the audience. There are no deductions or additional points for the format you select. This is meant to give you an opportunity to express yourself in the manner that you find most interesting. Below is a list of ideas about how to present, but if you want to present in a format that is not on this list don't hesitate to ask your teacher.

- ❖ Narrate a google slide presentation or large poster
- ❖ Give a TED talk
- ❖ Record yourself being interviewed (like a TV news broadcast)
- ❖ Make a television commercial
- ❖ Make a music video
- ❖ Create flyers that can be passed out and walk the class through the information (like
    if you were to knock on people's doors to share the information with them)

Presentation Plan
In this section, create the plan for how you will create your presentation. Describe the format you will use to present. Create any materials you will need for your presentation. Link images of posters/flyers, google slides, videos, or any other materials you will use.

You must also create a transcript or outline of what will be said during your presentation. Your goal here is to have something you can reference during your presentation to make sure you do not forget any important information.

Include your transcript/outline below

```
┌─────────────────────────────────────────────────────────────────────┐
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
└─────────────────────────────────────────────────────────────────────┘
```

If you are making a video make sure it is ready to be played before it is your turn in class. If you are presenting live, make sure you have rehearsed and you are prepared to present.

Have you completed all of part 3? If not, please go back and finish before reflecting on the material then proceeding to part 4.

Part 3 Reflection:	
What part of your presentation are you most excited about?	
What is the biggest thing you still need to work on to be prepared for your presentation?	
If there is anything from this section that you don't quite understand or need clarified, connect with a classmate and see if they can help you understand it better. If you still have questions, connect with your teacher.	

Part 4 - The Presentations

It is now time to present your findings to the class. You will be given 4 minutes to present. Use as much of it as you need to cover all of the necessary information about your energy resource.

While other groups are presenting, take some quick notes about the key ideas from the information they are presenting. Make sure you have notes for each of the types of energy resources. If you have any questions, don't hesitate to ask the group after their presentation (they are the experts)!

Coal	
Give a brief description of how this energy resource is converted to electricity.	
What are the benefits of this resource?	
What are the risks associated with this resource?	

Natural Gas	
Give a brief description of how this energy resource is converted to electricity.	
What are the benefits of this resource?	
What are the risks associated with this resource?	

Nuclear	
Give a brief description of how this energy resource is converted to electricity.	
What are the benefits of this resource?	

What are the risks associated with this resource?	

Solar	
Give a brief description of how this energy resource is converted to electricity.	
What are the benefits of this resource?	
What are the risks associated with this resource?	

Wind	
Give a brief description of how this energy resource is converted to electricity.	
What are the benefits of this resource?	
What are the risks associated with this resource?	

Biomass	
Give a brief description of how this energy resource is converted to electricity.	
What are the benefits of this resource?	
What are the risks associated with this resource?	

Hydroelectric

Give a brief description of how this energy resource is converted to electricity.	
What are the benefits of this resource?	
What are the risks associated with this resource?	

Part 4 Reflection:	
Which method of electricity generation did you find the most interesting?	
Which type of energy resource do you think would be the best choice for Minnesota to use in its new power plant?	
If there is anything from this section that you don't quite understand or need clarified, connect with a classmate and see if they can help you understand it better. If you still have questions, connect with your teacher.	

Grading Rubric

The following grading rubric will be used to score your final project.

Research (Part 1 and 2)					
Research	Excellent: Complete w/ obvious effort and depth of knowledge	Adequate: complete but lacking depth in a few areas	Research is complete lacking necessary information	Incomplete and/or most research is lacking depth	The research was not attempted
14.6	**10**	**8**	**6**	**5**	**0**
14.7	**10**	**8**	**6**	**5**	**0**
14.8	**10**	**8**	**6**	**5**	**0**
14.9	**10**	**8**	**6**	**5**	**0**
Independent Research	**10**	**8**	**6**	**5**	**0**
Citations (Part 2)					
Independent Research Citations	**10** 3 or more relevant and reliable resources are cited and were used to confirm information.	**8** Only 2 resources are cited.	**6** Only 1 resource is cited	**5** 0 resources are cited but it is evident the student obtained information from somewhere	**0** No citations provided and there is little or no evidence the student used resources
Presentation Preparation (Part 3)					
	Excellent: complete w/ depth	Adequate: complete but lacks depth in areas	Research is lacking necessary information	Incomplete and most research is lacking depth	The slides were not attempted
Content Planning	**10**	**8**	**6**	**5**	**0**

Transcript	10	8	6	5	0

Presentation (Part 4)					
Engagement and Use of Materials	**10** The presentation used various strategies, materials, resources, and graphics to help engage the audience and assist their understanding	**8** The presentation largely focused on one method to engage the audience and assist their understanding	**6** The presentation had little use of strategies or materials to engage the audience and assist their understanding	**5** The presentation had no use of strategies or materials to engage the audience and assist their understanding	**0** Did not present
Quality of Information	**10** Presentation is focused on the topic and covered in depth	**8** Presentation focused on the topic and covered with limited depth	**6** Presentation focused on the topic but 2 criteria missing	**5** Presentation is only partially completed	**0** Did not present
Presentation Notes	**20** Notes are in depth and show an understanding of the information presented	**16** Notes show understanding of the information presented with limited depth	**12** Notes show understanding but 2 sections are missing	**10** The notes are only partially completed	**0** Did not take notes