

WORKING TO LEARN:
THE EFFECT OF VOCATIONAL EDUCATION ON WORKING CLASS STUDENT
ENGAGEMENT

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Title: Working to Learn: The Effect of Vocational Education Programs on Working Class Student Engagement**Abstract**

Increasingly, districts are phasing out vocational education programs as the emphasis on standardized testing and measurable academic skills becomes stronger. Yet, these programs often fill an educational void for working class students, teaching them a specific, applicable skill set and locating their culture and knowledge within the institution of the school. This study explores how vocational education programs positively impact working class students' engagement. To investigate this claim, I collected qualitative data consisting of a five-month period of classroom observations and interviews with teachers and students in the drafting and machine technology shops in the Somerville High School Center for Career and Technical Education. Drawing upon pedagogical theories of student engagement of sociological theories of cultural capital and reproduction, this investigation demonstrates that because vocational education programs cater to working class youth in a way that traditional academic programs do not, they have a positive impact on working class student engagement. Pedagogically, vocational classrooms utilize the classroom-business model, authentic assessment, and active, independent student learning to provide students with applicable skill sets and tie abstract academic concepts to the real world. Sociologically, vocational education programs recognize the importance and value of working class cultural capital while simultaneously teaching students aspects of the dominant cultural capital that they need in order to advance socially and economically. Finally, vocational education programs provide a physical space within the school in which working class culture and capital is promoted, protected, and appreciated.

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INTRODUCTION

Work is an activity most people have in common; whether a person is an elementary school teacher, a factory foreman, or a doctor, many people in the United States spend in excess of 40 hours per week, or 2,000 hours per year, at work. Similarly, students spend their time from September through June attending more than 1,080 mandated hours in school. Many students will go directly from spending the majority of their waking hours in school to the majority of their waking hours in work. Yet few public schools make an explicit connection between the two.

Most high school mission statements assert a broad range of goals; they want students to attain scholastic aptitude, economic competence, and civic responsibility and to develop social skills, moral codes, and mental and physical health.¹ Yet, each of these goals begs definition. What is scholastic achievement? How must a person contribute to society in order to be civically responsible? In some ways, such broad intentions are beneficial; living and working in our society requires a variety of different experiences and skills and schools are called upon to prepare students for many various roles. However, students must also be taught how to use and apply these skills in real-life situations and encounters in order to prepare them to live productively after high school.

I believe that the purpose of high school is to prepare students to live a personally meaningful and productive life after graduation. The purpose, and mission, of high school should be intentionally broad because no two students will take exactly the same path after graduation. Students' abilities to pursue their goals are influenced by advantages and disadvantages based on class, race, gender, and geographic location. Thus, a useful and personally relevant high school experience teaches students the skills and practices they will need in order to live productively in their particular circumstances. A useful high school experience for an upper class white girl who

¹ Theodore Sizer, *Horace's Compromise: The Dilemma of the American School* (Boston: Mariner Books), 77.

wants to become a doctor may look different from a useful education for a poor Latino boy, who needs to find employment immediately to support his family. Similarly, a practical education for a college-bound senior will differ from the most beneficial education for a student seeking to join the work force. It is the responsibility of American schools to educate students with many different educational interests, needs, and abilities and to prepare them to find employment, build relationships, and live healthfully and happily. Schools must, therefore, offer a variety of opportunities to meet the diverse needs of its student body; because students have many different needs and goals, schools must make it their purpose to provide various paths for personal growth and development to students. Students are individuals, thus, the purpose of high school must be more individualized.

Because work is tied to a person's ability to support himself socially and economically, in order to fulfill this purpose, high schools must prepare students to transition into the working world. Yet, in many political and policy discussions, high school has become synonymous with college preparation. For students with the means and desire to attend college, having high school as a stepping-stone into college is helpful. However, this means that the many more students who either do not want or are unable to attend college are left with little real preparation for life beyond high school. Vocational education, also called career and technical education, offers one means of providing varied, practical skills and experiences to adolescents, thus better preparing those students to make informed and responsible decisions about their futures.

Why so narrow?

The increased reliance on standardized testing as a means to assess students' and schools' performance has resulted in this narrowly tailored education system. Neatly packaged, sorted, and arranged, education policymakers view these tests as the key to determining which students

are succeeding, which are failing, and how students in the U.S. are performing in relation to students in other countries. Students have individually varied goals and needs, yet they are increasingly being forced into a one-size-fits-all education. Often, instead of pursuing their interests and passions, either through elective classes or alternative schooling programs, students are compelled to take a series of regimented classes that may or may not be relevant to their larger educational goals. Moreover, the stated goal of NCLB, the law that mandates standardized testing of students, is to

challenge the nation to embrace education standards that would put America on a path to global leadership. It provides incentives for states to adopt academic standards that prepare students to succeed in college and the workplace, and create accountability systems that measure student growth toward meeting the goal that all children graduate and succeed in college.²

Learning the material on standardized tests, policy makers think, will prepare students to enter college and become competitive bodies in the global economy. According to this reasoning, graduating from college and joining the global workforce is the single most important thing that students can do post-high school graduation.

Many high schools expect students to learn job readiness in college or career training programs, not in the high school classroom; rather, schools focus their attention on teaching *The Iliad* and pre-calculus. Curricula are most often molded to provide college-bound students with the academic skills they will need to succeed in college. As a result, students for whom college is neither an option nor a goal are ill served, left with little knowledge about what it means or looks like to be a productive member of our society *without* a college degree. This is the problem:

² U.S. Department of Education, *Elementary & Secondary Education: ESEA Reauthorization: A Blueprint for Reform*, <http://www2.ed.gov/policy/elsec/leg/blueprint/index.html>.

educational systems across the country are increasingly measuring success in terms of college acceptance and attendance rates, yet, in reality, most students in the United States will not go to or graduate from college. If most students will not go to college, why should the only definition of success be college preparedness? Earning a college degree is not the only way that students can become economically sufficient, socially productive members of society. Schools, then, should provide programs and curricula that prepare all students, not just those who are college-bound, to live meaningful, productive, and profitable lives after graduation. It is time that schools recognize the need to supply all students with practical, marketable, and applicable skills.

The role of student engagement

As students participate in a schooling system that fails to meet their educational needs, they can become disengaged from the educational process. Learning becomes an obligatory, practiced routine, not an exciting and enlightening experience, because education is not personally relevant or meaningful. Disengagement from school is often not the result of a student's laziness or stupidity; rather, it can be an act of resistance to an educational system that students feel is ignoring their needs as individual learners. In most cases, students *want* to learn. They want to understand how particular information is applicable to real-world situations. They want to be able to think for themselves and ask questions when they fail to understand. They want to feel that their school cares about them as individuals with unique goals, abilities, and interests. When students feel that these needs and interests are being recognized and embraced by their school, they not only make an effort to learn, they even become excited about the process. Thus, engagement results when students feel that the school is addressing their needs as learners. School and learning, then, have a purpose beyond fulfilling compulsory education requirements.³

For many students, vocational education can be a reprieve from score-oriented, narrowly

³ Newmann, Winch.

tailored academic programs. Vocational education programs are programs in which a student learns particular job training skills while simultaneously completing academic course requirements. Many students earn some sort of vocational credit while in high school. Some students may opt to take one or two introductory vocational classes as electives; other students decide to concentrate in a vocation.

Prior to the standardization movement, vocational programs were commonly written off by parents and academic educators as an avenue for “lazy” or “stupid” students to get through school because they did not explicitly incorporate academic skills and usually attracted a largely working-class enrollment.⁴ Yet, vocational education programs teach students a specific skill set that is neither more nor less valuable than a traditional liberal education. Vocational education classes can have an extremely positive impact on students’ engagement by teaching them applied skill sets, workplace etiquette, and critical thinking.

Students in vocational education programs are taught concrete skills that contribute toward a body of knowledge that can be used in a definitive and productive way after graduation. In a calculus class, a student who does not intend to go to college may wonder when she will ever have to take a derivative of an equation outside of the classroom. However, in a course on auto mechanics, that student will learn skills that she deems practical and relevant, such as how to rebuild an engine. In addition, students in vocational classrooms utilize in a concrete way many of the abstract concepts that they learn in academic classes. For instance, cosmetology students are required to understand the anatomy of hair and nails and the chemical compositions of formulas used for perms. Similarly, students in a drafting and design class need to understand how to measure geometric angles of roofs and the rise and fall of staircases. In many vocational classes, students’ learning becomes more personally relevant and meaningful. Because the

⁴ Gordon, Oakes.

students can see and understand the applications of the knowledge they are being taught, they are more engaged.

Vocational education also recognizes work and work-based learning as a productive and respectable path for young people. While academic classes tend to adhere to dominant cultural beliefs and practices, vocational education acknowledges the importance of other kinds of capital. Working class students see their own culture represented in the institution of the school, which can validate their lifestyle and value systems. This can result in increased feelings of comfort and belonging within the institution of the school, thereby increasing the likelihood that students will see their own needs and goals reflected in the values of the institution.

Vocational education is valuable for all young people regardless of their academic goals or socioeconomic locations. In order to learn how to function effectively and efficiently in our society, students need to know how to interact with people, work toward goals, and apply learned skills. Vocational programs provide these educational opportunities through hands-on, active learning. Moreover, learning job-specific skills can be a point of pride for many students and can re-engage students in the educational process by making their schooling more personally relevant, meaningful, and exciting.

Context, Data, and Methods

I hypothesized that in allowing and encouraging students to demonstrate and develop intelligences that are often deemed non-academic and thus placed outside of the school setting, vocational programs give students ownership over their educational process, thereby encouraging meaningful learning and personal advancement. To explore the validity of my claim, I designed a project that took place in Somerville, Massachusetts in SHS's Center for Career and Technical Education (CTE) over a period of six months from October 2010 to March

2011. I draw on both library academic research and ethnographic participant observation and research to demonstrate the positive effect that vocational education has on student engagement. The library research primarily provided background and a theoretical framework through which to analyze the vocational education program. An anthropological case study of the CTE forms the bulk of my data and research. I apply several theoretical frames to the vocational program at SHS to assess whether vocational impact has a positive impact on working class students' engagement. I used sociological and educational theoretical frames to analyze my observation and interviews; the specific theoretical lenses I used will be elaborated upon in a later chapter. I also drew upon the fields of history, anthropology, and race studies to further inform my analysis. While these fields were not central to my argument or analysis, they helped to locate my findings within a larger social and historical context.

My research in SHS took the form of participant observation and interviews in the Center for Career and Technical Education. I chose to work in Somerville for several reasons. First, over the course of my academic career, I have built a relationship with the City of Somerville; I have worked in its City Hall, in several middle schools, and with the Boys and Girls Club in the City. Thus, I felt that I had substantial social, cultural, and political knowledge about the city. In addition, I was initially attracted to Somerville High School because it is economically, racially, and linguistically diverse. According to the school's NCLB report card, 70.3 percent of students are classified as low-income and 54.2 percent do not speak English as their first language. Many students in Somerville have parents who did not attend college. The racial composition of the school is as follows: 14.5 percent Black, 10.4 percent Asian, 33.9 percent Latino, and 40 percent White.⁵ Somerville's diverse student population presented many opportunities for research and

⁵ Massachusetts Department of Elementary and Secondary Education, *Somerville High School Report Card, 2011*, <http://profiles.doe.mass.edu/profiles/student.aspx?orgcode=02740505&orgtypecode=6&leftNavId=300&>.

analysis. However, I felt that in order to be thorough and narrowly focused in my investigation and argument, it was necessary for me to narrow my scope. Thus, this manuscript primarily focuses on the socioeconomic diversity of students within Somerville.

A final reason I chose to work in Somerville is that SHS is a comprehensive high school. Because SHS is a comprehensive high school, as opposed to a regional vocational school, its academic and vocational classes are more closely linked. In most regional vocational schools, all students have a vocational concentration and the schedule is bi-weekly: students alternate between full weeks of vocational classes and full weeks of academic classes. In Somerville, however, students study their vocational curriculum as a part of their everyday school schedule. SHS operates on a rotating block schedule: students have a total of seven blocks, five of which they attend each day. Depending on their class year, students spend between one and five periods in their shop class; thus, in some cases, senior students spend more than half of their time in their vocation. During the rest of the periods, students take academic classes with the general student population. Thus, vocational students have more opportunity to take higher-level and advanced placement classes than students at a regional vocational school. In addition, students without a vocational concentration still have the opportunity to take vocational classes as electives. Because I was interested in looking at the relationship between student engagement and vocational education, I thought it beneficial to be able to talk to students in different academic tracks with varying academic-vocational experiences.

Moreover, I believe the semi-fluidity between vocational and academic classes in Somerville better allows the school to meet its mission statement to foster the development of well-educated, responsible and productive citizens through a standards-based program of studies that encourages students to realize their intellectual,

creative and civic potentials.⁶

Like most high schools, Somerville pledges to teach students to be academically and civically minded individuals. Successfully implemented, this mission can engage all students in the educational process. SHS's vocational program positions the school to meet this mission for a greater variety of students.

In SHS, I spent time in seven different shops: computer repair, cosmetology, culinary arts, drafting, graphic communications, machine technology, and metal fabrication and working. In each of these shops, either the teacher or Mr. Leo DeSimone, Director of the Center for Career and Technical Education, introduced me to the class as a student from Tufts University completing a senior project. Each of the classes I observed consisted of 10-15 students and either one or two teachers. During the class periods, I spent about half of the time shadowing the teacher, observing the way in which he or she interacted with and taught students in the class. During the other half of the class, I spent time shadowing and observing individual students; I sat or stood with them as they worked on projects and informally asked them questions about what they were learning and doing. If a student seemed to feel uncomfortable as I was watching them work, I transferred my attention to one of his or her peers in order not to disrupt the classroom environment or the student's ability to perform well in class.

The bulk of my observation and interview hours were spent in drafting and machine technology; these are the shops and the students on which I will be concentrating in my analysis of SHS's vocational program. I chose to observe and interview students in these two different vocational tracks because I felt it would give me a better understanding of the nature of modern vocational education. While, historically, vocational education programs have been designed to

⁶ Somerville High School, *About Somerville*, http://www.somerville.k12.ma.us/education/components/scrapbook/default.php?sectiondetailid=13969&&cms_mode=view.

produce a readily employable skilled workforce, currently, some vocational education programs are shifting to a focus on college-preparedness. For instance, students in a computer repair or culinary arts program will likely have to pursue further education in order to pursue a career in that field. Other vocational tracks, however, such as welding or carpentry, still seek to educate students for immediate industry employment. Thus, examining only one type of vocational education program would not have provided me with information sufficient to make generalizations or conclusions about the nature of vocational education programs.

The drafting program exemplifies the technology-based vocational education programs that seek to prepare students for college acceptance and readiness. While the program teaches students the principles of drafting and design, it does not certify them to work in the industry. Many students in the drafting program hope to become architects or engineers and thus hope to attend college; the bulletin board outside of the classroom boasts many college acceptance letters. The shop is taught on computers and requires students to employ abstract ideas and work primarily on an intellectual level. The machine technology program, on the other hand, is more representative of traditional vocational programs. Many students in this shop seek to join the metal workers union or gain employment in a machine shop upon graduation. For these students, the shop is a means of gaining skills that will lead directly to skilled employment. These students work with heavy machinery and perform largely manual tasks.

In each of these shops, I spent time observing students working and teachers teaching. On several occasions, I shadowed students for entire class periods. As I returned to the shops, students became more familiar with me and were willing, and at times even excited, to explain to me the progress they had made on their projects since I last saw them. While interacting with the students, they often asked me questions about my project and about college life in general. I

believe that the rapport that I built with the students allowed them to be honest with me and helped to diminish my position as an outsider coming to observe their school day.

In addition to conducting observations in the shop classrooms, I held interviews with students and teachers. The reasons I chose to conduct interviews as opposed to distributing surveys or questionnaires are threefold. First, in the Somerville Public School district the City's school board must approve any survey conducted with students. Prior to beginning my research, the principal of the school informed me that, due to this policy, receiving permission to distribute surveys was highly unlikely. Second, while surveys and questionnaires can be useful to gain broad information about seemingly anonymous students, they are too narrow in their scope. On a written survey, students are unlikely to give information that is not specifically asked for on the form. Thus, important parts of a student's narrative may remain untold. Finally, surveys are highly impersonal and cannot earn the trust of the student, thus the information is somewhat unreliable. Many students are highly skeptical of outsiders; I believed that in order to obtain relevant and useful information, it was my responsibility to make an effort to know, understand, and respect each individual student. To meet this responsibility, I made an effort to make my presence and intentions known and familiar to the students before I completed my interviews; thus, interviews were the last part of my research that I completed.

I conducted a total of eleven interviews at SHS; three were with teachers and administrators, eight were with students. I first conducted interviews with CTE staff; I conducted formal, recorded interviews with Mr. Leo DeSimone, Director of the Center for Career and Technical Education, Mr. Perry Navleris, the drafting teacher, and Mr. Donald Medeiros, the machine technology teacher. I chose to interview all of my adult subjects before speaking to any student subjects because I wanted to gain as much insight as possible about the nature of the

program and its students in order to formulate the best possible list of questions for students. My rationale was that, while I could always follow up with a staff member if additional questions arose, I would likely only have one chance to get information from each of the students.

I interviewed eight students: four in machine technology, three in drafting, and one from metal fabrication. Originally, I intended to conduct ten student interviews, but teachers experienced difficulty convincing students to return parental permission slips. As a result, six of the students I interviewed were seniors 18 years of age or older, one was a junior, and one was a freshman. I interviewed six boys and two girls; four of my student subjects were either immigrants or children of immigrants to the United States. I interviewed one student from a shop in which I did not conduct substantial observation. Although metal fabrication was not a shop in which I concentrated my observation, the students' goals and activities are closely linked; in addition, interviewing this particular student was my only opportunity to formally gain the perspective of a girl in a manual shop. I conducted the interviews during class time, either in the school library or in a section of the classroom that was not being used by the larger class. During the interviews, I gave each of the students the opportunity to ask me personal questions or ones about my study both before and after I asked them questions; many seized this opportunity to ask about life in college and if I wanted to be a teacher. To protect the privacy of each of these students, their names have been replaced with pseudonyms throughout this manuscript.

Findings

My research supported, but also complicated, the hypothesis that vocational programs give students personal ownership over their educational process by allowing and encouraging students to demonstrate and develop intelligences that are often deemed non-academic and thus placed outside the school setting. These findings, however, are often complicated by other

factors, such as students' race and gender locations or linguistic abilities. Due to the duration and scope of this study, it was impossible for me to effectively investigate all of these factors. Thus, my argument primarily focuses on the effect of vocational education on working class youth, with the understanding that race, gender, citizenship status, and a variety of other factors simultaneously affect these students' experiences.

In this manuscript, I argue that vocational education programs cater to the needs of working class youth in a way that traditional academic programs do not and thus have a positive impact on working class student engagement. Pedagogically, vocational classrooms utilize the classroom-business model, authentic assessment, and active, independent student learning to provide students with applicable skill sets and tie abstract academic concepts to the real world. Sociologically, vocational education programs recognize the importance and value of working class cultural capital while simultaneously teaching students aspects of the dominant cultural capital that they need in order to advance socially and economically. Finally, vocational education programs provide a physical space within the school in which working class culture and capital is promoted, protected, and appreciated. Together, these strategies for engagement motivate students to pursue an educational path that will be meaningful, useful, and relevant after graduation.

Definitions of key terms

In order to be clear in my writing and argument, it is important to define certain key terms that are central to my argument. I believe that explaining these terms as they are applied would lead to confusion, thus this section will define many of the terms that I will be referring to throughout my argument.

Vocational education is education that is related to a particular trade or occupation. While

it could be argued that all education is vocational, since the end goal of most secondary and post-secondary education programs is employment, in this manuscript, vocational education is secondary schooling that is geared toward providing students with the skills to enter a specific trade. Many schools offer elective vocational classes, such as woodshop or accounting. However, this project focuses specifically on vocational education programs that require students to choose a vocational concentration and complete multiple years and levels of training within that concentration. More specifically, I focus on liberal vocational programs, which advocate for the integration of manual training and academic curricula. Liberal vocationalists believe that through this integration, students can master a wide array of manual and intellectual skills; they stand in opposition to supporters of instrumental vocational programs, who believe the purpose of vocational education should be to prepare people solely for specific occupations.⁷

My research focuses on working class youth. The working class constitutes both an economic tier and a social group. Economically, the working class is the group of people employed in industrial, manual, and service-related labor. Jane Nagle, an assistant professor of education at Westfield State College, explains that people working in these sectors “are paid for their time (an hourly pay rate) and not for their skills (a salaried pay rate),”⁸ which differentiates them from the salaried and professional middle and upper classes. In addition to being compensated differently, typically working class people earn less than their middle class counterparts. Equally important to this definition of the working class are the shared interests, values, and attitudes that form as a result of its members’ economic location. Class is relational and best “understood [through] a historical process of class conflict and action.”⁹ In an effort to

⁷ Christopher Winch, *Education, Work, and Social Capital: Towards a New Conception of Vocational Education* (New York: Routledge, 2000), 30.

⁸ Jane Nagle, *Voices from the Margins: Stories of Vocational High School Students* (New York: Peter Lang Publishing, 2003), 9.

⁹ Julie Bettie, *Women Without Class: Girls, Race, and Identity* (Los Angeles: University of California Press, 2003),

defend their own needs and interests, members of the working class have developed values and knowledge that often exists in opposition to middle class lifestyles. This opposition is historic; beginning in the nineteenth century, the working class saw themselves as the “industrious and useful” class while considering the middle class merely “parasites and speculators.”¹⁰ This moral and utilitarian division between the working and upper classes has helped to shape modern class relations. For the purposes of this project, working class refers to the intersection of these economic and cultural locations.

A student’s social location determines the amount and type of cultural capital that the student possesses. Sociologist Pierre Bourdieu defines cultural capital as the social, racial, and economic knowledge of students. Cultural capital is “the general cultural background, knowledge, disposition, and skills that are passed from one generation to the next.”¹¹ A person’s cultural capital affects how he or she interacts with and understands the world around them. While all persons have some sort of cultural capital, hegemonic American society holds white, middle class cultural capital as the most valuable.¹² The cultural capital of people from lower economic classes, non-white racial groups, and other minority groups are typically considered deficient.

The primary focus of this paper is student engagement. Fred Newmann, the Director of the Center of the Organization and Restructuring of Schools and Professor of Curriculum and Instruction at the University of Wisconsin-Madison, defines student engagement as “active involvement, commitment, and concentrated attention, in contrast to superficial participation,

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¹⁰ Burton Bledstein, *The Middling Sorts: Explorations in the History of the American Middle Class*, (New York: Routledge, 2001) 9.

¹¹ Jay MacLeod, *Ain’t No Makin’ It: Aspirations and Attainment in a Low-Income Neighborhood* (Boulder, Colorado: Westview Press, 2009), 13.

¹² Tara Yosso, “Whose culture has capital? A critical race theory discussion of community and cultural wealth” in *Race, Ethnicity and Education* 8, no. 1 (2005).

apathy, or lack of interest."¹³ Newmann argues that

engaged students make a psychological investment in learning. They try hard to learn what school offers. They take pride not simply in earning the formal indicators of success (grades), but in understanding the material and incorporating or internalizing it in their lives.¹⁴

All students can be engaged in school because all students have the ability to invest in and internalize learning in order to improve the quality of their lives. A more in-depth explanation of student engagement will follow in Chapter 2.

Any additional terms that require definition will be presented throughout the manuscript as they become relevant.

Structural Overview

This manuscript is divided into three chapters: Chapter 1 provides historical context, Chapter 2 argues the effectiveness of vocational pedagogy, and Chapter 3 presents a sociological analysis of vocational programs in a working class school.

This manuscript begins by placing the current state of vocational education within a historical context. The roots of vocational education in the Progressive movement and through state-sponsored economic initiatives will be explained and analyzed. Finally, I write about the effect of various standardization acts, such as No Child Left Behind and the Perkins Act, on vocational education programs.

Chapter 2 focuses on the pedagogical tactics of vocational education that engage students. The chapter begins with a literature review that explains the research completed on various aspects of student engagement and pedagogical strategies for engagement. The analysis

¹³ Fred Newmann, *Student Engagement and Achievement in American Secondary Schools* (New York: Teachers College Press, 1992), 11.

¹⁴ *Ibid.*, 3.

portion of the chapter, which follows the literature review, examines how these theories are applicable to SHS's vocational program. The classroom-business model, authentic assessment, and active, independent learning, are each examined through this lens.

Chapter 3 examines the sociological impact of vocational training on working class students. This section employs sociological theory to discuss cultural capital and valuation within the school. The chapter is broken into three sections: a literature review, Part I and Part II. First, the literature review and theoretical framework explicates various concepts such as cultural capital, habitus, reproduction, counter-school culture, and integration. Part I examines how integration and socialization operate within SHS to help students resist the process of reproduction. Part II explores the ways in which the distribution of space within the vocational building affects the self-perceptions and aspirations of working class vocational students.

The manuscript ends with a set of general conclusions reflecting on the impact of this study and a set of recommendations for both academic and vocational programs.

CHAPTER 1: HISTORICAL CONTEXT

The roots of American vocational education are twofold: capitalistic and progressive. Many politicians, theorists, and educators from both arenas began to advocate for manual training in schools in the late nineteenth century.¹⁵ Progressive educators, who believed that the most effective learning resulted from real-life activities, argued for a reformed curriculum that could break down hierarchical social structures and teach students applied knowledge. On the other side, those concerned with the economic state of the country pushed for programs that would teach students marketable and job-specific skills in order to improve their capacity to participate in the capitalist economy. While members of both schools of thought created interest in and support for manual training, capitalistic thinkers have dominated the development of American vocational education because their conception of vocational education proved most advantageous for the state.

John Dewey and Vocationalism's Progressive Roots

Vocational education programs partially took root in the progressive education movement. Pedagogical theorist, teacher, and progressive movement leader Dr. John Dewey believed that education should address the manual, social, and intellectual abilities of students. His holistic approach to education, which sought to provide students with a functional knowledge base, influenced education throughout the late nineteenth and early twentieth centuries. In 1896, Dewey, then teaching at the University of Chicago, established the Laboratory School in order to put his theories into action. The mission of the school, according to Dewey, was

to discover in administration, selection of subject matter, methods of learning, teaching, and discipline, how a school could become a cooperative community while developing

¹⁵ Carlton, Cremin, Feffer, Fletcher, Gordon, Hildreth, Jorgensen, Lewis, Oakes, Schugurens, Urban, Wayne.

individuals in their own capacities and satisfying their own needs.¹⁶

Life itself, Dewey asserted, could provide the grounds for this personally relevant educational and intellectual exploration. In order for students to understand applications of their knowledge, learning should arise from social activity. Thus, Dewey developed an approach to education that focused on a student's ability to "meet new social situations with habits of considered action"¹⁷ and worked to ensure that a student's education gave him the broad knowledge he needed in order to function in society.

Education, Dewey thought, should be "manual and social as well as intellectual"¹⁸ in order to teach students practical daily applications of their knowledge. He argued that learning should progress from exploring direct, tangible interests to remote and abstract forms and concepts. Dewey outlined manual, social, and intellectual training as important stages of this progression. Manual training is an extension of a child's daily activity that involved the active pursuits of occupations, such as sewing. Social learning provided a real-world background and context for these daily activities, encouraging students to understand the history of particular occupations and societal realities. Intellectual learning sought to maintain the "intellectual continuity of education,"¹⁹ and thus encouraged students to explore abstract and theoretical applications of their knowledge. In this model, each stage of learning built upon the knowledge acquired in the previous stage, providing a deeper context and theoretical understanding of daily life. Dewey's philosophy was called progressivism because he argued that students should progress linearly through each of these stages of learning.

According to Dewey, any social interaction could be a starting point for this progression.

¹⁶ Lawrence Cremin, *The Transformation of the School: Progressivism in American Education, 1876-1957* (New York: Alfred Knopf, Inc., 1961), 136.

¹⁷ *Ibid.*, 136.

¹⁸ *Ibid.*, 140.

¹⁹ *Ibid.*, 141.

As such, he developed an educational philosophy that held that students could learn most effectively through daily social interactions. He believed that “all activities and occupations had an instrumental as well as an intrinsic value; they afforded opportunity for social and intellectual growth as well as more immediate satisfaction to the children.”²⁰ For example, children would learn about the textile industry by first learning to weave. They would then explore the way in which cotton and flax were grown and processed. From this point, students could pursue any number of intellectual paths—from the social division of labor to botanical classifications to chemistry of dyes.²¹ By teaching children about all stages of production and other social interactions, Dewey hoped to break down the rigid social structure by fostering the development of democratic citizens who “would no longer live divided by social barriers.”²² Indeed, Dewey’s goal was to produce social and economic awareness in his students as a means of producing citizens educated in democratic processes.

Because Dewey viewed education as progressive, he argued that manual, social, and intellectual training could not be separated from one another. In order for students to have a well-rounded and complete education, they must engage each of these educational approaches. Thus, the connections between vocational and intellectual education should be fluid; one should support and be applied to the other. Dewey opposed educational systems that sought to provide exclusively vocational training to particular groups of people. Because he viewed education as a means of providing opportunity to all students, regardless of class, Dewey stressed that “without an intellectual base, the study of occupations could become primarily utilitarian.”²³ A dual system of education, he argued would result in a class-based education system in which only the

²⁰ Ibid., 138.

²¹ Andrew Feffer, *The Chicago Pragmatists and American Progressivism*: Cornell University Press, 1993, 119.

²² Ibid., 132.

²³ Ibid., 31.

wealthiest students would have access to intellectual forms of learning, thus contributing to, not combating, social predestination.²⁴ Thus, he opposed many of his contemporaries' efforts to prepare people for narrowly specified occupations.

As progressive education developed, however, it stressed the need for manual training less and instead focused more on the principles of continuity and interaction.²⁵ Continuity holds that each learning experience should be informed by the previous learning experience. Interaction stresses that learning is a process of revision; a person may need to revise, adapt, or discard previously obtained knowledge based on new knowledge.²⁶ Under these guiding principles, many progressive educators argued that learning should be a gradual and organic process. Thus, believers in progressive education advocated the destandardization and decentralization of schools, for which they were often criticized by mainstream educators and politicians. In addition, the economic constraints placed on the country and individuals as a result of the Great Depression and World War II made technical and tailored vocational education more appealing. As a result, the progressive education movement weakened. While some of its tenets, such as hands-on learning, are now common practices in schools, the Deweyan concept of education has become less prominent in the vocational education landscape.

²⁴ Howard Gordon, *The History and Growth of Vocational Education in America* (Long Grove, Illinois: Waveland Press, 2003), 32.

²⁵ Daniel Schugurensky, "1919: The Progressive Education Association is founded" in *History of Education: Selected Moments of the 20th Century* [online]. Univeristy of Toronto (2002).

²⁶ Ibid.

The capitalist push for vocational education

Vocationalism in Higher Education and Agriculture

Capitalism similarly promoted the development of vocational education; state-sponsored vocational schools were initially developed in the late nineteenth century to aid the American agricultural economy. The first federal act passed in relation to vocational education was the Morrill Act for Land-Grant Institutions of 1862.²⁷ The Act granted each state 30,000 acres of land per senator and representative in Congress; the state could sell this land to fund vocational colleges.²⁸ The founding of these colleges enabled “higher education to be open to a broader public and improve agricultural techniques.”²⁹ Such colleges marked the first time that academia and vocational training were combined to create a comprehensive curriculum. Because the institutions required advanced academic knowledge, however, many students were unprepared to enter the colleges; while they could successfully complete the colleges’ vocational training components, many students lagged in their academics. To expand access to vocational training to students who did not have access to academically rigorous preparatory schools, the colleges created and operated “university high schools” that “placed vocational preparation training at the forefront of their curriculum.”³⁰ These high schools better served a large and often under-educated rural class. Their formation thus enhanced the ability of the Morrill Act to provide widespread vocational education.

²⁷ Gordon, *The History and Growth of Vocational Education*, 41.

²⁸ *Ibid.*, 41.

²⁹ *Ibid.*, 41.

³⁰ *Ibid.*, 41.

The expansion of agricultural vocational education programs was well received by the public. Farmers and parents recognized that in traditional schools, students were not being prepared with real-world skills that would help them to be successful in America's agrarian economy. This discontent with the school system was chronicled in their periodicals. For example, "Uncle Henry" Wallace, editor of a popular late nineteenth century farming periodical, *Wallace's Farmer*, advocated that schools abandon the current methods of teaching. One article that ran in his periodical called for abandoning "the cut-and-dry formula of a period when a man was 'educated' only when he knew Greek and Latin."³¹ Instead, "there [should] be less adherence to textbooks, more concern with the all-around development of children, and unceasing attention to the rudiments of agriculture."³² Wallace supported his argument by citing that important concepts of food production, such as the function of carbohydrates and nitrogen extract, were neither more nor less difficult to grasp than traditional subjects in school. Students in rural communities, he argued, would especially benefit from an agriculturally influenced curriculum that taught them the theories and practices of successful farming.

³¹ Cremin, *The Transformation of the School*, 44.

³² *Ibid.*

Agricultural vocational education was further expanded in 1914 with the passage of the Smith-Lever Agricultural Extension Act. The act allocated federal funds to university-run extension programs whose purpose was to provide education and training in agriculture and home economics to people not formally enrolled in school. The act provided funds for training that was conducted in collaboration with a land-grant institution and the United States Department of Agriculture.³³ For instance, land grant institutions founded and operated demonstration farms in Texas, Louisiana, and Arkansas where they illustrated new and efficient agricultural techniques to neighboring farmers.³⁴ At the demonstration farms, farmers could see researched techniques working in a real-world setting and were thus more likely to be receptive to scientifically improved farming practices.

This extension training provided information to farmers and homemakers that would improve their quality of life and work and they would not have to attend formal educational institutions. Moreover, the extension programs created a way for the United States Department of Agriculture to communicate technological agricultural advances to farmers in an efficient and timely manner. Although not directed exclusively at high schools, the act helped the public to realize the “social efficiency of vocational education” by making direct connections between education and the quality of work.³⁵ The act also granted access to higher education to a wider audience.

War and the Technically Trained Workforce

³³ Ibid., 50.

³⁴ R. J. Hildreth and Walter J. Armbruster, “Extension Program Delivery: Past, Present, and Future: An Overview,” *American Journal of Agricultural Economics* 63, no. 5 (1981).

³⁵ Cremin, *The Transformation of the School*, 52.

United States involvement in wars shaped the trajectory of vocational education in the twentieth century and aided in the shift of vocational education from agrarian to industrial training. World War I's reliance on machinery such as automated weapons and war vehicles caused the United States to realize its lack of a mechanically and technically trained workforce.³⁶ To attempt to remedy this problem prior to the mobilization of American forces, the federal government turned to vocational education. The Smith-Hughes Act, passed on February 23, 1917, was the first federal act that provided funding to public education. From this act, the first Federal Board for Vocational Education was formed. The board was charged with developing "a permanent system of vocational education...its task was to train people in skilled occupations useful in combat conditions."³⁷ To aid the board in forming this system, the bill provided \$7.2 million in federal funds for the training and salaries of vocational education teachers.³⁸ In doing this, the government hoped to prepare teachers to help young men in schools become ready for immediate post-school employability in war industries, becoming mechanics, engine technicians, and radio operators and technicians.³⁹ Like other schools at the time, however, these normal schools were racially segregated and thus provided greater opportunity for white men to pursue these careers.

The development of a technically trained workforce was considered in the best interest of the nation because it could bolster both the nation's economy and preparedness for war. The Smith-Hughes Act was the first to provide substantial federal funds to educational institutions. In addition, by creating a federal board to oversee the system, the government ensured that the development of vocational education programs would align with the nation's needs. The creation of strong vocational education programs was a component of the United States' mobilization

³⁶ Ibid., 60.

³⁷ Ibid., 58

³⁸ David Carleton, *Student's Guide to Landmark Congressional Laws on Education* (Westport, Connecticut: Greenwood Press, 2002), 63.

³⁹ Gordon, *The History and Growth of Vocational Education*, 58.

before World War I. As a result, vocational education quickly became the most centralized form of education in the nation.

In communities of Color, this centralization received mixed responses. Some Black theorists, such as Booker T. Washington, saw “industrial, nonacademic instruction,” as a saving grace for rural Blacks who had little other opportunity for social and economic advancement.⁴⁰ Yet, few vocational schools for students of Color developed, in part because many Black people vehemently objected to their formation; in 1929, Mississippi had 49 agricultural secondary schools for White students and only one for Black students.⁴¹ Because federal funding for Black schools was already difficult to secure, many Black community leaders and parents resisted efforts to turn Black academic schools into vocational schools that would dictate a particular career path for Black students.⁴² Horace Mann Bond, a Black education scholar, believed that any vocational training that was provided to Black students would likely serve the interests of the White supremacist government by cultivating Black students for menial and unskilled employment.⁴³ Similarly, W.E.B. DuBois insisted that the state’s efforts to direct resources toward vocational and not academic training were based in economic interests that socially, educationally, and economically disadvantaged people of Color.⁴⁴ To make best use of the “meager funds,” available for Black education, they both argued, the focus of schools must remain on academics.⁴⁵

Despite this opposition from communities of Color, however, United States involvement

⁴⁰ William J. Reese, *America’s Public Schools: From the Common School to “No Child Left Behind,”* (Baltimore: The Johns Hopkins University Press, 2005), 210.

⁴¹ *Ibid.*, 211.

⁴² *Ibid.*, 211.

⁴³ Wayne J. Urban, *Black Scholar: Horace Mann Bond, 1904-1972*, (Athens, Georgia: University of Georgia Press, 1992), 88.

⁴⁴ Reese, *America’s Public Schools*, 210.

⁴⁵ Urban, *Black Scholar*, 88.

in later wars yielded a similar national focus on vocational education. During World War II, programs such as Vocational Training for War Production and Vocational Education for National Defense developed to expand vocational training specific to war industries such as aviation technology and weapons production.⁴⁶ Both of these programs were centered in urban areas and were designed to train industrial workers.⁴⁷

Moreover, the Servicemen's Readjustment Act of 1944, more commonly known as the GI Bill of Rights, afforded many veterans the opportunity to obtain vocational training. The bill not only allowed returning servicemen to enroll in vocational education programs, but also provided the option of majoring in vocational teacher education in colleges and universities.⁴⁸ These opportunities were later extended to veterans of the Korean and Vietnam Wars.

Thus, United States involvement in war in the twentieth century directly impacted the expansion of vocational education by allocating federal funding to vocational training programs. This funding came not only in the form of money given directly to vocational high schools, but also through the GI Bill, which paid for the training of vocational teachers. Because the modern nature of warfare called for technically and mechanically skilled individuals, not individuals trained in agriculture, the federal government used money to influence the developmental direction of vocational education programs.

Vocational Instruction and Standardization

Since the 1980s, as public schools have become more highly regulated and standardized, two main government acts have directly influenced the current state of vocational education: No Child Left Behind of 2001 and the Perkins Act of 2006. No Child Left Behind and its emphasis on standardized testing required stricter academic requirements and assessments for students in

⁴⁶ Gordon, *The History and Growth of Vocational Education*, 59.

⁴⁷ Ibid. 59.

⁴⁸ Ibid. 60.

all schools, including vocational schools. The Perkins Act, which was enacted specifically to intervene in the nation's vocational education system, created a new set of learning objectives and outcomes for vocational programs nationwide.

The push for school accountability arguably began in 1983, with the publication of *A Nation at Risk*, a report by the National Commission on Excellence in Education. The report argued that youth in the United States were being undereducated. Among its assertions were that thirteen percent of seventeen-year olds were functionally illiterate, only one-fifth could write a persuasive essay, and that remedial mathematics courses constituted a fourth of all mathematics courses taught at four-year colleges.⁴⁹ The recommendations of the report included the development of a foundation curriculum, or a set of specific core courses, that a student must pass in order to graduate from high school, clear definitions of expectations and standards, and the allotment of more classroom time and resources to the foundation curriculum.⁵⁰

More than ten years later, the government responded to these charges with the passage of the Improving America's Schools Act of 1994, which was a reauthorization of the Elementary and Secondary Education Act of 1965.⁵¹ The 1994 ESEA stressed high standards for all children, partnerships among families, communities, and schools, and increased access to resources in areas with the greatest educational need.⁵² In 2001, ESEA was reauthorized in the form of No Child Left Behind, which was touted by policymakers as an attempt at comprehensive school reform designed to increase school accountability. Like its predecessor, NCLB emphasized the need for high standards for all children and schools. NCLB introduced mandated standardized testing of students in all public schools as a means of monitoring student performance and

⁴⁹ Margaret Jorgensen, "History of the No Child Left Behind Act of 2001 (NCLB)," Pearson Education, Inc. (2003): 2.

⁵⁰ *Ibid.*, 3.

⁵¹ *Ibid.*, 4.

⁵² *Ibid.*

identifying schools that are underperforming.⁵³ Since NCLB passed, testing in high schools has become high-stakes—if students do not pass the state mandated exam, they are not allowed to graduate, even if they have completed the graduation requirements set forth by their school.

Because NCLB applied to all public schools, vocational high schools were affected by the passage of this act. In 1994, the National Assessment of Vocational Education Independent Panel had found a trend of “‘dumping’ disproportionately large numbers of disabled and educationally disadvantaged youth into vocational programs.”⁵⁴ Conversely, students with higher grade point averages enrolled in vocational education programs less frequently than the national average.⁵⁵ Due to this trend, there existed a standardized testing achievement gap between traditional high schools and vocational schools. Thus, in order for vocational programs to meet the requirements set forth in NCLB, they had to develop a greater focus on academic skills.

One of the root causes of the academic difficulties faced by vocational students was tracking. According to educational scholar Jeannie Oakes, tracking is:

the process whereby students are divided into categories so that they can be assigned in groups to various kinds of classes. Sometimes students are classified as fast, average, or slow learners and placed into fast, average, or slow classes on the basis of their scores on achievement or ability tests...Sometimes, but rarely in any genuine sense, students themselves choose to be in “vocational,” “general,” or “academic” programs...However it’s done, tracking, in essence, is sorting...⁵⁶

At their best, vocational education programs serve as an alternate curriculum, not a less valuable

⁵³ Edward Fletcher, “No Curriculum Left Behind: The Effects of the No Child Left Behind Legislation on Career and Technical Education,” *Career and Technical Education Research* 31, no. 3 (2006), 159.

⁵⁴ Theodore Lewis, “Tracking, Expectations, and the Transformation of Vocational Education,” *American Journal of Education* 113, no. 1 (2006), 72.

⁵⁵ Ibid.

⁵⁶ Oakes, *Keeping Track*, 3.

or less challenging one. However, because vocational programs tend to teach mostly non-academic skills and information, such programs are often stigmatized by middle and upper class Americans as requiring less effort and intellect than academic classes. Vocational classrooms were thus considered suitable spaces within the school building for students who struggled academically. As Oakes explains, “Vocational education was seen early on as the appropriate alternative curriculum for students who were not college bound.”⁵⁷ In effect, vocational programs served as the lowest track for students not welcome in mainstream and higher academic tracks.

The Carl D. Perkins Career and Technical Education Improvement Act of 2006, the latest in a series of acts authorized beginning in 1984, sought to repair vocational education’s reputation by imposing more rigid academic and vocational standards on vocational programs. The purpose of the act was primarily to develop rigorous and challenging standards for both the academic and technical classes in vocational high schools and postsecondary vocational programs.⁵⁸ The Perkins Act required vocational schools to provide students with (1) a rigorous academic curriculum on par with traditional schools, (2) vocational training that meets industry-specified standards and (3) an in-depth understanding of the growth and development of their industry.⁵⁹ The Act maintained that the most effective way to prepare students for work and further education was through a greater integration of academic and vocational curricula.

In addition to emphasizing the greater integration of academic fields of study, the Perkins Act upholds the school accountability put forth in NCLB. The Act requires that a program’s success be evaluated based upon student performance. At the secondary level, the indicators for student performance include: (1) student academic achievement on standardized tests; (2) student attainment of career and technical skills; (3) student attainment of diplomas and GEDs; (4)

⁵⁷ Ibid., 31.

⁵⁸ Carl D. Perkins Career and Technical Education Improvement Act of 2006, (2006): 2.

⁵⁹ Ibid., 39.

graduation rates; and (5) postsecondary placement of students in higher education, the military, and employment.⁶⁰ From these student performance indicators, districts must determine and express the program's performance in "a percentage or numerical form...so as to be objective, quantifiable, and measurable."⁶¹ Vocational schools must make annual progress toward improving their performance, just as districts and individual schools must meet Adequate Yearly Progress (AYP) under NCLB.⁶²

The current Perkins Act is set to expire in 2012. Thus, vocational programs are under pressure to prove the success of their programs. Traditionally, vocational education programs have stressed learning by doing. The amount that students learn has not been measured through tests; rather, students have been required to demonstrate their ability to apply acquired knowledge through complex projects and presentations. In much of the current literature, however, scores on standardized tests and graduation and college acceptance rates—the same criteria that define success for traditional academic programs—measure the success of vocational programs. It is undoubtedly important that all students, whether or not they complete a vocational program, graduate with a broad set of academic skills. However, students' performance on standardized tests, which are supposedly designed to assess whether or not they have a particular knowledge base, should not define the success of a vocational education program. This ignores the mission of vocational programs to provide students with an alternative way of learning.

NCLB "has at its pinnacle to provide students with a rigorous education in order to perpetuate student admission to post-secondary education"⁶³ Thus, in order for vocational

⁶⁰ Ibid., 14-15.

⁶¹ Ibid., 17.

⁶² Ibid.

⁶³ Fleeter, "No Curriculum Left Behind," 165.

education programs to be considered successful under NCLB, they must increase college attendance rates. Perkins addresses this concern through its emphasis on students learning all aspects of their chosen industry. Students might then pursue an industry-related career in engineering or business and therefore enter a postsecondary education program to achieve that goal.

As a result of these acts, it can no longer be assumed that a student who graduated from a vocational program will enter his or her vocation. While, previously, the goal of vocational education was to produce graduates for immediate employment in skilled industries, in modern comprehensive high schools, vocational programs, just like traditional programs, are expected to produce college-ready students. Consequently, because vocational classes are elective courses, students' career and technical training is often sacrificed to create additional time for standardized test preparation and various academic requirements. At the same time, the closer relationship that has formed between academic and vocational classes provides more opportunity for students from various tracks and concentrations to experience the benefits of vocational training. Thus, not only have stated goals of vocational education programs changed, so too has the population they serve. Despite these changes, however, many vocational programs remain rooted in the values of practical and applicable knowledge. As a result, they continue to provide personally relevant learning to working class students by utilizing relevant pedagogy and promoting cultural inclusion.

CHAPTER 2: VOCATIONAL PEDAGOGY: TEACHERS' TACTICS FOR ENCOURAGING MEANINGFUL LEARNING

Student engagement is affected by a variety of factors, including, importantly, the pedagogical tactics of the teacher. In this chapter, I argue that vocational pedagogy combines the most effective methods used in the classroom with techniques specific to manual and job training to form pedagogical practices that engage students at a very high rate. Chapter 2 begins with a literature review and theoretical framework, focusing first on the meaning of student engagement and later on the most widely accepted pedagogical techniques for engaging students. I then apply this theory to the SHS vocational program to examine the engaging role of the classroom-business model, authentic assessment, and active, independent learning.

Literature Review and Theoretical Framework***Aspects of Student Engagement***

The literature discussing the relationship between vocational education and student engagement argues that manual training can be an important and effective tool for teaching usable skill sets. These authors stress that manual training is important for all students: It is an integral part of the learning process that can help students find academic and nonacademic confidence and fulfillment.⁶⁴ According to the literature, vocational education, as well as the methods by which it is taught, captures students' attention because of its practical and useful applications. Yet, the literature largely fails to address exactly how and why vocational education, specifically, can engage students who otherwise feel marginalized from school.

Newmann frames student engagement as a psychological investment in learning.⁶⁵ Student engagement, he asserts, occurs when students feel that their education is both interesting and relevant. Thus, in order to be invested in school, students must understand the purpose and

⁶⁴ Bailey, Darling-Hammond, Newman, Willis, Winch.

⁶⁵ Newmann, *Student Engagement and Achievement in Secondary School*.

applications of their learning. Vocational students are routinely called upon to practice employable skill sets, from rebuilding a carburetor in a car to installing a motherboard in a computer. Vocational students are required to understand real world applications of their knowledge, which gives learning more value. Indeed, Newmann further argues that work, and vocational training, can engage students in school because it has intrinsic value, gives students a sense of ownership, and is connected to the real world.⁶⁶ This can be especially important for working class students, who do not often see the utilitarian values of their culture represented within the institution of the school. Vocational education programs can validate students' own cultural capital by locating their knowledge of work and industriousness within the environment of the school.

Vocational education's relevant and meaningful context can teach students applied skill sets that are generally absent from American curricula. Newmann, for example, asserts that vocational training requires higher order thought, or the expansive use of the mind, as opposed to routine application of knowledge, such as solving a multiplication problem.⁶⁷ Higher-order thinking is challenging because a person must figure out how to best apply his knowledge to the situation at hand. For example, a student may know the characteristics of a Trojan horse computer virus, but identifying one out of context requires her to use higher order thought. This application of knowledge requires students to use many critical thinking and analytical skills, thus calling upon students to use their acquired knowledge creatively. This can often result in increased student engagement. Every real-world application of knowledge, which is the pinnacle of vocational education programs, requires students to employ higher-order thinking.

⁶⁶ Ibid., 23.

⁶⁷ Ibid., 64.

Moreover, vocational education involves students in the adult world by allowing them to explore possible career paths and futures with little risk. Thomas Bailey, a professor at the Teachers College at Columbia University, explains that vocational education programs can allow youth to try on different adult roles before they enter the real world.⁶⁸ Through a vocational education rotation, students can learn, and to some extent experience, what it would be like to be an electrician, a beautician, or a chef. Students can explore different possible careers and applications of knowledge before they are forced to make an often high-stakes decision about life after graduation. Students can then be more confident that they are truly acting in their own best interests. This opportunity is especially important for lower and working class students who might not have diverse exposure to varying career paths.

⁶⁸Thomas Bailey et al. *Working Knowledge: Work-based learning and education reform* (New York: Routledge Falmer, 2004).

According to Bailey, when students find their vocation, it is accompanied by a sense of purposefulness that gives substance and further meaning to their education. Similarly, Christopher Winch, an education philosopher and scholar, argues that in modern American society, people generally see and understand their lives in terms of work; thus, vocational and manual training can be an effective method of showing students how their education is relevant.⁶⁹ This is especially important for working class students, many of who need to find work immediately after graduation. In this respect, Bailey and Winch's ideas are in line with Newmann's: in order for real psychological investment in schooling to develop, schooling must be purposeful and relevant. Thus, Bailey's argument that incorporating processes of self- and vocational-discovery into the school day can work to combat student disengagement with school is well supported by the literature.

What is engaging pedagogy?

⁶⁹ Winch, *Education, Work, and Social Capital*.

The literature establishes that when content has meaning beyond the classroom, students are more likely to understand how and why that content is relevant to their daily lives; this results in increased engagement.⁷⁰ To foster this engagement, the manner in which content is taught is equally as important as the content itself; teachers can adopt forms of problem-based learning, collaborative learning, or other types of learning in the classroom. The processes and strategies by which teachers convey this relevant and meaningful knowledge is the pedagogy. There is little literature that focuses exclusively on vocational pedagogy; this may be explained, in part, because most states lack a requirement for vocational education teachers to have a college degree. Thus, there is little literature that focuses exclusively on vocational teacher training; much writing on engaging pedagogy speaks about general classroom management and advocates for teaching practices that are common within both successful academic and vocational classrooms.

⁷⁰ Newmann, Winch, Bailey.

Vito Perrone, of the Harvard Graduate School of Education, argues that project-based, collaborative learning is one of the most effective ways to engage students. According to Perrone, project-based learning is a form of inquiry teaching that allows students four distinct opportunities: (1) to familiarize themselves with concepts of logic; (2) to incorporate their own experiences into scholarly conclusions; (3) to gain insight into the complex nature of arguments; and (4) to deeply explore ideas through discussion, interviews, surveys, and other data collection methods.⁷¹ The development of these skills and methods of thought can encourage and challenge students to think more critically and carefully about their work.⁷² Furthermore, projects, which often take place over time periods ranging from several days to several months, “provide... opportunities for scaffolding understanding performances (demonstrations of progress) along the way and ongoing assessment (response by peers and by the teacher).”⁷³ Students have the opportunity to revisit and revise their work based on teacher and peer feedback; continued commitment to a single project can allow students to develop a dynamic relationship with their work and can thus foster interest and investment in learning. This creates the psychological investment in learning that Newmann argues must be present in order for student engagement to occur. Project based learning is a central component of nearly all vocational classes, whose nature of instruction is spiraling and requires students to repeatedly practice the same skills in order to complete more complex projects.

⁷¹ Vito Perrone, *Lessons for New Teachers*, (Boston: McGraw Hill, 2000), 81.

⁷² *Ibid.*, 81.

⁷³ *Ibid.*, 80.

Perrone also argues that in order for project-based teaching approaches to be successful, a variety of factors must be present: (1) students must choose their own projects; (2) the project should result in a tangible product; (3) the project should be displayed to an out-of-classroom audience; (4) students must be allowed to correct their mistakes without fear of a failing grade; (5) every student's work must be valued and visible; (6) the project cannot follow the normal classroom routine; and (7) students must use applicable skill sets.⁷⁴ These factors inform the student that their work has value outside of the classroom while simultaneously providing students with increased control over their work. The knowledge that their work will be viewed and judged by others is incentive for the students to work with more diligence and effort than if their work was confined within the classroom walls. The opportunity to revise and correct one's work can encourage students to take risks, and possibly make mistakes, that may have previously inspired fear of failure. Projects in vocational classrooms frequently meet many, if not all, of these criteria.

Beyond common pedagogical practices, however, the literature fails to address the methods of teaching and learning specific to vocational education that engage students. Successful vocational education programs incorporate common student engagement tactics used in classrooms across the curriculum; however, they also practice a set of pedagogies that are unique to vocational schooling. Vocational education is effective and engaging because it teaches students relevant and meaningful information in a manner that mentally and physically occupies students while addressing their need to understand their position in relation to the adult world.

⁷⁴ Ibid., 87.

Analysis: Pedagogy for Engagement in Somerville

Throughout my time at SHS, I noticed that most vocational instructors and teachers shared similar pedagogical techniques to teach their students how to be effective workers and businesspersons. In addition to more traditional pedagogies, the vocational teachers I observed adopted pedagogical practices unique to vocational classrooms. The classroom-business model, authentic assessment, and active, independent learning are pedagogical practices that are especially common in vocational classrooms and that enhance vocational education programs' abilities to engage students in school and the educational process. These factors work beyond the more typical scope of student engagement, encouraging students to feel as if their work has a place not only in the classroom, but also in the real world. This section will explore the development and practice of each of these tactics within the classroom and examine the ways in which they result in positive student engagement.

The Classroom-Business Model

Most classrooms in the Center for Career and Technical Education in Somerville operated using what I will call a classroom-business model. While the shops were places of learning and teaching, they also independently operated businesses frequented by community members, from a restaurant to an auto repair shop to a print shop.

The purposes of operating a business within the classroom in Somerville were twofold. First, the cost of supplies for vocational classrooms is astronomical. Every shop needs to purchase a variety of materials to best serve its students: the culinary arts shop needed ingredients while the cosmetology shop needed hair dummies. Running a business out of the shop can help the school recoup the cost of supplies. While the shops are only allowed to charge for materials, not labor, the income generated by classroom-businesses is one of the reasons that vocational education programs are sustainable. Second, many students in vocational programs are training to enter professions; running community-frequented businesses gives these students the experience necessary to deal with customers, interact with colleagues, and function in a professional environment.

However, the benefits of operating a business within a classroom do not come without challenges. Because each of the shops served some community need, it was difficult for SHS teachers to have complete control over lesson progression and planning. As a result, learning took a much more fluid approach: students learned skills as they needed them in order to complete their work. For instance, in restaurant run by the culinary arts shop, the menu changed every week. In order to meet the needs and desires of customers, the restaurant did not have a “sauté” week, followed by a “roasted” week.⁷⁵ Rather, different culinary practices were mixed on each menu. Thus, rather than spend a whole week learning how to sauté vegetables and proteins, the students learned many different skills at once. Due to its fluidity and flexibility, the curriculum taught students how to multitask.

This fluid approach to learning, though sometimes confusing, is beneficial. In the real world, students do not learn in an isolated manner. When a person begins a new job, he or she is expected to learn a little bit of everything at once. Few companies expect their employees to spend one day learning to file, the next day learning a computer program, and still the next the proper layout of reports and forms. Rather, employees are called upon to learn a variety of skills at once—to be a multitasking learner. Vocational programs effectively teach students how to learn multiple tasks and lessons simultaneously and thus better prepares students for the real world.

⁷⁵ Thomas Cardon, personal conversation with teacher, November 12, 2011.

This fluidity of learning was demonstrated in the drafting shop through a project that arose from SHS's accreditation process. During the time that I spent at SHS, the school was in the process of seeking re-accreditation from the New England Association of Schools and Colleges, an organization that provides accreditation for high schools across the country. The drafting teacher, Mr. Navleris, informed me that although SHS passed the accreditation process, the Association informed the school that if they did not renovate or replace the school building, they would not be re-accredited in 2020. From this information, Mr. Navleris created an opportunity for his students to attempt to design the new SHS.

To design the school, junior and senior students worked in teams, choosing locations throughout Somerville for the new location. While some of the locations were ideal, others were less so, and students had to work with building codes and restrictions to determine if the site was realistic and practical. From there, students used Computer Aided Design software to lay out the perimeters of the school, design the floor plans, and choose building materials. Somerville's principal, Tony Ciccariello, agreed to serve as the class's "client." Students interviewed the principal about creative possibilities and the required elements of the new building. By forming an architect-client relationship with the principal, Mr. Navleris simulated a working relationship between the class and the principal, giving students the opportunity to garner pre-professional experience. While it is extremely unlikely that a single student's plans would be chosen as building plans for a new high school, the project gave students the opportunity to offer advice and recommendations about something they know in a professional setting. They operated and planned in the same manner as an architectural firm and as such functioned as one. There is a possibility that their plans will influence the project; Mr. Navleris confided in me that he hopes his students will be allowed to participate in the drafting and planning process as the project comes closer to fruition.

Mr. Navleris's flexibility and willingness to allow new projects and ideas to infiltrate the curriculum allowed his students better and more diverse learning opportunities. Although some of the tasks that were involved in the project were beyond his students' skill set, it was beneficial for students to tackle the material before they felt ready. Students were compelled to learn difficult skills and forced to take risks and make some mistakes along the way. While the project was challenging and difficult, the opportunity to work on a project about something close to them, a school that they attended nearly every day, engaged the students.

The classroom-business model results in student engagement because it ties student learning to the real world, making the classroom feel more like an adult work environment. This model, and the high school project in particular, required extensive employment of higher-order thought. Students see the ways in which their skills and knowledge can serve consumers and communities, putting real world social and economic value on their learning and progress. These ties can encourage students to be invested in material which otherwise might seem outside their goals for personal and economic growth and development.

Authentic assessment

While authentic assessment is not a practice exclusive to vocational education programs, it is a form of assessment that is integrated into most, if not all, vocational shops. Authentic assessment is a form of assessment that focuses on “challenging, performance-oriented tasks that require analysis, integration of knowledge and invention...rather than focusing merely on recall and recognition of facts.”⁷⁶ Authentic assessments “require that students demonstrate what they can do in the same ways that workers do in out-of-school settings by performing tasks that are complex and that require production of solutions or products.”⁷⁷ Authentic assessments are more active than pen-and-paper tests and require more use of higher-order thought. Rather than merely recalling how to perform a specific task, authentic assessments call upon students to compile and sort through their accumulated knowledge in order to solve a complex problem.

⁷⁶ Linda Darling-Hammond et. al., *Authentic Assessment in Action: Studies of Schools and Students at Work* (New York: Teachers College Press, 1995), 2.

⁷⁷ *Ibid.*, 2.

Authentic assessments are called “authentic” because of their intrinsic connection to the real world. Students must practice the “application and production of knowledge” within a meaningful context.⁷⁸ Vocational learning, like authentic assessment, is connected to the real world in a very specific and concrete way. In most cases, students learn skills that prepare them for employment or career training after leaving high school. In vocational classrooms, authentic assessment is the evaluation of student work using industry-based standards and expectations. Forms of authentic assessment differ depending on the class. For example, in machine technology, authentic assessment is based upon the final metal product: its quality, closeness to the original, and customer satisfaction. In drafting, however, authentic assessment comes in the form of professional-architect feedback on floor plans and other documents.

Authentic assessment engages students in schooling on multiple levels. First, it provides students with specific guidelines regarding how they are being graded and assessed. Authentic assessment also directly ties a student’s learning to the real world, in turn placing students’ knowledge within the context of their chosen industry. Every single shop I observed in Somerville practiced some sort of authentic assessment. While the assessment differed between intellectually based vocational classes and manually-based vocational classes, all students were required to work to an industry standard. In Somerville, I observed that authentic assessments engage students in learning because it places real-world value on the skills students learn in the classroom.

⁷⁸ Ibid., 4.

In Mr. Navleris's drafting class, student work was edited, revised, and corrected by working architects to determine if students were working to industry standards. Each year, the drafting class works with the Somerville Historical Association, which catalogs all of the Victorian houses in the city. Students choose a historically preserved house from the city and draw it: among proper ratios and measurements, the students must include architectural markers, historical figures, and other details.⁷⁹ Student work, along with a photograph of the house, is then sent to an architect working at a firm in Greater Boston. The architect makes notes, corrections, and adjustments about what needs to be changed in order for the plan to meet industry standards. Mr. Navleris told me that this was "the single most important form of feedback"⁸⁰ that the students receive each year. This assessment allowed students to understand how their work compares with professional work, directly tying their learning to the real world.

⁷⁹ Perry Navleris, personal conversation with teacher, February 11, 2011.

⁸⁰ Perry Navleris, personal conversation with teacher, November 1, 2010.

In machine technology, authentic assessment was more informal and product-based. Community services and businesses frequently recruited this shop to create metal products, like signs, at a low cost. When the students created these items to be sold, the finished product must meet industry quality standards. For example, during one class session, I saw one student, Abdullah, working on an engraved sign for a local day care. After Abdullah's first attempt, the last letter on the sign was crooked: the "e" was split at the tail. When Abdullah showed Mr. Medeiros, the shop teacher, his finished product, Mr. Medeiros told him that he must re-do it, because his work represented the shop as a business and the engraved letters did not meet quality standards.⁸¹ The student flipped the metal over and prepared to re-engage the sign. While it was not a formal evaluation, this interaction was a form of authentic assessment. Mr. Medeiros insisted that the sign meet the same standards it would have to meet if the client had ordered it from a for-profit shop. This was necessary for two reasons. First, the quality of work and customer satisfaction at the shop must remain high so that the classroom-business model, and thus the economic viability of the shop, can be maintained. Second, students who wish to enter a union or work upon graduation must learn to judge the quality of their own and others' work.

⁸¹ Donald Medeiros, personal conversation with teacher, November 10, 2010.

Vocational classes have more opportunity and cause to engage students through authentic assessment than traditional academic classes because of the hands-on nature of classes and the state requirement that all vocational teachers must have had several years of industry-related experience in order to teach in a vocational classroom. Because an automotive teacher has worked as a mechanic, he is likely highly aware of the standards and performance requirements in functioning shops. An English teacher, on the other hand, might have never worked as a publisher or editor and therefore is probably less aware of the standards and expectations that professional writers must meet. Vocational teachers' real-world experience in their field better positions them to assess students authentically.

Authentic assessments also allow students to individually discover and determine which of their acquired knowledge is most valuable. Taking a test assumes a base level of knowledge; it assesses what the teacher believes are the most important things for a student to learn. An authentic assessment that requires students to wrestle with and piece together their own knowledge in a way that makes sense within the context of the problem is not only challenging, it allows the student to decide which information is important to the assessment. In this sense, authentic assessments give students control and agency over their education, which can encourage students to become more invested in the learning process. Moreover, authentic assessments are typically closely tied to project based learning activities and can thus benefit students who perform poorly on more traditional assessments. Through these types of activities, students have multiple chances within a single assessment to demonstrate their knowledge, while high-stakes standardized tests, finals, and midterms may discourage students. Project-based authentic assessments allow for more creativity and room for mistakes, thus better engaging students in ways that tests cannot.

Active, independent learning

The importance of having agency over one's personal education process is also evident in the final, and one of the most important, aspects of vocational student engagement: the heightened level of trust and independence given to students in the vocational classroom. The ability to direct the pace and direction of one's learning allows a student to better tailor their educational pursuits to their own goals and interests.

Students in vocational classrooms work at their own pace rather than at a pace that is prescribed for the class, ensuring that all students master required skill sets. In shops, the information learned is truly cumulative; a student has to learn how to operate CAD before he or she can create a blue print. If a student is unable to master a given skill, he or she will most likely be unable to move onto the next skill successfully. Thus, in vocational classrooms, students are often required to practice one particular skill until they get it right, no matter how much time it takes. While this ensures that all students acquire skills in a particular order, a feat that is difficult in many academic classrooms, it also virtually guarantees that students in the class are working on different projects at different times.

Multiple projects taking place within a classroom can be both confusing and beneficial for students. During one visit in the machine technology shop, I observed students working on four separate projects: a tool called a 1-2-3 block, a decorative cannon, a meat cleaver, and an engraved plate; there were less than 20 students in the class. This class consisted primarily of sophomores; there was also a stray junior and senior. Because these students were inexperienced, they were required to gain permission from Mr. Medeiros before operating particular pieces of machinery. The motivation of this policy, Mr. Medeiros informed me, was twofold. Mr. Medeiros's first concern was safety; the machinery in the shop moves forcefully and quickly, so most students needed to be supervised while operating it. Secondly, metal is expensive and the shop operates on a limited budget. If a student makes a mistake with his or her material, it is easier to salvage the piece early on. Once a student passes certain stages of their project, the metal cannot be altered or reused. Thus, students' quality of work was checked at each stage of the project to avoid costly mistakes.

Students often became frustrated waiting for Mr. Medeiros to check their work. One student, Billy, frequently complained about wasting time in the shop. Indeed, many of the students were frustrated when they needed help or wanted to ask a question and they had to wait at least five minutes before Mr. Medeiros was able to speak with them. However, this wait time also encouraged students to ask older or more experienced peers for guidance and advice. There was one senior, Abdullah, working amongst a class of sophomores; younger students approached him four times during the hour-long period to ask how they could improve upon their project. Abdullah told me he felt satisfied because he could answer questions he once had himself. Another student, Marcos, beamed with pride as he told me that his younger peers often referred to him as “Mr. Medeiros, the second one”⁸² because he helped them with their projects so frequently. Thus, although this policy proved frustrating for some students, it allowed others to develop further competence and confidence.

The act of hands-on learning is another important engaging feature of vocational education classes. Active learning can often be more effective than passive, rote learning methods because it compels students to think critically about a problem at hand. Active learning forces students to pay attention with both their minds and their bodies, making learning a more comprehensive and all-engaging experience. While hands-on learning activities are present in many classrooms, including traditional academic ones, vocational training programs rely on this type of learning almost exclusively. This pedagogical tactic thus makes it more difficult for students to be mentally or physically distracted or disengaged.

⁸² Personal communication, interview with Marcos, March 4, 2011.

Finally, vocational classrooms are physically large—much larger than a typical academic classroom and thus allow students more independence and control over their learning pace. Classrooms need to have an instruction area, industry-specific equipment, and space for students and teachers to circulate. In Somerville, while some of the classrooms, such as the drafting room, are double the size of an academic classroom, others, such as machine technology, are much larger, covering space that could be occupied by four or five academic classrooms. Because the rooms are so large, it is physically impossible for a teacher to be with or watch every student at the same time. Students are expected to complete their work in a timely, orderly fashion without having a teacher constantly watching over their shoulder or noting their every move. This gives students responsibility and independence akin to that which they will experience in the working world. Moreover, many students reported that they enjoyed and appreciated the trust of their teachers; it made them feel more adult-like and thus better prepared them for life after high school.

Rote learning does little to engage students who have difficulty in a traditional academic environment. In shops, students were rewarded with higher grades for good time management and were given many opportunities to dictate the pace and direction of their work. Moreover, it is more difficult for students to be distracted when their minds and hands are occupied by the same tasks. Thus, more mental engagement can result from hands-on learning because a student's mind and body are focused on the same task.

Conclusions

The classroom-business model, authentic assessment, and an independent, self-directed learning environment all give students in vocational classrooms an increased degree of authority and responsibility over their personal education process. While working in a business functioning out of the classroom, students need to make decisions that benefit not only their own learning and growth, but also the reputation and well-being of the shop-run business. During authentic assessments, students need to assess and draw from among their own skill sets and knowledge bases in order to solve complex, real world problems. Finally, while working in the shop on a daily basis, students need to be responsible for their rate of progression, quality of work, and personal behavior. Through these practices, vocational education programs trust their students to behave like adults and teach them how to function in a work environment.

Vocational pedagogical practices encourage students to make a psychological investment in learning because they understand that the skills they are learning are not only valuable in the classroom, but also in the real world. Formal indicators of success, such as a test grade, mean nothing if the student is unable to complete his or her work in a real-life setting. By showing students how to work independently and efficiently, vocational training programs support real student interest, understanding, and engagement, as opposed to the rote memorization and assessment techniques common in solely academic classrooms. As such, vocational programs engage students that strictly academic programs may have trouble reaching.

Moreover, these pedagogies and the value they place on real-world, applicable skill sets, have the ability to engage other types of students, not just those from the working class. It is possible that vocational pedagogical tactics, such as authentic assessment, could serve as a model for how to engage other groups of students who often feel alienated from the traditional classroom experience. In this way, the vocational classroom and its real-world centered pedagogy could serve as a model to engage other, hard-to-reach student groups.

CHAPTER 3: INTEGRATING WORKING CLASS CULTURE: RESISTING REPRODUCTION AND ALIENATION

Chapter 3 begins with a literature review and theoretical framework section that outlines the primary arguments about what effect vocational education has on working class students' social and economic futures. The beginning portion of this section outlines scholarly work completed on both vocational education programs and the representation of students' culture within the school; the latter portion describes theories about how students resist reproduction. The analytical body of the chapter is then broken into two sections, Part I and Part II. Part I uses the theories of resistance to examine the ways in which Somerville's CTE encourages and enables students to resist the effects of social and cultural reproduction. Part II explores the meaning attached to the use of space within the vocational building and speculates about the effect that space-based hierarchies have on vocational students.

Literature Review and Theoretical Framework

The body of sociological theory on which this chapter is based focuses on the ways in which capitalistic exchanges define students' educational experiences.⁸³ The literature emphasizes that schools are part of a system that needs to reproduce a working class in order for the capitalist economy to function. The literature argues that schools are institutions that define and reproduce power by determining which culture and knowledge is valuable in society. Because vocational education is typically directed toward working class students, many of these authors consider it a negative mechanism that reproduces social and economic inequality.⁸⁴

Social and cultural reproduction: What's class got to do with it?

⁸³ Ainsworth, Hodkinson, Nagle, MacLeod, Willis.

⁸⁴ Willis, MacLeod.

Many authors argue that cultural and social reproduction are the primary forces operating in vocational education programs.⁸⁵ These theorists suppose that the detrimental force of reproduction outweighs the possible benefits of vocational education. Jay MacLeod, a priest and academic, and Philip Hodgkinson, a professor at the University of Leeds School of Education, each argue that one of the most influential factors in students' educational choices is their habitus. Bourdieu defines habitus as "a system of lasting, transposable dispositions which, integrating past experiences, function at every moment as a matrix of perceptions, appreciations and actions."⁸⁶ In other words, habitus is the collection of "attitudes, beliefs, and experiences" that characterize one's social class.⁸⁷ Like cultural capital, it influences a person's understanding of his or her own position in the social and economic landscape and how he or she relates to people and institutions in their society. A person's habitus is generally inherited from his or her parents. Typically, students with a middle or upper class habitus are better equipped to navigate the institution of the school than students with a working class habitus.

Social reproduction is the process by which a society and its institutions maintain inequality by conditioning working class students and students of color to fill working class economic and social roles and promoting the success and advancement of middle class students. Reproduction theory holds that schools reinforce and sustain inequality by preparing students to occupy the same social and economic position as their parents, reproducing, in working class students, a submissive, disempowered class of people.⁸⁸ Through social reproduction, children inherit the habitus and cultural capital of their parents. Because they share the attitudes, dispositions, and knowledge bases of their parents, working class children often end up in

⁸⁵ MacLeod, Hodgkinson.

⁸⁶ MacLeod, *Ain't No Makin' It*, 15.

⁸⁷ *Ibid.*, 15.

⁸⁸ *Ibid.*, 13.

working class jobs.⁸⁹

The role that habitus plays in reproduction is explained by Hodkinson in his review of a study completed in England on the choices of working class students. The study found that students' choice of schooling and career paths are primarily influenced by familial occupations, particular "turning points" in one's life, and confirmation of previously chosen career paths.⁹⁰ Using Bourdieu's theories of cultural capital and reproduction, Hodkinson questions the study's conclusion that students have choice in their career or educational path. Rather, he asserts, students are influenced both consciously and subconsciously by societal rules and expectations surrounding their social class—their habitus. Thus, Hodkinson argues that a student's habitus affects not only her performance in school, but also the career and education choices she makes. Following this logic, it would seem plausible that most vocational students, who choose career training over advanced academic training, are the children of unskilled and semi-skilled blue collar workers.

MacLeod further argues that one of the primary goals of optional vocational programs is the continued production of a working class through social reproduction.⁹¹ His conclusion is similar to Hodkinson's: students whose habitus is shaped by working class values are more likely to choose an education trajectory that will locate them in the working class as adults. For example, in the vocational education program that MacLeod studies, students are not encouraged to develop skills necessary for employment; rather, teachers and administrators send failing students to the vocational program in order to allow teachers more time and effort to focus more on academically successful students. In this way, academically inclined students are given more

⁸⁹ Ibid., 11.

⁹⁰ Philip Hodkinson, "Career Decision Making and the Transition from School to Work," in *Acts of Practical Theory: Bourdieu and Education*, ed. Michael Grenfell (London: Falmer Press, 1998).

⁹¹ MacLeod, *Ain't No Makin' It*.

attention and support to succeed and vocational students are effectively barred from receiving advanced educational opportunities. The unequal opportunity provided to students supports a system of reproduction. By dumping undesirable students into the vocational education program, the school that MacLeod studied created an environment in which middle class students were given the space and resources to excel while working class vocational students were excluded from the dominant school culture. This situation is not unique to the school the MacLeod examined; as discussed in the historical context, before NCLB and the Perkins Act, vocational education programs were commonly considered an appropriate path for youth who were not academically inclined.

Reproduction is not solely a social mechanism; it also operates economically, according to sociologists James Ainsworth of Georgia State University and Vincent J. Roscigno of Ohio State University, who jointly critique vocational education as capitalistically driven and self-interested in their article “Stratification, School-Work Linkages and Vocational Education.” The authors employ the theories of reproduction and the achievement ideology to suggest that the American school system is structured by the class in power to maintain the current economic system and distribution of capital. Because they are structured by the more affluent class, schools provide an advantage to students who possess the dominant cultural capital. In addition, Ainsworth and others argue that schools adhere to a rigid achievement ideology that suggests that if students work hard, they will get into college to get a well-paying job.⁹² This ideology, however, falsely promises that there are an infinite number of well-paying, post-collegiate jobs.⁹³ They argue that the students who inevitably fail to achieve this proscribed success, who hail primarily from vocational tracks, will work the minimum wage, low- and unskilled jobs that

⁹² Ainsworth, MacLeod.

⁹³ James Ainsworth and Vincent Roscigno, “Stratification, School-Work Linkages and Vocational Education,” in *Social Forces* 84, no. 1 (2005), 258.

support capitalism. Because members of the dominant culture possess the power to determine which knowledge is valuable, they have the power to determine which students will “achieve” and ultimately fill each rung of the economic ladder. Thus, social reproduction begets continued economic disadvantage for working class students.

Hodkinson argues that how youth understand their possible futures demonstrates this relationship between social and economic reproduction. According to Hodkinson, young people make decisions about their future within horizons for action, or the “perspectives on and possibilities for action given in any field or intersection of fields.”⁹⁴ What students perceive as possibilities for education and employment is influenced by their habitus. For example, a girl might consider entering a traditionally male-dominated field, such as auto mechanics, if she were surrounded by such occupations growing up. On the other hand, a girl might not consider becoming an engineer a possibility if she does not perceive that as a realistic or appropriate choice due to class, race, and gender restrictions.⁹⁵ Students make decisions about what they want based on what they know; thus, which education and career paths students perceive as available and ultimately choose to pursue are limited and affected by their habitus. Because of this, students who originate from a working or lower class habitus are more likely to make choices that will reproduce their current social and economic status, thus maintaining current social structures.

Resisting reproduction: Counter-culture, differentiation, and integration

Despite the negative processes of reproduction described in much of the literature, there also exists the possibility for resistance. British cultural theorist Paul Willis argues that vocational students develop tactics to resist reproduction and cope with a dominant culture that

⁹⁴ Hodkinson , “Career Decision Making,” 97.

⁹⁵ Ibid., 97.

systematically devalues their working class status, values, and knowledge.⁹⁶ One way in which students do this, he argues, is through the development of counter-school culture. Counter-school culture is the process by which marginalized groups within a school form their own value systems, hierarchies of knowledge, and customs that exist in opposition to the culture of the school. Willis further defines counter-school culture as:

the zone of the informal. It is where the incursive demands of the formal are denied—even if the price is the expression of opposition in style, micro-interactions and non-public discourse. In working class culture generally opposition is frequently marked by a withdrawal into the informal and expressed in its characteristic modes just beyond the reach of “the rule.”⁹⁷

In other words, students develop counter-school culture to undermine the formal, orderly rules and customs of the school. Students who engage in counter-school culture typically withdraw from the mainstream school environment. Yet, while the students who participate in these cultures do not adhere to the rules and regulations set forth by the school, they do have their own set of rules, beliefs, and ideologies that are policed by other students within the group.⁹⁸ Because the rules and standards to which these students adhere exist in opposition to the rules and standards of the school, students who participate in counter-school culture often seem disengaged with and hostile toward the more traditional educational process, which often stresses rote acquisition of abstract knowledge. Participation in such counter-cultures is an act of agency against the process of reproduction.

It is possible for multiple counter-school cultures to exist within a school. Julie Bettie, associate professor of Sociology at University of California at Santa Cruz, demonstrated this in

⁹⁶ Willis, *Learning to Labour: How Working Class Kids Get Jobs*.

⁹⁷ *Ibid.*, 22-23.

⁹⁸ *Ibid.*, 59.

her ethnography *Women Without Class: Girls, Race, and Identity*, in which she studied a group of White and Latina working class girls.⁹⁹ Bettie described the formation of multiple different counter-cultures based on class and race identity within the school; counter-culture groups included the so-called hicks, *las chicas*, and smokers. Each of these groups withdrew from the “prep” mainstream school culture in different ways: the smokers skipped class to smoke cigarettes and marijuana, while many of *las chicas* ignored their teachers to share baby photos and paint their nails. Each of these groups had a distinct counter-culture that existed in opposition to the dominant culture and ideologies of the school. Willis characterizes the working class counter-school culture of the school he studied as valuing physical awareness and ability over the theoretical knowledge and intellect. For example, according to Willis, youth engaging in a vocational counter-school culture might value being a plumber, which is physical labor, over being a scientist, which is intellectual labor. He notes that the boys in his study scorned the boys who were “always listening, never doing,”¹⁰⁰ because their counter-culture valued the application of skills over theorizing about skills.

The development of a counter-school culture is driven by the power dynamics that exist in schools, and in vocational education programs in particular. In her ethnographic study, *Voices from the Margins*, Jane Nagle, an assistant Professor of Education at Westfield State College in Massachusetts, examines the power that schools hold to rank and validate knowledge based on capitalistic notions of success and intelligence. Knowledge, Nagle argues, is a construction based in relationships of power. The powerful, dominant culture and its members have the ability to determine how knowledge should be acquired and which knowledge is important. Working class students, she writes, can become frustrated with their lack of agency over and inability to

⁹⁹ Betty, *Women Without Class*.

¹⁰⁰ Willis, *Learning to Labour*, 14.

identify with their education because, institutionally, schools are rooted in middle class values and knowledge. Many students turn to vocational education programs, she argues, because these programs seem to share values and standards with working class culture.¹⁰¹ Students thus develop counter-school culture to reject institutionalized values before that institution can reject them.

Counter-school cultures simultaneously exist within and apart from the school; although it is actively working against the values and power of the institution, the counter-culture influences the institution just as the institution influences the counter culture. Thus, through the development of a counter culture, the working class is at once a part of and different from the school. The process by which this occurs is called differentiation. Willis defines differentiation as:

the process whereby the typical exchanges expected in the formal institutional paradigm are reinterpreted, separated, and discriminated with respect to working class interests, feelings, and meanings. Its dynamic is opposition to the institutions which is taken up and reverberated and given a form of reference to the larger themes and issues of the class culture.¹⁰²

In other words, differentiation is the formalized, systematic process by which working class students separate themselves from the school.

The opposite of differentiation, according to Willis, is integration, “the process whereby class oppositions and intentions are redefined, truncated and deposited within sets of apparently legitimate institutional relationships and exchanges.”¹⁰³ While differentiation formalizes opposition to institutional values and hierarchies, integration provides a space for the informal culture and knowledge within the formal paradigm. Differentiation participates in social and

¹⁰¹ Nagle, *Voices from the Margins*.

¹⁰² Willis, *Learning to Labour*, 62.

¹⁰³ *Ibid.*, 63.

cultural reproduction by making opposition to school culture formal and systematic. Integration, on the other hand, has the capacity to positively influence youth involvement and investment in schooling because it recognizes the knowledge and culture of working class and other marginalized youth as having a meaningful place within the school. Whereas resistance tactics such as counter-culture can alienate students from the institution, integration creates a systematic effort to include students in the institution and culture from which they feel alienated.

The Comprehensive High School: How Vocational Programs Value Working Class Knowledge

Vocational education programs engage students' cultural capital in two distinct ways. First, through Willis's concept of integration, vocational education programs incorporate working class values, thus placing social value on students' working class cultural and social capital. Simultaneously, they teach students aspects of dominant, middle class social and cultural capital that they need in order to climb the employment ladder and gain meaningful employment. The students simultaneously resist and adopt dominant class values, giving them real opportunity at social and economic advancement while maintaining their home cultures and values.

Christopher Winch describes cultural capital more broadly than does Bourdieu, defining it as "the moral and cognitive assets laid down by someone's culture which they can draw upon as individuals."¹⁰⁴ For a student from a working class family, this could mean having a strong work ethic, valuing hard labor, or understanding shop floor culture. These assets, however, frequently go unrecognized because formal institutions, such as schools, often view working class students through a deficit lens; rather than recognizing the positive aspects of a student's culture or abilities, the deficit lens evaluates a person based on what they are missing. For example, a working class student might have a strong work ethic, but might not understand the principles of grammar. Instead of recognizing the time and effort a student put into a paper, a

¹⁰⁴ Winch, *Education, Work, and Social Capital*, 4.

teacher might focus on the student's lack of ability to use a semicolon.

Teacher and classroom practices that uphold working class knowledge as deficient are central to the reproduction that occurs in schools. In her study of working class parents of high-school aged students, Canisius College Assistant Professor of Education Gillian Richardson concluded that working class students feel alienated from the traditional classroom because of rote learning methods, a lack of control over their education, and a disconnect between classroom learning and real life, practical applications.¹⁰⁵ To reach this conclusion, Richardson presented to working class parents a variety of studies on working class youth completed by theorists such as Paul Willis and asked them to discuss the validity of the researcher's results based on their own experiences and the experiences of their children. Parents of working class students, she argued, were aware to some extent of the role that schools played in social reproduction. Parents reported that, when they were in school, they were unconcerned with these classroom practices because previously, there was an abundance of living wage, working class jobs available without an advanced education. The parents were concerned about their children, however, whom they perceived as being forced to pursue an education in order to maintain a working class standard of living. They thus resented the processes of reproduction that were positioning their children at a social and economic disadvantage.

As the parents in Richardson's study recognized, schools that adhere to a rigid and traditional curriculum typically do not value working class cultural capital. As a result, much of the working class feels alienated from middle-class directed institutions, such as schools, because of the devaluation of their own cultural capital and values that takes place within these institutions. In the school he studied, Willis reported that the working class boys scorned the

¹⁰⁵ Gillian Richardson, "Structural Barriers and School Reform: The Perceptions of a Group of Working-Class Parents," in *Urban Education with an Attitude*, ed. Lauri Johnson et al., (Albany: State University of New York Press, 2005).

boys who expressed “enthusiasm for, and complicity with, immediate authority.”¹⁰⁶ The traits that the middle class students displayed, such as following directions, meeting deadlines, and sitting quietly in their seats, were a result of the dominant, middle class cultural capital that the students possessed. Children from middle and upper class homes are conditioned to behave in a way that is acceptable, even anticipated, in public institutions, such as schools. In most academic classrooms, students are simply expected to behave in this way; they are not taught *how* to follow directions or not to interrupt the teacher. This is one reason why reproduction takes place. Working class and poor students remain in their socioeconomic position because they are never provided with the tools and information that they need in order to succeed in an environment dominated by middle and upper class ideals.

This alienation is historic, as well as structural. In previous decades, only a base level of education was needed in order to acquire a job that provided a steady and reliable living wage. However, as Richardson explains:

With industry down sizing and increasing literacy demands in all sectors...those in the working class have been forced to look towards education as their only viable option. Rather than viewing education as inherently valuable, however, [parents and students] tend to perceive it as a forced commodity, necessary as a credential for continued survival in a changing economy.¹⁰⁷

Thus, many members of the working class recognize the need to acquire some aspects of middle class cultural capital in order to be economically self-sufficient. The balancing act that occurs between working and middle class values allows students to develop the cultural skill set necessary in order to navigate the institutions, such as schools, upon which their long-term

¹⁰⁶ Willis, *Learning to Labour*, 14.

¹⁰⁷ Richardson, “Structural Barriers and School Reform,” 180.

success is dependent.

When teachers assume that students' rejection of the institutional structure is the result of a class- or race-based deficiency, they are supporting the process of reproduction, which lead to students feeling alienated and disengaged from school. Willis writes of the concept of "class insult," whereby middle-class teachers display belittling and sarcastic attitudes towards lower class and vocational students in the classroom. These attitudes are based in teachers' view of working class students as being culturally and intellectually deficient rather than resistant. For example, Willis observed that the working class students did not value the institution of the school, and what it represented, in the same way that middle class students did. He observed that the middle class students sat quietly, willfully listening to and absorbing the information that the teacher had to impart, while the working class students placed value on disrupting the conformity that the institution encouraged.¹⁰⁸

Willis argues that rather than embarrass and demean students in class teachers should focus on presenting culturally relevant material to engage students. He asserts:

Since relevance is about the return to working class themes, and since working class themes importantly centre on work, there is obviously a temptation to assert attitudes and requirements appropriate to working life retrospectively on the school culture.¹⁰⁹

In other words, teachers should focus on connecting learning with students' knowledge base rather than forcing students to learn about culturally irrelevant material. Both Willis and Newmann argue that when schools view working class culture with a positive attitude, the result is increased student engagement and investment in learning.

The ways in which vocational classrooms recognize and value the social and cultural

¹⁰⁸ Willis, *Learning to Labour*.

¹⁰⁹ *Ibid.*, 91.

capital of working class youth is an example of integration. Many vocational classrooms participate in integration by recognizing working class values as important not only to the individual student, but also to the school setting as a whole. In Richardson's study, adult members of the working class described themselves as "grassroots' people who use common sense and practical skills to deal with situations."¹¹⁰ Richardson also reported that many working class students are more visual, active learners who value characteristics and attributes such as common sense, practical application of skills, and respect for others. Because these values run counter to many middle class and institutional values that emphasize independence, direct and confident speech and ingenuity, they are often omitted from the formal curriculum. The curriculum does not reflect their values, and so working class students often reject school knowledge as irrelevant and unrelated to their own culture. Vocational education programs, however, mindfully incorporate these working class values into class activities, curriculum, and grading practices, thereby formally integrating working class values into the institution.

PART I: METHODS OF RESISTING SOCIAL AND CULTURAL REPRODUCTION

Bridging the Gap Between Home and School Culture

Through investigating processes of integration and productive counter-culture, the literature and theory focusing on the cultural capital and reproduction of the working class consider some of the ways in which individuals use structures that promote reproduction, such as schools, to seek personal betterment. In Somerville, my findings similarly demonstrated the ways in which students use the school to serve their own social, economic, and academic goals. Many of the students with whom I spoke in Somerville described their involvement in vocational education as part of an effort to better their social and economic location and expand their

¹¹⁰ Richardson, "Structural Barriers and School Reform," 179.

thought processes. In some cases, clearly, social and cultural reproduction does take place within vocational education programs; however, many well-run vocational programs, such as Somerville's, also take part in the more positive process of integration. By integrating working class values into the formalized structure and curriculum of the school, vocational education programs benefit working class youth. Moreover, vocational education programs can provide working class youth with access to the social and cultural capital that they will likely need in order to be successful in their chosen field. Such programs recognize that social and economic improvement is possible not only from one social class to another, but also within a social class. In Somerville, this simultaneous integration and socialization can counter processes of social reproduction and redefine hierarchies of knowledge, thus giving working class youth a better chance to engage in and reap benefits from school.

A Classroom for the Working Class

Vocational education can form a connection between the dominant school culture and the working class counterculture through the process of integration. Because vocational education programs tend to value working class values and knowledge, students are able to see their own cultural standards reflected in the formalized standards and frameworks of the school.¹¹¹ Thus, while vocational education programs can work as agents of social and cultural reproduction,¹¹² they can also work to deconstruct traditional hierarchies of knowledge by giving working class knowledge a place within the formal schooling system. The inclusion of working class students' knowledge, values, and culture within the institution of the school challenges the hegemonic assertion that only the culture of the dominant, middle class has worth. Moreover, placing value on working class cultural capital can make students feel included in an institutional environment

¹¹¹ Willis, *Learning to Labour*, 52.

¹¹² Willis, MacLeod, Hodkinson.

from which they were previously excluded, allowing for a deeper and more meaningful level of engagement.

In Somerville, the vocational education programs consciously integrate working class values into classroom practices and the curriculum. Pedagogically, vocational classrooms cater to the working class value of practical, applicable knowledge. Math, an academic subject critical to success in nearly every shop, is given practical applications. Mr. Medeiros, for example, explained that although his students claimed that they hated math, when he taught trigonometry in his machine technology shop, they understood why they needed to learn it:

What we do is we calculate a taper or an angle and then we'll set the machine up with the math that we did on the board and then we cut the part and it works. And what happens is they see the importance of the math. It's applying all the information that we're teaching them...They see math on a whole different spectrum...it shows everything in place and how to apply those mathematics.¹¹³

Mr. Navleris expressed the same sentiment about his drafting shop:

That's the problem with the solely academic setting, is that you're in geometry class and you've learned all about Pythagoras, and that's wonderful, and you know the triangle and how it works, and the hypotenuse...but until you bring that triangle on top of a roof that is designed to hold weight like snow and ice and wind, its not practical. Now, all of a sudden, you know why Pythagoras was solving these problems.¹¹⁴

By showing students that they understand students' needs to know the practical application of academic material, CTE teachers demonstrate that they are aware of the students' needs.

Teachers consider not only how the academics fit into the vocational curriculum, but also how

¹¹³ Donald Medeiros, interview with teacher, March 7, 2011.

¹¹⁴ Perry Navleris, interview with teacher, February 11, 2011.

they can infuse the academics with working class values. The students responded well to these tactics. As one machine technology student, Marcos, told me, “[When] I’m in math class, I feel everything [is] more difficult. But when I’m working in shop, using math is easy for me.”¹¹⁵

Another working class value that vocational classrooms incorporate into their lessons is respect for one another. Respect, especially in the form of loyalty, is a central value of the working class, perhaps because members of the working class, especially those who are employed in service industries, often have to battle for respect in both the workplace and social situations. Teaching and demonstrating respect for one another is one of the integral aspects of vocational training in Somerville. Every machine technology student that I interviewed said that one of the most important things that they learned from machine shop was respect for others. Said Steve, a senior student: “Mr. Medeiros taught me...how to be respectful and stuff like that. I’ve changed dramatically [since] I was in eighth grade and freshman year. I’ve matured a lot.”¹¹⁶ Mr. Medeiros, confirmed that this was one of the most important things he wanted to teach them: “Most of all I want them to be a good person. And then, second of all, I want them to respect everyone that they work with.”¹¹⁷ In accordance with Willis’s concept of class insult, in academic classrooms, students may feel disrespected because the student-teacher power dynamic can leave working class students disenfranchised. Vocational programs actively resist the effects of class insult. As Mr. Medeiros explained, “I get the respect from the kids because I give it. I get it, and I give it in return, and that’s what it is.”¹¹⁸ It is not only imperative for the students to learn how to respect others, but also to learn how to receive respect and to work in a respectful environment.

While upper and middle class students are often conferred respect by peers and teachers,

¹¹⁵ Marcos, interview with student, March 4, 2011.

¹¹⁶ Abdullah, interview with student, March 4, 2011.

¹¹⁷ Donald Medeiros, interview with teacher, March 7, 2011.

¹¹⁸ Ibid.

many working class students feel that they need to earn it. Moreover, working class students often feel disrespected in an educational institution that does not value their goals, needs, or abilities. Thus, it is possible that respect is often more important to and valued by working class students than to their middle class peers. In the vocational classroom, everyone has a right to respect, regardless of a person's class, race, gender, or ability; this mandated respect creates a more equitable learning environment. By demonstrating respect toward students, vocational teachers simultaneously embody and teach a central working class value. Respecting students and their culture allows students to feel more comfortable in the classroom, increasing the likelihood that they will be engaged in, not ostracized from, the education process.

Finally, while many schools' sole aim is to prepare students for college, Somerville's career and technical education programs recognize the need that many students have to gain employment immediately upon graduation. As Mr. DeSimone explained, "Students that enter our program want to know that they have the option to go right into work."¹¹⁹ By providing students with skills with which they can seek this employment, vocational education programs recognize the purpose that education must serve for a large portion of students and validates the often need-based decision of many students to forgo the college application and matriculation process.

Career and technical education classes can help students who need to enter the workforce by providing a safety net to students who might otherwise become yet more members of the large, unskilled working class in the United States. Somerville makes helping students obtain skilled work an explicit part of their mission; beginning next year, SHS will offer opportunity for certification to all students graduating from the CTE.¹²⁰ Vocational students who successfully complete a variety of courses and interdisciplinary projects, such as designing a business plan,

¹¹⁹ Leo DeSimone, interview with director, February 18, 2011.

¹²⁰ Ibid.

will earn a certificate of training completion from their shop; these certificates will be awarded to students based on their performance in shop, not academics. Theoretically, this means that students who cannot graduate because they have not passed the MCAS will still be able to show some documentation of their ability to work in a given career field. While this formal certification may not qualify a student to become a master electrician, it demonstrates to employers that the student's skills in a particular area have been evaluated and meet industry standards. Moreover, it recognizes in a formal and institutionalized way the amount of time, effort, and work students put into their vocational education classes that, under the current standards, only count as elective classes. In this way, vocational education programs can institutionally recognize and value the needs of many working class students. Students are thus made aware that their needs and decisions are important to the school and are more likely to trust the school to help them to advance socially and economically.

21st Century Skills: Acquiring New Cultural Capital

While it is important for schools to value the inherent cultural capital of youth, it is also important to recognize that our society is one in which, in order to succeed economically, people need to possess a certain amount of institutionally valued cultural capital. If students, vocational or traditional, want to gain and retain meaningful employment, it is absolutely necessary for them to learn the skills and practices associated with the middle and upper class. Without access to this kind of cultural capital, students remain trapped in a cycle of poverty that prevents them or their children from climbing American social and economic ladders. For example, whether a person is a welder or a doctor, if he continually fails show up to work on time, the probability that he will retain that job is low. Vocational education programs intentionally and explicitly teach skills valued by the dominant culture and capital, thus countering the processes of

reproduction that take place within the larger school environment.

In speaking with me, Mr. DeSimone continually emphasized the importance of teaching students “21st century skills,” which he described as, essentially, employability skills.¹²¹ The nonprofit organization Partnership for 21st Century Skills breaks these skills into three categories: life and career skills, which include initiative, social skills, productivity, accountability, and leadership; learning and innovation skills, which include creativity, critical thinking and problem solving, and communication skills; and information, media, and technology skills, which include technical and media literacy.¹²² Mr. DeSimone explained that the development of these sets of skills was aimed at producing a “well rounded employee, rather than just an automotive mechanic or electrician.”¹²³ In many ways, teaching these skills attempts to provide students with the cultural and social capital that they need in order to be successful in their chosen field, thus better enabling students to achieve work-related and economic goals that could enrich the quality of their lives.

The concept of providing students with employment and job readiness skills is not novel. However, in the academic classroom, it is often assumed that students learn such skill sets at home or in their communities. Students are not necessarily taught how to represent themselves in an interview, manage their time, or communicate effectively. Yet, students are expected to exhibit these skills and are often graded on them during class discussions, project presentations, and other forms of assessment. There is an unspoken assumption that, with practice, students will improve on their speaking, writing, and presentation skills with little to no formal training. This assumption is damaging to working class students, who often lack exposure to these skills

¹²¹ Ibid.

¹²² *Framework for 21st Century Learning*, http://www.p21.org/index.php?option=com_content&task=view&id=254&Itemid=119.

¹²³ Leo DeSimone, interview with director, February 18, 2011.

outside of the classroom environment.

Somerville's vocational education program makes acquiring these "21st Century" skills explicit, graded goals for all students. In Massachusetts, career and technical education programs must follow the Vocational and Technical Education Frameworks outlined by the state. The frameworks contain several different "strands," or areas of focus in which students must be educated. One of those strands is titled "Employability and Knowledge Skills." The framework contains both sets of skills and performance examples to demonstrate that students have acquired those skills. An example of skill sets includes "Develop employability skills to secure and keep employment in chosen field," and includes specific skills such as interviewing skills, punctuality, resume and cover letter writing, and career planning.¹²⁴ The performance examples, which assess the acquisition of these skills, include participating in a mock interview with an industry professional or researching job benefits associated with a specific position. Other skill sets outlined by the state include communication, problem solving, and positive work behaviors.

On a practical level, "Employability and Knowledge Skills" translates into everything from filling out job applications to attending meetings at City Hall. In machine technology, students listened to speakers from local trade schools, such as the Everest Institute, talk about the importance of interviewing and possibilities for continuing education.¹²⁵ Students also received help from Mr. Medeiros to find summer employment and fill out post-graduate job applications. In drafting, students working on a project exploring the architectural and structural implications of the MBTA Green Line Extension attended a meeting at City Hall, where they interacted with city planners in a professional environment.¹²⁶ Those same students had the opportunity to

¹²⁴ Massachusetts Department of Elementary and Secondary Education, *Vocational Technical Education Frameworks* (Massachusetts, 2007).

¹²⁵ Brian, interview with student, March 4, 2011.

¹²⁶ Erin, interview with student, March 18, 2011.

conduct a meeting with their principal to learn more information about the specifications for the new SHS they were working in class to design. Through activities such as these, Somerville's vocational students are constantly called upon to present themselves, in person and in writing, as professional, knowledgeable persons.

This practice will benefit students as they seek employment and education after graduation. For many students, the first time that they are formally called upon to demonstrate these skills is in the middle of a job search or college application process. Yet, these skills are critical to social and economic improvement and advancement. By making the teaching and learning of these skills a mandatory and integrated part of the technical curriculum, vocational education programs prepare students to enter the workforce or college with an improved sense of how they can best represent themselves to others. The acquisition of these skills provides working class students with greater opportunity for social and economic mobility.

Intra-class Mobility: Escaping Social Reproduction

The opportunity for mobility exists not just between socioeconomic classes, but also within them. While MacLeod, Willis, and other authors criticized vocational programs as reproducing a working class, I believe that, in reality, comprehensive vocational programs allow for the creation of a skilled working class, helping many students to escape working in the unskilled positions of their parents. While many vocational students retain working class culture and values, the specialized skills that vocational classes help them to acquire provide a means by which to improve economically. This intra-class mobility was especially demonstrated within the machine technology shop.

The achievement ideology is central to the beliefs in social mobility and the American dream in our society; the ideology purports that if a person works hard enough, she can advance

socially and economically without limit. The achievement ideology and faith in the meritocracy justify the advancement of the upper and middle classes, as well as the stunted growth of the working class.¹²⁷ There is, however, possibility for social mobility *within* classes, not just between them. Social and economic advancement is achievable; however, it often must happen in stages. In her ethnography on working class White and Latina girls, *Women Without Class*, Bettie describes two different kinds of working class families. “Settled living” families “are supported by jobs that have relative security, higher pay, and, at times, health benefits.”¹²⁸ This type of home environment is more predictable and stable than its counterpart, “hard-living.” Hard-living families “are supported by low paying, less stable occupations that lack health care benefits and make home ownership impossible.”¹²⁹ Jobs in non-union labor and service industries support this type of living, which is often unstable and unpredictable. Families in hard-living situations are typically more stressed than those in stable-living situations because they often live paycheck-to-paycheck and have to constantly think about unsettling possibilities such as unemployment and eviction.

All of the students whom I interviewed from the machine shop were from hard-living families. The students’ parents worked as crossing guards, hospital cafeteria workers, truck drivers, factory linemen, and in other unskilled positions. These positions meet the criteria that Bettie outlined for hard living. The jobs are not secure because the workers are unskilled and easily replaced. Moreover, several of these students confided that their families often had difficulty making ends meet and that money was continually tight. These students are not unlike their peers; according to the school’s NCLB report card, 70.8 percent of students in SHS are from low-income families that qualify for free or reduced lunch prices.

¹²⁷ MacLeod, Bettie.

¹²⁸ Bettie, *Women Without Class*, 13.

¹²⁹ *Ibid.*, 13.

Bettie's assertion that there are two different categories of working class families suggests that the possibility for mobility exists within the working class, not just away from it. Just as families can sometimes ascend from the working class to the middle class, families and individuals can also ascend from "hard living" to "settled living." Although the transition from the hard-living working class to the settled living working class may be viewed as a lateral move, it is actually a significant improvement because it offers a steady stream of income, often benefits such as health insurance, and an overall better standard of living. Thus, the transition from the hard living working class to the settled living working class affords students some degree of opportunity to climb the social and economic ladder.

The students I interviewed recognized the economic value that was attached to their high school diploma because of their vocational training. For example, a freshman student, William, repeatedly referred to his shop as his "job." He told me "At first I didn't wanna try this but once I started I thought it was really cool and I thought this was the shop for me... That's when I wanted to pursue this job." He continued, "This is a job I would like to have someday."¹³⁰ By interchanging the word "job," with "shop," William recognized the economic value to his training. To William, shop is not about simply learning a skill set, but rather, is about learning a set of knowledge that will translate into an economically rewarding job after graduation. A junior student, Brian, expressed this sentiment more explicitly: "I don't have a very wealthy family. We barely get by. So another income could really help."¹³¹ The direct connection that multiple students drew between vocational education and a career indicates that economic advancement and mobility are indeed on the minds of students who choose to enroll in the machine technology shop.

¹³⁰ William, interview with student, March 4, 2011.

¹³¹ Brian, interview with student, March 4, 2011.

Graduating from a vocational program provides students with a skill set with which they can earn a living wage and support a family. Vocational students are provided with the skills that they need in order to secure a job that pays close, if not more than, the average salary in Massachusetts.¹³² Whether or not they achieve economic self-sufficiency, though, students believe that the vocational programs offer them a route to economic success. For instance, one student, Raju, told me six times over the course of a twenty-minute interview that he hoped to use skills he learned in his drafting class to secure a “good, paying, white-collar job.”¹³³ Other students repeated similar hopes for economically rewarding careers as a result of their vocational skills and training. The promise of a good paying job excited the students and encouraged them to invest time, effort, and thought into their vocational work. For example, Abdullah told me informally that he did not mind fixing the mistakes he made on pieces in the machine technology shop. He insisted that, although tedious, mistakes helped him to learn better and remember to not make the same mistakes in the future. Abdullah related this willingness to make mistakes to his hope to one day work in a machine shop: he said that making mistakes now would make him a better employee in the future. Thus, although I was unable to determine if vocational training actually translated into economic improvement after graduation, it is evident that because students understood a possibility of economic advancement existed they were more motivated and engaged in the classroom.

The economic hope that vocational education programs offer is further enhanced by the opportunity they provide to learn skills that are relevant to employment in a variety of fields. Mr. Medeiros asserted that an introduction to one trade is really an introduction to an entire way of working that provides students with employment opportunities beyond the immediate scope of

¹³² Bureau of Labor Statistics, *May 2009 State Occupational Employment and Wage Estimates*, (Washington, DC: United States Department of Labor, 2009).

¹³³ Raju, interview with student, March 4, 2011

their shop. He explained,

Learning in a vocational program, so many programs are like gears, they fit together.

They teach you how to use tools, teach you how to use machines. And whether they teach you how to use a lathe or a milling machine or a CNC machine, then you have the

machine and a machine is a machine. It's just like a stepping-stone that gets you there.¹³⁴

Thus, training in a vocational program not only opens doors to a student's specific vocational concentration, but also to a larger sphere of skilled work. Mr. Medeiros himself is the perfect example of this: in 1976, he graduated from the Medford High School auto mechanic shop; after working for several years as an auto mechanic, he worked as a machinist for General Electric before coming to teach machine technology. His education in auto mechanics laid the foundation for his work as a machinist. Thus, with the technical foundation provided by a vocational education, students have the opportunity to move between skilled working class jobs. Students who obtain these jobs retain their working class social and cultural identity, but economically, they experience job and wage security from unions, health insurance and other benefits that are typically associated with steady living and middle class earners. Thus, as the previous section demonstrated, vocational classes reproduce certain working class social ideals, but not necessarily economic fates.

Yet, the students still see the responsibility to escape the low-income working class as a responsibility that they must bear alone. Every one of the students I interviewed claimed that they made the decision to take up a shop on their own. For example, when I asked William, a freshman who had recently made the decision to enroll in machine technology, who helped him to make his decision, he responded: "Myself...[my parents, teachers, and guidance counselors] didn't really help me or tell me to take this shop, it's a good idea. I just thought it was a good

¹³⁴ Donald Medeiros, interview with teacher, March 7, 2011.

idea for myself.”¹³⁵ Thus, while the school did not track William into the vocational program, it also did not provide sufficient guidance for him to make an informed decision about his education. As a result, William exhibited independence and self-reliance characteristic of the working class; indeed, the drive to take care of oneself and to learn not to rely on other people is a working class survival mechanism. Thus, even with the opportunity for economic improvement, students retain their working class tendencies, supporting my initial assumption that, while students improve economically, they remain part of the working class culturally.

There are several possible reasons why the vocational education program in Somerville offers more opportunity for economic advancement than those studied by Willis and MacLeod. Traditionally, the social structures in Britain, where MacLeod and Willis studied, are stricter than in the United States. Moreover, these observations and conclusions might be different in a school that serves a more socioeconomically diverse student population. However, in Somerville, where the student population is largely made up of the poor and working classes, vocational education programs provide positive opportunity for social and economic advancement that would likely not be possible without free job and career training.

The Effect of Standardization: The Persistence of Reproduction

This chapter does not argue, however, that vocational education is a panacea for all aspects of social and cultural reproduction and limitation. There are structural and systematic factors that affect the degree to which vocational education programs can enact change in students' lives.

One factor that makes the thwarting of cultural and social reproduction difficult is the process by which students are assigned to shops. During the ninth grade, students can opt to rotate through each of the thirteen shops in the Center for Career and Technical Education. At the

¹³⁵ William, interview with student, March 4, 2011.

end of the first semester, the students rank the shops that they would like to be placed in. Which shop the student is ultimately assigned to is based upon a score they receive, which is calculated from a compilation of academic grades, attendance, and disciplinary records. Explains Mr.

DeSimone:

They are scored on academic grades, example: an A = 4 [points], B = 3 [points] in math, science, English and Social studies. They are also scored on attendance [and] tardies [sic]. They are also scored on suspensions and detentions and the last factor is the daily grades in each shop, these include a rubric.¹³⁶

Since shop is an elective, students are not entitled to this training but, rather, it is a privilege that they must earn; students with the highest number of points earn their higher choice shop. The points system reflects this. Because working class students are often not engaged in their academic classes for many of the reasons outlined in this manuscript, they often perform poorly academically, which limits students' opportunities to seek vocational training and education. Thus, in some cases, it is possible that the students who would most benefit from training in a shop in which they are interested are denied the opportunity.

Another factor that limits the capacity of vocational education programs to enact positive change in students' lives is standardized testing. One student whom I interviewed, Marcos, was a 21-year-old El Salvadorian senior in the machine technology shop. Throughout his high school career, Marcos had struggled in his academic classes. He started in SHS as a freshman in the machine technology shop before his family moved to Chelsea; when the district discovered that Marcos was still attending school in Somerville even though he was no longer a resident of the city, he was forced to leave the machine technology shop and transfer to Chelsea High School. After struggling academically in Chelsea, Marcos dropped out of school. A year later, he pleaded

¹³⁶ Leo DeSimone, personal email, March 12, 2011.

with Mr. Medeiros to let him return to the shop. He moved in with his uncle, who lived in Somerville, and returned to SHS. Marcos lived with his uncle in Somerville through his junior year in school; as a senior, SHS allowed him to complete his senior year when he moved back with his parents in Chelsea. Every morning, Marcos wakes up at 5:00 to take two buses and a train to get to school.

With the help of Mr. Medeiros, Marcos has improved his academic performance since his return to Somerville. He attended summer school to make up various academic credits and has built strong relationships with each of his teachers. Mr. Medeiros described Marcos as one of the hardest working students he has ever taught: “You get one kid like Marcos in your whole life of teaching and it’s great, it’s just wonderful. He has a great work ethic, very respectful.”¹³⁷

Moreover, Marcos is very advanced mechanically; over the summer, he worked at a machine shop and engineering firm in Bedford, where he honed his skills as a machinist. He was excited to learn more and was aware that in order to build a successful and profitable life, he will need a specific skill set. He told me that his goal after graduation was to “Get a job at a machine shop. Later, save some money, learn more about machine shop go to college. A small college, I don’t care, but I want to learn more about machine shop.”¹³⁸ Marcos’s ambition to improve his life through hard work and education demonstrates his faith in the myths of the meritocratic system and the American dream.

Yet, despite Marcos’s hard work and faith in the meritocracy, he may not be able to realize his dreams if he does not pass the MCAS examination this school year. While Marcos has passed the mathematics and English MCAS examinations, he has not passed the science MCAS, which is required in order to earn a high school diploma. Last time he took the exam, Marcos

¹³⁷ Donald Medeiros, interview with teacher, March 7, 2011.

¹³⁸ Marcos, interview with student, March 4, 2011.

scored two points shy of passing; since he last took the test, however, the passing mark for the science MCAS has been raised. Moreover, since Marcos is 21 years old, this is his last chance to graduate from SHS. His age makes him ineligible to return to the high school. Marcos's residency in Chelsea further handicaps him by disqualifying him from the adult education services available in Somerville. While Marcos has a job offer for next year in the machine technology company in which he worked over the summer, if he fails to pass the science MCAS, he will not have the diploma that he will likely need in order to further his career or education.

While most vocational education students pass the MCAS, it does present a significant obstacle for many, like Marcos, whose graduation relies upon passing scores. Mr. Medeiros elaborated:

It's so unfair for these kids that these MCAS, all their education requirements are based on a test. I don't think that's the right thing to base an education on...because then what happens is we teach the kids to the test, we teach the kids to pass a test. We don't teach them how to balance a checkbook, we don't teach them penmanship anymore, we don't teach them you know, basic math skills or how to interview. We teach them how to pass a test, which is totally unfair for the kids. And it doesn't prepare them for the real world.¹³⁹

The fact that, despite a student's vocational qualifications, their high school diploma relies upon a test is certainly discouraging. In Somerville in 2010, eight percent of tenth grade students failed the ELA MCAS, 16 percent failed math, and eight percent failed science.¹⁴⁰ While students are provided with multiple opportunities to pass the MCAS after their sophomore year, the initial act of failing is unnerving and discouraging. Students may learn a technical skill set, perfect their

¹³⁹ Donald Medeiros, interview with teacher, March 7, 2011.

¹⁴⁰ Massachusetts Department of Elementary and Secondary Education, *Somerville High School Report Card, 2011*, <http://profiles.doe.mass.edu/profiles/student.aspx?orgcode=02740505&orgtypecode=6&leftNavId=300&>.

interviewing techniques, respect their coworkers, and successfully complete job applications and resumes, but without passing a narrowly designed standardized test, the students have little chance of making good use of those skills. While the school may value the students' cultural capital and knowledge, the larger state and national education institution does not.

Marcos's situation is not unusual in Somerville. Mr. Medeiros revealed that while he began the school year with six seniors, he now has only three. Half of his seniors dropped out of school. Mr. Medeiros explained:

Because the kids in Somerville come from a poorer background, if they get themselves in trouble because they're not passing classes or they're not passing MCAS, they tend to quit high school and go get a job and work, not understanding...that it's important to stay in school. I started off this year with six seniors and now I'm down to three. And those three quit high school because things weren't going so well, things weren't going so well at home, and so they go out and they get a job. Well, it's great for now, what about two years from now? When you go to fill out that job application that asks where you graduated...that comes back to haunt you.¹⁴¹

Marcos reached out for help, appealing for funding to attend summer school and allowing Mr. Medeiros to be his advocate with his other teachers. Yet he still might not graduate. There is little wonder why his peers would understand there to be no hope. District-wide, Somerville has a five-year graduation rate of 76.8 percent; the drop out rate is 17.1 percent.¹⁴² It is likely that many of these drop outs, as Mr. Medeiros speculated, are the result of students not being able to meet all graduation requirements in a timely fashion and subsequently deciding that the world of work offers a more realistic and immediately profitable path.

¹⁴¹ Donald Medeiros, interview with teacher, March 7, 2011.

¹⁴² Massachusetts Department of Elementary and Secondary Education, *Somerville High School Report Card, 2011*, http://profiles.doe.mass.edu/grad/grad_report.aspx?orgcode=02740000&orgtypecode=5&.

While effective vocational education programs have the power to counter the effects of reproduction, it is extremely difficult for them to do so in the face of structural and systematic hurdles to student advancement and achievement. Consequently, the positive effects of the engagement that vocational programs foster are limited by institutional barriers. The prevalence of such systems may be part of the reason why vocational education programs are unable to help many students overcome these forces.

PART II: FINDING SPACE: UNDOING THE SOCIAL ALIENATION OF TRADITIONAL SCHOOLS

The physical space of the vocational building is a locus for working class culture and values within the school. While vocational education programs value working class culture through course content and pedagogy, the building provides a tangible representation of that culture. In many ways, the vocational wing provides an escape for working class students from the dominant middle class culture that occupies the rest of the school building. In other ways, however, the geography of the vocational building reinforces the intellectual-based hierarchy that devalues manual vocational education and the hard-living working class.

Geography: An introduction to the layout of Somerville's Vocational Wing

Somerville's Center for Career and Technical Education is located in a building constructed in 1985, when SHS became a comprehensive school. Previously, the vocational students occupied a building in another section of the City. The building is organized into three distinct sections: on the top floor are the technological shops (drafting, computer repair, electrical); on the middle floor are the human service industry shops (culinary arts, cosmetology, child care); and in the basement are the manual shops (machine technology, automotive, metal fabrication). The shops on the top floor were closer to and less separate from the academic

buildings, the library, and the director of the CTE. The shops shared their building with the gymnasium.

Inside the classroom, almost all of the shops are set up in a similar fashion. Physically, the classrooms are huge; many are the size of four academic classrooms combined. On one side of the classroom was an array of desks or tables and chairs and a blackboard that was used for classroom instruction within the shop. On the other side of the classroom was practice space, complete with the equipment necessary for the shop's activities. Depending on the shop, the practicum space could be filled with salon chairs and mirrors, stoves and industrial mixers, welding equipment, or computer workbenches. In the shops on the first and second floor, the instruction space is separated from the practice space by a panel; in the manual shops in the basement, the instruction space was often a small, separate room located within the larger classroom. The only shop I visited that lacked this setup was drafting. There, the singular instruction and practice space consisted of desks set up with computers; the classroom's setup mirrored a typical computer lab.

Creating a Space for Working Class Culture

The dominant, middle class culture permeates the atmosphere of most schools. Because this culture dominates classroom interactions, the classroom, and thus the school itself, becomes a physical location that represents that culture and its capital. This can be alienating for working class students and students of Color who feel that there is no space in the school in which their culture is represented or welcome. Such feelings of alienation can augment and encourage social reproduction. The construction of the vocational wing, an entire center that values working class culture, capital, and jobs, provides institutional support for the working class. As established in the previous chapters, vocational shops are spaces that differ significantly from the larger school

culture. Shops appreciate working class values and capital at an institutional and structural level, giving working class students and culture a physical space in which it can belong.

In many ways, shops are a microcosm of the working world and thus represent the futures of many vocational students. Several shops require students to change into uniforms to protect their school clothes and enhance safety. In other shops, students need to fill out time cards to keep track of the number of hours of training they complete in order to apply for licensure in their chosen field. Students and teachers interact as colleagues, brainstorming solutions and solving problems together. Students' grades are based upon fulfillment of these conditions. The standards and culture of the shops are more closely tied to the working world and are markedly different from those of the academic realm.

By senior year, many students spend most of their school day in their shop because vocational classrooms served as a safe space for working class students within the school. Many of the students with whom I spoke remarked that their shop was like a home-away-from-home; they had strong relationships not only with the shop itself, but also with the people in it. In drafting, students came to spend their lunch periods eating and talking with Mr. Navleris and friends from drafting. In each of the metal shops, students who had free periods would come to spend their time working on their own projects or helping underclassmen learn the rules and procedures in the shop. The shops, separated from the larger physical environment of the school, provide space for developing relationships. As Brian explained to me:

Especially in metal fab and machine tech, it really emphasizes on family. When you walk in here on the first day, one of the first things you hear is that metal fab and machine shop is a family...Because when you first come in here, you don't know many people. By the end of my freshman year, I made several friends. And by this point, they're more like

brothers.¹⁴³

Students build close networks and relationships with their peers and teachers that, in many ways, mirror workplace relationships. These relationships differ from those formed in solely academic settings because students and teachers bond over solving trade-related problems and puzzles; thus, the students' relationships are both personal and professional. By providing a "home," for the development of these relationships, the vocational wing gave physical space, and thus tangible importance, to working class culture and relationships.

Creating space within the school for the development and practice of working class culture allows that culture to become a visible entity in the school. For instance, SHS relies on the shops in the CTE for numerous different services. The computer repair shop runs a help desk that services teachers' and students' computers. The graphic arts shop prints all advertisements and posters for school-sponsored events and business cards and stationery for administrators. The machine technology shop created engraved signs for each of the department offices and routinely repaired metal parts within the school, like the gym's volleyball net. These services and physical objects spread throughout the school locate the shops, and their culture, as important to the larger SHS community. Without these shops, the school would need to spend significantly more money on services that the shops provide at cost. Thus, the shops directly contribute to the economic sustainability of the school. Several students, including Abdullah and Erin, remarked how proud it made them feel to see the impact that their work had on the school.

The physical inclusion of working class culture within the school gives vocational students the opportunity to be more integrated with the larger school culture. Many times, students who feel alienated from an institution to which they feel they should belong seek ways to build a relationship with that institution. Indeed, Mr. Navleris said that the students who most

¹⁴³ Brian, interview with student, March 4, 2011.

often enrolled in shops were those who felt that they needed to be connected to the school in some way. He explained: “[The students] see these vocational classes as another opportunity to be involved in a lot of different things...you belong to something. They are kids who feel like they need to belong somewhere.”¹⁴⁴ By recognizing the students’ often-alienated culture as important to the larger, institutionalized school culture, students feel more connected to the institution. While physical projects connect students to the school on a tangible level, validating and integrating their culture and knowledge connects students to the school on a deeper, more personal level. This connection likely results in increased engagement because students feel accountable to their community and to their school because of the connection and investment that they feel.

Space-based hierarchies: organization of space and class relations

While the presence of a vocational wing in SHS does make strides toward the inclusion and recognition of working class students and culture, the organization of the vocational wing reinforces the hierarchy of knowledge and culture that the center itself strives to counteract. The way in which the shops are organized within the Center for Career and Technical Education is indicative of a shop hierarchy. While the organization of the shops serves several practical purposes, it also reflects of the hierarchy of shops within the CTE. The manual shops, such as machine technology, need locations on the ground floor to accommodate deliveries of supplies from outside people and vendors; the metal shops need to get sheet metal, the automotive shops need to pull cars into the shop, neither of which are practical or possible via elevator. However, even considering these specific needs, there is an obvious hierarchy to the organization of the shops based on floor. The shops at the bottom require the most manual, physical labor; the shops on the top floor are more intellectually motivated. Students in the basement and second floor

¹⁴⁴ Perry Navleris, interview with teacher, February 11, 2011.

shops need to wear uniforms to protect their school clothes from grease, chemicals, food, and other contaminants; students on the top floor wear their own clothes and do not need to change throughout the school day depending upon which class they are in. Final evidence of the hierarchy is the settings of each of the shops; while the shops on the top floor operate more like offices, where each student has his own computer and space to store and display work, the shops in the basement are more like a working shop—a student moves throughout the shop based upon the type of work that his doing and the type of machine he needs to use.

Each of the above factors either tie or separate the shop from the larger school culture. For instance, when the machine technology, automotive, and welding students change their clothes and shoes, they are making a clear and distinct transition from one role to another; they shed the clothes that define them as academic students and don uniforms that define them as craftspeople. The act of changing clothes marks a stark division in their day. On the other hand, the drafting students' days are more fluid; they do not need to change clothes or put on a uniform before they enter the shop classroom. In this sense, there is little division between this part of the students' day and any other. The drafting students sit in an assigned seat and work through class, much like they would in an academic class. Students in the machine shop, however, are forced to move around to engage different machines and are more active than they are in their academic classes.

In many cases, the degree to which each shop was separate from or connected to the larger school determined the degree to which its students were reliant on and attached to the shop. It seemed that the deeper into the CTE building I got, the more invested the students were in their vocation; the closer the shops were to the academic building, the more tied to the academic programs they were. While I only formally interviewed eight students, I talked with

many more informally across each of the shops that I visited and in which I observed. The students in the shops closer to the academic wing of the school seemed less dependent on and invested in the vocational program. For example, most of the students on the top floor with whom I spoke were in their shops for only one or two of their seven total class periods; in the shops in the basement, it was not uncommon for me to encounter students who spent four or five of their seven class periods in the shop. Many of the students in the shops on the top floor were from settled-living or middle class families; I met students whose parents ran nonprofit organizations and owned convenience stores. These students had greater access to the dominant cultural capital and thus felt more comfortable moving between the different spaces in the school.

Moreover, a greater percentage of students in the manual shops with whom I spoke desired to enter their shop's profession after graduation than students in the technological shops. Nearly every student I talked with, both formally and informally, in the manual shops desired to become a member of their shop's workforce; while not all students were able to do this, most aspired to it. The situation was quite different in the technological shops. In drafting, I met only one student who definitively stated that she wanted to be an architect. The situation was similar in the computer technology shop; most students said that while they thought the skills that they learned in shop would be useful, they did not necessarily want to pursue it as a career. These students were much more interested in asking me about my college experience than answering questions about their vocational experience. While the broadening of students' intellectual horizons is a valid and important goal for vocational education programs, it seemed that the manual and technological shops served two different purposes for two different sets of students. While, for hard-living, academically struggling students shops provided a path to employment,

for settled living and middle class students, they offered exposure to a set of skills that might provide them with an advantage in college. While each purpose is valuable, popular discourse equates scholastic success with college attendance and thus it is possible that this division harms the self-esteem of working class students in manual shops.

For many students and teachers, the academic-vocational division was indicative of an intellectual hierarchy that existed among the shops. Students, as well as teachers, seemed to perceive this intellectual hierarchy. As Jonathan, a senior drafting student explained to me, “The drafting program is up on the second floor and all of the mechanical engineering and stuff is on the basement level so it’s good to be away from loud noises and stuff when you’re trying to think.”¹⁴⁵ Through this statement and his assuming tone of voice, Jonathan seemed to imply that no thinking actually took place in the basement shops. Mr. DeSimone explained the same hierarchy in regards to students’ desires to continue with their education:

I think there are clusters, different areas...those would attract a different brand of student that may want to be able to just go out to work, whereas classes like drafting, health, you really need a four year degree to climb the ladder. Those are the students that are more career-focused, that are not looking to leave school anytime soon...they have a plan that they want to go to college, enjoy college life...drafting or health may be an introduction, but those kids aren’t that sure what they want to do.¹⁴⁶

With this statement, Mr. DeSimone implied that students in the shops located on the top floor are more academically ambitious than those in the manual-centered shops such as carpentry or machine technology.

Students in the manual shops perceived that they were understood through this hierarchy.

¹⁴⁵ Jonathan, interview with student, March 18, 2011.

¹⁴⁶ Leo DeSimone, interview with director, February 18, 2011.

Erica, a student in the metal fabrication shop, was awarded the title of “Most Outstanding Vocational Student of the Year” by SHS shortly before I interviewed her. She, as well as her teacher, reported that many administrators and CTE teachers were surprised that she won this prestigious award because, usually, it was awarded to a more academically inclined student, almost always in the drafting shop. Involved in multiple extracurricular activities, including student government and the general advisory council for metal fabrication, Erica was in the process of applying to college to pursue a degree in mechanical engineering. Erica reported that she was one of only two seniors from metal fabrication applying to college. She was also more than aware that her trajectory ran counter to what was expected of her:

Pretty much if you're not in drafting or health careers, you're expected to go to work.

You're supposed to have a low GPA... Voc kids, we're not supposed to go to college.

We're supposed to go right to work.¹⁴⁷

When I asked her who thought this, she replied “Everyone.” Erica’s understanding of how she was perceived by others based on the intellectual hierarchy that existed within the vocational building indicates that even with the presence of a vocational program that validates and values their culture and knowledge, some working class students still feel subjected to class- and race-based assumptions about their intelligence and ability.

This hierarchy is based in false beliefs about the intellectual rigor of particular shops; each of the shops, no matter the cluster, uses academic skill sets, especially math, daily. In cosmetology, students must comprehend chemical compositions and equations before they can use hair dye or facial solutions; in metal fabrication, the students need to understand the melting points of various pure metals and know the reactions that occur between metals; in machine technology, students must be able to measure millimeters, calculate angles, and align graphs. As

¹⁴⁷ Erica, interview with student, March 7, 2011.

Mr. Medeiros explained, “Hands on does not mean mind off.”¹⁴⁸ No matter the task at hand, students in the manual shops were constantly called upon to think critically about their work.

Conclusions

While the allocation of physical space for working class students and culture is extremely important in order for students to feel confident and included in the larger school environment, the intellectual hierarchy that is located within that space is still detrimental to students. The presence of a vocational wing certainly allows for more inclusion of working class culture, but it hardly remedies all of the alienation and structural inequalities that position lower class students at a disadvantage.

SHS is already taking some steps to remedy this. Currently, students who choose to enroll in shops such as drafting or cosmetology do not need to cycle through the freshman vocational rotation, in which students spend approximately a week in each of the CTE’s shops. Next year, however, all freshmen wishing to enroll in a shop will need to cycle through all of the shops. This mandatory exposure to the often unseen parts of the CTE could help to foster greater equality between the shops because students will better understand the intellectual and manual demands of all shops. This change has the potential help to decrease the stigma associated with students in manual shops and foster improved relationships and understanding between students in all shops.

¹⁴⁸ Donald Medeiros, interview with teacher, March 7, 2011.

CONCLUSIONS AND RECOMMENDATIONS**Conclusions**

Student engagement is one of the most critical factors in student success; if students are not interested or invested in their learning, they will not put in the time, effort, and thought that they need to in order to perform well in school. As demonstrated in this manuscript, student engagement is a compilation of multiple factors. It does not only result from students becoming excited about math, science, or history. Rather, it results when students feel that the school values and respects their culture and goals and teaches them skills they deem to be personally relevant and meaningful.

Legislators and educational administrators commonly argue that the most important factor in student success is having good teachers. Well-educated, compassionate teachers are certainly an important factor in student engagement; all of the students with whom I spoke were very grateful to and thankful for their vocational education teachers. These teachers genuinely cared about their students and their achievement; this concern encouraged students to care about their own performance in school. However, it is a mistake to think that the single important factor that affects student engagement is good teachers. As I have demonstrated in the previous chapters, the social and cultural inclusion of typically marginalized students is just as important to students' investment in school.

Because they are institutions that operate within a larger context of oppression and discrimination, schools can be alienating places for poor and working class students and students of Color. Vocational education has the capacity, however, to include these students in the institution of the school by recognizing the importance of and providing space for working class cultural capital. Vocational education programs do not view these students through a deficit lens,

as many academic programs do; rather, they recognize the many positive aspects of working class capital and teach students how these values, skills, and attitudes can be used constructively after graduation.

The most important factor in student engagement is making education personally meaningful and relevant to students. Increasingly, high schools are focusing on college acceptance and matriculation as the best measures of success. What about the students who choose, for one reason or another, not to go to college? Are these students inherent failures, according to the school's definition of success? Whether or not the school believes this, students do; when schools solely preach the importance of college, they ignore the majority of students who will not go to college. If students who do not plan to go to college understand that the purpose of high school is to get to college, they are most likely going to believe that the education they are receiving is not relevant to them. Since relevance is a central factor in student engagement, schools need to work harder to make education meaningful and relevant to all students, not just those who are college bound. Vocational education programs do just that.

Marcos best explained it:

[Academic teachers] teach you, but they don't explain why you're doing it. They're doing it, like 'you need it for college, you need it for college,' yeah I need it, I know that, but, like, why? That's the question. But you're in shop, you can see why you need it.¹⁴⁹

For the vocational students in Somerville, understanding applications of abstract knowledge made their learning personally relevant and meaningful. Their enthusiasm for this type of learning was evident; I did not meet a single student who disliked the methods of teaching and learning in shop, a singular opinion rarely, if ever, replicated in an academic classroom.

¹⁴⁹ Marcos, interview with student, March 4, 2011.

Recommendations

Based on my observations and analysis, I believe the benefits of vocational education in urban school districts are far-reaching and adaptable. Vocational education programs have an important role to play in all schools. Overwhelmingly, American schools fail to provide students with information about how to use and apply their knowledge in realistic situations. Vocational classes provide a rare opportunity for students to learn academic and culturally applicable skill sets. This type of applicable learning makes knowledge and education real and valuable to all students, not just those who plan to use their theoretical knowledge in college. In an ideal world, all students would be required, at some point in their academic career, to take vocational education classes.

Yet, our world, and particularly our education system, is not ideal. That does not mean, however, that students cannot reap the benefits that vocational programs offer. Academic programs have the capacity to include culturally sensitive and inclusive learning in their curricula as well. Projects in math, English, and history can include active, hands-on components that require students to use and comprehend their knowledge in a new a different way. For example, to learn about angles and ratios in a math class, students could build a model house or draw a floor plan instead of doing a problem set. In an English class, students could work on publishing a newsletter about the importance of immigrant-produced literature instead of writing an analytical essay. Each of these types of activities simultaneously teaches students real-world uses and applications of their skills and locates the students' cultural knowledge and capital within the curriculum. This type of integrative learning has the capacity to better reach a wider variety of students with different capitals, learning styles, and academic strengths, thus preparing more students for a greater variety of post-graduate challenges.

Final Words

Engraved in brick on the Highland Avenue side of the Center for Career and Technical Education is the phrase: “Dedicated to the preparation of youth for the responsibilities of life.” This mission is at the heart of Somerville’s vocational program; it should be at the heart of all high schools’ missions. Life is about more than Shakespeare, the Pythagorean theorem, and chemical equations. In order to prepare youth for life, schools need to teach them not only theoretical knowledge, but also applications of that knowledge; students need to be taught life skills, such as creating a resume, filling out a job application, and how to work with diverse populations. The responsibilities of life are broad and far-reaching; preparing students for these responsibilities requires a similarly broad and integrative approach, such as that which they employ in Somerville

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