

ENHANCING CURRICULUM DESIGN AND IMPLEMENTATION THROUGH
INSTRUCTOR CERTIFICATION

By

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INSTRUCTOR CERTIFICATION

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ABSTRACT

In Career and Technical Education there is often a dis-connect between what is being taught and what is expected of new hires entering the workforce. This is in spite of the fact that many CTE educators come from industry and have direct knowledge of those needs. In order to bridge this gap it is necessary for educators to keep their knowledge and certifications current to not only stay in touch with industry but to ensure curriculum is designed to allow students to pursue current certifications as well. By researching the current available certifications within the Outdoor Power Equipment industry and comparing their various attributes one can determine which are the most cost effective to obtain and which will yield the greatest value to the holder of said certification(s). By polling the various manufacturers and organizations that offer certification it was determined that the suite of certifications offered by the Engine and Equipment Training Council met the requirements set forth in this project.

After the determination was made the process of obtaining the certifications began with application, studying and finally taking the actual tests.

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CHAPTER 1

INTRODUCTION

The Traverse Bay Area Intermediate School District (TBAISD) serves approximately 24,000 students in the following five counties: Antrim, Benzie, Grand Traverse, Kalkaska and Leelanau. It is situated along the western edge of northern Lower Michigan and is bordered by water on the western side of the Benzie, Grand Traverse and Leelanau counties. The unique setting of the ISD is a substantial contributing factor to the type of programs offered and the crucial role the ISD plays in local education. In addition to providing key services to local districts the Traverse Bay Area Intermediate School District also operates a standalone center for education in career and technical programs known as the TBAISD Career-Tech Center, paraphrased from www.tbaisd.k12.mi.us.

The Career-Tech Center offers education in the following areas: Agri-Science and Natural Resources, Allied Health, Auto Body Repair, Automotive Technology, Building Trades, Business Careers, Construction Trades, Culinary Arts, Drafting and Design, early Childhood Education, Electrical Occupations, Film and New Media, Information Technology, Manufacturing Technology, Power Equipment Technology (PET), Precision Machine Technology, Public Safety and

Protective Services, Skilled Trades, Teacher Academy, Visual Imaging Technology, Web and Game Programming and Welding and Fabrication.

The immediate community surrounding the Career-Tech Center is that of Traverse City a steadily growing area that is a mix of residential neighborhoods and light industrial developments. A unique feature is that of the peninsulas that jut out into Lake Michigan giving Traverse City a thriving cherry growing community that is known worldwide. It has also developed a strong presence in the wine making community and has become a destination for both progressive working people and retirees. In addition, it hosts the National Cherry Festival attracting hundreds of thousands of people to the annual event along with the throng of summer tourists attracted to the abundant beaches and availability of watersports in the area.

Statement of Need

In addition to the recreational opportunities that abound in Traverse City and the surrounding area, there are substantial populations in residential areas around the five county areas. The Power Equipment Technology (PET) program at the TBAISD Career-Tech Center seeks to serve the three largest segments of equipment needs within the geographical region it serves. PET is a two year program that seeks to educate students in multiple aspects of the Outdoor Power Equipment (OPE) industry and then place them in a working environment to refine those skills and gain valuable real world experience within the confines of a working business. In the first year of the program, PET focuses on safety in the

workplace, resource location, and efficient operating procedure. Subsequent content areas include the basic aspects of mechanical operation, electrical function and troubleshooting. The students also receive training in academic content relating to math one day a week in order to increase their ability to properly compute the many types of problems associated with working in the field of Outdoor Power Equipment.

In the second year of the program students are able to select one of the three areas to specialize in. The three choices are: (1) lawn and garden equipment, (2) motorcycle technology or (3) Marine technology. While many of the content elements are the same, they have striking differences that are addressed in the pathway the student chooses. All second year students also take in the Occupational Safety and Health Association (OSHA) training to receive their basic ten hour safety card to further reinforce safe operation within the shop and elsewhere. The second year students are then eligible to enter employment into the field and complete either a paid or unpaid internship with an employer. Currently PET has about twenty businesses in the area that have taken, and will continue to take, students for these experiences. PET also participates in the SKILLS USA competition every year to provide an opportunity for the students to test their skill set against that of others from around the state of Michigan.

As the requirements of both the state and federal education boards have changed in the last several years we are able to maintain our existence by offering a 4th year math credit to seniors participating in the program. It is through

this innovative curriculum integration that the TBAISD has become a leader around the state in CTE. The PET program is one that has been a long standing program and continues to serve the needs of the community by supplying new mechanics into the labor pool and preparing those that wish to continue their education in a post-secondary school. Through relationships with employers and articulation agreements with several community colleges and trade schools students are able to get a step ahead of the competition by attending the Career-Tech Center.

Enrollment in the PET program has remained stable with approximately 24 students enrolled per session. The Career-Tech Center offers two sessions for students—one session in the morning from 9:20am to 11:50am and a second in the afternoon from 12:15pm to 2:45pm. The program is designed to produce students in a two year period that are capable of stepping into an apprentice technician position or to segue directly into a post-secondary opportunity. It is a blend of lecture, reading and hands-on learning that appeals to many of the non-college bound students in the region.

Since there are many different avenues to learning including many outside of the structured setting of school, employers are requesting ways for the Center to document student competencies related to general knowledge within the OPE fields. In fact, employers increasingly are requesting that programs provide opportunities for students to earn industry certifications in their content field. Industry-validated certification becomes a minimum standard by which knowledge can be judged by documenting that the individual was, at the very

least, capable of passing this exam. In this way an employer is able to better judge the initial and subsequent value in hiring of an individual. It is a substantial burden of time and money for an employer to hire a substandard employee and have to deal with their incompetence on the job. It can and does have far reaching negative effects on a business.

By training students and assisting them to achieve competency by taking and passing a certification test, students will increase their credibility and their employability in a high wage earning field immediately after graduation. By offering some type of certification through the TBAISD Career-Tech Centers, the PET program will ensure that the students are receiving a level of training recognized by some segment of the professional community.

Purpose of the Project

The purpose of this project is for the instructor of the Power Equipment Technology (PET) program to identify and obtain industry certification pertaining to the fields of outdoor power equipment. By obtaining industry certification, the instructor will be better able to construct and deliver lessons within the known framework of the industry that will increase employment opportunities for students that complete the program.

This project has four objectives. Each objective will be discussed in detail in Chapter 3 of this project report.

Objectives

1. Identify potential industry recognized standards for the PET program area
2. Analyze the advantages and disadvantages of acquiring each type of industry certification
3. Establish criteria for selecting the most appropriate certification to acquire
4. Prepare for and secure the certification

CHAPTER 2

LITERATURE REVIEW

Career and Technical education is widespread throughout the United States and indeed all around the world. However it remains a somewhat unknown entity amongst educators in other disciplines as well as the general public. The intent is to allow students to choose a path of education that interests them while maintaining adequate education in purely academic subjects. This allows CTE to service those students who wish to enter into a career field immediately after graduation or to transfer into a technical school and pursue a degree from a post-secondary school with programs that specialize in mechanical fields. The fact that is lesser known as an educational pathway does not detract from the importance of its existence. Without it there would be a lot less qualified technicians available in many of the critical service industries that keeps the country functioning.

Career and Technical Education in Michigan

CTE in Michigan is widespread from the Upper Peninsula to the southern border of the state. The greatest concentration of programs is not surprisingly found in the southern half of the Lower Peninsula in and around the areas of high

population densities. While there are fewer in the larger geographically situated districts they are of equal and possibly greater value to the population as they can be tailored to serve any population that exists within a given area. Where a more urban based center may choose to focus on programs like culinary arts and graphic arts more agrarian areas can choose to have programs like agricultural science and forestry or construction. The Michigan Department of Education is active in supporting and encouraging these programs throughout the state to serve all aspects of CTE.

Classification of Instructional Programs (CIP) Codes

The CIP codes are a way of classifying programs into groups and then more specific subgroups. It has been revised several times and the current incarnation was established in 2000. The major classification is a 4 digit code in this case 47.06 which is known as Vehicle Maintenance and Repair Technologies. The subgroups include 47.0606 which is been referenced in this document, and other proximal fields like Diesel, Automotive, Auto body and similar mechanical fields. The purpose of this classification is to delineate between programs and make sure that the appropriate content is being delivered in a given program. (Career Clusters at a Glance, n.d.)

Industry Certifications

A certification is only as good as the issuing authority that chooses to “back up” or enforce said certificate. Most major manufacturers of Outdoor Power Equipment offer a certificate or endorsement of some type to ensure that the

technicians performing work on their behalf out in the field meet a minimum threshold of ability. The requirements for which can be found on their websites in many cases or by directly consulting with the industry representative since not all certifications are available to the general public. This helps the factory representatives when they are dealing with the general public and in many cases increases the rate of warranty repair reimbursement a shop can receive when performing warranty service on said products.

Having worked in a number of shops over the years I can tell you that by getting and maintaining a number of certificates an employee may enhance their value to a current or prospective employer by demonstrating a level of achievement that is endorsed by a third party. However there is little acceptance of certification across company lines. This is where it would be beneficial to achieve a general competency in technique as opposed to those focusing on manufacturer specific requirements.

Structure of Career and Technical Education (CTE) in the USA

The Career and Technical Education field is broken into sixteen different Career Clusters® and are listed below. This information is from (www.careertech.org, n.d.) and describes the areas of study that are dictated under the different clusters. There has been much work done in defining and re-defining these standards so that they can be used nationally and have a valued impact on students who are both college bound and those wishing to transition directly into a high wage earning career field. The clusters are expansive and

seek to encompass a wide array of career and post-secondary opportunities to allow regional specificity to dictate exactly which of the Programs of Study will be taught in a particular location.

In addition to the detailed guidelines for the different clusters there are also common technical core standards dictated to ensure that students are getting sufficient skills in common areas and that they are being delivered in similar manner between all the different programs of study. In many areas of the country including the Traverse Bay Area Intermediate School District Career-Tech Center there is integration of core academics to make sure that students participating in Career and Technical Education are not being shorted in the areas of mathematics and English. The Power Equipment Technology program is able to offer seniors a fourth year math credit to help them meet the stringent state requirements and still participate in CTE. The difference is that the math is derived from actual situations that occur within the workplace of an Outdoor Power Equipment dealership as informed by the instructor and Para-pro, both of whom are veterans in the field. Using this knowledge as a base students have practical applications for what many struggle with due to its seemingly disconnected nature. This math is delivered by a highly qualified math teacher certified in the state of Michigan and the program instructor with appropriate supports for any exceptional learners.

The following description is the career cluster that encompasses the Power Equipment Technology program.

Transportation, Distribution & Logistics from (www.careertech.org, n.d.)

The planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

Pathways:

- Transportation Operations
- Logistics Planning & Management Services
- Warehousing & Distribution Center Operations
- Facility & Mobile Equipment Maintenance
- Transportation Systems/Infrastructure Planning, Management & Regulation
- Health, Safety & Environmental Management
- Sales & Service

PET program alignment to Career Clusters

The Outdoor Power Equipment Industry is a small subsection of the Transportation, Distribution and Logistics Cluster but it is a large and widely distributed industry that exists in every climate of every country around the world. Based on my experience it may be one of the largest service industries in existence, as it exists everywhere grass is mowed or water is pumped with a gas engine. Anywhere trees are being cut for lumber or boats are being used for fishing or transportation there is a need for people who can repair the equipment that is fundamental to these operations. In a more local sense of the United States we have several large subtypes of equipment which are

ubiquitous across the continuous lower 48 states. These are Lawn and Garden, Motorcycle and Marine Equipment. A functional definition is required for Lawn and garden and Marine. Lawn and Garden encompasses a wide range of equipment such as rototillers, lawn mowers of all types, chainsaws, pressure washers, log splitters, stump grinders, snow blowers and compact tractors up to 100 horsepower. It is important to make the distinction with tractors as it rapidly changes over to Agricultural and heavy equipment once that line is crossed. While there are huge differences in the composition of equipment based on the area a person lives in they have a vast quantity of similarities in engines and drive systems that are used making it possible to cross apply much of the knowledge learned about one to another.

PET Program Alignment to National Career Clusters

In addition to the Programs of Study the National Association of State Directors of Career Technical Education Consortium has recently implemented a Plan of Study to both guide educators in the CTE field and to help streamline the delivery process helping to ensure uniform delivery across the country. While the cluster definition serves to identify the vocational and educational areas covered by the various clusters the Programs of Study take it to the next level identifying a still broad but narrower definition of the career paths under the particular cluster. The Power Equipment Technology program falls under the Transportation, Distribution and Logistics Career Cluster[®] and then under mobile equipment and facility maintenance and finally the Sales and Service pathway.

Within each pathway there are four distinct elements that are tailored to each of them these are:

From the (careertech.org, n.d.) website

Cluster (Foundation) Knowledge and Skills

TRC01 ACADEMIC FOUNDATIONS: Achieve additional academic knowledge and skills required to pursue the full range of career and postsecondary education opportunities within a career cluster.

TRC02 COMMUNICATIONS: Use oral and written communication skills in creating, expressing and interpreting information and ideas including technical terminology and information.

TRC03 PROBLEM-SOLVING AND CRITICAL THINKING: Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.

TRC04 PLANNING AND IMPLEMENTATION: Develop and manage preventative maintenance plans and systems to keep facility and mobile equipment inventory in operation.

In addition to these are the Foundational Academic Expectations:

All secondary students should meet their state's academic standards.

All Essential Cluster and Pathway Knowledge and Skills are predicated on the assumption that foundational academic skills have been attained. Some

knowledge and skill statements will further define critical linkages and applications of academics in the cluster and/or pathway. According to the pathway description found on careertech.org (n.d.) “The people in this pathway keep the equipment and machinery running while looking for more efficient, safe, and cost effective ways to do so.” (Knowledge and Skill Statements, n.d. p.1)

As one can see from the listing of standards above, this particular pathway requires a bright individual who is capable of performing many tasks at the same time. As it is a high wage earning career path it is necessary to set oneself apart and to identify oneself as a competent and capable individual amongst the many applicants. This is where certification comes in giving a person a better position to be hired than someone who does not possess said certifications.

Carl D. Perkins requirement for industry certifications

Career and Technical Education is funded in part by the Carl D. Perkins Career and Technical Education Act of 2006, commonly known as Perkins IV. As with any funding there are specific guidelines for the dissemination and usage of these funds along with substantial levels of monitoring related to performance of schools and level of attainment by students. As such Michigan has dictated that in order for a program such as Power Equipment Technology to be in compliance with the goals of the Perkins IV Act the program must “lead to an industry-recognized credential or certificate at the post-secondary level, an associate or baccalaureate degree, or recognized apprenticeships” (“Carl D. Perkins”, n.d.) Recognizing this it is critical for the instructor of the program to also be in

possession of said credentials in order to better instruct the students in their course of study.

By using the functional certifications that are in place in the industry today a school can ensure that their students are being given access to the best material to make them employable after completion of high school. These certifications serve two purposes; first they let employers know that a student has achieved a level of competency recognized over and above a high school education and second to satisfy a tenet of the Perkins IV Act which is mentioned above. This segues into a much larger and more important issue for a person and that is the ability to transition from high school directly into a high wage earning field if they desire or go on to post secondary schooling and further their education. It is of vital importance that students leave with one of the prescribed certifications so they have a definite benefit of having attended a Career and Technical Education Program; otherwise they just have a diploma and nothing else to show for the years of training. The specific areas of training are defined further to clarify exactly how they comply with the Perkins IV legislation.

Motorcycles are easier to define in that they are any two or three wheeled vehicle that is used to legally travel on a roadway or used for strictly off road purposes. In the off road classification are four wheeled all terrain vehicles commonly referred to as "Quads" and the increasingly popular utility vehicles also called "side by sides" capable of carrying two to four people and having similar drive trains and engines with ATV's.

Marine applications include personal watercraft or “Jet-Skis” and boats that run on gasoline. Diesel marine is its own study and not covered here. Since larger boats are difficult to handle and move there is an entire segment of that industry dedicated to the storage, maintenance and hauling of these vessels which students often learn about through internships more than in the classroom. The other application is the outboard motor which is the most common type of propulsion used on pleasure craft in the consumer market (as opposed to commercial applications). There are even hybrid units that run Lawn and Garden engines to power outboard drive units creating a unique market for a cross-trained individual.

The Outdoor Power Equipment industry is comprised of businesses that usually service and sell equipment. There are some facilities that only do repair but they tend to be smaller owner/operator type businesses and much fewer than the selling and servicing dealers. The size and quantity of dealers in a given area is directly proportional to population, geography and demographics. The distance to, size and quality of a body of water has a major impact on the quantity of marinas in a given area. In Michigan there are many coastal cities on the west side of the state and consequently there are many large scale marina operations as well. The marinas that are found associated with smaller inland bodies of water have a different type of clientele as they generally have smaller boats designed for different purposes.

A person going into one of these fields can be relatively assured of work as there is no current indication in trade publications that the areas will be

decreasing in size or number any time soon. It is a rapidly evolving field however as more stringent environmental laws are forcing the rapid evolution of designs in all three fields. Therefore it is essential that anyone entering one of these fields must stay current with the industry trends and standards.

CHAPTER 3

METHODOLOGY AND PLAN

In this chapter will be identified the specific way in which the certifications will be identified and judged. In order to maximize the effectiveness of the effort expended in completing this project there needs to be close scrutiny of what is available followed by a pro versus con scrutiny to determine which will yield the greatest benefits to the students of the Power Equipment Technology program.

1. Identify potential industry recognized standards for the PET program area

There are multiple possibilities for certification within the umbrella of Outdoor Power Equipment. Since there are many manufacturers worldwide, not all of which are marketed in the United States, it will be necessary to research websites that have a compendium of knowledge on the current manufacturers selling goods within the contiguous 48 states. By first identifying which manufacturers have a presence in the US and then determining which if any of them offer factory based training programs for certification it can be determined which ones will be relevant to the industries with which the Power Equipment

Technology program is concerned. Through this process of elimination a pool of potential certifications will be derived which will then be researched more fully to determine applicability and obtainability.

To determine what certifications are available within the identified areas of the OPE industry, a comprehensive polling of known manufacturers will take place via website review and or direct contact with a representative of said manufacturer(s). By first identifying potential certifications it will be feasible to present those in a comparative manner to determine what associated requirements a particular certification has. Particular to each certification will be any requirements for cost of test, where the test is available to be taken and if a proctor is required or if it can be self-administered via a website or other means. Another consideration is whether or not there is any industry or school experience required in order to take the test, for example, two years of verifiable employment, etc.

First it will be necessary to find the various manufacturers and potential certifying entities within the OPE industry. This will be carried out largely through web searches using firsthand knowledge. In addition contact will be made with several local dealerships to make sure that no significant possibilities are being overlooked. Manufacturers of niche equipment will not be considered as this project is concerned with large scale acceptance and wide distribution of product and knowledge. Only manufacturers or entities that deal directly with the areas of Lawn and Garden, Motorcycle and Marine will be considered for inclusion within

this list. Anyone wishing to further their specific knowledge will be able to obtain that after employment within a specific industry.

2. Analyze the advantages and disadvantages of acquiring each type of industry certification

Each type of certification will only carry a specific type and/or level of credibility. Each will be examined separately here and establish a base criteria for the selection process of which will be pursued. As for the type of credibility there are believed to be two separate types of certification based on cursory research, those offered by a specific equipment manufacturer and those offered by an outside certifying authority. Outside certifying authorities include state or federal controlled authorities or a consortium that is being endorsed by manufacturers or other entities which have a reason to be concerned with such certifications. Of the two types, the manufacturer offered training/certification may be available only to those working within a dealership that have verifiable employment at a certified selling and servicing dealer. Furthermore the reputation of a large manufacturer and the associated credibility or “weight” of the certification will need to be compared in a plus/minus fashion to determine if the requirements to obtain certification are balanced by the gains from obtaining it.

Among the manufacturer based certifications there may be different levels that can be obtained. It is known that some manufacturers indeed offer a three tiered certification that can only be obtained by traveling to advanced training at their manufacturing facility. It is unknown at this time what level of benefit that

yields to the individual working in education versus one working in the OPE field, that will have to be determined in later stages of the project. One distinct disadvantage to obtaining manufacturer developed certification is the lack of cross recognition between the manufacturers. Even those that are closely related do not seem to recognize each other's training as valid so that may be an issue of concern.

As for the other type of certification, those offered by a governmental body or consortium, it stands to reason that they would be more widely accepted within the industry as excess specificity would make them relatively useless to the average person. If this is the case then a person could obtain one or more certifications that are recognized for their own merit as opposed to being attached to a specific manufacturer. For example a certification in Four Stroke Cycle theory and operation may be recognized as an adequate competency to an employer and may even be endorsed to some level by manufacturers though it lacks the product specific knowledge base common with multiple manufacturers. This would make that type of certification a better choice as it has the possibility of being recognized widely throughout the Outdoor Power Equipment industry across the platforms of Lawn and Garden, Marine and Motorcycle the three areas of focus for the Power Equipment Technology program.

Each of the identified certifications will be analyzed for their advantage or disadvantage relative to the particular pathways taught in PET during the two year program. Factors will be real time costs in dollars to achieve competency in

each certification area, required travel, and whether or not experience is needed to be eligible for testing. Heed must also be given based on how well they line up with the state and federal standards that dictate curriculum within CIP code 47.0606, Small Engines and Related Equipment, as reported in Chapter 2.

Once the research of the standards and their relative alignments is done a comprehensive schedule of criteria will be applied to narrow the field of potential certifications. Those with the highest degree of applicability to the OPE field, and the specific types of equipment with which the Power Equipment Technology program is concerned, will be selected and reviewed more closely.

3. Establish criteria for selecting the most appropriate certification to acquire and select the appropriate certification.

Based on the considerations listed the criteria will be established to determine which of the certifications will be pursued. There will need to be consideration given to the applicability of a given certification and how well it is aligned to the standards set forth under CIP Code 47.0606. Careful consideration will have to be given to make sure effort is not wasted obtaining a certification that is less than ideal to improve the instruction material in the Power Equipment Technology program.

What follows is a list of potential criteria for narrowing the field. This will be modified to a final list when the particulars of the certifications become clear after determining what is available:

1. Number of currently operating Outdoor Power Equipment manufacturers that endorse/accept the certification?
2. Number of manufacturers within each of the three areas identified that accept a certification?
 - a. Ex: if one manufacturer in Motorcycle and one in Marine accept a certain certification but ten in the Lawn and Garden category do it is likely worthwhile as there is often multiple categories of repair performed in a shop.
3. What period of time the certifying authority has existed?
4. What are the direct obtainable benefits associated with gaining a given certification?
5. What is the cost of obtaining the certification?
6. Is there travel required (Amount)?
7. Is there a time in dealership requirement (e.g. two years work experience).
8. Is there a requirement that the person obtaining certification be employed by a dealership?
 - a. If there is what level of dealer must they be (full, partial, listed, servicing or other to be determined).
9. What are the renewal requirements of the certificate (if applicable) and what are the associated costs with renewal?
10. How do the certifications align with curriculum established for CIP Code 47.0606?

4. Prepare for and secure the certification

Once the determination has been made as to which certification(s) to pursue the process of acquiring them can begin. It will be necessary to determine if there is any association membership required and obtain them as well. Next will be to determine test site and availability and arrange, with any other persons (Proctor etc...) required, to take the test and pay any associated fees that are required. Thorough research will be conducted via any websites of the certifying entity and if necessary phone calls and/or emails to the person or persons involved in administering the test. There may be requirements of employment or experience verification that need to be filled out by human resources personnel, in which case they will be obtained and routed to the correct individual. Once all the pre-requisite paperwork is completed the test(s) can be scheduled and administered.

CHAPTER 4

PROJECT

The first step in determining the best certification to obtain was to search and find out which manufacturers indeed offer a certification and then determine which is the most appropriate to obtain as an instructor looking to better the chances of employment for his students. While many of the manufacturers included in the list do indeed offer some sort of certification many of them are simply not available to the general public and therefore were not explored beyond whether or not working in a dealership is a requirement. It is also worth noting that this list is representative and not exhaustive. Since many of the manufacturers don't even list the training on a publicly accessible website listing them here would simply be redundant, a comparison can be found in Table 1.

Table 1. Comparison of cost and benefit to various certifications:

Sponsoring Organization	Must work at dealership (Y/N)	Cost Involved (Y/N) if Yes how much?	Travel Required (Y/N) if yes where?	How renewed -Retest or update school required	Levels	Recognized industry wide? (Y/N)	Information found at:
Kohler Inc	N	N	N online	Retest or Attend update school	N	N	www.kawasakipower.com
Briggs and Stratton	Yes					N	www.thepowerportal.com
Stihl Inc	Yes *					No	http://www.stihlicademy.com/
MTD (Build and distribute many popular brands)	No Info available						http://www.mtdproducts.com
Yamaha	Yes	Yes	Yes		Yes	No	http://www.yamahamotorsports.com http://www.starmotorcycles.com
Harley Davidson	No info available						http://www.harley-davidson.com
Arctic Cat	No info available						http://arcticcat.com/
Ski-Doo	Yes						https://brpti.brp.com
EETC	No	\$49 Per test	Yes to closest proctor site	May retest or attend update seminar	No	Yes	www.eetc.org

* Note on the table, Stihl does extend its base level training, or Bronze Certification, to educational facilities as a courtesy. However the specificity of the material makes it a less desirable certification.

After investigating the certifications available and assessing the various requirements for obtaining them it became clear that there was only one organization having suitable certifications to pursue, the Equipment and Engine Training Council. Whether or not one had to work at a dealership to obtain a given certification eliminated the bulk of the manufacturer sponsored certificates from the mix. This does not benefit the students and since the point of the project is to better train the trainer there is no point in pursuing those any further. It was found that the manufacturers universally have certifications specific to what they sell; although it wasn't possible to get all of the details without being a registered dealer enough information was available to determine that much. A few phone calls to local dealers confirmed that indeed many of the trainings are on the websites and a log-in is required to access that part of the site.

Since the EETC offerings were one of the only available choices, the next step was to determine which are the most applicable of the eight areas in which they certify: Two Stroke, Four Stroke, Electrical, Drivelines, Compact Diesel, Generator, Reel Technology, and Components Plus. After looking into the particulars it was determined that the following four would be attempted: Two Stroke, Four Stroke, Electrical and Components Plus. These are representative of a broad knowledge base within the Power Equipment Technology program and the first three are representative of several of the segments that are taught

within the 47.0606 CIP code discussed earlier in the project. The fourth, Components Plus deals with a variety of attachments and associated operations prominent in the Outdoor Power Equipment field such as, chainsaw bars and chains, roto-tiller attachments and leaf blowers. The remaining areas of certification were discounted for this particular project for specific reasons, Compact Diesel while being prevalent in some areas of the OPE industry is not universal in its use and it is not addressed in the state or federal standards governing CIP 47.0606. Reel Technology is specific to the golf industry and is not found anywhere in the curriculum. Generator is specific to power generation units which are powered by gas engines (covered under Four Stroke) however the power generation portion is a narrow specialty which is also absent from the curriculum. Finally Drivelines which is an area that tends to be more prevalent among agricultural equipment. While there are some standards addressing drive components in the curriculum they are broad and meant to cover the multitude of drive types found on lawn and garden equipment and various types of recreational vehicles.

Once the decision was made about which tests would be taken I had to register with the EETC and assign a test site. I am fortunate that my Para-pro was able to sign up as a test proctor so that I was able to take the test on site. Each test cost forty-nine dollars and is a written 150 question test that is administered in a controlled environment with a two hour time limit. The tests have been developed and refined by a panel of individuals from industry that represent a broad spectrum of manufacturers within the OPE industry. Each test

lists in the cover who exactly is responsible for that content. To prepare for the test I used the study guides available from the EETC to ensure the best possible chance of success.

After the tests were completed they were mailed to the EETC for grading. After receiving them they were graded and the following results were sent back:

Four Stroke, Passed 95%

Two Stroke, Passed 85%

Electrical, Passed 81%

Components Plus, Passed 81%

This means that I am now certified for the next three years in the areas listed above. This gives me the added ability to modify and implement curriculum standards in order to help my students achieve one of the four competencies as a result of attending the Power Equipment Technology program.

CHAPTER 5

SUMMARY

At the beginning of this project I had a fairly clear picture of what to expect and what I was going to find in terms of available training and certification regarding the OPE industry. I anticipated that I would locate a few of the readily available certifications and parlay those into a workable project. What happened wasn't quite that simple as I discounted the difficulty in obtaining this information as a person that is now outside of the business. The journey from idea to reality was more complicated than what I anticipated.

It is one thing to know of a company and that they offer a certification but finding out the details surrounding that is not easy when lacking the inside track of working at a dealership. Of the approximately twenty major manufacturers that were identified and considered, only two had any significant available information on their respective websites, those being Kohler and Yamaha. Of those two only one is available to anyone who is interested in taking it and that is Kohler. The Yamaha training was extensive and leveled requiring rigorous testing and long trainings at their factory training facility. While this is great for the Yamaha

technician it has little inherent value to mechanics working on other brands. It does give some credence to the mechanic demonstrating a higher than average ability but it doesn't help them in a non-Yamaha shop so the certification has limited lateral value.

There are a multitude of schools out there offering training in specific lines of equipment that can lead to employment and verified status however they are all post-secondary and for that reason are of no value to the average high school student. They are primarily trade schools designed to produce functional employable mechanics and are not schools that offer dual enrollment or other options. There appear to be no other routes to receive training and potential certification for traditional high school aged students besides training in a center based Career and Technical Education or possibly a traditional general education school that has the facilities to offer an in house program.

As I worked through the various facets of this project it became more and more clear that what students need to enter the workforce and be successful is an accredited certification from a recognized agency that was achievable within the two years of the Power Equipment Technology program. That meant I was limited to the offerings made either by Kohler or those from the Equipment and Engine Training Council. Since Kohler had the same shortfalls as the other manufacturers in that it was specific to those dealerships selling and servicing Kohler powered products it was not a suitable choice. The EETC certifications made the most sense and gave the students some choice in which certification they were most interested in pursuing.

I chose to take the four which are most applicable to the PET program thus giving me the maximum amount of insight into what knowledge is critical for taking and passing the exams. Since both two and four stroke technology are base level knowledge for any mechanic they were easy choices. Electrical is the bane of many a mechanic and the student who can pass that will have a clear advantage over other candidates for employment. Finally the components plus test which covers many types of common attachments and implements associated with the OPE industry. The remaining fields will be available as a one-off option for a student who demonstrates above average skill in a given area and wishes to pursue it. While there is a fair amount of cost involved with taking each of these tests, especially for a high school student, I anticipate they will only be taking one or possibly two of the tests available and that will lead to a significant advantage as they enter the working world.

I believe that through research and the process of elimination I have found the right certifications to guide the curriculum development and tailor the lessons to maximize the real world effectiveness of my instruction for my students. This will allow them to confidently step into a work-based learning experience or entry level job in the Outdoor Power Equipment industry with real applicable skills. This in turn will help maintain these necessary relationships and expand it to other companies so that students graduating from the Power Equipment Technology program will be known as capable and competent employees.

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APPENDIX A
EQUIPMENT AND ENGINE TRAINING COUNCIL CERTIFICATES OF
COMPLETION

***EETC* Certified Technician**

THIS ACKNOWLEDGES THAT

Kevin Kimble

HAS SUCCESSFULLY COMPLETED

THE EQUIPMENT & ENGINE TRAINING COUNCILS
CERTIFICATION TEST IN

FOUR CYCLE ENGINE

ON THIS 6th DAY OF NOVEMBER, 2013

Erik Sides

ERIK SIDES, EXECUTIVE DIRECTOR, EETC

CERTIFICATION EXPIRES: NOVEMBER 6th,
2016

THE MISSION OF THE EETC IS TO SERVE THE POWER
EQUIPMENT INDUSTRY THROUGH
EDUCATION, TESTING AND CERTIFICATION

***EETC* Certified Technician**

THIS ACKNOWLEDGES THAT

Kevin Kimble

HAS SUCCESSFULLY COMPLETED
THE EQUIPMENT & ENGINE TRAINING COUNCILS
CERTIFICATION TEST IN

TWO CYCLE ENGINE

ON THIS 6th DAY OF NOVEMBER, 2013

Erik Sides

ERIK SIDES, EXECUTIVE DIRECTOR,
EETC

CERTIFICATION EXPIRES: NOVEMBER 6th, 2016

THE MISSION OF THE EETC IS TO SERVE THE
POWER EQUIPMENT INDUSTRY THROUGH
EDUCATION, TESTING AND CERTIFICATION

***EETC* Certified Technician**

THIS ACKNOWLEDGES THAT

Kevin Kimble

HAS SUCCESSFULLY COMPLETED

THE EQUIPMENT & ENGINE TRAINING COUNCILS
CERTIFICATION TEST IN

ELECTRICAL

ON THIS 5th DAY OF NOVEMBER, 2013

Erik Sides

ERIK SIDES, EXECUTIVE DIRECTOR, EETC

CERTIFICATION EXPIRES: NOVEMBER 5th, 2016

THE MISSION OF THE EETC IS TO
SERVE THE POWER EQUIPMENT
INDUSTRY THROUGH EDUCATION,
TESTING AND CERTIFICATION

***EETC* Certified Technician**

THIS ACKNOWLEDGES THAT

Kevin Kimble

HAS SUCCESSFULLY COMPLETED

THE EQUIPMENT & ENGINE TRAINING COUNCILS
CERTIFICATION TEST IN

COMPONENTS PLUS

ON THIS 5th DAY OF NOVEMBER , 2013

Erik Sides

CERTIFICATION EXPIRES: NOVEMBER 5th, 2016

THE MISSION OF THE EETC IS TO SERVE THE
POWER EQUIPMENT INDUSTRY THROUGH
EDUCATION, TESTING AND CERTIFICATION