The Characteristics, Effectiveness, and Barriers, of Learner-Centered Instruction

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I would like to recognize my wife, Christi and my daughter, Evelyn for their loving support during this process. I would also like to acknowledge Dr. Karen Stinson for providing consistent and useful feedback which enabled me to undergo and complete this project.

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Abstract

Traditional teacher-centered instruction is passive, does not promote active, and effective learning and limits a student's personal growth (Ahmed, 2013). With this type of education, all of the focus is on the teacher who primarily presents material through lecture and other passive formats. Research indicates students retain approximately 5-30% of content presented in traditional lecture format (Masters, 2013). Conversely, learner-centered instruction has the students actively involved in their learning which results in stronger instructor/student relationships, higher student satisfaction, increased student development, and promotes critical thinking skills (Stefaniak, 2015). This research study presented evidence to convince fellow instructors and faculty development personnel to shift away from traditional teacher-centered instruction and included the characteristics and effectiveness of the more dynamic and effective learner-centered education. Additionally, faculty resistance and student opposition to these approaches were discussed. Overall, this research project evaluated whether learner-centered instructional techniques will produce more actively engaged students who will score higher on course academic assessments versus students whose instructors do not utilize learner-centered instructional methods.

Keywords: learner-centered, student-centered, teacher-centered, passive learning, active learning, student engagement, technical college, vocational education, adult education.

Learning a new career or skill is one of the most rewarding things you can do, and a technical college is a great place to acquire the knowledge necessary to become successful. A technical college education is distinctive because it prepares individuals for the workforce immediately after graduation and numerous programs offered at these institutions have labs or workshops that allow the students to engage in active, hands-on learning activities. However, in the classroom where students learn the theoretical concepts that support lab activities, the instructional methods are often passive traditional teacher-centered techniques rather than dynamic learner-centered educational practices.

Consider the following scenario. It is thirty minutes before the start of class, and an instructor reviews a PowerPoint presentation created earlier on a particular topic. When it's time to start class, the teacher discusses the objectives for the day and then starts the presentation on the subject. During the lecture, some students are taking notes, a few are asking questions, some are playing with their phones, others are trying not to fall asleep, and a small number are pretending to be listening. The lecture continues for fifty minutes with very little interaction between the teacher and students. The problem in this situation is that the only one engaged during that presentation was the instructor. Scenarios like this occur in numerous college classrooms every day (Doyle, 2011, p.51).

According to Cullen, Harris and Hill (2012), the majority of classes at educational institutions are teacher-centered rather than learner-centered. Moreover, Smith and Valentine (2012) researched the frequency of various instructional strategies of 744 full-time and part-time faculty members at eight associate degree-granting technical colleges in Georgia. The purpose of the research was to determine technical college instructors' utilization of eighteen teaching methods relating to three student educational outcomes including aiding students in acquiring

information, solving problems, and learning to perform tasks. A sample of the instructional techniques surveyed included lectures, hands-on activities, practical exercises, one-on-one discussions, multimedia devices, simulation activities, and full-group discussions. The results from the study indicated that traditional lecture was by far the most popular teaching method used during the last ten class sessions. In fact, 92.8% of the participants lectured four or more times, and 52.6% of the members specified they lectured during all ten classes.

Kovačević and Akbarov (2016) researched the dominant teaching style used by fifty-two university professors from various segments of a four-year university. The instrument utilized to perform the research was the Principles of Adult Learning Scale (PALS) inventory. The results of the survey placed an instructor's teaching preference on a scale ranging from extreme teacher-centered to extreme learner-centered and a score range from 0 to 220 points. The average score on the PALS survey is 146. Scores below 146 represent a teaching style geared towards teacher-centered and scores above 146 indicate a tendency toward learner-centered instruction. The results of the research showed strong support for the teacher-centered instructional method with an overall mean score of 115 (Kovačević and Akbarov, 2016).

Finally, research indicates that faculty development programs utilize traditional methods to train new instructors. Researchers studied 227 CTE teacher educators and program deans from faculty development programs at 164 postsecondary institutions and found that 83.2% of the faculty development programs trained instructors using the traditional lecture format (Fletcher and Djajalaksana 2014).

The results of the research provided above indicate that numerous higher education institutions are primarily teacher-centered. This study will provide evidence to persuade colleagues and faculty development personnel to shift away from traditional teacher-centered

instruction and inspire him/her to consider the more dynamic and effective learner-centered education.

Statement of the Problem

In a technical college or community college environment, does learner-centered instruction increase student engagement and academic performance?

Significance of the Study

This study is necessary to improve instructional effectiveness through the use of learner-centered instruction in the postsecondary technical college educational system, particularly in highly specialized areas such as the Automotive Technician curriculum. In the next decade, automobiles will become increasingly complex with sophisticated electrical systems. By 2026, there is a projected shortage of 6% or 47,600 skilled Automotive Technicians to keep these technically advanced automobiles operating appropriately (*Occupational Outlook Handbook*: 2017). Because of this, there will be a need for effectively trained technicians to service these vehicles. However, minimal research has been performed on improving instructional effectiveness for diverse learners in a technical college setting, and none has been completed in Automotive Technician area of study (Fletcher, Djajalaksana, and Eison, 2012). This study will review research in other related fields to provide information regarding the integration of learner-centered instruction into technical and community college courses.

Purpose of the Study

The purpose of this study is to determine if learner-centered instruction increases student engagement and academic performance in a technical college setting. Although a vast amount of research exists regarding the benefits of learner-centered instruction in K-12 schools and postsecondary universities, there is very little research that has been conducted on learner-

centered instructional strategies in a technical college setting. Existing research shows that most technical college classroom instruction follows traditional teacher-centered educational methods with lab experiences providing the hands-on learning.

Hypothesis

Automotive instructors who implement learner-centered instructional techniques will have more actively engaged students who will score higher on course academic assessments versus students whose instructors do not utilize learner-centered instructional methods.

Null Hypothesis

Implementing learner-centered instructional techniques will not result in increased student engagement, nor will the students score higher on course academic assessments.

Definition of Terms

- Automotive Technician Program – A program where students learn to service automobiles, and light trucks, and perform other vehicle repairs on almost any part or system through a mixture of classroom instruction and hands-on laboratory experience (Threeton, Walter, Evanoski, 2013).
- Learner-centered instruction "is the perspective which focuses on the learners' experiences, perspectives, backgrounds, talents, interests, capacities, and needs. It creates a learning environment conducive to learning and promotes the highest levels of motivation, learning, and achievement for all learners" (Ahmed, 2013).
- Teacher-centered instruction is a traditional instructional technique that is characterized by the transmission of information from a teacher, who serves as a lecturer to the student, who passively receives the content (Ahmed, 2013).

- Career and Technical Education (CTE) is a part of the United States education system that includes vocational education courses such as auto shop, woods, metals, criminal justice, education and medical disciplines (Crowder and McCaskey, 2015). For the purpose of this research postsecondary CTE is also included.
- Accommodating learning style represents an individual's preference for learning that is characterized by feeling and doing and it is best suited for hands-on learners who favor a practical, experiential method when learning. (Threeton, Walter, Evanoski, 2011).
- Assimilating learning style represents an individual's preference for learning that is characterized by watching and thinking. People with this learning style prefer lectures, reading and abstract ideas (Threeton, Walter, Evanoski, 2011).

Chapter Two: Review of Related Literature

General Overview and Characteristics of Learner-Centered Instruction

Learner-centered instruction "is the perspective which focuses on the learners' experiences, perspectives, backgrounds, talents, interests, capacities, and needs. It creates an environment conducive to learning and promotes the highest levels of motivation, learning, and achievement for all learners" (Ahmed, 2013). According to Mostrom and Blumberg (2012), learner-centered instruction encompasses three essential components including an increased student responsibility for learning, active learner engagement in the course content, and the implementation of various formative assessments.

Mostrom and Blumberg (2012) reported that the first vital component of learner-centered instruction is a greater student responsibility for learning, which reduces the instructor's accountability for the students' learning. Radu (2016) reported that in a traditional learning environment the instructor predominantly lectures to a group of passive students and controls all aspects of instruction including what will be taught, how it will be taught and how long to spend on each topic. Conversely, with learner-centered teaching, the instructors and students share the verbal exchanges, and the teacher performs the role of a facilitator who engages the students who are seen as partners in learning.

According to Crowder and McCaskey (2015), in a learner-centered course, the focus shifts from the content that the teacher presents to how well each student is learning. Tawalbeh and AlAsmari (2015) agreed and indicated that the instructor's responsibility must shift from that of a lecturer to a guide or facilitator who utilizes interactive teaching strategies that engage the students in experiences which require them to learn-to-learn and prepares them for real-life challenges. Likewise, Crowder and McCaskey (2015) reported that a facilitator's role is to create

a learning environment that allows the students to explore and decode information and develop ideas based on their current knowledge, skills, and abilities.

Weimer (2013) reported that the desirable aspect of a facilitative instructional role is that it more effectively promotes learning for two reasons. First, this role shifts the focus from what the teacher is teaching to what the students are learning. When the instructor concentrates on what the students are learning, he/she can determine the students learning skills deficiencies. Knowing student learning skill deficiencies enables the teacher to modify instructional strategies that will facilitate learning. Second, facilitative education requires the students to move from passive recipients of information to active creators of knowledge. The learners work alone or collaboratively to perform dynamic activities such as problem-solving, critical analysis, generating questions and formulating answers, and summarizing content. Blumberg (2015) concurred and stated that the main task of a learner-centered educator is to stimulate learning through the comprehension and application of the course information and to promote critical thinking skills by challenging students to solve problems that relate to their field of study.

The job of a learning facilitator can be equated to a sports coach. When training athletes the coach does not focus on how he/she is coaching. This person is observing how and how well the players are playing. This observation enables the coach to provide useful feedback to the players and offer strategies that will increase each player's effectiveness (Weimer, 2013).

A facilitative role does not reduce a teacher's importance as an educator. According to Smith and Valentine (2012), the responsibilities of a facilitator are far greater than that of a traditional lecturer because the skillset required to mentor, guide and train students is more challenging to acquire. In addition to being a content expert, the facilitator is expected to have exceptional social skills and be relatable to each of the students. Furthermore, the teacher must

have the knowledge and skillset to devise teaching activities that will stimulate learning, maximize the acquisition of knowledge, and assist the students in achieving the course learning outcomes.

The classroom layout is an essential aspect of learner-centered teaching. Wise (2017) indicated that class facilitation is the most efficient when an informal seating arrangement is used. Likewise, Cullen, Harris, and Hill (2012) suggested that a modular seating layout is preferable because it places students in a configuration that requires them to face each other, such as at a circular table. This configuration allows all students in the group to actively communicate and reduces the control of the teacher from being at the head of the communication channel. Furthermore, this configuration prevents students from becoming social loafers who avoid active engagement in learning tasks because sitting passively in this social environment is considered impolite.

Serving as a facilitator in a learner-centered classroom does not mean instructors will not be teaching. Weimer (2013) suggests that fundamental teaching responsibilities are still required in this learning environment. Effective teachers will always be needed to explain difficult concepts, answer questions, provide solutions to problems, and model problem-solving strategies. However, she argues that these fundamental tasks should be performed more often by the students than the instructor because the students are ultimately responsible for their learning.

According to Mostrom and Blumberg (2012) in a traditional teacher-centered class, the teacher is responsible for learning. However, when a learner-centered approach is utilized instructors can transfer this responsibility to the students by teaching students learning-to-learn skills that correspond to the learning objectives and course assessments and allocating time for the students to practice these skills collaboratively and independently. Stefaniak (2015)

concurred and reported that the responsibility for learning is increased and student development is enhanced in a learner-centered classroom due to the diverse learning activities that promote teamwork and require the students to think critically by solving complex problems individually and collaboratively. Furthermore, Tawalbeh and AlAsmari (2015) reported that student responsibility for learning is increased when the instructor assumes the role of facilitator who uses class time to promote participation, cooperation, self-teaching, learner reflection and active student engagement.

The learner-centered approach highlights the balance of power between teachers and students. What this means is that the teachers give up some control of the course structure and becomes partners with the students to enhance the learning environment (Smith and Valentine, 2012). Ahmed (2013) agreed and reported that this method enables students to take ownership in their learning by having an opinion in the content to be covered and teaching methods used, which will correspond to the students' personal learning interests and goals.

According to Doyle (2011) students who have some control in how learning is initiated increase their ability to remember and apply the course information. One method of shared control is for students to have a voice in creating the course policies and procedures such as the grading scale, due dates, late work policy, and attendance policy. Likewise, Wei (2017) indicated that students could take ownership in their learning by aiding in the development of the course syllabus to prioritize content, create peer accountability guidelines and develop ideas for course assignments. Moreover, Blumberg (2015) suggested that the use of open-ended assignments allow students to personalize their learning to meet their own specific educational goals. Additionally, Doyle (2011) indicated that sharing control with the students empowers them to have more control over the content they learn, how they learn it and what assessment strategies

they would like to incorporate. When students are given some choice in their learning, it increases the likelihood they will actively engage and work hard to achieve their learning goals.

The second vital component of learner-centered instruction according to (Mostrom and Blumberg (2012) is to engage the students actively with the course content. The objective of active student participation is to develop each student's comprehension of the material so they can apply the information in new situations. From a student perspective, Smith and Valentine (2012) note that in learner-centered classrooms, the students transition from passive learning participants to active knowledge creators. Additionally, Crowder and McCaskey (2015) suggested that compared to traditional teacher-centered classrooms, learner-centered courses emphasize individual learner engagement in which each student must utilize his/her current knowledge skills and abilities to apply the course information. However, depending on the subject, some teachers may provide instruction in a teacher-centered format but also combine various learner-centered components.

According to Weimer (2013), an example that teachers can use to encourage active engagement and to develop the students' learning skills further is to use the last five minutes of class to summarize the content. However, she suggests that the students, not the teacher, generate a summary of the course lesson information. This activity requires the students to read through their notes and attempt to understand and apply the information provided. During this process, they may find that they don't fully understand the lesson. By requiring the students to summarize the content, they develop self-awareness as learners. From this, the can start to understand their deficiencies and begin to generate questions.

Weimer (2013) reported that learner-centered instructional practices require instructors to shift the focus from the subject matter they are teaching to how well the students are learning the

content. Brackenbury (2012) indicated that with traditional teaching, content is one of the essential facets of instruction, and these courses are generally designed to include a significant amount of course material. However, this method restricts an instructor from exploring the content in depth and limits the learners' ability to comprehend and apply the information. Consequently, students in many teacher-centered classes obtain only surface level knowledge of the information, which does not promote long-term retention of the content (Brackenbury, 2012).

Weimer (2013) suggested that instructors should provide a lesser amount of content and instead, design classroom activities that encourage teamwork, discussion and in-depth content exploration which will lead to increased content applicability, and a deeper understanding of the course information. Brackenbury (2012) agreed and reported that a learner-centered classroom supports authentic learning and contributes to the students' long-term retention of the material. Moreover, having a deeper understanding of the material increases intrinsic motivation to learn more and explore new ideas.

Learner-centered teaching provides authentic learning experiences. According to Stefaniak (2015), authentic education offers students realistic learning experiences that they can use in practical applications. Baeten, Dochy, Struyven, Parmentier, Vanderbruggen (2016) concurred and indicated that classroom learning experiences should reflect the way those experiences could be applied in practical situations such as real-world case studies or occupational scenarios. Furthermore, Stefaniak (2015) suggested that a paramount aspect of authentic learning is to provide students with the necessary relevant learning experiences that allow them to relate to the course information personally. This relevancy can lead to increased student motivation. A suitable example suggested by Brackenbury (2012) is to provide the students with a career related application problem that they would not know how to solve on

their own. Next, create small groups, and provide guidelines for the students and give them access to the appropriate resources they need to resolve the problem, such as a book, video, article, or a component. As the students work to solve the problem, they access course information that becomes immediately relevant to their field of study, and they learn how to reference primary source information needed in their area of study.

It is crucial for instructors to reiterate to their learners' the utility of the instructional material and how students can apply it in practical applications. Providing examples of the utility of instruction and offering concrete examples related to the learners' personal lives are instances of instructional strategies that promote relevance. Relating current instruction to the students' future career-related experiences can be accomplished using teacher-centered instruction with the only the teacher providing the examples. However, a more effective approach is to ask the students to offer experiences from their backgrounds, such as a practicum or internship experiences.

The third essential component of learner-centered instruction is the implementation of formative feedback assessments, which enable the students to demonstrate a thorough understanding of the course material before the exam or summative evaluation is administered (Mostrom and Blumberg, 2012). In contrast to summative evaluations, Brackenbury (2012) indicated that formative assessments are utilized to assess students' present knowledge of the subject material and to allow extra student learning opportunities. Additionally, formative assessments are a significant part of student evaluation because they allow instructors to determine if learning has occurred, enables students to recognize their learning deficiencies and gives them an opportunity to obtain valuable feedback from the instructor. Instructors can use the results of the assessments to improve teaching and learning.

According to Cullen, Harris, and Hill (2012), one of the most straightforward examples of a formative assessment is a technique called the muddiest point. This assessment would be given after a specific amount of content was covered and requires the students to write what was unclear about the topic that was presented or what questions they have that need to be answered. Another example is called the exit ticket where students jot down two or three items they learned in class and create one question relating the content that they had difficulty understanding. Additionally, Webber (2012) offered other examples including student presentations, peer evaluations, and service learning assignments, and Cullen, Harris, and Hill (2012) cited other specific examples such as memory matrix, one-minute paper, and word journals. These assessments can take five minutes at the end of class and can provide students and instructors with formative feedback on a daily basis.

The primary advantages of formative assessments are that the students can use them to learn from their mistakes, engage with course content, receive critical feedback on their learning and improve their knowledge and comprehension of the material. When students obtain constructive feedback that helps them learn, they recognize that the instructor is concerned about them individually and about their success as students, which can increase their motivation to learn (Mostrom and Blumberg, 2012).

Students in a learner-centered classroom also benefit from self-assessment. According to Cullen, Harris, and Hill (2012) self-assessment aids in the accomplishment of two primary objectives. It promotes self-awareness and learner independence. Bishop, Caston, and King (2014) agreed and indicated that self-evaluation is critical to career success, but most students have minimal experience with this activity and will need to be trained to perform a proper self-assessment.

Weimer (2013) suggested that an easy way for instructors to implement self-assessment in their classrooms is to have the students evaluate the prior work of others. An example teachers can use to get started with self-assessment is to give students three examples of the same task/assignment/essay at different levels of quality. From this, the learner can determine particular features that separate various quality levels of work and identify what makes one task/assignment/or essay exceptional and another substandard. From these examples, the students will become more confident in understanding what the instructor requires to produce a successful work. Furthermore, Bishop, Caston, and King (2014) suggested that when self-assessment is frequently performed, students find it easier to evaluate themselves, their cohorts, and the course content.

Evaluations in learner-centered classrooms such as self and formative assessments lead to a greater student understanding of the expectations of the instructor, acknowledges various aptitudes and learning styles and aids in synthesizing their educational experiences (Webber, 2012). Lastly, Kovačević (2016) indicated that instructors should utilize these assessments to provide helpful feedback to the students, which will improve teaching and learning.

The research provided regarding the three features that are essential to learner-centered instruction indicate that implementing this instructional method creates a more active learner who takes responsibility for his/her learning by successfully engaging in the course content (Mostrom and Blumberg, 2012).Teachers can use this information to design effective classroom learning activities and authentic assessments that will improve teaching and learning. Furthermore, these methods help to create a learning atmosphere where students and instructors can collaborate towards the common goal of achieving the course learning outcomes.

Faculty Resistance and Limitations of Learner-Centered Instruction

While there is significant research that indicates that learner-centered instruction is superior to traditional teaching (Weimer, 2013; Kovačević and Akbarov, 2016), there are instructors who oppose altering pedagogies for several reasons. Much of this resistance is grounded in each instructor's educational philosophy. This philosophy represents each instructor's personal opinion regarding how to effectively teach and includes topics such as determining course content and objectives, teaching materials development, student engagement, assessment and course evaluation (Kovačević and Akbarov, 2016). An instructor's beliefs about these topics guide them to develop a particular teaching style. Because of this personal education philosophy, some teachers are reluctant to transform their instructional methods (Kovačević and Akbarov, 2016).

Several researchers studied why university faculty did not use learner-centered instruction in their classrooms. One of the research studies by Tawalbeth and AlAsmari (2015) examined teachers' attitudes towards learner-centered instruction. The researchers sought to identify potential implementation barriers that would prevent teachers from shifting to this approach. One of the findings of the research was that the bulk of instructors at a university were utilizing teacher-centered educational practices. The participants selected for the study were 144 male and female instructors who taught at a university. The research was conducted using a questionnaire that included eight potential barriers that would prohibit them from using learn-centered instruction. The results of the study concluded that one of the most significant reasons that prevented faculty from implementing learner-centered teaching was lack of time.

According to Kovačević and Akbarov (2016), learner-centered activities are designed to meet the needs of diverse learners. However, it is unreasonable to assume that instructors who

teach multiple sections of several different courses would have enough time to analyze the learning requirements of all these students and design flexible curriculum for each student. Brownell and Tanner (2012), found that learner-centered instruction requires more time to implement compared to traditional teaching and reported that the fundamental process of shifting from one instructional approach to another requires a substantial time commitment to complete successfully. The researchers believed that most faculty members are already overwhelmed with teaching responsibilities coupled with additional obligations aside from teaching, which prevents them from adapting to new educational approaches. Weimer (2013) agreed and stated that a significant reason faculty members resist is they are concerned that the extra time commitment to employ learner-centered teaching will reduce the amount of course content that is covered. This additional time could prevent the faculty from meeting the university course objectives.

Researchers found that in addition to time a lack of training negatively impacted teachers from implementing a new teaching strategy such as learner-centered instruction. Brownell and Tanner (2012) indicated that numerous teachers feel apprehensive and insecure about altering the way they teach and cite that many teachers would like access to a formal training program. However, research indicates that teacher training programs are primarily teacher-centered. In fact, a national survey of 227 career and technical education programs from 164 higher education institutions found that more than 83% of the teacher training programs utilized traditional methods of instruction to train instructors (Fletcher and Djajalaksana, 2014). Furthermore, critics of learner-centered education argue that training and learning to be a learner-centered instructor is an ongoing process that takes time to develop. Often, training programs last from one day to one week and fall short of thoroughly and successfully preparing instructors to utilize these teaching methods. With a lack of training and practice needed to implement learner-centered

instruction successfully, teachers often fall back to teaching in a traditional teacher-centered format (Brownell and Tanner, 2012). Weimer (2013) agreed and stated many educators are not prepared to modify their teaching method to learner-centered instruction because it involves a domain shift on the instructors' behalf. This shift requires the educator to teach students learning skills development. Other researchers, Tawalbeth and AlAsmari (2015) concluded that Taif University faculty had an optimistic outlook toward learner-centered instruction and believed it to be an excellent way to improve teaching and learning. However, the researchers also found that nearly 63% of the faulty had a lack of knowledge about learner-centered instruction. Although faculty members indicated that learner-centered instruction was superior for the students and that they could learn how to design and deliver education using learner-centered techniques, many had minimal knowledge of it. Faculty willingness and a positive attitude towards this innovative teaching method are positive attributes but are insufficient without the faculty having the training to understand what learner-centered instruction is and how to implement it (Tawalbeth and AlAsmari, 2015)

Often, potential barriers exist that are outside an educator's control and relate to Institutional obstacles. Kovačević and Akbarov (2016) suggested that numerous university programs are subject to institutional, national, and international regulations. Often, the lesson plans, assessment dates, and educational outcomes are established before the semester starts. Pathamathamakul (2016) agreed and reported that in non-major preparatory and prerequisite courses, the scope of the content was chosen according to particular academic departments. Because of this, teachers were not allowed to alter the content. Making a transition from teacher-centered instruction to learner-centered instruction can be challenging because the instructor must demonstrate that all of the course content is covered thoroughly. Additionally, Tawalbeth

and AlAsmari (2015) agreed stating approximately 50% of the 144 participants they surveyed thought that the learner-centered teaching approach reduces the amount of content they can teach making it challenging to meet all the required course objectives. Furthermore, Crowder and McCaskey (2015) reported that numerous teachers believe that teacher-centered learning is still the most efficient method to cover a significant amount of subject matter to meet the course requirements.

Cultural guidelines among colleagues and professionals at higher education institutions can also pose a substantial hindrance to implementing learner-centered instruction. Pathamathamakul (2016) reported that one of the most significant obstacles to converting to a learner-centered teaching style is the current environment or the existing teaching models in practice. In other words, if everyone else in the department is using teacher-centered instructional methods, it would be unusual to switch to a different teaching strategy. Brownell and Tanner (2012) agreed and indicated that educators often attend training conferences or workshops to become accustomed to learner-centered teaching, but they often face resistance when trying to implement these techniques due to cultural norms. Additionally, a primary cultural barrier manifests itself as a teacher's professional identity. This identity represents how teachers perceive themselves coupled with the accomplishments in their field compared to their peers, and how they are evaluated and accepted by their peers. Because of this, these professionals are expected to adhere to particular cultural norms, which includes traditional teaching methods. If a teacher modifies instructional methods by embracing innovative instructional practices, his/her professional identity may be put at risk and with it, their professional career.

Cultural barriers can also exist in the classroom. According to Kovačević and Akbarov (2016), the students assume and expect the teacher to be the primary information source. Additionally, their research indicated that several students believed that an instructor who is allotting time for one individual student during class facilitation meant that the teacher was neglecting other students who needed assistance. Tawalbeh and AlAsmari (2015) agreed and stated that more than 77% of the 144 teachers they surveyed reported that student perception of learner-centered instruction was a significant barrier to implementing learner-centered instruction.

As a final point relating to institutional barriers, researchers indicated that a lack of resources and overcrowded classes were potential hindrances. In regards to a lack of resources, Kovačević and Akbarov (2016) showed that colleges often utilize large classrooms and large class sizes that are not conducive to providing non-traditional education. Tawalbeh and AlAsmari (2015) agreed and stated that of the 144 participants they surveyed, crowded classes (93%) and immovable seating arrangement (68%) were significant barriers to implementing new teaching strategies. Pathamathamakul (2016) concurred and indicated that students' academic diversity and background knowledge of the material coupled with full classes compounded the barrier for teachers who wanted to utilize learner-centered instruction. Although they agree that while lecturing may not be as effective as learner-centered instruction, they believed that traditional direct lecture is the best way to educate academically diverse learners. Additionally, according to Kovačević and Akbarov (2016), the class size for learner-centered instruction should be between ten and twenty-five students. This necessity would most likely be too costly to implement for college budgets because it would require altering the current students-per-teacher ratio. Furthermore, Doyle (2011) found that groups of two to four students are desirable

when implementing learner-centered instruction as larger group sizes lead to inefficient group discussions where not all team members participate equally. However, it would be impractical to have small groups of students in large lecture halls designed to train a mass of students.

Resistance to a learner-centered instruction from faculty members can and does exist, and as colleagues or faculty development personnel choose to implement these innovative instructional methods, teacher opposition must be considered. Responding to this resistance involves an understanding of the grounds from which they object and a thorough understanding of learner-centered theories, practical uses, and first-hand experiences (Weimer, 2013). Further research is necessary to determine the proper implementation strategies to minimize teacher opposition to learner-centered instruction.

Student Opposition to Learner-Centered Instruction

The beginning of the academic school year generates excitement for students and faculty, and it's often a good time to adjust or modify instructional strategies that will increase student engagement and create a more efficient learning environment. When shifting to learner-centered instruction teachers modify homework, class projects and course guidelines and present this information to the students at the beginning of the semester. Teachers explain the shift in instructional strategies to the students and tell them that these changes will improve teaching and learning (Weimer, 2013). However, incorporating elements of learner-centered instruction to increase engagement can lead to resistance from the students. According to Weimer (2013) opposition to learner-centered teaching strategies is to be expected and frequently occurs when shifting away from traditional instructional strategies (p.200).

Weimer (2013) classified student resistance into four origins. The first is learner-centered approaches require more work for the students. The students' argument regarding this is that they

feel as though they are being required to perform the teacher's job. For example, when utilizing a traditional teacher-centered approach, the instructor would normally provide examples of theory in practice. However, with a learner-centered approach, the students would be required to develop practical applications of theory, which is much more challenging for them. However, as the author notes, this resistance is evidence that this approach increases student engagement, which leads to improved learning of the course objectives. Doyle (2008) concurred that students don't want to give more effort and learner-centered instruction requires it. His research concluded that learner-centered environments are active classrooms that cultivate teamwork and challenge students to become collaborative learners who can effectively communicate with their peers (Doyle, 2008). However, this collaboration between peers to complete a task can lead to resistance due to social loafing, which means that all members of the group may not participate equally. Social loafing is often associated with significant group sizes, projects that prolong an extended period and projects that do not have partner evaluations (Seidel and Tanner, 2013). Because of the additional work and the chance that others may not participate, it is common for students to resist this educational approach to learning.

The second reason for opposition according to Weimer (2013) is that learner-centered approaches can be threatening and can involve risks. Weimer concludes that the students resist based on fear. In a traditional course, the class policies, guidelines, assessments, assignments, and expectations are all set by the instructor. With a learner-centered approach, the students determine how one or more of these class policies, guidelines, or assessments are used in the class. Because of this, students who have been successful in the teacher-centered approach may feel threatened and frustrated because they do not want to learn how to adapt to this new way of teaching. Similarly, Doyle (2008) argued that learner-centered instruction doesn't resemble what

students think of as school. By the time learners have reached eighteen, they have spent more than 70% of their lives in school, and their former educational experiences prevented them from providing input regarding the desired classroom learning experiences. In the past, the only area of control for them was the extent to which they chose to engage in the learning environment. Because learner-centered instruction requires them to take control of their learning, resistance can develop because the students feel that the course lacks direction or that the instructor has lost interest in teaching (Doyle, 2008). Additionally, students have preconceived notions regarding what their role as students is, and they may resist learner-centered strategies because they believe their responsibility as a student is to take a seat, pay attention and take notes as the instructor lectures (Seidel and Tanner, 2013).

Students who lack self-confidence in their learning abilities may also feel threatened by this approach because it requires them to practice completing tasks that they are not confident in performing. Rather than relying on the teacher, the students must take learning risks and understand that failure is an option if they are not successful at completing unknown tasks or becoming a critical thinker (Weimer, 2013). Doyle (2008) agreed that students don't like taking learning risks and believed the primary reason students do not wish to take risks is to avoid failure because they see it as a negative experience that can inhibit their future learning. Taking a learning risk and failing can produce an emotional state of inadequacy and vulnerability. However, it is feelings such as these which will propel them to become successful learners. Additionally, students' mindsets about learning make adapting to learner-centered instruction more difficult. Students who have a fixed mindset believe their intelligence level is permanent and cannot be changed. Because of this, these students may avoid participating in learning activities that will increase their intelligence level (Doyle, 2008).

Weimer's third reason students resist is that learner-centered approach involves losses. When students transfer from one stage of learning to another, an emotional loss is incurred. What this means is that this approach to teaching and learning requires the students to take more responsibility and develop ownership in their education rather than relying on the teacher to make all the decisions for them (Weimer, 2013). Doyle (2008) studied student's pre-college experiences and found that most students' past learning experiences have primarily been teacher-centered, where the instructor governs the content the students learn, how they will learn it and the assignments and assessments that will be given.

This learning transition is very similar to what happens when adolescents turn 18 and are no longer dependent on immediate family members to make important decisions. This transition forced the adolescents to follow different decision patterns and pathways. Turning eighteen means assuming legal, financial, and personal responsibility for the consequences of decisions. The students may understand that this new approach will cultivate individual growth, but the feeling of loss that occurs can result in resistance (Weimer, 2013).

Weimer's final basis for opposition is that some students are not prepared for learner-centered education. In other words, these students are predominantly dependent learners who do not have the skillset to undertake the activities, coursework, and projects that learner-centered teaching requires. This incompetence manifests itself as resistance when the students claim they cannot complete the course objectives (Weimer, 2013). Moreover, Doyle (2008) found that most students are unprepared for learner-centered instruction because their prior traditional educational experiences led to the development of particular patterns such as passive listening, notetaking, completing assignments, and taking multiple choice tests. Additionally, former student educational experiences have emphasized the memorization of facts and details rather

than on learning and comprehension. Because of this, developing new habits associated with learner-centered teaching are time-consuming and require repetition to be successful. Likewise, Seidel and Tanner (2013) believed that students might not be prepared for learner-centered instruction due to a lack of training. During classroom activities, the students may be required to discuss topics or collaborate with their peers without having any formal training on what they should do or how they should do it.

Seidel and Tanner (2013) suggested that a lack of incentives may also lead to resistance meaning students may not see the value associated with implementing learner-centered strategies. These students often believe that good grades, little effort, and effortlessness course completion are appealing incentives to perform well. Doyle (2008) described these students as "minimalist learners" who are more concerned about the point values necessary to obtain a good grade rather than focusing on how much they can learn. For these students, learning is not a top reason students give for attending college. A ten-year study performed on high school students' success revealed that the primary reason students performed well in high school was to get good grades to guarantee college admission. Unfortunately, this thought process continues throughout college when the primary reason students do well is to become employed and make a respectable wage (Doyle, 2008).

As colleagues or faculty development personnel decide to implement these effective instructional strategies, student opposition to learner-centered instruction needs to be considered. The critical message at this point is to recognize that student opposition to new educational approaches can and does occur. Because of this student resistance, faculty must learn the skills and strategies to counteract this resistance because it can mean the difference between a

successful and unsuccessful course. Further research is necessary to determine the proper implementation strategies to minimize student opposition to learner-centered instruction.

Benefits of Learner-Centered Instruction-Why Shift?

Traditional lecture-based education has been the backbone of conventional education for more than 200 years and has only started to change in the last two decades Lowe (2011). According to Crowder and McCaskey (2015), in teacher-centered instruction, the primary purpose is to transmit content from a lecturer to the learner. The instructor is seen as the primary information source who, through lectures, maintains control and authority in the classroom. This follows the tradition of teacher-centered instruction. Educators tend to teach the way they were trained, and a strong relationship exists between an instructor's preferred learning style and his or her instructional style (Threeton, Walter, and Evanoski, 2013). According to Lowe (2011), lecture presentations are often utilized because it is the model that teachers learned when they were in training and that they became proficient in using. Shifting from one pedagogy to another can represent a significant challenge for educators, even if research suggests another method is superior. Instructors often gravitate toward the familiar traditional instructional methods that they have developed over time because they have become effective at delivering instruction with the lecture format.

The standard lecture has been our dominant model of teaching for so long because early theories about education suggested learning was primarily the attainment of knowledge. This was the empty vessel theory that the learner was ready to be filled and molded into a scholar. Theorists believed and many still think that a learner needs a core of commonly understood components to acquire the background to scaffold learning (Smith and Valentine, 2012). For example, professionals in the medical field need to learn vocabulary words and common medical

prefixes and suffixes to be able to understand the primary language of their industry. Learning activities and classroom skills historically were all directed at the acquisition of content knowledge or specific skills especially at the beginning level of learning a new skill (Lowe, 2011).

Advantages of teacher-centered instruction

The teacher-centered instructional approach has its advantages. For example, this method may be a better way to teach students who need discrete step-by-step instructions and covers material that is related to safety, requires a detailed sequencing of steps or when critical components must be covered. Additionally, a teacher-centered approach may be more beneficial in situations where you must persuade others, if time is a factor, or if the group of learners needs to remain on task (Wise, 2017). Additionally, Pathamathamakul (2016) reported that "effective" traditional lectures are possible, but generally are best utilized when teaching new skills and learning the technical course content. Likewise, Doyle (2011) reported that instructor lectures are still a required fundamental aspect of teaching. Educators who are content experts will always need to explain challenging and sophisticated information to students via lecture to facilitate learning the course content. However, he argues that teachers should only lecture when they information is complicated enough that the students are unable to comprehend the information on their own (Doyle, 2011).

Educating using the traditional lecture is also efficient. According to Crowder and McCaskey (2015), teacher-centered instruction is an efficient way to deliver complex, sophisticated, detailed and in-depth information excluding the students' learning style preferences. Additionally, Pathamathamakul (2016) reported that providing step-by-step

guidance to students with academic difficulties is the most efficient method of delivering course content promptly.

Although traditional teacher-centered lectures can be useful in particular situations, conventional teacher-centered instruction has disadvantages. Often an instructor's teaching preference does not correlate with the learning preferences of the students as there is not a single versatile instructional approach to teaching and or learning that is the most beneficial. This conflict creates a discrepancy that requires educators to reconsider their current pedagogy (Threeton, Walter, and Evanoski, 2013). Moreover, Crowder and McCaskey (2015) reported that educators often overlook the fact that each course has a diverse group of learners, and because of this, some students' may have difficulty understanding the course material.

Disadvantages of Teacher-Centered Instruction

One of the most significant arguments against the use of traditional teacher-centered instruction is that it is passive. According to Crowder and McCaskey (2015), the majority of learners experience a minimal amount of learning when a teacher utilizes passive teaching approaches. Moreover, according to (Marzano, Pickering, and Heflebower (2011), "If students are not engaged, there is little, if any, chance that they will learn what is being addressed in class" (p. 1). Doyle (2011) argued that traditional teacher-centered education requires the instructor to perform most of the work during class, resulting in less active learning for the students and can, in fact, be unfavorable to students' learning. Additionally, Smith and Valentine (2012) stated that instructors in a traditional classroom undertake the active role and the students are seen as empty vessels who passively engage in the learning process. Also, teacher-centered instruction is based more on the premise that education is an end product to be delivered on a

schedule rather than being on a continuum. According to Cullen, Harris and Hill (2012), once content is dispensed-learning is complete. This traditional view of learning is assumed to be the result of the dissemination of course content from the teacher to the passive student, and once the course content has been delivered, the student is full of knowledge. Furthermore, Threeton, Walter, Clark and Ewing (2011) reported that students want to be engaged in learning. Research conducted utilizing 621 students from career and technical programs sought to determine the most effective instructional strategies appropriate for the students. The students were surveyed using three standard learning preferences including navigators, problem solvers, and engagers, which correspond with particular personality characteristics. The findings of this research revealed that the most popular learning preference for the career and technical students was the engagers classification. Students with this preference for learning favored hands-on learning, and preferred teachers who made learning enjoyable.

Traditional teaching methods limit students' retention. Research indicates students retain approximately 5-30% of content presented in traditional lecture format (Masters, 2013). The reason for the low percentages is due to the average student's attention span and ability to process the information. According to Lowe (2011), the attention span of an average student is roughly twenty minutes, and the average lecture is sixty minutes, which results in forty minutes of inefficient learning where the course content is not absorbed by the students. Also, although a lecture is an efficient means of communicating course information, it can lead to mental overload. Many presentations include PowerPoint slides which contain a massive amount of information that is presented very quickly, and students can have difficulty constructing meaning from the material (Lowe, 2011). Additionally, according to Bishop, Caston, and King (2014), the human brain will only grow if the learner is actively engaged in learning consistently enough to

create and retain the neuron networks associated with brain development. According to Doyle (2011), for information to be stored in long-term memory and establish new neural networks, consistent practice and engagement with the course material are required.

Traditional teaching supports a limited range of skills and limits a student's personal growth. According to Lowe (2011), some students' perceive that there is a lack of relevance that lecture-style teaching has to real-world applications, which means that the on-the-job experience for these future employees will require them to utilize problem-solving skills to tackle real-life situations. Because the information is delivered to them passively, the students may struggle to develop critical thinking skills needed for real-world situations. Likewise, Crowder and McCaskey (2015) report that critical thinking skills, which are necessary for career and technical education students remain underdeveloped when traditional teaching methods are used. Lowe (2011) asserts that problem-based learning, which is a component of learner-centered instruction is an alternative to teacher-centered lectures. An example of this instructional method is to introduce potentially difficult situations to the students, ask them to come up with possible solutions, and then reflect on those job-related experiences, before being presented the content relating to the topic. As the students are exposed to the content related to the potential situations, they already have a background in the job-related experience. Because the students used their critical thinking skills to solve the work-related problem, the information content becomes immediately relevant to real scenarios.

One of the most frequently asked questions instructors inquire about when invited to change to learner-centered instruction strategies is, why should I change? The fundamental answer to this question revolves around active rather than passive engagement in the learning

process. According to Doyle (2011), passive learning does not exist. He argues that for learning to occur, students must be active participants in their education to process new information. What this means is that instructors must devise activities that require the student to perform the work. These activities that support active student engagement are a significant facet of learner-centered instruction.

Benefits of Learner-Centered Instruction

The primary objective of learner-centered instruction is to provide a learning atmosphere that focuses on student engagement and offers activities that enhance authentic learning which has the students actively involved in their knowledge creation and results in stronger instructor/student relationships (Doyle, 2011). Likewise, Crowder and McCaskey (2015) agreed and added the technologically-enhanced design of today's classrooms and the academic needs of diverse learners requires the implementation of active learning approaches. Weimer (2013) recognized and reported that when students are learning new information, what and how well they learn corresponds directly to the methods used to engage them. Because of this, instructional techniques that use multiple senses should be used.

According to Doyle (2011), the sensory inputs of the human body, work in conjunction to translate new information. He argued that when multiple senses are used during instruction, improved translation of the material occurs, which results in enhanced learning. In fact, students in multisensory learning environments have much better long-term recall of information compared to those in single sensory environments. Furthermore, Lowe (2011) reported that lecture tends to rely on only one or two senses including visual and auditory channels. If the instruction is primarily auditory and visual (faculty is providing written notes or a power point)

the students may have difficulty processing the material. Conversely, students in learner-centered courses utilize all of the senses including creating, designing, communicating with others, questioning, modeling, reconstructing.

Learner-centered instruction supports educational outcomes and critical thinking skills (Stefaniak, 2015). Smith and Valentine (2012) researched the frequency of various instructional strategies of 744 full-time and part-time faculty members at eight associate degree-granting technical colleges in Georgia. The purpose of the research was to determine technical college instructors' utilization of eighteen teaching methods relating to three student educational outcomes including aiding students in acquiring information, solving problems, and learning to perform tasks. The results from the study indicated that the participants believed that the top three instructional techniques that would support the acquisition of the learning goals were hands-on activities, practical exercises, and one-on-one discussions. These learning activities correspond to the learner-centered teaching techniques.

Learner-centered instruction allows for different learning styles. Numerous students have encountered difficult learning situations that have been directly related to the instructional technique used by the teacher. Because we all have different personality types and preferences for learning, teachers who primarily use traditional methods can represent a challenge for some learners. Because of this, learning styles and personality types should be considered when developing educational strategies (Threeton, Walter, and Evanoski, 2013). Research conducted by Threeton, Walter, Clark and Ewing (2011) sought to determine automotive technology students' learning styles and preference for experiential learning which would enable faculty to determine how to meet the educational requirements of the students. The participants included

176 automotive technology students from three public college training facilities in central Pennsylvania. Kolb's learning style inventory was used, which measures learning styles and preference for experiential learning. The findings revealed that the students represented all of Kolb's learning styles. The Accommodating learning style was the most popular at 39.8% (70), and the Assimilating style was the least popular at 16.5% (29). The Accommodating learning style is best suited for hands-on learners who favor a practical, experiential method when learning, and the Assimilating learning style is for individuals who prefer lectures, reading, and abstract ideas. The final results indicate that although one can assume automotive technician students are predominantly hands-on learners, the findings suggest these students have a mix of all the learning styles. Moreover, the results can benefit career and technical education instructors when developing classroom instructional strategies to meet and exceed the education needs of their students. Sample activities an instructor could utilize for the accommodating learning style include open-ended vehicle problems, student presentations, and hands-on repair simulations. These sample activities relate closely to the learner-centered paradigm. Sample activities for the assimilating learning style include lectures/presentations, repair manual reading, and repair demonstrations. These activities represent teacher-centered instructional methods.

Another study by Threeton, Walter, Clark and Ewing (2011) sought to determine the dominant personality traits of 176 postsecondary automotive technology students from three public colleges in central Pennsylvania. The researchers used John Holland's theory of vocational personalities which specified that personalities and work-related atmospheres could be grouped into six different categories including Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. The results of the study revealed that the realistic personality type was the dominant personality classification at 84.1% or 148 participants. The realistic

personality type is defined by usually have mechanical and athletic ability and prefer to work with things rather than people. These personality traits correspond well with learner-centered instructional techniques.

Learner-centered instruction yields higher student satisfaction and success according to research (Stefaniak, 2015). Ahmed (2013) reported that a study conducted with graduate students in learner-centered educational environments sought to determine the students' observations and opinions relating to specific dimensions of learner-centered teaching. The results of the study concluded that with learner-centered teaching, the students felt respected, further developed their problem-solving skills and promoted autonomous learning. Furthermore, Stefaniak (2015) researched student experiences with learner-centered instructional strategies. The purpose of the study was to determine student motivation and perceptions toward learning in a communications course. The study took place over a semester and included six faculty members and 109 students. Three faculty members in the control group were not provided any support and were instructed to teach their class utilizing traditional methods. The remaining three teachers in the experimental group were assigned an instructional design specialist to help them incorporate learner-centered instructional techniques in their classrooms. The mentors worked closely with the experimental faculty at the start of the semester, and gradually removed support which enabled the teachers to create learner-centered activities independently. The students were surveyed and interviewed about their experiences at the end of the semester and the results of the study showed that learner-centered instruction has the students dynamically involved in their learning which results in stronger instructor/student relationships, higher student satisfaction, increased student development, and stronger critical thinking skills (Stefaniak, 2015).

Mostrom and Blumberg (2012) found that students in learner-centered classrooms accomplished the educational outcomes more often and at a higher benchmark as compared to students in teacher-centered courses. Lastly, Weimer (2013) reported that these teaching methods were effective in a college Algebra course at the University Of Missouri-St. Louis College. The student success rate in the class when traditional teaching strategies were used was only 55%. However, when learner-centered instructional methods were implemented, the student success rate improved to 75% over a three-year period. Lastly, Blumberg (2015) indicated that learner-centered teaching results in enhanced long-term retention and increased content application skills.

The shift toward learner-centered instruction represents an essential movement toward the development of independent lifelong learners who can assimilate and change with the ever-changing workforce (Cullen, Harris and Hill 2012). Bishop, Caston, and King (2014) agreed and argued that it is the instructor's responsibility to create a learning atmosphere that prepares students to be autonomous, self-motivated and continual learners. When teachers encourage students to engage in reading, writing, listening, teamwork, goal setting, and time management activities, students begin to understand the importance of creating life-long learning skills. Moreover, Schreurs and Roza (2014) suggested that students are prepared to become lifelong learners in learner-centered classrooms due to the experience they encounter solving real-life problems in collaborative and social environments. Lastly, learner-centered instruction increases student's application of the knowledge to use in their careers. Bishop, Caston, and King (2014) indicated that basis for teaching strategies such as problem-solving, teamwork, communication and learn-to-learn skills is that they represent significant skills students will need to have a successful career.

Learner-centered instruction increases student development (Stefaniak, 2015). Wei (2017) stated that student input is needed for effective student growth. Research conducted using 111 college students enrolled in a business communication course sought to find the effectiveness of learner-centered instruction. A pretest-posttest was utilized to determine the students' current level of writing and to determine if the learner-centered instruction utilized improved the students' writing skills. The results of the study showed the importance of collecting relevant data associated with each student's current knowledge level and then using this data to address each student's educational needs. The findings also indicated a significant increase in scores from the pretest to the posttest and increased student confidence in business communication writing.

The critical message in this section is for administration, faculty members, colleagues, students, and instructional development personnel to understand why we use learner-centered instructional techniques and how these methods lead to better-quality learning experiences for students and teachers (Doyle, 2011). Further research is needed to determine the best starting point for those who are interested in shifting to these dynamic learner-centered instructional practices.

Summary

The purpose of this study was to determine if learner-centered instruction increases student engagement and academic performance in a technical college setting. Although a vast amount of research exists regarding the benefits of learner-centered instruction in K-12 schools and postsecondary universities, there is minimal research on improving instructional

effectiveness in a technical college setting, and none has been completed in the Automotive Technician area of study (Fletcher, Djajalaksana, and Eison, 2012).

The outcomes of this research provided evidence to encourage colleagues and faculty development personnel to shift away from traditional teacher-centered instruction and consider the more dynamic and active learner-centered instruction. Overall, the research indicated that learner-centered instruction is an effective educational strategy which promotes long-term retention and a greater ability to apply the material (Blumberg, 2015). Furthermore, learner-centered instruction has the students actively involved in their own learning which results in stronger instructor/student relationships, higher student satisfaction, increased student development, and promotes critical thinking skills (Stefaniak, 2015).

Although a considerable amount of research supports the effectiveness of learner-centered instruction, it is common for faculty and students to oppose these educational methods Weimer, 2013; Doyle, 2008; Seidel and Tanner, 2013). Teachers often oppose due to organizational, cultural, and implementation challenges (TBD). Additionally, students often resist because learner-centered approaches require more work and responsibility, and the students may not be prepared for these approaches because their past experiences were primarily teacher-centered (Weimer, 2013; Doyle, 2008; Seidel and Tanner, 2013). Before teachers and faculty development personnel consider learner-centered instruction, it is imperative they understand the proper implementation methods to reduce the chances of faculty and student opposition.

Chapter Three: Conclusions and Recommendations

The purpose of this research was to determine if learner-centered instruction increases student engagement and academic performance in a technical college setting. After performing an in-depth analysis, it is clear that learner-centered education has the following advantages. Implementing this instructional method yields higher student satisfaction and success, increases student development, promotes independent and lifelong learning, develops critical thinking skills, accommodates various learning styles, improves students' application of the knowledge, and supports obtaining the educational outcomes more often and at a higher benchmark compared to traditional methods. Overall, this research project found from the review of literature that learner-centered instructional techniques produce more actively engaged students who will score higher on course academic assessments versus students whose instructors do not utilize learner-centered instructional methods. Teachers can use this information to design active learning activities and authentic assessments that will improve teaching and learning.

Although learner-centered instruction has been proven to be more effective, based on the existing literature, the following undesirable conclusions were found. First, existing college instruction is almost exclusively teacher-centered, and both teachers and students appear to appreciate this format. Also, learner-centered education is not always the ideal teaching method for all learning situations as there are times when a teacher-centered approach is preferable. For example, the teacher-centered technique may be a better way to teach students who need step-by-step instructions, if time is a factor, and in situations where there is a mandated curriculum or a state-wide or national assessment that students must pass based on the content.

The second conclusion derived from the research is the resistance generated from some faculty members and students when confronted with this teaching method. The research found that the most common reasons teachers resist are due to a lack of time, lack of training and

institutional barriers. Researchers noted that students oppose the learner-centered approach because it requires more work than traditional methods, can be threatening, requires the students to take responsibility for their own learning, and students are not adequately prepared for this method.

Based on the study, it is recommended that further research is conducted regarding effective teaching strategies for career and technical education instructors. Although a vast amount of research exists regarding learner-centered instruction in K-12 schools and postsecondary universities, there is very little research that has been conducted on learner-centered instructional strategies in a technical college setting, particularly in the career and technical education division.

The majority of instructors in this division at Southwest Tech have a technical diploma or an associate's degree in their related field coupled with a vast amount of real-world experience. Instructors in this division are not likely utilizing the most effective teaching strategies that will create an environment conducive to learning because they have rarely been given any training on teaching methods or classroom assessment.

Further research is also necessary to determine the proper implementation strategies to minimize teacher opposition to learner-centered instruction. The vital message is for administration, teachers, students, and faculty development personnel to understand why we use learner-centered instructional methods and how these techniques lead to better-quality learning experiences for students and teachers. Further research is needed to determine the best starting point for those who are interested in shifting to these dynamic learner-centered instructional practices.

As colleagues or faculty development personnel decide to implement these effective instructional strategies, student opposition to learner-centered instruction needs to be considered. The critical message at this point is to recognize that student opposition to new educational approaches can and does occur. Because of this student resistance, faculty must learn the skills and strategies to counteract this resistance because it can mean the difference between a successful and unsuccessful course. Further research is necessary to determine the proper implementation strategies to minimize student opposition to learner-centered instruction. Additional research is also needed on the quantitative and qualitative benefits of learner-centered education by career pathway. Research can determine, for example, that learner-centered instruction is more effective in the technical fields, but not as effective in the healthcare fields because of the strictly mandated curriculum, the mandatory course content, and the state and or national testing requirements for the students.

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