ABSTRACT

JOHNSON, HALDANE LUTHER. Individual Perceptions of Leadership Attributes by Industrial Technology Teachers in Selected Public High and Technical High Schools in Jamaica. (Under the direction of William J. Haynie and Aaron C. Clark)

This study sought to determine the future leadership potential of industrial technology teachers in selected public high and technical high schools in Jamaica. It also sought to identify and understand environmental and personal factors that support or hinder their leadership development and growth.

A mixed methodology research design was used. Twenty-seven schools from two administrative regions were randomly selected and 103 industrial technology teachers surveyed using a researcher designed questionnaire based on self-assessment measures by Lussier and Achua (2001). Education and training administrators, a professional association leader, and teacher training personnel were interviewed to determine administrative and policy perspectives on leadership development programs.

Quantitative data was analyzed (means, frequency, ANOVA, Tukey-HSD) using JMP 5 software. Qualitative data from interview transcripts and open-ended item responses were analyzed using the constant comparative method.

Teachers with 16-20 years teaching experience had a significant difference in leadership experience than teachers with 0-10 years teaching experience. There was no significant association between the demographic factors of Age Range, Qualification, College, Industrial Experience, and School Type with the respondents' perception of Leadership Potential and Leadership Experience.

There was a significant association between Attitude to Professional Development, Community Activity, and personality factors (Surgency, Adjustment,

Agreeableness, Conscientiousness, and Openness to Experience) with respondent's perception of Leadership Potential. Attitude to Professional Development and Agreeableness showed a significant association with both Leadership Potential and Leadership Experience.

Education and training in management and administration were the main preparation needs perceived by industrial technology teachers for them to attain leadership roles. Interviewees suggested that the apparent lack of leadership aspiration by industrial technology teachers included a lack of personal interest, the unattractiveness of administrative roles, academic under-qualification, and limited vacancies due to seniority of incumbents.

Coordinated implementation of appropriate academic and leadership development programs by education administrators, and establishing an industrial technology education association would help the leadership growth and development of industrial technology teachers.

INDIVIDUAL PERCEPTIONS OF LEADERSHIP ATTRIBUTES BY INDUSTRIAL TECHNOLOGY TEACHERS IN SELECTED PUBLIC HIGH AND TECHNICAL HIGH SCHOOLS IN JAMAICA

by
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Dedication

This dissertation is dedicated to the memory of my father Henley Luther Johnson and my mother-in-law Mrs. Veronica Powell-McGregor who were not able to see the completion of this phase of my career.

Biography

Haldane Johnson was born and raised in the suburb of Harbour View in Kingston, Jamaica. He is the fourth child of Henley, a technologist, and Hazel, housewife/ bookkeeper. He attended Excelsior High School and later the College of Arts Science and Technology (CAST) where he completed a Technical Teacher's Diploma in 1981. After teaching at a Technical High School for seven years, he went on to lecture full-time at CAST (now University of Technology, Jamaica).

Haldane completed the Bachelor of Education Degree in Construction Technology in 1990 and was awarded a Fulbright-LASPAU scholarship to complete the M. A. in Industrial Technology Education at the University of Northern Iowa, Cedar Falls.

Returning to CAST in 1992, he coordinated the Part-time Bachelor of Education Degree programs for Industrial Technology. In 1998, he began a three-year appointment as Head of the School of Technical and Vocational Education and led the development of 4-year Full-time Bachelor of Education Degree programs in Business & Computer Studies, Family & Consumer Studies, and Industrial Technology. In 2001, he enrolled in the Technology Education doctoral program at North Carolina State University in Raleigh.

Outside of academic and professional pursuits, Haldane has been involved in youth ministry in various capacities for over 25 years. He and his wife Andrea have two boys and live in Kingston, Jamaica.

Acknowledgments

So many persons deserve acknowledgement for their contribution to my personal and professional development, and academic achievements culminating in this degree. Although not all are mentioned by name, their contribution is appreciated. However, the following individuals and groups deserve special mention:

Firstly, my Committee members: Dr. Haynie for his meticulous guidance and mentorship, Dr. Clark for his statistical and research reality checks, Dr. Brinson for his qualitative expertise and understanding of alternative perspectives, and Dr. Wenig for being an exemplar of technology education leadership.

Dr. Deluca, Dr. Crow and Dr. Peterson for providing timely advice and encouragement. Fellow Graduate students for their camaraderie on this journey.

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The University of Technology administration, staff, colleagues and friends- for their support and providing me the opportunity to serve. The Jamaican education and training administrators and industrial technology teachers who participated in the study. Dr. Veta Lewis and Mrs. Loveda Jones who offered mentorship over the years.

My mother, sisters and brothers- for continued support. My wife and sons for their love, unwavering sacrifice and support.

Finally, to God to whom the glory belongs, for His faithfulness, mercy and grace.

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CHAPTER ONE

Introduction

The strength and future of any organization or profession rests on the membership and more importantly on its leadership. Without leadership, groups of persons are less effective in their collective impact on their mission and without responsive members following, leaders will be frustrated. Compatibility between leaders and followers is important. Some leaders are more effective with a certain type of follower, and some followers perform better with a certain type of leadership. The emphasis has typically been placed on leaders to bring about change, but this responsibility is actually shared; as it is not difficult to frustrate the efforts of leadership if persons are unwilling to be led in a particular direction.

Leadership is also about relationships, and if the leader and collective followers are compatible, then substantial progress is made to the mission of the group. This is true for business where team members have been chosen to complement each other for maximum productivity. This has also been extended to the management of organizations where co-leaders are deliberately selected to temper or complement the skills and behavior of the main leader (O'Toole, Galbraith and Lawler, 2003).

Within education, it is a reasonable expectation that the school administration and teachers positively influence society and the community beyond the confines of their classrooms. For this to take place, teamwork it required in which leadership is not confined to the few at the top, but shared with all within the organization. Lindborg (2002) in supporting the concept of distributed leadership stated "leadership should be

found everywhere in organizations and be measured as institutional capacity instead of CEO charisma" (p. 100).

Leadership development goes beyond the requirements of business organizations, and can be related to the technology education classroom. Wenig (2002) has investigated the impact of leadership knowledge and skill in enhancing technology education teachers' professional preparation and development. Research has shown that the vast majority of outstanding teacher-leaders in technology education are actively involved in their professional organization (Williams, 2001). Professional organizations foster the ideals of their profession; they provide networking opportunities, mutual support, and the development of professional and leadership skills through continuing education, conferences, and dissemination of ideas and research through publications. The International Technology Education Association (ITEA), National Association of Industrial Technology (NAIT), and Association of Career and Technical Education (ACTE) are professional organizations respectively serving primarily the technology education, industrial technology, and career and technical teachers in the USA.

These professional organizations have members in other countries including Jamaica; however, a local professional organization serving the Jamaican industrial technology teachers would facilitate similar opportunities for continuing education, leadership and professional development that is relevant for the Jamaican context. The creation of a professional association will necessitate leadership at the local school level and commitment and support at the national administrative and policy levels. An understanding of the Jamaican industrial technology teachers' environment and their

individual and collective disposition to leadership is a starting point from which implementation of a professional association can be made.

Background

Jamaica is located in the north central Caribbean 144.8 km south of Cuba and 898 km southeast of Miami, FL. It has an area of 11,420 square km (4,400 square miles). It is a former British colony and received political independence in 1962. The population in 2002 was estimated to be about 2.624 million, where approximately 52% live in urban areas, the largest being the Kingston Metropolitan Area (Planning Institute of Jamaica [PIOJ], 2002). The mainstay of the free market economy is tourism, mining, sugar, and increasingly, remittances of foreign exchange ($1.2 billion in 2002) from Jamaicans living and working overseas (Bartley, 2003). However, Jamaica has been struggling for many decades to have a sound and sustainable economy. It is indebted to local lenders and international agencies such as the World Bank, and the Inter-American Development Bank; According to Bear Stearns (cited in Jamaica Observer, 2003) interest payments on debt consumes 67% of the government's 2003-2004 revenues. Education, outside of debt servicing, receives the largest share of the budget, which illustrates that education and training for the workforce is seen as important for the social and economic development of Jamaica.

The Jamaican Education System

The education system in Jamaica formally begins with six years of primary (elementary) education, which culminates when students take the Grade Six Achievement Test (GSAT), successor to the former Common Entrance Examination, at the end of Grade 6. Students are placed in the school of their choice based on their GSAT score and

geographic location of residence. Priority is given to those students with the highest GSAT scores. The preferred schools are the traditional high schools that provide the best secondary education and prospects for academic success (Vasciannie, 2002). The traditional high schools are mainly those established by churches or private trusts prior to independence. They are located throughout the island in multiple urban and rural settings. Before 1957, access to secondary education was mainly limited to the privileged classes who could afford the fees. Unrestricted access, where no fees were charged, was then limited to 30 students per year through scholarships (Duncan, 2003). Students that were not in the top percentiles of the GSAT were placed in the non-traditional high schools that, prior to 2001, had labels such as comprehensive, new secondary, or junior secondary where they completed mainly pre-vocational programs. Universal secondary education in 2005 is the goal of the government. Therefore, through the Secondary School Enhancement Program, these non-traditional schools were renamed high schools and upgraded in terms of curriculum, financial support, and staffing to make them on par with traditional high schools (PIOJ, 2002). The Secondary Enhancement Programme [*sic*] (SEP) which began in September 2001, is a Jamaica Government initiative with the following objectives:

1. To improve the quality of education within the newly upgraded high schools.
2. To initiate and enhance site-based management.
3. To assist in closing the gap between programme offerings of the traditional high schools and the more recently upgraded high schools (Ministry of Education, Youth and Culture, 2003a).

In grades 7 to 9 there is general exposure to all academic and most technology disciplines; while in grades 10 and 11 the students specialize in preparation to take the Caribbean Examination Council (CXC) Caribbean Secondary Education Certificate (CSEC) examination at the end of grade 11. Grade 11 is the terminal grade for the majority of students and on leaving school, graduates attempt to gain employment or go on to further education at post-secondary and tertiary institutions. Limited job prospects for these graduates contribute to the 15.5% unemployment rate in 2002 (Statistical Institute of Jamaica, 2003).

At some traditional high schools, very few students go on to grades 12 and 13, also known as "sixth form", to complete the CXC Advanced Proficiency Examination (CAPE) that is the preferred entry qualification to the University of the West Indies. CAPE is the Caribbean's replacement for the UK-based Cambridge General Certificate Examination-Advanced Level. In the year 2002, there were 226,500 students enrolled in secondary school, 12,500 were in post secondary institutions, and 20,700 attended university (PIOJ, 2002).

Overall performance of Jamaican students in the 2002 CXC CSEC examinations is below that of the rest of the English-speaking Caribbean islands as only 25.3% of the grade 11 cohort passed English Language and 27.8% passed Mathematics (National Council on Education, cited in Thompson, 2003). There is continual criticism against the quality of the outputs from the schools because the whole education system has suffered from non-articulated and elitist categorizations and is described by Thompson (2001) as "complicated and compromised." Chuck (2003, para. 3) spreads the blame asserting "the whole Jamaican society is failing our young people and education is not making a

difference." Factors contributing to this are the disparity in allocation of resources, overcrowding, and employment of pre-trained teachers (United States Agency for International Development [USAID], 2002). The Government of Jamaica has recognized this and has implemented policy and programs to address the situation. The Government's policy paper "The Way Upward" (Ministry of Education, Youth and Culture, 2000) is represented as:

> A commitment of the Government of Jamaica to engage our people in the strongest possible partnership in the development of our human resources as the primary tool for personal, social and economic development. Education and training is our over riding priority. It is the key ingredient in the nation's overall development of a creative, productive, democratic and caring society and should prepare citizens for changing roles in a social, economic and global environment that is also constantly changing. (Section: A Context for the Future).

Senator Maxine Henry-Wilson, the Minister of Education, Youth and Culture in describing initiatives to reform education in Jamaica said in a Go-Jamaica online interview on January 15, 2003:

> The education process has been undergoing a process of continuous reform. At the primary level the introduction of the Grade Six Achievement Test is a major reform which requires that students be tested prior to entering primary to determine their learning readiness. If they are not learning ready then remedial education will be done. They are then tested at strategic intervals in the primary system, and the philosophy is that by the time they get to grade six they should have the basic competences to allow them to enter secondary. At secondary

> [level] the major reform has been in the area of curriculum including the provision of vocational education and of some market skills, especially for those who will leave after grade nine. These are just some of the areas of reform. We are also working on teacher preparation, teacher accountability, and improvement of laboratories as a part of our reform process. (See 6:36:32 p.m. transcript).

In addition, there was recent bi-partisan agreement to make education a national priority; some issues of agreement are that education will receive 15% of the annual budget, the teacher/pupil ratio in the primary schools will be reduced, performance incentives for teachers will be introduced, and provisions made for a supervised compulsory homework/literacy hour after school (Jamaica Gleaner, 2003). It is almost an accepted fact that students who cannot perform academically are expected to leave school with at least a technical or vocational skill. With approximately 90% of the age cohort students leaving school without any CXC subjects (Chuck, 2003), this is a heavy responsibility and burden on the technical/vocational teachers to redeem part of the education system's inadequacies.

Technical/Vocational Education

Technical/Vocational education was formally practiced in British colonial Jamaica since the latter part of the 19th century in the areas of the mechanical arts mainly to support the post-slavery agricultural economy. During the post-independence decade of the 1960s the government, in order to provide the workforce for a burgeoning industrial economy established technical schools in various parishes. From the 1960s the Jamaican Ministry of Education has recognized three strands of the formal education system: academic, vocational, and technical (Ministry of Education, cited in Morris,

1998). Fourteen Technical High Schools (THS) now provide training for entry-level and supervisory workers in the industries and businesses. To a lesser extent, most traditional high schools also have technical/vocational programs alongside their academic curriculum. However, the technical and vocational programs do not have the same status as the academic subjects within the school community.

The management of Technical and Vocational education was solely done by the Ministry of Education, Youth and Culture's Technical Vocational Unit, and more recently in collaboration with the Human Employment Resource and Training/ National Training Agency (HEART/NTA). Investment in Technical and Vocational education has increased in recent years with funding from HEART/NTA that had an overall budget in 2000 of J$2.06 Billion [Note: J$45.53 = US$1] (PIOJ, 2001).

Industrial Technical/Vocational Teacher Education

Until 1987, there was no opportunity within Jamaica for obtaining a technical teacher's bachelor's degree. This meant that of the hundreds of industrial technology teachers in Jamaica, only a small minority were so favored to go to university overseas. Otherwise, to become a technical teacher, one would have to complete a two-year certificate or three-year full-time diploma program of study at the post-secondary level at institutions such as Mico Teachers' College, University of Technology, Jamaica (formerly College of Arts, Science and Technology), and the Vocational Training Development Institute (VTDI). Skilled workers and artisans from industry were recruited to fill the teaching vacancies. On rare occasions, outstanding high school graduates were also recruited as pre-trained teachers to fill urgent vacancies using their high-school diplomas/subjects as their credentials. These pre-trained teachers were required to go to

teacher's college after a maximum of three years in the classroom. Overall, the process of teacher training has traditionally been one of upgrading qualifications as one's teaching experience increased.

The reward system in education favors the more qualified. To obtain a school leadership position as principal requires that a teacher have at least a first degree. Technical teachers were at a disadvantage for many years, as the only university in Jamaica offering degrees was the University of the West Indies (UWI), Mona campus, which catered to the Liberal Arts and Sciences. This meant that only teachers of traditional academic subjects such as Mathematics, English Language, Geography, and the Sciences had the opportunity to obtain degrees and thus became qualified for principal and vice principal positions. Without opportunity for studying for a first degree in a technical field, technical teachers had to limit their aspirations and settle in their role as classroom teacher. Opportunity for upgrading industrial technology and industrial arts teachers began in 1987 and 1991 with the respective introduction of the post-diploma Bachelor of Education Degree programs in Industrial Technology and General Technology at the University of Technology, Jamaica (UTech).

Between 1996 and 2001, UTech has graduated 103 teachers with Bachelor's of Education degrees in Industrial Technology and General Technology (Faculty of Education and Liberal Studies, 2002a). These industrial technology teachers are working in the schools and colleges in various capacities yet their collective leadership influence appears minimal. Why is this so? How integral was leadership development to their program of study? According to the goals of the program it is to "prepare a cadre of teachers and trainers with *enhanced leadership* [emphasis added] and administrative

skills for technical/vocational institutions . . . provide expertise in the development, implementation and supervision of industrial technology programmes [*sic*]" (Faculty of Education and Liberal Studies, 2002a, p. 84). There is a stated expectation that the Bachelor of Education in Technical and Vocational Education & Training (B. Ed TVET) full-time degree program would add to the potential leadership pool (Faculty of Education and Liberal Studies, 2002b):

> The programme [*sic*] is designed to prepare competent, professional teachers/trainers of technical subjects for the education system at the upper secondary and lower tertiary levels, training system, and also for industry. Therefore the four-year Bachelor of Education Degree programme will: . . Prepare teachers of technical subjects who will provide *quality leadership*, [emphasis added] administration and supervision of technical programmes in the TVET system. (p. 2)

A further program rationale for the degree program is to "provide leadership in the development of the TVET system within the [Caribbean] region" (p. 1). What is the nature of the leadership development program that will develop quality leadership? To answer this question, and the preceding question, a review of the leadership development programs at the technology/technical teacher education departments of Mico Teachers' College, the VTDI and UTech is warranted in the context of this study.

Professional Organizations, Research, and Leadership

Every year, various leaders in technology/vocational education in Jamaica attend the International Technology Education Association (ITEA), National Association of Industrial Technology (NAIT), International Vocational Education and Training

Association (IVETA), and Association for Career and Technical Education (ACTE) conferences in the USA. They return with ideas considered relevant for introduction into their schools and organizations. How effective is the transfer of knowledge and technology to the technical teachers and their classrooms? Dissemination of research findings and their implications for the technical/vocational teaching community in the high and technical high schools is an imperative.

Research in Technical/Vocational education is very limited in Jamaica and not as prolific as in the USA, where research is a major requirement for promotion and tenure in the universities. There was a short-lived research journal by the Technical Education Department at the University of Technology, Jamaica titled "Journal of Technical Education". Four volumes were published (1988-1992). Since then, publications of technical/vocational education-related research have been in international journals, or in conference proceedings. A Dissertation Abstracts International search on Jamaica's Technical and Vocational Education will reveal three relevant entries (Morris, 1987; Lewis, 1987; Onyefulu, 2001). Morris' dissertation was on technical teacher competencies, Lewis' thesis was on college students' occupational choice, and Onyefulu's study evaluated the Bachelor of Education Business Education program at UTech. There are no recent doctoral studies on industrial technology teachers in Jamaica.

The Jamaica Association for Technical and Vocational Education and Training (JATVET) is an umbrella organization similar to the ACTE that caters to all technical/vocational areas including Home Economics, Business Studies, Industrial Arts/Technology, Art & Craft, and Agricultural Science. JATVET has annual conferences on topics such as career guidance, technology in education, dispute

resolution, and career education (P. Facey, personal communication, October 2003). There is no discrete professional forum for industrial technology educators in Jamaica to network, air concerns, share ideas, provide mentorship, give support, and gain leadership experiences. This is a challenge for the future to establish such a body for industrial technology teachers, even within JATVET.

The Jamaica Home Economics Association (JHEA) is a relatively vibrant organization and has regular conferences to update their members on the latest developments in their field. They have connections with Caribbean and international associations. Three members of JHEA are leaders in all three Technical High Schools (THS) in the capital city. Is there a connection between professional associations and leadership development? Yet in Industrial Technology, there is no such professional body in existence to support the teacher-leaders in the classroom. Professional and leadership development is lacking for this group of industrial technology teachers. This was the same concern raised recently by Patrick Facey, Assistant Chief Education Officer (Acting) for Technical and Vocational Education in the Ministry of Education, Youth and Culture. He lamented the small pool of qualified individuals in Industrial Technical/Vocational education to fill vacancies as Education Officers (similar to Supervisors in the USA). He saw this situation as a crisis (P. Facey, personal communication, September 2003).

Additionally, leaders (principals and vice principals) in the technical high schools (THS) tend not to be those whose teaching area is in a technical vocational subject area, save Home Economics and Business Education. Of the 36 principals and vice principals in the 14 THS, seven have an English Language background; six have a Mathematics

background; eleven are from other non-technical areas such as Geography, Spanish, and Social Studies; five have a Business Education background; and three are from the Home Economics discipline while only three principals and one vice principal have an industrial technology or engineering academic background (L. Jones, personal communication, 2003). This leads one to ask: How are curriculum decisions critical to the functioning of technical disciplines in the schools determined without compromising the integrity of the discipline due to lack of knowledge and understanding among school leaders?

Statement of the Problem

Observing the leadership in the technical high schools (THS), there is a dearth of industrial technology teachers at the helm, and it is this researcher's impression that more needs to be done for and by industrial technology teachers for their leadership development. What are the prospects of industrial technology teachers taking on principal roles in the schools? Who will take responsibility for the profession in ensuring advocacy of policies that support technology education? Who will raise the image and standard of the profession within the education fraternity and wider community? How are innovations and technology transferred to the teachers and their students? What is the level of motivation possessed by these teachers in taking on the challenges and responsibilities facing technical/vocational education?

The issues raised by these questions suggest the need for strengthening of leadership within the industrial technology/vocational education system in Jamaica especially at the high school level. Therefore, the primary question studied here is: What is the future leadership potential of industrial technology teachers as perceived by industrial technology teachers in selected high and technical high schools in Jamaica?

Justification for the Research

The need for leadership development for industrial technology teachers was precipitated by the following developments:

1. Continual difficulty in recruiting qualified teachers with leadership disposition (at the Master's level) as Industrial Education Officers (superintendents) for the Ministry of Education, Youth and Culture (MOEYC), or to teach selected technical courses at the university level.
2. Technology as practiced in Jamaica (mainly in the domains of construction, electrical and mechanical technologies) needs upgrading to 21st century standards to seize the opportunities in a post-industrial world economy. The pending emergence of Common Free Trade Area of the Americas, and the Caribbean Community Single Market Economy (CSME) demands changes in the technical education system for Jamaica to be competitive.
3. Accountability to the taxpayers for investments made in education who demand performance related pay for teachers (Jamaica Observer, 2003), and
4. Recent upgrading of the former comprehensive high, junior high, and new secondary schools to high schools.

Additionally, there are curriculum issues requiring academic leadership, namely:

1. An urgent need to improve the overall pass rates in the Caribbean Examination Council (CXC) Caribbean Secondary Education Certificate (CSEC) examinations;
2. The replacement of the CXC CSEC Industrial Arts curriculum with an Industrial Technology curriculum;

3. The introduction of CXC Caribbean Advanced Proficiency Examination (CAPE) for Electrical Technology for grades 12 and 13; and
4. Rationalization of the Technical/Vocational education and training system that includes the introduction of the National Vocational Qualification of Jamaica (NVQ-J) as an alternative qualification for vocationally oriented students at grades 10 and 11.

Despite producing a small number of excellent academicians for export to North America, the overall under-preparedness of the majority of graduates from our school system is always a great concern that requires leadership to address (Chuck, 2003). Industrial technology teachers have an individual and collective role to play in changing this situation.

Purposes

The purposes of the study were: first, to create baseline data on leadership knowledge and skills for establishing leadership development programs for high school industrial technology teachers in Jamaica; and second, to provide insight into the environmental factors supporting the creation of a professional association for industrial technology teachers. Specifically, the study attempted to:

1. Identify and measure the perceived effectiveness of existing leadership development programs for industrial technology teachers in the schools.
2. Identify and describe environmental and personal factors that support or hinder leadership development and growth of industrial technology teachers.

3. Compare the leadership attributes of groups of industrial technology teachers based on demographics and education.

Research Question

What is the future leadership potential of industrial technology teachers as perceived by industrial technology teachers in selected high and technical high schools in Jamaica?

In order to answer the main research question, the following sub questions guided the development of the questionnaire and interview schedule:

1. What is the association between education, college of study, age, years of teaching experience, other experiences, and school type on industrial technology teachers' self-perceptions of leadership attributes?
2. What are the environmental and personal factors that hinder or help industrial technology teachers' leadership development and growth?
3. What are the leadership preparation needs as perceived by industrial technology teachers?
4. What is the role and contribution of Jamaican education and training administrators, professional associations, and teacher training institutions in leadership development of industrial technology teachers?

Assumptions

The following assumptions were made for this study:

1. The industrial technology teachers were knowledgeable about their leadership attributes and answered the questionnaire items competently and honestly.

2. The sample size used was sufficiently representative of the Industrial Technology teachers in Regions 1 and 6.
3. Leadership experience and leadership potential are measurable components of leadership attributes.

Limitations

The study was limited to industrial technology teachers employed in selected public high schools and technical high schools in Regions 1 and 6 in Jamaica during the 2003-2004 academic year. It included interviews of selected education and training administrators, teacher educators, and a professional association leader. This study was aimed at the teachers in the secondary level and therefore excluded teachers in post-secondary educational institutions such as training academies and colleges. This study was not a comprehensive leadership assessment of individual industrial technology teachers per se, as the study's scope did not include a battery of assessment tests, follow-up and counseling. In summary, it was an overall assessment of the general pool of industrial technology teachers and the conduciveness of the environment to their leadership development.

Operational Definition of Terms

The following terms are operationally defined for the purposes of this study:

Industrial Technology teacher: Full-time and part-time teacher of grade 10-11 CXC or NVQ-J courses prepared in the disciplines of Industrial Arts, Industrial Technology, or Vocational /Occupational trades such as Auto-mechanics, Mechanical Technology (Welding, Sheet-metal Fabrication), Electrical

Technology and Electronics, Building Construction (Masonry, Carpentry, Joinery, Woodwork, Plumbing, Pipe fitting), and Drafting.

High school: Secondary school with grades 7-11 or 7-13 curriculum that emphasizes the Arts, Sciences, and some Technical/Vocational programs.

Technical High School: School with grades 7-11 or 9-11 curriculum that emphasizes the Technical/Vocational programs with some relevant Arts, and Science subjects.

Leadership attributes: Those traits, skills, and dispositions that make up the factors generally considered exemplifying leadership such as being assertive, being interested in helping others, making wise decisions, being open to change, taking and sharing responsibility, learning from experiences and always seeking to improve oneself.

Summary

Jamaica has historically had a fractured education system that favored academic education over industrial education, and this is reflected in the leadership at the secondary school level despite recent opportunities for academic advancement for industrial technology teachers. Economically, Jamaica is struggling to respond to the changes in the world economy and markets, and education is one of the development levers for its survival and future prosperity. It is therefore an imperative for the industrial technology teaching profession to respond to this challenge for the national good. However, the potential of this group of teachers appears limited without leadership at the local school and national levels. This study aimed to find out the status of the environment and the leadership potential of industrial technology teachers. This was done with a view to establishing base data for leadership development programs and a professional

association that would hopefully help teachers to improve the industrial technology education outputs from our secondary schools.

CHAPTER TWO

Review of Literature

Definitions of Leadership

Leadership and management are two concepts that have been continually compared and dissected in academia. It is known that leadership is not management and vice versa but they are both complementary and necessary in any properly run organization, institution or society (Bass, 1994). Leadership appears to be a greater determinant of success for an organization. The complex nature of leadership requires that it is studied in different ways that require different definitions (Lussier & Achua, 2001). Bass (1994) stated that the definition of leadership should "depend on the purposes to be served by the definition" (p. 12). Bass further identified various theories and phases of leadership research to include leadership traits, group process, personality and its effects, compliance-induction theory, power relation, goal achievement, emerging effect of interaction, and combination of elements.

Frigon and Jackson (1996) defined leadership as "the art and science of getting others to perform and achieve a vision" (p. 1). Daft (1999) stated that "Leadership involves the influence of people to bring about change toward a desirable future" (p. 5). Lussier & Achua asserted that leadership is "the influencing process between leaders and followers, not just leader influencing followers; it's a two way street" (p. 6). Quirk and Fandt's (2000) definition is:

> Leadership is fundamentally a social influence process that culminates in reaching mutual goals with the leader's constituents. It involves making sense of a

> situation, determining the team's objectives, and motivating people to work together to accomplish these objectives, and influencing team culture. (p. 15)

Bass (1994) defined effective leadership as "the interaction among members of a group that initiates and maintains improved expectations and the competence of the group to solve problems or to attain goals" (p. 12). The many different and new definitions of leadership suggest that leadership is still an evolving concept. Therefore, in the context of this study, which is about the leadership attributes and development of industrial technology teachers, and their concomitant professionalism, the concept of total leadership as purported by Barrett (1998) is applicable as it:

> Works from the top down and is shared between colleagues but, most particularly, it works from the bottom up – when everybody acts as leader, without appointment, simply because they are motivated to do so by feeling of personal responsibility. (p. 9)

Leadership Theories and Models

The traits approach to leadership attempted to identify distinguishing personal characteristics of leaders such as intelligence, values, self-confidence, and appearance. Traits were integral to the Great Man concept of leader derived from longitudinal studies of great leaders. However, there was no agreement that traits were the main determinant of leadership success. Traits are essential for effective leadership but in combination with other factors. The most important traits according to Daft (1999) are self-confidence, honesty/integrity and drive.

The Big Five theory of leadership effectiveness is based on a personality theory that categorizes human behavior as openness, extraversion (surgency), adaptiveness

(neuroticism), agreeableness, and conscientiousness. It provides an insight into motivational characteristics of leaders. Openness is making sense of one's environment using imagination and intellect; Extraversion is taking the message, vision and plan to the world; Agreeableness is considering the needs of workers; Adaptiveness is keeping emotionally steady; and Conscientiousness is following through with self-discipline (Quirk and Fandt, 2000). Personality factors or traits (The Big Five theory) provide multiple indicators in other leadership concepts such as: dominance, sensitivity to others, stability, high energy, self-confidence, integrity, internal locus of control, intelligence, and flexibility (Lussier & Achua, 2001). See Figure 1.

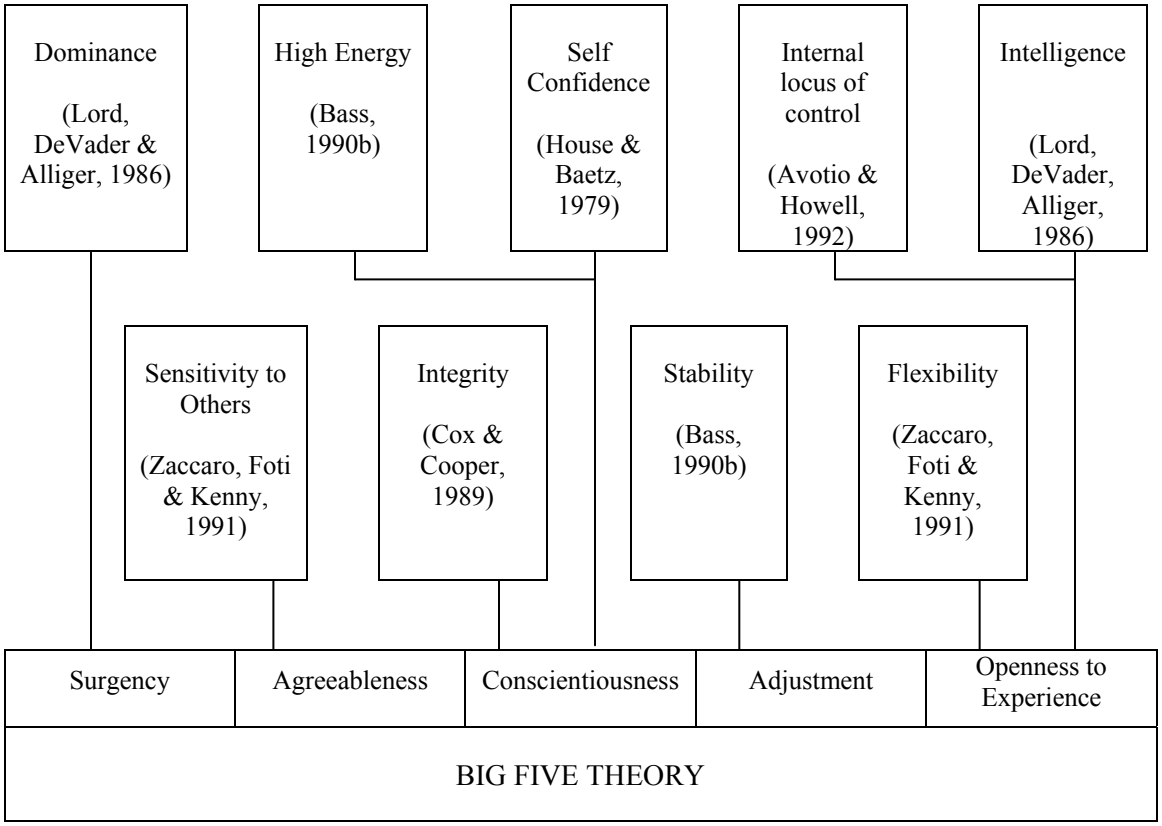

Figure 1. Traits of effective leaders and relation to Big Five Personality theory. Adapted from Lussier & Achua (2001).

There are motivational dimensions to personality (Winter, 2002). Persons with high Surgency are motivated by power. Persons with this motivation display "a variety of 'impact' and prestige seeking behaviors" (Winter, 2002, p. 123). Those who are conscientious have an achievement motive. According to Winter (2002) they are "rational negotiators, and seek information and help from technical experts" (p. 122). The Big Five theory has universal application across cultures, and the Conscientiousness dimension is the best predictor of leadership success on a global level (Salgado, 1997). Persons who have high Agreeableness traits are affiliation-motivated and are cooperative and friendly when they feel secure; however, in threatening situations, they can become "prickly and defensive, even hostile" (Winter, 2002, p. 122). No traits can guarantee success in leadership roles because other factors are at work, but studies have identified traits that are related to leadership success. Some traits consistently differentiate leaders from others (House & Aditya, 1997). Successful leaders do not have all the same traits nor do they have them in the same emphasis; and where necessary, traits can be developed (Lussier & Achua, 2001).

Behaviors can be emulated. Therefore, behavior approaches to leadership have enabled leadership to be accessible to all, as behaviors are learned more readily than traits (Daft, 1999). University researchers have proposed behavioral models such as: The Consideration vs. Initiating Structure by Ohio State University (Stogdill & Coons, 1957); and The Leadership Grid-Concern for People vs. Concern for Results by Blake and Mouton (1985) of the University of Texas. Essentially, they all conceptualize leadership in terms of a people-oriented versus a task-oriented dichotomy. Another common type of leadership behavior model has been along the autocratic-democratic continuum.

Dyadic approaches to leadership recognize that the relationship between the leader and follower is different for each follower and for each leader. An individual relationship between the leader and each follower results in individualized leadership. This individual relationship called Leader Member Exchange (LMX) (Graen & Uhl-Bien, 1995) between each follower and leader determines working environment, rewards, climate and culture of the organization. The better followers are part of the "in-group", and those that are not the ideal followers are in the "out-group" (Daft, 1999). Mutual trust, respect, loyalty, and obligations between the superior and subordinate are the characteristic nature of the relationship according to LMX theory (House & Aditya, 1997). This also gives the subordinate a measure of discretion in the relationship.

Where subordinates and superiors are matched based on demographics, liking, familiarity, reputation, and other factors that can foster a high quality LMX, it can result in a favored situation, such as promotion, for the subordinate. This however may unintentionally be at the expense of other subordinates. For an organization, high quality LMX should be given to all employees, otherwise a dysfunctional organization could result (House & Aditya, 1997).

Contingency models of leadership claim that there is no one best method of leadership, as it depends on many factors. A key contingency in determining the best style of leadership is the nature of followers: their needs, maturity and cohesiveness. Daft (1999) provided clarification of the intent of the contingency approaches as seeking to

> Delineate the characteristics of situations and followers and examine the leadership styles that can be used effectively. Assuming that a leader can properly

diagnose a situation and master the flexibility to behave accordingly to the appropriate style, successful outcomes are highly likely. (p. 94)

A situational leadership theory called Life Cycle Theory developed by Hersey and Blanchard (1982) considers the readiness of the follower as the determinant of leader behavior. Readiness is a combination of relationship behaviors and task behaviors of the followers. Independent, competent followers need less direction from the leader (delegating) in comparison to timid, insecure followers who require closer supervision (telling). The leader will change the style of leadership to telling, selling, participating, and delegating depending on the follower's readiness.

In Path-goal theory (House, 1971; House & Mitchell, 1974), the leader changes behaviors to match the situation. A leader is expected to identify the goals (objectives of the organization) and clarify the path (behaviors of the subordinate) and increase rewards to provide motivation for the subordinate to achieve both personal and organizational goals. Within the path-goal framework, the leader can display four leader behaviors: supportive, directive, participative, and achievement–oriented. These behaviors are not traits, and therefore can be adapted depending on the situation.

Rationally, for the theory to work the follower must be able to make an accurate estimate of goals to be accomplished and be confident about the subsequent reward. This however does not occur when stress is involved and the follower cannot make accurate estimates of goals or rewards. Path-goal is a complex theory and has not been properly empirically tested due to its four leader behaviors and many intervening variables (House & Aditya, 1997).

Bass (1990a) sees transformational leadership as superior leadership that "occurs when leaders broaden and elevate the interest of their employees, when they generate awareness and acceptance of the purposes and mission of the group, and when they stir their employees to look beyond their own self interest for the good of the group." (p. 21) Bass purports that a transformational leader uses charisma to achieve greater performance from employees by inspiring, being considerate, and intellectually stimulating them. He contrasts that with transactional leaders that depend on contingent rewards for performance and they manage either passively, actively or laissez-faire.

Traits are important to leadership as a good basis from which to build and develop leadership skills, but not by themselves. Behaviors are equally significant, and greatly determine the outcome of leadership endeavors because they are the visible manifestation of what leaders do. Understanding the situation, relationship, and interaction between followers and leaders are also critical for success. Therefore, a combination of styles is the most effective option for a leader (Daft, 1999).

Conceptions of Leadership and Motivation

Danzig (1999) identified seven leadership attributes and actions from his study: leadership as coaching, situational, servant, visionary, participatory, moral, and inclusionary. Edwards (1999) in an attempt to clarify leadership myths from reality established his list of leadership themes:

- To be a leader you must have followers; if you don't you're just out for a walk.
- Leadership is something we can learn and strengthen over a lifetime.
- Good management is not leadership.

- You can attain a leadership position, but you won't stay there very long without a strong character ethic.
- You must be able to capture your vision of moving followers from A to B by telling a good story.
- Emotional control is fundamental. (p. 8)

Eales-White (1998) identified four actions of an effective leader as: (a) puts work into context, (b) develops the follower, (c) leads by example, and (d) provides support. Putting work into context includes visioning, creating the big picture, setting clear and agreed goals and monitoring and reviewing performance. Developing the follower includes providing direction and guidance, coaching, giving feedback and not interfering. Leading by example includes being honest and encouraging honesty, acknowledging shortcomings and mistakes, displaying confidence and commitment, creating team spirit. Providing support includes being available and approachable, encouraging and praising, listening and being receptive to ideas, and being a safety net (Eales-White, 1998).

Kouzes and Posner (2003) in summarizing their book on exemplary leadership identified "staying in love" (p. 104) as the key secret of leadership. Out of this motivation of love, the basis for acting in the interest of the followers and constituents should naturally emanate. Sewell (2003) furthered this concept by paraphrasing a passage about love from the Bible (1Corithians 13) and inserted leadership qualities/tenets in its place:

> Leadership is not showy. It does not demand its own way. It is not noisy. Though the leader may have more knowledge on current research and understand the intricacy of educational changes, be able to see into future events, set goals, determine school objectives, and have the energy to move mountains, it is nothing

> unless all concerned believe that the leader truly cares about the individuals within the school community. . . Leadership rejoices in the success of others at all levels and communicates this. Leadership seeks to develop and empower other leaders. It never gives up. It constantly moves toward its vision through the strength of its staff and students. (p. 55)

This is akin to the tenets of principle-based leadership as proposed by Covey (1989), which has universal application. These principles are having a personal vision, personal leadership, personal management, interpersonal leadership, empathetic communication, creative cooperation and balanced self-renewal. Confirming the notion that the capacity and motivation for someone to lead comes from within an individual, Winter (2002) stated

> Not every person with sociopolitical skills to lead actually has the motivation to do so, and the corridors of corporate and political power are full of people who *want* to lead but lack the requisite cognitive and emotional intelligences to be a good leader. (p. 122)

Therefore, drive and desire to lead must be matched with adequate personal development.

Followers, Shared Leadership, and Empowerment

The importance of values, integrity and ethics is central to leadership development (Day, 2000; Covey; 1989; Maxwell, 1998). Consequently, rational models of leadership development that only focus on the behavioral skills and competencies are insufficient to meet the needs of successful education leaders in the future during times of change (Day, 2000).

A vital human resource associated with leadership success is the follower. Quirk and Fandt (2000) stated "In reality, leadership is not linear because there are no leaders without followers, and a leader won't be successful unless there is substantial collaboration and coordination with team members" (p. 15). Personal volition on the part of all parties in this relationship is implied in Kouzes and Posner's (2003) definition of leadership as "a relationship between those who aspire to lead and those who choose to follow" (p. 2). Daft (1999) concurs thus: "followers want to be led, not controlled" (p. 414). Beyond personal characteristics, there are defined roles for leaders and followers to play according to Kelley (1988):

> Followership is not a person but a role, and what distinguishes followers from leaders is not intelligence nor character, but the role they play. . . effective followers and effective leaders are often the same people playing different parts at different hours of the day. (p. 146)

Eales-White stated that effective followers

> Manage themselves well; are committed to the organization and to a purpose, principle or person outside themselves; build their competence and focus their impact for maximum effect; are honest and credible; think for themselves; are assertive and energetic; are risk takers, self-starters and independent problem solvers. (p. 4)

Effective leaders and followers share similar characteristics except for the leadership traits of forward-thinking and being inspirational. Effective followers are those that posses the courage and capacity to assume responsibility, to serve, to challenge, to participate in transformation, and to leave the organization when necessary (Daft, 1999).

The Association for Leadership Development (2002, Section #4) believes in the development of leadership skills at every hierarchical level within an organization: "leadership is not a role belonging solely to the organization's high-ranking officials. *Leadership* is manifested in the characteristics and behaviors of people *throughout* the organization - at all levels." This implies the preparation of all persons for shared leadership which is "a collaborative, emergent process of group interaction in which members engage in peer leadership while working together. . . a logical extension of the expanded decision-making authority that characterizes truly empowered teams" (Cox, Pearce, and Perry, 2003, p. 53). Engagement in collaborative leadership is one of the reasons given by Richardson (2003) for teachers to be prepared in school leadership. Collaborative leadership allows for collaborative decision making and empowerment.

Short and Rinehart (1994) investigated and codified teacher empowerment factors to include decision-making, professional growth, status, self-efficacy, autonomy, and impact. The 38-item School Participant Empowerment Scale (SPES) developed by Short and Reinhart (1992) measures the perceived empowerment in school settings. The Decision-making dimension refers to the teachers' sense of inclusion in critical decisions that affect their work directly. Professional growth relates the opportunity for professional growth and development provided by the school. Status is the sense of esteem received by the teacher from students, parents, community members, other teachers, and administrators. Self-efficacy reflects the extent to which teachers believe that they are able to help students learn. Autonomy is the latitude teachers believe they have in making work-related decisions. Impact is a measure of the teachers' perceived influence on the overall organization and recognition for their accomplishments. Klecker

and Loadman (1998) in an evaluation of the SPES concluded that professional knowledge is another measure of empowerment to be included in the SPES. A teacher who is competent and current in his or her field will have a sense of empowerment.

In an attempt to justify the exploration of leadership within an instructional context Kuchinke (1999) stated

> Instructors impact the climate in a classroom in ways similar to leaders who shape institutions (and vice versa). Instructors influence students, shape their future development, focus their attention on specific tasks, and induct them into the field or profession in a manner that appears to resemble what leaders in institutions do: they influence, initiate, focus attention, set direction, and coordinate activities toward a goal. (p. 209)

Therefore, this suggests that teachers are academic leaders in their classrooms and wider profession, and assessment using leadership measures can be applied not only at the administrative levels but also at the point of instruction. Supporting the universality of academic leadership, Hargrove (2003) noted that for Historically Black Colleges and Universities to maintain academic excellence and recruit quality faculty and staff, academic leadership roles should extend to all levels of the organization.

A constant interchange of professional information whether formal or informal, collegial ways of working and building relationships are seen by Harris (2001) as a mark of an improving school community with a shared purpose. Howe and Stubbs (2001) declared "Teacher leaders work with colleagues within their schools, school districts, and professional organizations to introduce new ideas, support the growth of others, and lead the way toward reform" (p. 284). Kendall Starkweather interviewed by Wenig (1993)

revealed that the leaders that moved the profession from industrial arts to technology education came mostly from the local school technology educators and not from the college/university teacher educators. This highlights the power of leadership from the ground up.

Relationship Between Leadership and Professionalism

From the Richardson study (2003) teachers who underwent a leadership development program were able to have a better understanding of the decision making and implementation actions of administrators, and increased their professionalism with respect to teaching and communication. The concept that leadership training is appropriate for all teachers whether they become administrators or remain as teachers is argued as essential to enable these teacher-leaders to better exhibit collaborative leadership. Richardson recommends that the school improvement role of teachers would be beyond the classroom if leadership is part of the pre-service curriculum for teachers. Richardson recognized that there is a lack of understanding by teachers on the realities of school leadership, both internally and externally. This suggests the need for more exposure to leadership issues for all teachers. Richardson summarizes thus: "If teachers are to contribute meaningfully and substantively to the leadership of the school, the development of teachers as leaders should be a substantial investment for school districts" (p. 204).

Wenig (2002) identified four models or paths to leadership positions [in technology education]: (a) active involvement in professional associations; (b) graduate degree in leadership; (c) becoming expert in a specific area; and (d) leadership development symposium (with follow-up, leader mentor, and placement in leadership

organization). This model presupposes the existence of professional associations, graduate degree programs and leadership academies to support leadership development.

Howe and Stubbs (2001) recognized that even though both leadership development and professional development programs do not have the same outcomes or goals, they have many common elements. Howe and Stubbs stated "Rather than focus on skills, leadership development must take a broader view and attend to personal, as well as professional aspects of leadership" (p. 283), which suggests a holistic view of leadership development.

Leadership Development Systems/Programs

Effective leadership development has to be planned and executed within a framework. Various systems exist, and for targeted groups and, individuals are generally client-directed. They are developed from research theories, experience, and observation and can exist on a wide continuum to include self-help books, seminars, and residential retreats. Figure 2 illustrates the Palus and Drath (1995) model of leadership development. It has three phases: Readiness for Development, Developmental Processes, and Outcomes. The focus is on the development of individuals' potential for leadership within a community of practice. The process however is not considered to be linear nor unidirectional as new meanings and perspectives are formed only after an individual goes through steps that may be a tentative learning process moving between the states of equilibrium and disequilibrium. (Howe and Stubbs, 2001). This is described by Palus and Drath (1995) as "a process of 'getting outside the box' with respect to one's worldviews" (p. 26). The readiness of an individual for leadership development is evaluated with

respect to internal factors (such as personal health, and stability of one's personality) and external factors (such as family responsibilities, and stressful work situation).

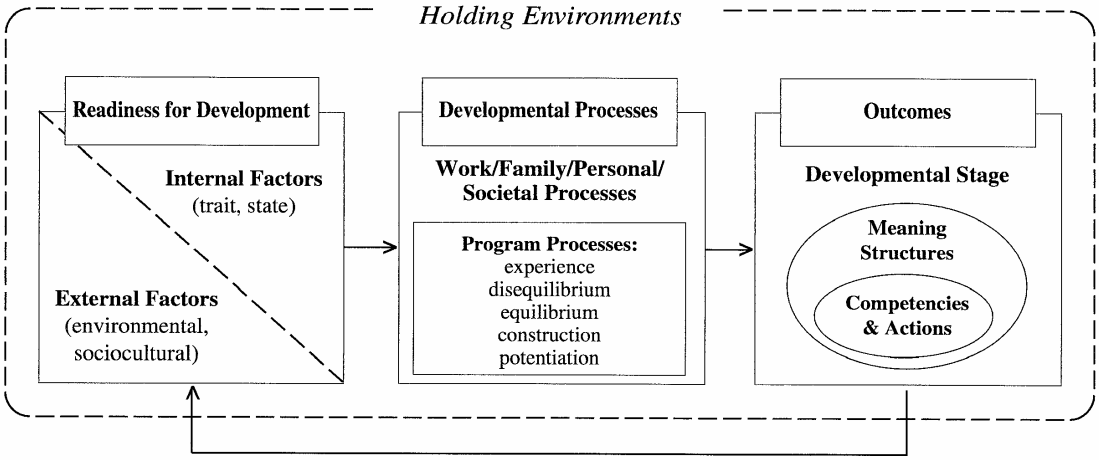

Figure A1. Leadership Development Program Model

Figure 2. Leadership Development Program Model.

Adapted from Palus, C. J. & Drath, W. H. (1995). Evolving Leaders: a model for promoting leadership development programs. Center for Creative Leadership, Greensboro, NC. Appendix A (p. 37)

Palus and Drath (1995) placed the leadership the development process in a time frame:

> Leadership development is best considered over a span of years rather than (only) weeks and months. Short-term results from programs are possible and may be desirable, but the absence of obvious and dramatic short-term results does not necessarily indicate the absence of development. The pragmatics of outcome measurement have led to conceptions of development that emphasize the short

> term at the expense of understanding long-term development. . . Programs do best when they incorporate some form of long-term support and follow-up. (p. 26)

Another form of leadership preparation technique involves the use of narratives or story telling. According to Danzig (1999) stories provide the opportunity for further interpretation of data and reflection on leadership. Stories are seen as a way of representing experience and are subject to examination and reflection. Danzig suggests that stories of leadership are dramas that unfold over time, where the leader is the prime character. Meanings behind everyday actions can be revealed through stories. These meanings "typically go unseen" (p. 119) and analyzing the stories of experienced leaders promotes learning when the underlying motives and theories behind the actions are examined.

Despite attending leadership development sessions to increase one's knowledge base on leadership, actual leadership growth comes from experience. Clark and Clark (1999) noted that corporations gave challenging assignments to prospective leaders. These assignments, progressive in nature, allow leaders-in-training to understand themselves in terms of confidence, limitations, courage, humility, adapting to change, and reliance on others. The role of a mentor is critical in helping to teach important leadership lessons.

In most states in the USA, time for professional development is allocated from a certain number of days in the school calendar. To keep valid teaching licenses, some teachers are required to earn continuing education units (CEUs) through varied lifelong education and professional development activities that include on-site work, education conferences, and pursuing advanced degrees (Pritchard & Marshall, 2002).

A study on staff development in Trinidad found that university-led staff development programs were more satisfactory than those done by schools and subject associations. Teachers were content with administrator-planned development programs and only experienced teachers and those with extra qualifications wanted to be involved in the decision-making process regarding staff development (Melville, 1995). Cummins' (1997) study of continuing professional development of technical/vocational education administrators in Barbados, found that administrators with less than B. A. degrees showed a greater need for preparation than administrators with B. A. or graduate degrees. A study on teacher empowerment of career and technical education teachers in the USA supported the possibility that education level has an important role in teacher empowerment (Scibner, Truell, Hager and Srichai, 2001). The researchers recommend continuing professional development and education to improve teacher empowerment. No similar studies exist for Jamaica concerning leadership and professional development issues for technical/vocational education teachers.

Love's (2000) study on availability of qualified candidates for secondary principalship in Arkansas, identified factors that encouraged or discouraged applicants. Leadership opportunities in school districts and district's academic reputations were the encouraging factors. Job–related stress and time commitment for after-school activity supervision were the discouraging factors. Assuming this school condition is not universal, what are the encouraging and discouraging factors for industrial technology teachers taking up principalships in Jamaica?

Leadership Measurement and Assessment

Researchers have attempted to develop instruments that can quantitatively measure and predict leadership skills. Factors making up each test were based on observations over time of various leaders in the field, continually validated and updated for different populations and situations. Each instrument however is based on a different philosophy of leadership. Alimo-Metcalfe and Alban-Metcalfe (2001) have identified the paucity of qualitative techniques as a concern among researchers given the social nature of leadership. Parry (1998) argued for complementary approaches of quantitative and qualitative research rather than a competitive one when researching leadership. Alimo-Metcalfe & Alban-Metcalfe suggested that it was important to distinguish between models of leadership that are determined from (a) interviewing top managers, (b) perceptions of mangers construing top level managers, and (c) perceptions of managers construing immediate supervisors. They believe understanding the social distance between the assessed and assessor is important for interpretation. Self assessments are based on an individual's perception of themselves and their reality. Self assessments however, have the disadvantage of generating halo effects in the respondents who rate themselves more highly than they ought to (Alimo-Metcalfe & Alban-Metcalfe, 2001).

The Multifactor Leadership Questionnaire (MLQ) was developed by Bass and Avolio (1990) to measure the full range of leadership styles and behaviors that included transformational, transactional and laissez-faire behaviors. The MLQ is widely used in research and has been demonstrated to be consistent. However, Carless (1998) argued that the MLQ does not measure distinct transformational leader behaviors but instead assesses a single higher order construct of transformational leadership. It is argued that

the MLQ exaggerates the importance of leaders' behavior and removes attention from other interpersonal and situational factors (Pittenger, 2001).

The Leadership Attribute Inventory (LAI) is a 37-item inventory on leader attributes developed by Moss, Lambrecht, Jensrud, & Finch (1994). The LAI requires five persons (peers and supervisors) to assess the leadership attributes of one individual. Although sensitive to reflect changes in self-perception, the LAI would need refinement if it were used for diagnostic purposes (Moss, Leske, Jensrud, & Berkas, 1994). Table 1 details the factors identified with the LAI inventory.

Table 1

Attributes assessed by the 'Leader Attributes Inventory'

Networking	Insightful	Visionary
Ethical	Planning	Accountable
Motivating others	Sensitivity, respect	Initiating
Team building	Energetic with stamina	Persistent
Coaching	Tolerant of frustration	Organizing
Decision-making	Information management	Problem-solving
Achievement-oriented	Time management	Delegating
Adaptable, open to change	Dependable, reliable	Even disposition
Enthusiastic, optimistic	Conflict management	Stress management
Courageous, risk-taker	Personal integrity	

Table 1 *(continued)*

Communication (oral, listening, written)	Intelligent with practical judgment
Ideological beliefs appropriate to the group	Confident, accepting of self
Tolerant of ambiguity & complexity	Willing to accept responsibility
Appropriate use of leadership styles	Committed to the common good

Note: Adapted from Moss, J., Jr., Leske, G. W., Jensrud, Q., & Berkas, T. H. (1994). An evaluation of seventeen leadership development programs for vocational educators. *Journal of Industrial Teacher Education, 32*(1), 26-48.

The Leadership Practices Inventory (LPI) developed by Kouzes and Posner (1988) is a 30-item 10-point scale that has appeared to be reliable and valid in performing formative evaluations of leaders at various levels of an organization. Six items measure each of the following five factors: Challenging the Process, Inspiring a Vision, Enabling Others to Act, Modeling the Way, and Encouraging the Heart. There are versions for self assessment and for observing others. It is estimated to take 15 minutes to complete the questionnaire.

The selection of an established, valid and reliable instrument depends on its suitability to the problem under investigation. Convenience, ease of use, time, and nature of respondents are other selection considerations. Research studies use a combination of instruments, adapted where necessary to increase reliability and validity of the findings.

Self-Perception Theory

Perception is related to a person's cognitive ability to, among other things, reason, form concepts, and solve problems. Constructivist theorists posit that perception is influenced by experience and expectation as constructed by the person based on past and

current knowledge (Kearsley, 2003). While other theorists believe it is the stimulus array that determines what we perceive. Self-perception is a process in which individuals seek to understand their own attitudes and feelings through observation of their behavior and the surrounding circumstances. Self-perception assumes that the respondent is aware of their self, motives, and the situation/environment on which they are reflecting. A further assumption is that individuals draw inferences about themselves in a similar manner as they would draw inferences about other persons. If an individual judges that his/her behavior is freely chosen, the individual infers that the behavior is a reflection of his/her attitudes and feelings (Roskos-Ewoldsen, 2004).

Perception is a pervasive feature of one's conscious life. It is important to "one's understanding of consciousness itself and one's conception of one's place in the natural world" (Noe and Thompson, 2002, p. 12). How do industrial technology teachers see themselves fitting into their world? It was expected that industrial technology teachers would reflect on their current and past experiences and thus arrive at a reasoned judgment of their personality, leadership experiences, and aspirations.

Theoretical Framework and Summary

This chapter presented the literature surrounding Leadership, its definitions, models, conceptions, its measurement and development. Leadership is a complex construct and has many definitions depending on the purposes being served (Lussier & Achua, 2001). Both leaders and followers are important in any organization and their relationship is important to the success of the organization; thus shared leadership as posited by Barrett (1998) is important for empowerment of the members of an organization.

Leadership can be conceptualized at the individual, group or organizational levels. Leadership can also be seen in terms of behaviors or traits of the individual. Situational Leadership advocates the choice of leadership style depending on the situation and the nature of the follower. The Big Five personality theory is an amalgamation of key personality traits that are identifiable in all leaders, although not present in the same amounts. Self-efficacy of the followers is a vital aspect of leadership. This is conceptualized as transformation (Bass, 1998) or empowerment (Richardson, 2003).

Although the focus is different, leadership and professional development are symbiotically related as they affect each other. Leadership development opportunities and professional preparation of teachers are tied to pre-service and graduate programs. Leadership Development Systems/Models must consider the teacher and his/her readiness for training, and should include story-telling; be a part of continuing education; and provide time for this to take place. Leadership Measurement/Assessment methods are always under development to improve their assessment and predictive ability.

The selection of the industrial technology teachers and department heads, and not the principals as the main population of the study is to measure the "readiness for development" factor (Palus & Drath, 1995) of the larger pool of industrial technology teachers. Readiness for development is based on internal factors (health, personality) and external factors (family responsibility, stressful work situation).

Professional organizations have a role to play in ensuring the survival and sustainability of the interests of industrial technology teachers. This is an avenue to provide leadership practice, and professional development so teachers would have the experience, competence, and confidence to pursue other leadership roles in the general

school setting. A capable group of industrial technology teachers (as empowered teacher-leaders) is essential for success as Harris (2001) stated

> For school improvement to occur school leaders need to know the strengths and weaknesses of staff and must invest in their growth and development. In the current climate of rapid change, the task facing school leaders is much more complex and diverse. Leaders therefore must become more sophisticated in their ability to manage change and in sustaining a culture of learning for students and teachers. However this cannot be achieved in isolation but depends on building a school community that is inclusive and values, above all, individual development and achievement. (p. 22)

Leadership development is a part of professional development and a key factor or determinant of how a collective body operates and how effective it is. An understanding of the leadership attributes of industrial technology teachers should consider the incentive and disincentives to leadership (Love, 2000), the educational level essential for empowerment (Scribner et al; 2001, Harris, 2001), involvement in professional associations (Wenig, 2002), key personality traits and motives (Lussier & Achua, 2001; Winter, 2002), and their readiness for development (Paulus & Drath, 1995). This understanding of the disposition of the individuals and the existing environment of the Jamaican industrial technology education profession necessitates investigation that is important in charting strategies and direction for action.

CHAPTER THREE

Methodology

The purposes of the study were: first, to create baseline data for establishing leadership development programs for high school industrial technology teachers in Jamaica; and second, to provide insight into the environmental and personal factors supporting the creation of a professional association for industrial technology teachers. Specifically, the study attempted to:

1. Identify and measure the perceived effectiveness of existing leadership development programs for industrial technology teachers in the schools.
2. Identify and describe environmental and personal factors that support or hinder leadership development and growth of industrial technology teachers.
3. Compare the leadership attributes of groups of industrial technology teachers based on demographics and education.

Research Question

What is the future leadership potential of industrial technology teachers as perceived by industrial technology teachers in selected high and technical high schools in Jamaica?

In order to answer the main research question, the following sub questions guided the development of the questionnaire and interview schedule:

1. What is the association between education, college of study, age, years of teaching experience, other experiences, and school type on industrial technology teachers' self-perceptions of leadership attributes?

2. What are the environmental and personal factors that hinder or help industrial technology teachers' leadership development and growth?
3. What are the leadership preparation needs as perceived by industrial technology teachers?
4. What is the role and contribution of Jamaican education and training administrators, professional associations, and teacher training institutions in leadership development of industrial technology teachers?

Research Design

This study was a descriptive survey. It used multiple or mixed methodologies including questionnaires and interviews. The research question being answered determined the type of methodology used. The importance of descriptive research is posited by Gall, Borg and Gall (1996) who stated "unless researchers first generate an accurate description of an educational phenomenon as it exists, they lack a firm basis for explaining or changing it" (p. 374). Mixed methods studies are "those that combine the qualitative and quantitative approaches into the research methodology of a single study or multiphased study" (Tashakkori & Teddlie, 1998, p. 17-18). Richardson (2003) in a study to understand teacher participants' perceptions of their professional responsibility used a combined quantitative and qualitative method. The qualitative data revealed insightful data from write-in items included in the questionnaire for coding and constant comparative analysis as described by Glaser and Strauss (1967). Constant comparative analysis involves examining data, grouping them according to themes and generating new theory or concepts that emerge from the data. Pritchard & Marshall (2002) used the qualitative procedure of constant comparative analysis and quantitative analyses in their

study of healthy and unhealthy school districts, which allowed for in-depth analysis that one method by itself, could not achieve.

Pritchard & Marshall noted that one of the limitations of some quantitative scales is that they offer pre-determined or structured responses that are not always satisfactory in painting a full picture. Therefore, in order to understand the environment in which industrial technology teachers work, open-ended questions would allow for qualitative responses.

Self-reported data has pitfalls associated with this data collection methodology. According to Hogan and Hogan (2002) "Personality is studied using self reports of actors, which are inherently self-enhancing and hard to verify" (p. 77). The main drawbacks of self-reports is *response sets*, that is the tendency for a respondent to present themselves in a certain manner: acquiescence, agreeing with items without regard to their content; central tendency bias, selecting the average or middle response scale; and deviance or extremity bias, tendency to respond in non typical or deviant way. (Tashakkori & Teddlie, 1998; Gall, Borg & Gall, 1996). However, despite these drawbacks, it is a widely used and efficient method of collecting data on attitudes and perceptions.

Population and Sample

The Ministry of Education, Youth and Culture (MOEYC) classifies teachers as Trained University Graduate, Untrained University Graduate, Trained College Graduate, Untrained Tertiary Level Graduate, Trained Instructor, and Untrained Secondary School Graduate (MOEYC, 2003b). There are 116 public high and 14 technical high schools offering 17 named industrial technology/vocational subjects as shown in Table 2. The

total population consists of 741 teachers of industrial technology or vocational subjects in the high and technical high schools (grades 7-11) in Jamaica (Ministry of Education, Youth and Culture (MOEYC), 2003c).

Table 2

Industrial Technology Subjects Taught in High and Technical High Schools

Subjects	
Auto mechanics	Industrial Arts
Building Engineering	Electricity/Electronics
Building Technology	Electrical Technology
Cabinet Making	Mechanical Engineering Tech.
Carpentry/Joinery	Metals
Drafting	Plumbing and Pipe Fitting
Electrical Installation	Technical Drawing
Masonry	Wood Work
Machine Shop and Welding	

Source: MOEYC (2003c)

The Ministry of Education, Youth and Culture administers the education system through six geographic regional offices as shown in Figure 3. Regions 1 and 6 were selected for this study because they are the two largest zones in terms of population, and are geographically connected which was convenient for data collection that involved site visits. Regions 1 and 6 have 342 industrial technology teachers representing 46% of the entire population.

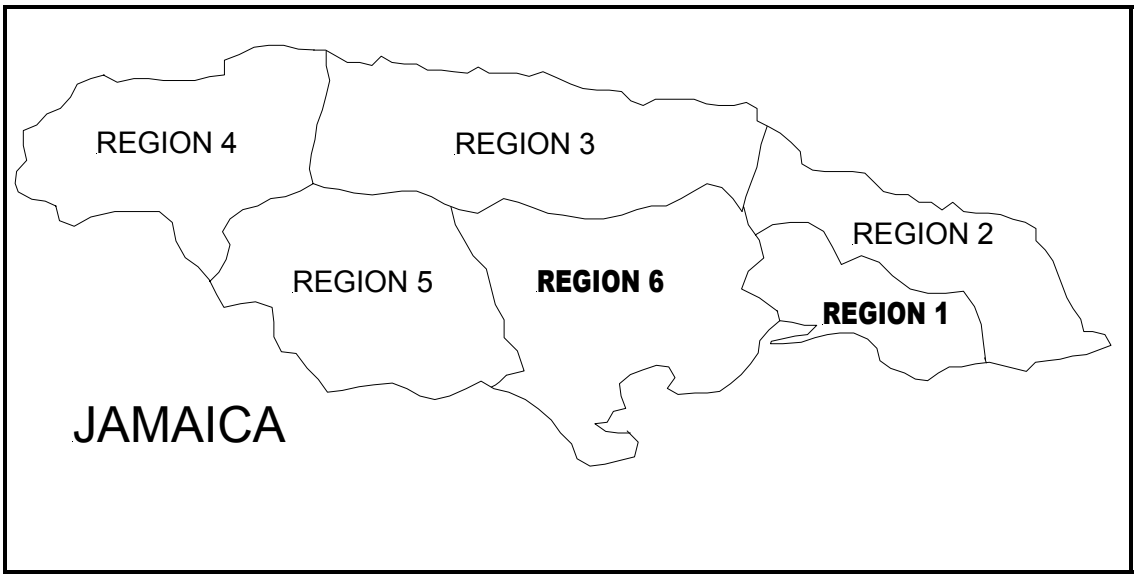

Figure 3. Administrative regions of the Ministry of Education, Youth and Culture

The sample was determined using a stratified random sampling system. All public high schools within Regions 1 and 6 were listed in numerical order based on the school number assigned from the MOEYC database. The schools that did not have an industrial technology/vocational program to the CXC CSCE level or NVQ-J were removed from the list. The number of schools remaining in each zone were noted and 35% of that number was calculated and rounded to the nearest whole number to determine the raw number of schools to be in the sample from each zone. Technical high schools for the sample were randomly selected at a higher percentage (66.6%) because they are fewer in number as they represent the core of technical education at the secondary school level. A random number table was used to select the sample schools from each zone. A list of the schools in the population is in Appendix A.

The selection process resulted in 23 high schools and 4 technical high schools as the sample schools from which the respondents would be solicited. Table 3 shows the sample of 148 industrial technology teachers from both types of schools.

Table 3

Population and Sample of Selected Public High and Technical High Schools

Zone/Region	Number of Schools		Sample Schools*			Teachers in Sample	
	High	THS	High	THS	Total	High	THS
Kingston/1	34	3	12	2	14	41	36
Old Harbour/6	32	3	11	2	13	51	20
Sub Total	66	6	23	4	27	92	56
Total	72					148	

Key: High = High school THS = Technical High School
* High @35% and THS @ 66.6%

This study did not differentiate between schools classified as rural or urban by the MOEYC. It is the position of the researcher that locale does not preclude leadership opportunity, leadership practice or leadership potential of industrial technology teachers, as all classes of schools are located in both rural and urban areas. However, comparative analysis of the overall differences between teachers at the technical high schools and high schools were made irrespective of their geographic location.

In addition to the survey of industrial technology teachers, selected teacher educators, administrators, policy makers, and supervisors of Technical and Vocational education were interviewed to obtain policy and administrative perspectives of the leadership development environment for industrial technology teachers.

Instrumentation

The questionnaire used to collect information from the industrial technology teachers was adapted from two self-assessment exercises on leadership potential, and personality (based on Big Five Personality) developed by Lussier & Achua (2001), a school environment scale developed by Wenig & Wenig (1992), and items developed by the researcher. The questionnaire had a 6-point Likert scale without neutral choice for personality factors, a 5-point Likert scale with neutral choice for school environment, fixed items, closed and open-ended questions. (See Appendix B)

The 6-point Likert-type scale was coded +3, +2, +1, -1, -2, -3 to reflect "Strongly Agree" to "Strongly Disagree". The 5-point Likert-type scale was coded +1 to +5 to reflect "Low" to "High". One item (# 33) which referred to work stress on the 5-point Likert-type scale was reverse coded for data analysis. The expectation is that work stress is negatively related to the other factors.

The questionnaire was divided into four parts:

Part A was designed to determine the respondent's Personality, Leadership Potential, Attitude to Professional Development, and Leadership Experience. The questionnaire, based on assessment exercises by Lussier & Achua (2001) items were categorized thus:

- Personality traits (15 items)
- Leadership potential (7 items)
- Leadership experience (2 items)
- Attitude to professional development (4 items)

Respondents were asked to rate the extent of their agreement or disagreement with statements on the scale: Strongly Agree, Agree, Slightly Agree, Slightly Disagree, Disagree, and Strongly Disagree. Sample items are shown in Figure 4.

1. I step forward and take charge in leaderless situations.
2. I am concerned about getting along well with others.
3. I have good self-control; I don't get emotional and get angry and yell.
4. I'm dependable; when I say I will do something, it's done well and on time.
5. I try to do things differently to improve my performance.

Figure 4. Sample items from Part A of questionnaire

Part B concerned the school environmental context. The questions were adapted from an environmental context scale developed by Wenig & Wenig (1992) and used by Williams (2001) in a study on the leadership practices of award winning local school technology education teachers. Sample questions were rated on a scale of Low = 1 to High = 5 are shown in Figure 5.

29. How would you characterize the quality of communication among your school's teaching staff?
30. Rate the amount of time you have to prepare for class?
31. Rate the image of industrial tech/voc education in your school.
32. How much time do you spend on community activities?

Figure 5. Sample items from Part B of questionnaire

Part C included the open-ended questions that allowed for free responses by respondents to determine (a) what they perceive as their education, training, and other needs for their leadership preparation, (b) their experience in being pursued for leadership posts and their response, and (c) heads of departments' understanding of the system for selecting and preparing new leaders to their post. Figure 6 shows examples of questions used in Part C of the questionnaire.

1. If you were to become head of department/section or principal/vice principal in the future, what preparation (experience, training, education, etc) do you think you would need to effectively perform that role? Please be as specific as possible.

4.Have you ever been actively pursued to lead or "volunteered" to be on a committee at school or elsewhere? Describe the situation and how you responded.

Figure 6. Sample items from Part C of questionnaire

Part D of the questionnaire gathered information on personal demographics, education history, and professional experience. These data included:

- Age range, member of any civic/ social /religious body/ sport club (Kiwanis, Rotary, Citizens Association, Church, etc) and position held (if any).
- Academic qualifications, College/University attended.
- Teaching position, teaching experience, Industrial /Other work (non-teaching) experience, MOEYC classification, courses taught, and grade level. Involvement in professional association.
- Open comments.

Validation

The questionnaire for industrial technology was reviewed for face and content validity by professors of technology education, leadership, and education administration, an external technology education professor, a Jamaican industrial technology lecturer, and a classroom teacher with an interest in professional development. An evaluation sheet was attached to the questionnaire for reviewers to comment (See Appendix B). Based on the feedback received, the original questionnaire was revised to reduce the number of items from 74 to 52, change layout, revise items, and modify language to make it culture-appropriate. The researcher's dissertation committee advisors reviewed the interview schedule. The instruments: interview schedules and questionnaires were submitted to the North Carolina State University's Institutional Review Board, and further adjustments were made to reduce respondents' potential professional risk.

Pilot Test

After obtaining permission from two principals, one each from Region 2 and Region 6, the questionnaire was sent via electronic mail to the principals for further distribution to 14 industrial technology teachers. Nine teachers returned the pilot questionnaires and evaluation sheets (See Appendix B). The aim of the pilot study was to clarify the wording and structure of the questionnaire. The average time for responding to the questionnaire was 20 minutes. Comments from the pilot group were also taken into consideration from which further refinements were made before distribution and administration of the questionnaire.

Data Collection

Data collected from industrial technology teachers was done using the questionnaire. Face-to-face and telephone interviews, and electronic mail were used for data collection from administrators, teacher educators and a professional association leader.

It was the original intention of the researcher to use mail-in questionnaires to obtain data from the industrial technology teachers. However, other researchers familiar with the Jamaican research culture and using the postal system for data collection from overseas, recommended direct visitation to the various sites.

The Chief Education Officer of the MOEYC was contacted to obtain permission to access the schools in the sample. After official permission was granted, the principals of schools in the sample were contacted by telephone for permission to gain access to their industrial technology teachers to participate in the study (See Appendix B). Assurances of confidentiality and anonymity of the school's identity was given to the principal. Where no access was initially granted by a school's principal, a facsimile letter was sent, followed by a personal visit to the principal.

At sites where access was gained, arrangements were made to identify a convenient time to visit the site during the school day. The researcher took a cover letter detailing the purposes of the research for the principal and individual packets for each industrial technology teacher for further distribution by the principal or his/her designee. The packet included a letter to the teacher, the questionnaire, a small token (a ball point pen), a self-addressed envelope in which to place his or her completed questionnaire, and

a self-addressed return postcard for the teacher to indicate his/her interest in obtaining a summary of the results from the study. (See Appendix B)

The researcher distributed the packets at each school on an arranged day and collected the completed questionnaires on another day. The purpose of the study and protocols for conducting the study was again explained to the principal or his/her designee. In the few cases where the researcher interacted with potential respondents, it was emphasized that they were not obligated to participate in the study, and that no repercussions would result from non-participation. Assurances of confidentiality and anonymity were stated in the letter and repeated verbally to the respondents. The researcher assured the teachers that none of the sealed envelopes would be opened until all questionnaires from all schools were received. On receiving the questionnaires, they were placed randomly into a large box so as not to track individual teachers' questionnaires. Postcards were collected in a separate envelope at the time of pickup.

Questionnaires were coded to track the school type (high school or technical high school) and the Region (1 or 6). The postcards were not coded. School names were not recorded. Logistics and the coding system did not allow for follow-up of specific teachers at a particular school who did not submit their questionnaire with the pool of others.

After all sites were visited and questionnaires collected, all envelopes were opened. Whenever postcards were inadvertently included with the questionnaires, they were separated and shuffled with the other postcards. No attempt was made to link the schools and names on the postcards with questionnaires.

At five sites, it was not possible to return and collect the completed questionnaires, and therefore stamped self-addressed envelopes were left with the

teachers (as was in the original collection design). These questionnaires were mailed to a local address and after a two week wait were packaged unopened and sent via courier to the researcher. The same process of not linking questionnaires to schools was applied to the mailed in questionnaires.

Qualitative Instrumentation and Validation

In qualitative research, the researcher is the main research instrument for data collection and interpretation (Leedy, 1997). After consultation with a qualitative researcher, the validation process involved the declaration of potential bias, and considered ethical issues affecting the research.

The researcher, an industrial technology teacher, knew all the respondents interviewed on a professional basis. There is mutual respect between the researcher and interviewees. The researcher also had a stake in the outcome of the study in understanding the entire leadership environment of industrial technology teachers. This declared background although considered a slight bias, instead translated into insight for understanding the issues raised and to probe into questions that would otherwise go unanswered. In order to maintain objectivity, notes were taken during the interviews and the entire interviews were recorded, transcribed and later verified by the interviewees.

Interviews and Electronic Mail

Semi-structured interviews were conducted using an interview schedule (See Appendix C) with the target respondents shown in Figure 7.

Respondent	Method
Senior Administrator	Face-to-face interview
Project Director	Face-to-face interview
Academic Director	Telephone interview
Senior Lecturer	Telephone interview
Director Professional Development Unit, MOEYC.	Electronic mail
President, JATVET.	Face-to-face interview

Figure 7: Interviewees and method of interview.

Targeted interviewees were contacted by telephone to solicit their support. They were then sent the topics and questions (without prompts) ahead of schedule via electronic mail. The interviewees were asked to respond via electronic mail to confirm their willingness to participate. A day and time was arranged at the interviewee's convenience. Telephone and face-to-face interviews were approximately 45 minutes in duration and recorded with the interviewees' permission and later transcribed, verified by the interviewee, coded and analyzed. Interview schedules are shown in Appendix C. Examples of these questions are shown in Figure 8.

1. What is your philosophy of leadership?

2. What is the contribution or role of your office/ department/ institution in developing leaders for the industrial technology education profession?

3. Is there a formal leadership plan for your program/department?

Figure 8: Sample questions from interview schedule.

Table 4 provides a description of the variables used in the study. Definitions of variables and sub variables are in shown in Appendix D.

Table 4

Description of Variables

Variable name	Type	Research Sub-Question	Measure	Scale
Leadership Potential	DV	1 and 2	Teacher self-reported based on Lussier and Achua (2001)	Continuous
Age Range	IV	1	Teacher self-reported age range (4) levels	Nominal
Qualification	IV	1	Teacher self-reported qualification (4) levels	Nominal
Classification	IV	1	Teacher self-reported classification (6) levels	Nominal
College	IV	1	Teacher self-reported college	Nominal
Teaching Experience	IV	1	Teacher self-reported Teaching Experience years range (5) levels	Nominal
School Type	IV	1	Researcher determined code (THS/HS)	Nominal
Industrial Experience	IV	1	Teacher self-reported Industrial Work Experience. Yes/No.	Nominal
Leadership Experience	DV	1 and 2	Teacher self-reported leadership experience	Continuous

Table 4 *(continued)*

Variable name	Type	Research Sub-Question	Measure	Scale
Surgency	IV	2	Teacher self-reported based on Big 5 personality scale by Lussier and Achua (2001)	Continuous
Conscientiousness	IV	2		Continuous
Agreeableness	IV	2		Continuous
Adjustment	IV	2		Continuous
Openness to Experience	IV	2		Continuous
Attitude to Professional Development	IV	2	Teacher self-reported based on researcher scale.	Continuous
Mentored	IV	2		Nominal
Member Civic Religious	IV	2	Teacher self-reported based on researcher scale.	Nominal
Leader Civic Religious	IV	2		Nominal
School Environment	IV	2	Teacher self-reported based on Wenig & Wenig (1992) environmental context scale.	Continuous
Work Stress	IV	2		Continuous
Communication	IV	2		Continuous
Time	IV	2		Continuous
Autonomy	IV	2		Continuous
TVET Image	IV	2		Continuous
Community Activity	IV	2		Continuous

Key: IV = Independent variable DV = dependent variable

Data Analysis

Measures of central tendencies (mean, frequency, percentage, standard deviation) were done for the data collected according to the demographics of teaching experience, age, member of any civic/ social /religious body, sport club, industrial /other work (non-teaching) experience, college/university attended, academic qualifications, MOEYC classification. Open-ended responses on leadership needs, leadership experience, and other open comments were recorded verbatim and themes extracted, summarized and entered in frequency tables (Creswell, 2003).

One-way and Two-way Analysis of Variance (ANOVA) was done to determine the effect of the multiple means of the groups within the independent variables on the dependent variables of Leadership Potential and Leadership Experience.

The interview transcripts and open-ended questions were analyzed using constant comparative analysis. Common themes were identified to bring deeper understanding to: (a) the constraints and incentives to leadership development, (b) leadership development practices in pre-service teacher education programs, and (c) relevant leadership development issues not gleaned from the objective questionnaire. The verified transcripts were analyzed using the constant comparative method. Themes were noted in the margins. The themes were then grouped, and regrouped until common themes emerged. Factual information given by the interviewees was classified for comparison with the teachers' open responses on the questionnaires.

Summary

This chapter described the methodology used in this study. It is a mixed methodology study using both descriptive and qualitative study methods. The four-part

questionnaire had Likert-type, open-ended, and closed items designed to collect perceptions of leadership potential, leadership experience, attitude to professional development, the school environmental context, and demographic data. It was validated through expert review, pilot tested and refined before implementation. Twenty-seven schools were randomly selected from two geographic regions and after formal protocols and gaining access, the potential 152 teachers in the sample were solicited to participate.

Data collection procedures were designed to ensure confidentiality and anonymity of respondents. Quantitative data were entered into JMP 5 software and analyzed for means, frequencies, percentages, and standard deviations. F-tests were done to determine significant effects of independent variables on the dependent variables of Leadership Potential and Leadership Experience. Where the F-test and p-values at the 0.05 level suggested significant differences between the means, a Tukey-Kramer HSD test was performed to determine where the difference existed. Qualitative data was collected from open-ended questions on the questionnaires and from interviews. Interviews were done with teacher educators, administrators and a professional association leader. Transcripts were analyzed using the constant comparative analysis method and verified by the interviewees. The researcher, as the main instrument of data collection, and analysis identified potential bias and methods used to maintain objectivity.

CHAPTER FOUR

Findings

This study sought to determine the future leadership potential of industrial technology teachers as perceived by industrial technology teachers in selected high and technical high schools in Jamaica. Specifically it sought to identify and understand environmental and personal factors that support or hinder leadership development and growth. This involved a review of the existing leadership development programs and factors supporting the creation of a professional association for industrial technology teachers. This chapter reports the findings from the survey and interviews. The demographic data is presented first, followed by quantitative data, and finally the qualitative data.

Research Question

What is the future leadership potential of industrial technology teachers as perceived by industrial technology teachers in selected high and technical high schools in Jamaica?

In order to answer the main research question, the following sub questions guided the development of the questionnaire and interview schedule:

1. What is the association between education, college of study, age, years of teaching experience, other experiences, and school type on industrial technology teachers' self-perceptions of leadership attributes?
2. What are the environmental and personal factors that hinder or help industrial technology teachers' leadership development and growth?
3. What are the leadership preparation needs as perceived by industrial

technology teachers?

4. What is the role and contribution of Jamaican education and training administrators, professional associations, and teacher training institutions in leadership development of industrial technology teachers?

Population, Sample, and Return Rate

The sample size was determined from a sample size table developed by Krejcie and Morgan (1970). The target sample size of 181 was not met due to non-access to four schools and the discrepancy between the actual number of teachers in the sample schools and information given in the Ministry of Education, Youth and Culture (MOEYC) list.

Questionnaires were distributed to 152 industrial technology teachers in 27 randomly selected public technical high schools and high schools in Regions 1 and 6, which had industrial technology programs at grades 10 and 11. This sample represents 44.4% of the total industrial technology teacher population in Regions 1 and 6. One hundred and nine questionnaires were returned (71.71%); six were rejected leaving 103 useful questionnaires representing a return rate of 69.95%. The questionnaires rejected had either insufficient information to indicate that the respondents were industrial technology teachers or were inadvertently completed by teachers who were not in the target population. The breakdown is shown in Tables 5 and 6.

Table 5

Population and Sample

Total Population	Sample size and proportion
342	152 (44.4%)

Table 6

Questionnaire Distribution and Return Rate

	Questionnaires									
Region	Distributed		Returned		Rejected		Useful		Return Rate	
	High	THS	High	THS	High	THS	High	THS	High	THS
1	41	36	32	31	3	3	29	28	70.7	77.8
6	51	20	31	15	-	-	31	15	60.8	75
Sub Total	92	56	63	46	3	3	60	43	65.8	76.4
Total	148		109		6		103		69.59	

Key: HS= High School THS= Technical High School

Table 7 presents data on several demographic factors. The number of industrial technology teachers in the final sample was closely matched by region. There are 52.4% in Region 1 (Kingston) and 47.6% in Region 6 (Old Harbour). A greater proportion of industrial technology teachers in the sample are from the high schools (58.2%) while 41.8% are from the technical high schools. Over 60% of the teachers in the sample are 40 years old and below. Approximately 31% and 30% of the teachers in the sample are in the 31-40 and 30 & under year age range respectively. The majority of the respondents (55.3%) are graduates from the Vocational Training Development Institute (VTDI). The University of Technology (UTech) accounts for 29.1% of the graduates. The number of VTDI graduates is almost double the number from UTech and is almost five times the number of graduates from Mico Teachers College (11.7%).

The Diploma is the qualification possessed by approximately 64% of the respondents. This is over four times the number of respondents with a Degree (13.6%) or Certificate (11.7%). The MOEYC has six classifications for teachers. The largest proportion of the respondents are classified as Trained Instructors (45.6%). This is more than double the number of those classified as Trained College Graduate (21.4%) or Trained University Graduates (17.5%). The vast majority of the respondents were certified as receiving teacher or instructor training of some type (84.5%). Approximately 60% of respondents have 10 years or less teaching experience. Half of this number has five years or less teaching experience.

Table 7

Distribution of Population

N = 103	Frequency	Percentage
Region		
Region 1	54	52.4
Region 6	49	47.6
School Type		
High School	60	58.2
Technical High	43	41.8
Age Range		
30 & under	31	30.1
31-40	32	31.1
41-50	26	25.2

Table 7 *(continued)*

N = 103	Frequency	Percentage
51+	8	7.8
Not stated	6	5.8
College		
VTDI	57	55.3
UTech	30	29.1
Mico	12	11.7
Other	1	1.0
Not stated	3	2.9
Qualification		
Statement	5	4.9
Certificate	12	11.7
Diploma	66	64.1
Degree	14	13.6
Not stated	6	5.8
Classification		
Trained Instructor	47	45.6
Trained College Graduate	22	21.7
Trained University Graduate	18	17.5

Table 7 *(continued)*

N = 103	Frequency	Percentage
Untrained University Graduate	4	3.9
Untrained Tertiary Level Graduate	2	1.9
Untrained Secondary School Graduate	2	1.9
Not stated	8	7.8
Teaching Experience (years)		
0-5	30	29.1
6-10	31	30.1
11-15	9	8.7
16-20	15	14.6
21+	12	11.7
Not stated	6	5.8

Quantitative Data Analysis

Quantitative data were entered into JMP 5 software and analyzed for means, frequencies, percentages, and standard deviations. One-way and two-way ANOVAs were conducted to determine if there were any effects of the independent variables on the dependent variables of Leadership Potential and Leadership Experience. Where the F-test and p-values at the 0.05 level suggested significant differences between the means, a Tukey-Kramer HSD test was performed to determine where the difference existed.

Research Sub-Question 1

What is the association between education, college of study, age, years of teaching experience, other experiences, and school type on industrial technology teachers' self-perceptions of leadership attributes?

Table 8 illustrates the means and standard deviations for the independent variables of Age Range, Qualification, College, Classification, Teaching Experience, Industrial Experience, and School Type presented against the dependent variables of Leadership Potential and Leadership Experience.

Based on means of Age Range, the teachers in the 30-40 age range had the highest ranked Leadership Potential and mid-range Leadership Experience. The teachers in the 30 and under age range had middle ranked mean for Leadership Potential and one of the lowest ranked means for Leadership Experience.

The teachers with Certificate qualification had the highest ranked mean for Leadership Experience but the lowest ranked mean for Leadership Potential. The teachers with degree qualification had the highest ranked mean for Leadership Potential and second highest ranked mean for Leadership Experience. Diploma qualification ranked mid range means for both Leadership Experience and Leadership Potential.

Trained College graduates were the only trained teachers ranked with high means for both Leadership Potential and Leadership Experience. Trained University Graduates had the least ranked Leadership Experience means. Both UTech and VTDI graduates had the two highest ranked means for Leadership Potential, while they occupied the two lowest ranked means for Leadership Experience.

Teachers with 6-10 years teaching experience had the highest ranked means for Leadership Potential and were in the lower ranks of Leadership Experience means. Teachers with 16-20 and 21+ years teaching experience had the highest ranked means for Leadership Experience. The teachers with 0-5 years teaching experience had the least Leadership Experience.

The mean Leadership Potential for technical high school industrial technology teachers was ranked higher than the mean for high school industrial technology teachers; however, this order is reversed for Leadership Experience.

Table 8

Means and Standard Deviations for Leadership Potential and Leadership Experience

	Leadership Potential			Leadership Experience		
	Number	Mean	SD	Number	Mean	SD
Age Range						
30 & under	31	16.1935	2.91455	31	1.09677	2.68769
31-40	32	17.0625	3.50978	32	1.93750	2.80481
41-50	26	16.6654	2.58904	26	2.92308	3.26096
51+	8	16.0000	3.38062	8	2.75000	2.05287
Not Stated	6	13.1667	3.31160	6	0.83333	4.26224
Qualification						
Statement	5	16.6000	3.20936	5	1.40000	2.60768
Certificate	12	15.1667	4.74501	12	2.50000	2.27636
Diploma	66	16.5197	3.01857	66	1.90909	2.96506

Table 8 *(continued)*

	Leadership Potential			Leadership Experience		
	Number	Mean	SD	Number	Mean	SD
Degree	14	17.2143	2.45509	14	2.00000	3.28165
Not Stated	6	15.3333	2.25093	6	1.33333	4.54606
Classification						
TCG	22	17.0909	2.65310	22	2.54545	2.75555
TI	47	16.1553	3.43244	47	1.72340	3.23501
TUG	18	16.3333	3.28991	18	1.66667	3.08697
USSG	2	16.0000	5.65685	2	2.50000	2.12132
UTLG	2	17.5000	2.12132	2	0.00000	0.00000
UUG	4	16.5000	3.31662	4	3.00000	2.94392
Not Stated	8	15.7500	2.86606	8	1.87500	2.64237
College						
Mico	12	16.2500	2.37888	12	2.83333	2.32900
UTech	30	16.8667	2.94470	30	1.83333	3.29140
VTDI	57	16.3211	3.47495	57	1.71930	2.96861
Other	1	16.0000	____	1	4.00000	____
Not Stated	3	13.6667	0.57735	3	2.66667	3.21455
Teaching Experience (years)						
0-5	30	16.5000	2.58310	30	1.20000	2.51067
6-10	31	17.0000	3.03315	31	1.22581	3.01894

Table 8 *(continued)*

	Leadership Potential			Leadership Experience		
	Number	Mean	SD	Number	Mean	SD
11-15	9	15.2222	4.84195	9	1.22222	4.23609
16-20	15	16.6200	2.81988	15	4.53333	1.50555
21+	12	15.8333	4.13045	12	2.75000	2.56285
Not Stated	6	15.0000	2.19089	6	2.16667	3.37145
School Type						
HS	60	16.3050	3.18500	60	1.96667	2.89925
THS	43	16.5116	3.16508	43	1.88372	3.12600
Industrial Experience						
No	25	16.4400	2.87344	25	1.60000	3.09570
Yes	75	16.4840	3.28494	75	2.01333	2.96599
Not Stated	3	13.6667	0.57735	3	2.66667	3.21455

Key: HS= High School; THS= Technical High School; TI= Trained Instructor; TCG= Trained College Graduate; USSG=Untrained Secondary School Graduate; TUG= Trained University Graduate; UTLG= Untrained Tertiary Level Graduate; UUG= Untrained University Graduate

One-way analysis of variance (ANOVA) was used to regress demographic factors of Age Range, Qualification, College, Classification, Teaching Experience, Industrial Experience, and School Type on Leadership Potential and Leadership Experience using JMP 5 software. Where the F-test indicated a potential significant effect between the means, the Tukey-Kramer HSD (Honest Significant Difference) analysis for each pair of variables identified possible relationships and their potential significance. The Tukey-

Kramer HSD is a type of t-test used for multiple comparisons (Gall, Borg, & Gall, 1996). According to Johnson and Berk (2000) the Tukey-Kramer HSD uses a wider interval to compare all pairs of differences in a table, and at the alpha = 0.05 level, assures there is no more than a 5% risk that any of the comparisons are significant when it is not. Exploratory data analysis, which is looking at raw data, scatterplots and charts were done initially to identify those factors warranting further analysis (Gall, Borg & Gall, 1996). The following is a description of those factors that had a relationship at various levels of significance.

Table 9 illustrates the significant association between Teaching Experience and Leadership Experience, $F(5, 102) = 3.722$, $p = 0.004$. There were no significant differences among the means of the independent variables and dependent variable of Leadership Experience at the alpha = 0.05 level: Age Range, $F(4, 102) = 1.7291$, $p = 0.1497$; Qualification, $F(4, 102) = 0.2054$, $p = 0.9349$; Classification, $F(6, 102) = 0.4405$, $p = 0.8500$; College, $F(4, 102) = 0.5108$, $p = 0.7279$; School Type, $F(1, 102) = 0.0192$, $p = 0.8901$; and Industrial Experience $F(2, 102) = 0.2701$, $p = 0.7638$. There were no significant differences among the means of the independent variables and dependent variable of Leadership Potential at the alpha = 0.05 level: Age Range, $F(4, 102) = 2.1183$, $p = 0.0842$; Qualification, $F(4, 102) = 0.8832$, $p = 0.4770$; Classification, $F(6, 102) = 0.3125$, $p = 0.9291$; College, $F(4, 102) = 0.7352$, $p = 0.5702$; Teaching Experience, $F(5, 102) = 0.7973$, $p = 0.5543$; School Type, $F(1, 102) = 0.1060$, $p = 0.7454$; and Industrial Experience $F(2, 102) = 1.1518$, $p = 0.3202$.

Table 9

Summary: One-way ANOVA Result for Leadership Experience and Teaching Experience

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Teaching Experience	5	145.93269	29.1865	3.7222	0.0040
Error	97	760.59158	7.8412		
C. Total	102	906.52427			

A Tukey–Kramer HSD analysis was done on Teaching Experience and Leadership Experience ANOVA result using JMP 5 software. Table 10 shows the results from the Tukey–Kramer HSD analysis at the 0.05 level of significance. There was a significant difference between means of teachers with 16-20 year teaching experience and those with the 0-5 and 6-10 years teaching experience on the Leadership Experience variable. None of the other Teaching Experience groups showed any significant differences between their means.

Table 10

Tukey-Kramer HSD Comparisons for all pairs of Teaching Experience groups based on Leadership Experience Means

Comparison	Difference
0-5 vs. 6-10	-2.0593
0-5 vs. 11-15	-3.0720
0-5 vs. 16-20	0.7588*
0-5 vs. 21+	-1.2309
0-5 vs. Not Stated	-2.6743
6-10 vs. 11-15	-3.0791
6-10 vs. 16-20	0.7468*
6-10 vs. 21+	-1.2438
6-10 vs. Not Stated	-2.6903
11-15 vs. 16-20	-0.1217
11-15 vs. 21+	-2.0623
11-15 vs. Not Stated	-3.3465
16-20 vs. 21+	-1.3699
16-20 vs. Not Stated	-1.5661
21+ vs. Not Stated	-3.4874

* $p < 0.05$

Research Sub-Question 2:

What are the environmental and personal factors that hinder or help industrial technology teachers' leadership development and growth?

Personal factors are derived from the Big Five Theory personality factors (Surgency, Agreeableness, Adjustment, Conscientiousness, and Openness to Experience) and Attitude to Leadership Development. Leadership development and growth are captured within the dependent variables of Leadership Potential and Leadership Experience. Environmental factors are School Environment factors (Work Stress, Communication, Time, Autonomy, TVET Image, and Community Activity), Mentored, Member Civic/Religious, and Leader Civic/Religious.

Table 11 illustrates the means of the personality factors as distributed amongst the respondents. Conscientiousness ranked highest (M = 6.422, SD = 1.831) followed by Agreeableness (M = 5.549, SD = 2.502), Adjustment (M = 5.330, SD = 2.610), Openness to Experience (M = 4.874, SD = 2.562), and lastly Surgency (M = 4.345, SD = 3.137). Out of a possible score of 12, Attitude to Leadership Development had a mean of 10.029 with a standard deviation of 1.790.

Table 11

Personal Factors Distribution and Rank

Personal Factor	N = 103	Distribution		Rank*
	Max	Mean	SD	
Personality				
Surgency	9	4.345	3.137	5
Agreeableness	9	5.549	2.502	2
Adjustment	9	5.330	2.610	3
Conscientiousness	9	6.422	1.831	1
Openness to Experience	9	4.874	2.562	4
Attitude to Leadership Development	12	10.029	1.790	-

* Personality factors only

The Two-way analysis of variance (ANOVA) for Leadership Potential and Leadership Experience by Personal factors (Surgency, Agreeableness, Adjustment, Conscientiousness, and Openness to Experience), and Attitude to Leadership Development was done using JMP5 software. All personal factors showed significant effects on Leadership Potential. Surgency and Adjustment were the factors with the highest effect, $F(1, 102) = 21.2413$, $p<.0001$ and $F(1, 102) = 16.5592$, $p<.0001$ respectively. These are followed by Agreeableness, $F(1, 102) = 15.9569$, $p = 0.0001$, Attitude to Leadership Development, $F(1, 102) = 10.5386$, $p = 0.0016$, Openness to

Experience, F(1, 102) = 8.4629, p = 0.0045), and Conscientiousness, F(1, 102) = 6.2970, p = 0.0137. See Tables 12 to16 for summary results.

Table 12

ANOVA Summary Table for Leadership Potential on Surgency

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Surgency	1	177.2964	177.296	21.2413	<.0001
Error	101	843.0257	8.347		
C. Total	102	1020.3221			

Table 13

ANOVA Summary Table for Leadership Potential on Agreeableness

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Agreeableness	1	139.2070	139.207	15.9569	.0001
Error	101	881.1151	8.724		
C. Total	102	1020.3221			

Table 14

ANOVA Summary Table for Leadership Potential on Adjustment

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Adjustment	1	143.7212	143.721	16.5592	<.0001
Error	101	876.6009	8.679		
C. Total	102	1020.3221			

Table 15

ANOVA Summary Table for Leadership Potential on Conscientiousness

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Conscientiousness	1	59.8806	59.8806	6.2970	0.0137
Error	101	960.4415	9.5093		
C. Total	102	1020.3221			

Table 16

ANOVA Summary Table for Leadership Potential on Attitude to Professional Development

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Attitude to Professional Development	1	96.4036	96.4036	10.5386	0.0016
Error	101	923.9185	9.1477		
C. Total	102	1020.3221			

Only Agreeableness, F(1, 102) = 3.9619, p = 0.0492, and Attitude to Leadership Development, F(1, 102) = 9.9740, p = 0.0021 had a significant effect on Leadership Experience. All other personality factors had no significant effect on Leadership Experience: Surgency, F(1, 102) = 2.5570, p = 0.1129; Adjustment, F(1, 102) = 2.3355, p = 0.1296; Conscientiousness, F(1, 102) = 1.8145, p = 0.1810; and Openness to Experience, F(1, 102) = 1.5287, p = 0.2192. See Tables 17 and 18 for summary results.

Table 17

ANOVA Summary Table for Leadership Experience on Agreeableness

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Agreeableness	1	34.21739	34.2174	3.9619	0.0492
Error	101	872.30688	8.6367		
C. Total	102	906.52427			

Table 18

ANOVA Summary Table for Leadership Experience on Attitude to Professional Development

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Attitude to Professional Development	1	81.47592	81.4759	9.9740	0.0021
Error	101	825.04835	8.1688		
C. Total	102	906.52427			

Cronbach's Alpha on the reliability of the entire personality variable set is 0.7005.

Table 19 illustrates school environmental factors distribution and rank. Time is ranked as the highest rated factor (M = 3.72, SD = 0.84), followed by TVET image (M = 3.58, SD = 1.16), Communication (M = 3.43, SD = 0.84), Work Stress (M = 3.34, SD = 1.10), Community Activities (M = 2.68, SD = 0.18), and Autonomy (M = 1.99, SD = 1.06).

Table 19

Environmental Factors Distribution and Rank

Environmental Factor	Distribution			Rank
	n	Mean	SD	
School Environment (Overall)	93	15.45	2.98	-
Work Stress	96	3.34	1.10	4
Communication	102	3.43	0.84	3
Time	99	3.72	0.95	1
Autonomy	100	1.99	1.06	6
TVET Image	102	3.58	1.16	2
Community Activity	102	2.68	1.18	5

Item 2 on Part D of the questionnaire asked respondents about their membership and possible leadership role in civic, service, sport, and religious organizations (See Appendix B). The majority of respondents (57 of 103) indicated that they were members of an organization or association. Of those who are members of an association/ organization, most were members of a religious organization (N = 33), and equally Sports and Citizens' Association (N = 7). About one half of those in a religious organization were in leadership roles (N = 17), while 6 out of 7 persons involved in a Sports Association were in leadership positions. All respondents involved in a school organization were in a leadership position (N = 4). One respondent involved in a political

organization was not in a leadership role (N = 1). Forty-six respondents were not involved in any organization. (See Table 20).

Table 20

Membership of Industrial Technology Teachers in Organizations and Leadership Roles

Organization Type	Frequency*	%	Rank	Leadership Role*	%
Religious	33	50.8	2	17	47.2
Sports	7	10.8	3	6	16.7
Citizens Association	7	10.8	4	4	11.1
Club	6	9.2	5	3	8.3
Service club	5	7.7	6	1	2.8
School organization	4	6.2	7	4	11.1
Uniformed group	2	3.1	8	1	2.8
Political	1	1.5	9	0	0
None/None stated	46	-	1	-	-

*includes multiple responses

The majority (59%) of the respondents indicated they were members of a Civic/Religious Organization. Of those who are members, about half (N = 31) or about 30% of the overall sample were in a leadership position (See Table 21). Almost half (49%) of the industrial technology teachers indicated they were not mentored, while about 35% indicated they were mentored.

Table 21

Distribution of Mentored, Member Civic/Religious Organization and Leader Civic/Religious Organization

Factor	N = 103	Frequency	Percentage
Mentored			
	Yes	36	35.0
	No	50	49.0
	Not stated	17	16.0
Member Civic/Religious Organization			
	Yes	61	59.0
	No	34	33.0
	Not stated	8	8.0
Leader Civic/Religious Organization			
	Yes	31	30.0
	No	64	62.0
	Not stated	8	8.0

Table 22 illustrates the professional relationship that respondents have with the Jamaica Association for Technical and Vocational Education and Training (JATVET). The majority (58.8%) heard of the association but only a minority (18.4%) attended an event sponsored by JATVET.

Table 22

Respondent's Involvement with JATVET

Response	N = 103	Frequency	Percentage
Heard of JATVET			
Yes		60	58.3
No		40	38.8
Not stated		3	2.9
Attended JATVET event			
Yes		19	18.4
No and Not Applicable		84	81.6

Tables 23 to 30 illustrates the Two-way and One-way analysis of variance (ANOVA) for Leadership Potential and Leadership Experience by Environmental factors using JMP5 software. Leader Civic/Religious, $F(1, 102) = 6.7322$, $p = 0.0109$; and Community Activity, $F(1, 101) = 14.6677$, $p = 0.0002$ had significant effects on Leadership Potential (See Tables 23 and 24). All other environmental factors had no significant effect on Leadership Potential: Mentored, $F(2, 102) = 1.9108$, $p = 0.1533$; Member Civic/Religious, $F(2, 102) = 1.2217$, $p = 0.2991$; Work Stress, $F(1, 95) = 0.2539$, $p = 0.6155$; Communication, $F(1, 101) = 0.0926$, $p = 0.7615$; Time, $F(1, 98) = 0.6071$, $p = 0.4378$; Autonomy, $F(1, 98) = 1.0161$, $p = 0.3159$; and TVET Image, $F(1, 101) = 0.0235$, $p = 0.8784$.

Table 23

ANOVA Summary Table for Leader Civic/Religious on Leadership Potential

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Leader Civic/Religious	1	63.7600	63.7600	6.7322	0.0109
Error	101	956.5621	9.4709		
C. Total	102	1020.3221			

Table 24

ANOVA Summary Table for Community Activity on Leadership Potential

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Community Activity	1	128.0232	128.023	14.6677	0.0002
Error	100	872.8267	8.728		
C. Total	101	1000.8499			

Within the school environment, Communication, $F(1, 101) = 16.5583$, $p = <.0001$, had the most significant effect on Leadership Experience. This was followed by TVET Image, $F(1, 101) = 11.5910$, $p = 0.0010$; Time, $F(1, 101) = 5.0901$, $p = 0.0263$); Autonomy, $F(1, 101) = 4.3293$, $p = 0.401$; and Community Activity, $F(1, 101) = 4.0174$, $p = 0.0477$. See Tables 25 to 29 for summaries.

Table 25

ANOVA Summary Table for Communication on Leadership Experience

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Communication	1	128.65617	128.656	16.5583	<.0001
Error	100	776.99089	7.770		
C. Total	101	905.64706			

Table 26

ANOVA Summary Table for Time on Leadership Experience

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Time	1	44.28400	44.2840	5.0901	0.0263
Error	97	843.89782	8.7000		
C. Total	98	888.18182			

Table 27

ANOVA Summary Table for Autonomy on Leadership Experience

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Autonomy	1	37.94945	37.9495	4.3293	0.0401
Error	98	859.05055	8.7658		
C. Total	99	897.000			

Table 28

ANOVA Summary Table for TVET Image on Leadership Experience

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
TVET Image	1	94.06981	94.0698	11.5910	0.0010
Error	100	811.57725	8.1158		
C. Total	101	905.64706			

Table 29

ANOVA Summary Table for Community Activity on Leadership Experience

Source	*df*	*SS*	*MS*	F Ratio	Prob > F
Community Activity	1	34.97802	34.9780	4.0174	0.0477
Error	100	870.66904	8.7067		
C. Total	101	905.64706			

Table 30 illustrates that the majority of respondents (63 out of 103) indicated that they were actively pursued to take on a leadership role. Of those who responded yes, the majority (N = 34) accepted an in-school leadership role while fewer (N = 23) accepted non-school leadership roles. Six respondents served on committees, while seven declined the leadership position. Twenty-one respondents indicated they were never actively pursued for leadership roles, while 19 did not respond.

Table 30

Industrial Technology Teachers Pursued to Lead or Volunteered and their Response

Response	Location and Frequency*			
	School	Non-school	Not specified	Committee
Yes			1	6
Yes, accept	34	23		
Yes, decline	5	2		
No			21	
No response			19	

* includes multiple responses. N = 103

Research Sub-Question 3:

What are the leadership preparation needs as perceived by industrial technology teachers?

In Part C item 1 of the questionnaire, respondents were asked to identify their perceived needs in order to assume leadership positions as head of department, vice principal or principal. The verbatim responses were coded, tallied and categorized into similar needs. Some respondents had multiple responses and frequency counts represent the number of times a need is mentioned. The percentage is the proportion of the frequency counts, not the number of respondents. The summary results of preparation needs are shown in Table 31.

Education was indicated as the most identified need (N = 56) followed by Training (N = 42), Skills (N = 38) and Experiential (N = 20), and Additional needs (N = 17). Twenty respondents did not give a response. If Courses/Seminars and Workshops are considered Training, then the Training frequency would increase to N = 57, which would be about equivalent to the Education need (N = 56).

Table 31

Summary of Education, Training, Skills, Experiential and Additional Needs of Industrial Technology Teachers to Assume Leadership Positions

Need	Frequency*	Percentage	Rank
Education	56	26.9	1
Training	42	20.2	2
Skills	38	18.3	3
Experiential	20	9.6	4
Additional	17	8.2	6
Courses/Seminars/Workshops	15	7.2	7
Not stated	20	9.6	4

* includes multiple responses.

Table 32 illustrates a breakdown of the Education need as specified by the respondents showing the greater desire for Bachelor's degree (N = 29), Master's Degree (N = 18), and Diploma (N = 4). Management or Administrative-related type education was specified most (N = 20), while Education /Teaching-related type education was specified at a frequency of N = 9.

Table 32

Education Needs of Industrial Technology Teachers to Assume Leadership Positions

Education	Frequency*	Total	Percentage	Rank
Diploma	4	4	7.1	3
Certificate in Management	2	2	3.6	5
Bachelors Degree		29	51.8	1
Education	7			
Management Studies	6			
Discipline specific	3			
Supervisory management	2			
Teaching	2			
Sociology	1			
Unspecified Bachelors	8			
Masters Degree		18	32.1	2
Education Administration /Management	5			
Management Studies	5			
Education	2			
Unspecified Masters	6			
Unspecified Education Qualification	3	3	5.4	4

* includes multiple responses.

Table 33 details the primary Training need as Management (N = 15), followed by Leadership (N = 4), Discipline-specific training (N = 3), and Administration (N = 3).

Table 33

Training Needs of Industrial Technology Teachers to Assume Leadership Positions

Training Needs	Frequency*	Percentage	Rank
Management	15	35.7	1
Leadership	4	9.5	2
Discipline-specific training	3	7.1	3
Administration	3	7.1	3
Guidance and Counseling	2	4.8	5
Curriculum Development	2	4.8	5
Budgeting	1	2.4	6
Communication	1	2.4	6
Conflict Resolution	1	2.4	6
Education Administration	1	2.4	6
Entrepreneurship	1	2.4	6
In-house training (not specified)	1	2.4	6
On-the-job	1	2.4	6
Personnel Management	1	2.4	6
Psychology	1	2.4	6
Public Administration	1	2.4	6
School Management	1	2.4	6

Table 33 *(continued)*

Training Needs	Frequency*	Percentage	Rank
Technical/Vocational education	1	2.4	6
Technical/Vocational Education management	1	2.4	6

*includes multiple responses.

Table 34 illustrates that the Experiential needs were mainly in Teaching (N = 6), School Operation (N = 5), and Industrial Work experience (N = 3). Unspecified experiential needs are N = 4.

Table 34

Experiential Needs of Industrial Technology Teachers to Assume Leadership Positions

Experiential Needs	Frequency*	Percentage	Rank
Teaching	6	30	1
School operation	5	25	2
Industrial work	3	15	3
Managing workforce	1	5	4
Understanding staff	1	5	4
Unspecified experience	4	20	6

*includes multiple responses.

Table 35 illustrates that the leading Skill need is in Human Relations/resources (N = 9), Management (N = 7), Communication (N = 5), and Finance and Accounting (N =

3). Skills in Evaluation, Leadership, Motivation, and Technology in Education are equally tallied at (N = 2). Minor skill need is in Conducting meeting, Education, Management, Listening, Observation, Planning, and Technological preparation (N = 1).

Table 35

Skill Needs of Industrial Technology Teachers to Assume Leadership Positions

Skill Needs	Frequency*	Percentage	Rank
Human Relations/resources	9	23.7	1
Management	7	18.4	2
Communication	5	13.2	3
Finance and Accounting	3	7.9	4
Evaluation	2	5.3	5
Leadership	2	5.3	5
Motivation	2	5.3	5
Technology in education	2	5.3	5
Conducting meeting	1	2.6	9
Education Management	1	2.6	9
Listening	1	2.6	9
Observation	1	2.6	9
Planning	1	2.6	9
Technological preparation	1	2.6	9

*includes multiple responses.

Additional needs are those perceived needs falling outside the previous categories of Education, Training, Skill, and Experiential needs. Table 36 illustrates the primary Additional need as Curriculum content knowledge (N = 3). Lesser Additional needs identified (N = 1 each) are Authority, Committed/commitment to job, Competent teachers, Cooperation, Development plan, Exposure, Job description, Leadership qualities, Mental preparation, Mentor, Knowledge of Ministry of Education policy, Qualified and motivated staff, Rapport, and Vision.

Table 36

Additional Needs of Industrial Technology Teachers to Assume Leadership Positions

Additional Needs	Frequency*	Rank
Curriculum content knowledge	3	1
Authority	1	2
Committed/commitment to job	1	2
Competent teachers	1	2
Cooperation	1	2
Development plan	1	2
Exposure	1	2
Job description	1	2
Knowledge of Ministry of Education policy	1	2
Leadership qualities	1	2
Mental preparation	1	2
Mentor	1	2

Table 36 *(continued)*

Additional Needs	Frequency*	Rank
Qualified and motivated staff	1	2
Rapport	1	2
Vision	1	2

*includes multiple responses.

Using data from Tables 32, 33, 34 and 35, the overall emphasis of the industrial technology teachers was on Management and Administrative needs that were mentioned 50 times. By comparison, Leadership was cited 7 times, and Vision was cited once.

Table 37 shows the vast majority of respondents indicated that they were not involved in an academic upgrading program (58.25%). Of the 30.1% that are involved in an academic upgrading program, about two-thirds (64.52%) have the Diploma qualification. Two-thirds of the teachers with Certificate qualification were not in an upgrading program.

Table 37

Contingency Table of Teachers in Upgrading Program by Qualification

Count Total % Column % Row %	No	Yes	Not Stated
Statement	2 1.94 3.33 40.00	3 2.91 9.68 60.00	0
Certificate	8 7.77 13.33 66.67	4 3.88 12.90 33.33	0
Diploma	45 43.69 75.00 68.18	20 19.42 64.52 30.30	1 0.97 8.33 1.52
Degree	4 3.88 6.67 28.57	3 2.91 9.68 21.43	7 6.80 58.33 50.00
Not Stated	1 0.97 1.67 16.67	1 0.97 3.23 16.67	4 3.88 33.33 66.67
Total (%)	60 58.25	31 30.10	12 11.65

Research Sub-Question 4:

What is the role and contribution of Jamaican education and training administrators, professional associations, and teacher training institutions in leadership development of industrial technology teachers?

Qualitative data are the result of structured interviews with selected administrators, a professional association leader, and industrial technology teacher training lecturers. A description of the interviewees precedes the themes and subheading emerging from the interviews.

Description of Interviewees

In an attempt to preserve anonymity of the interviewees, a general description of their background is given without specifics to their work institutions.

Academic Director (AD) is a teacher educator and Program Director of the Full-time and Part-time Bachelor of Education degree programs in Industrial Technology. AD has industrial training experience and over 20 years experience in technical teacher education. AD has consulted on the development of Technical and Vocational Programs in Jamaica and the Eastern Caribbean. AD is an examiner for the Caribbean Examinations Council.

Senior Lecturer (SL) has over 25 years teaching experience and is Acting Director of the Technology Section for the Diploma in Industrial Technology. SL has industrial work experience and over 20 years experience in technical teacher education. SL is an examiner for the Caribbean Examinations Council.

Senior Administrator (SA) is responsible for Technical/Vocational Education in Jamaica, and former Senior Education Officer for Industrial Education. SA's role was to

develop and monitor all industrial technology programs in the secondary schools and colleges. He has over 30 years experience in technology education. SA is currently President of the Jamaica Association for Technical and Vocational Education and Training (JATVET) (JP).

Project Director (PD) is a former English Language teacher with over 30 years teaching experience, a former Vice Principal of a technical high school. PD has had a Project Directorship in the Ministry of Education, and is currently directs a development project for technical high schools.

Qualitative Data Analysis

This section is a presentation on the qualitative data gleaned from interviewee transcripts and open-ended questions from teachers. They are arranged in themes or sub headings.

A relaxed and cordial atmosphere was created during face-to-face and telephone interviews, therefore interviews were done in a conversational manner where Standard Jamaican English was spoken. Interviewees concentrated on communicating meaning without necessarily considering grammatical structures. Therefore grammatical edits were limited to preserve the spirit of the interaction while making the following transcriptions readable (For more on Jamaican Standard English see http://www.nationmaster.com /encyclopedia/Jamaican-English).

Preparation of Student-TeacherLeaders

One interviewee reported that The University of Technology (UTech) uses formal courses and outside classroom opportunities to develop leaders. The formal courses include Personal Development, Seminar, Integrated Study, Educational Administration,

Classroom Behavior Management, Work Experience, and Teaching Practice. Professional development and growth were also seen as important, and UTech students were encouraged to develop Professional Growth Portfolios, that allow reflective evaluation of the student-teachers' attitude to teaching and professional development. AD saw the need for teachers to provide "strong leadership for classroom and community at large." To achieve this, opportunities exist for students to become involved with student government, Peer Counseling, Community Service Project, and mentoring program. Mico Teachers' College has a similar student government and even a spiritual leader called a "Pope". The Vocational Training Development Institute (VTDI) also uses the formal program, particularly Education Administration. At the basic level they have class representatives, and student government officers. VTDI students are also involved in sporting competitions, and a singing group.

The majority of Mico's students live on halls of residence, where there is opportunity for leadership, mentorship and guidance. This is described by SL:

> Most students at Mico live on halls of residence so here again they get the opportunity to have some experience in leadership, because we have [roles] like the hall chairman, unit leaders . . which gives them some exposure. The education courses are focused to a certain extent on leadership and management in the classroom. Teachers will [construct]in class the experiences that they will come upon . . to [help] prepare them. Opportunities are also created from the administrative side where we [have] the college student president for example. There is also a 'College Pope', who will not necessarily become a minister of religion at the end, but while at the college, he is like the minister for the college - a reverend. All of the religious type activities and fraternal things - he is involved. We have a house system and the house captain is a very important person in the house. You have a lecturer who serves as the House leader/ House Master, but the House Captain actually is involved in everything. He literally runs the house. The House Master more or less . . oversees activities and gives guidance here and there. There is also the President for each batch [year-group]. So this is another opportunity for leadership. So we have a wide exposure at different levels and . . students are encouraged to take part in these things and then become leaders.

The house system is a community of students and academic staff, similar to fraternities and honor societies in the USA, where students are engaged in social interaction, and mobilized to compete and support each other and the college in different service and sporting events during the year. At UTech, these groupings and divisions for competitions and community action are on a faculty (college), school or departmental basis. All these student-led activities are on an institution-wide level and not specifically targeted for industrial technology student-teachers.

The interviewees indicated that there was value in having a mentoring program for industrial technology teachers at the pre-service stage. To date the peer training for students and the mentoring program at UTech is to be better organized. However, there are plans to improve existing programs, and to implement a program in the near future where no formal mentoring programs exist.

Leadership Development Programs

Interviewees reported that there are no formal leadership development programs in existence exclusively for industrial technology teachers. Leadership and management are important skills that principals and other leaders must have. These skills are seen as important in affecting the performance of students. Although no formal program exists, management and leadership principles are infused into the training programs of the Ministry of Education, Youth and Culture's Technical Vocational Unit (TVU). The HEART/NTA, through its Technical High Schools' Development Project (THSDP) has annual professional development workshops for the principals, vice principals, heads of department and teachers. A two-day 17-hour residential workshop caters to teachers in the 14 technical high schools in Jamaica.

Influencing the professional development thrust of the THSDP is the linkage the PD has with the Association of Supervision and Curriculum Development (ASCD). Every year a group of about eight persons attend the ASCD conference in the USA. Current trends in leadership gleaned for the ASCD conference are shared at the two-day THSDP workshop with colleagues.

Every year the TVU conducts training sessions for technical/ vocational teachers in schools based on perceived needs, directives and priorities. The sessions are conducted by the TVU officers or by outside experts as necessary. According to SA, attendance to local professional development sessions is a concern of principals. SL believes that teachers prefer professional development sessions during the school day, and not on weekends, when it might interfere with family commitments.

The Professional Development Unit (PDU) of the Ministry of Education, Youth and Culture is responsible for, co-coordinating and managing all in-service opportunities for all categories of teachers at the primary and secondary level. According to the Director of the PDU, the overall aim of the Unit is to ensure that:

> All teachers from the target groups should experience on-going and continuous professional development so that learning becomes a lifelong process, and all schools will become true learning organizations. In order to achieve this goal, in-service training opportunities are available for all categories of school personnel.

The Jamaica Association for Technical and Vocational Education and Training (JATVET) caters to the needs of all technical and vocational teachers. JATVET has biannual meetings where, in addition to regular business matters they have a professional development component as stated by JP:

> I think professional development is the main focus. We try as an association to provide *that* in all our meetings. We don't just simply meet and discuss business.

We have a training session every time we meet, with the focus on a special topic.

Responsibility for Leadership Development

The SA believes the principals and the teachers should take the lead in ensuring technology education impacts the community. There is acknowledgement by SA regarding the limited resources from government to support the industrial technology programs in schools, yet more is expected from the teachers. The teachers and principals are encouraged to seek alternative support for their programs by linkages with business companies. SA stated:

> Rather, I think they need to look at how they can better maximize and optimize the equipment that they have. Look for creative ways of using what they have and find ways of procuring additional equipment for the school which may not be provided though the Ministry of Education [Youth and Culture]. I am saying this is the responsibility of the HOD [head of department] and the principal of the school to look for ways to solve this problem, and some are doing it.

SL was however took the position that it was the principals who should lead the effort of getting the industrial technology teachers activated.

Historical Background

The negative perception of technical/vocational teachers has its genesis from our slave background, as working with our hands was seen by society in general as degrading work. PD hinted at the societal perception in the recent past where technical/ vocational teachers were not seen on the same professional level as other teachers in a school:

> There is a little history behind this: The industrial technology teachers over the years, many of them are trained at the VTDI. They are not degreed teachers - university graduates. While I was a young teacher at a technical high school, I found the academic teachers would generally refer to the industrial teachers as 'the tradesmen' as if they are an inferior set of persons because they were not

> university graduates. However, these were the persons who have the skills, who help the students acquire the competencies and do far better in examinations and in the world of work than in these general areas. And when some of these teachers decide to take a break from teaching and set up their own business[es], they do very well and make far more money [in comparison to teaching]. But I think we are in a society where we tend to have a bit of this class structure and we see the university graduate as someone superior to someone who has been to a training institute and has acquired competencies in industrial technology.

The class structure in the education system is differentiated by qualification, as this is the primary vehicle for promotion and recognition.

Professional Status of Industrial Technology Teachers

SL notes that the status has changed recently:

> From my standpoint, I think the status is changing or has changed quite a bit . . in recent times. With movement in technology and technology advancement, people are now realizing that our area is the area that is dealing with technology. So the technologist has become very important, very critical in society. So I don't really see it [our profession] as being down like where it was five, ten years ago. Things are changing.

Educational opportunities, changing public opinion, and versatile competence of industrial technology teachers are factors cited by SA:

> I think this has changed and you find that teachers themselves as well as parents are recognizing the importance of technology and that technological occupations are as lucrative as others; so that a lot more parents are looking to have their children pursue technology studies than before. So the status has risen somewhat and we have more of these teachers who are becoming leaders in schools. Some are becoming vice-principals and principals, not as many as I would like to see though. We still have a shortage of these people who would assume the top positions in schools. Plus there was the recognition after a while that the teacher of Techvoc [technical /vocational] was able to teach the academic subjects as well as Techvoc subjects, while the teacher of academic subjects was able to teach only those subjects so that the Techvoc teacher was more versatile.
>
> I think more and more are coming out of the colleges, you see we have more and more persons who are leaving the colleges who are seeking to upgrade themselves both in terms of skills and professional development . . than before. The days when teachers left college and taught for 15, 20 years before they went on to do a

> degree is no longer the case. You have persons who are leaving college and after 2 years, or 3 years they go on to do their degree. So I am saying that we do have a number of teachers who are not waiting until they have completed many years [of teaching experience] before they do a degree. They are jumping to the opportunity soon after leaving college and provisions for them to access a degree program, have been made easier too.

It was assumed by the researcher that the status of industrial technology teachers was not necessarily at the desired level, and that there was the need for changing it. There was no agreement on what are the first steps to change the status of industrial technology teachers. However, interviewees suggested possible components of this change to include:

1. A strong professional association, as posited by AD:

> We have come a far way! What we need really is a couple things. One: We need a strong association. An industrial technology association, which would provide some forum for individuals in the field to reflect on their work, stay on the cutting edge, [examine] what is best for students, establish some model for change. It needs this kind of collaboration between individuals in the field. This forum is really important for that.

This suggests the association should focus on continuing education, technology transfer, and to pursue collaborative opportunities.

2. Support from the Ministry of Education Youth and Culture's Technical Vocational Unit (TVU). AD stated:

> In terms of direction, policy development, we need a strong technical unit in the Ministry [of Education, Youth and Culture] to provide this direction. We have nobody in our corner. We are just there. It's just tacked onto the traditional academic [areas] of the institution. We are treated just like that [with disrespect]. So I think they [teachers] need strong support from the Ministry. They need to organize themselves so they will come out a very strong force.

The perception of AD is that dynamic leadership is needed at the government administrative level. The feeling of isolation was a recurrent issue for AD.

3. Linkages with industry

AD said, “We need to establish some strong linkages with industry. I don’t see the industrial technology [profession] surviving without strong linkages with industry.” This was also a need expressed by a teacher who wrote: “It would also be good if industrial teachers could be attached to an industrial environment during their summer break or otherwise.” An education-industry linkage is a logical expectation for industrial technology teachers. JATVET has this link and members of the profession should utilize it. This link however needs to be strengthened.

4. Establish minimum standards of operation. SL stated:

> We need some standards of operation that we need to insist on. . . The facilities that are provided for us to work: if they are not at a certain standard, you can’t really deliver to the students effectively. . . So once you actually plan to run a course then you should have some basic things [in place] that without them . . you don’t bother to offer the course at all. The facilities provided for the teacher: we should actually insist for example [that] our shops . . are . . as good as the other areas . . in the school.

SL continues to show the impact standards have on the image and operation of the profession at the classroom level:

> Our place is not [to be] like a junk yard where you actually just send old broken down desk[s] . . and make the place look like a junk yard. So, the whole working environment should be different.

This is indicative of the perception that others in the school have of the industrial technology section--as a maintenance section for the school, and a store of things in need of repair. It is a possible sign of disrespect or misunderstanding that others have for the industrial technology profession. However, leadership is required to change perceptions, garner respect, and improve standards of operation while serving an obvious maintenance need within the school community.

5. Continual professional development of industrial technology teachers. SL further stated:

> Professional development will have to be ongoing for teachers in this area. . . A lot of people were just comfortable with having just graduated in [the] 1960[s] to be teaching still with that same qualification and the same college experience up to now [*sic*]. There ought to be some professional development for people. Now if you can have that, then it will actually provide the way forward for some of these things to happen.

There is a perception of complacency among some teachers. SA was elated that he had to force a teacher to be upgraded: "You need to say to them: You are in this thing too long. You have been here for ten, fifteen years. You need to make a move for additional training. Go! and get some training."

Reasons for the Apparent Lack of Aspiration

The reasons given by respondents for the apparent lack of aspiration of industrial technology teachers to principal and vice principal positions are:

1. The lack of personal interest on the teachers' part. SA acknowledges, "The main hindrance is lack of, or inadequate qualification. I don't think many of our industrial technology teachers are aspiring to the degree level."

2. Disincentive to being tied down to administrative roles. PD stated: "The principal is said to be the instructional leader, but we find that in the Jamaican situation it cannot work effectively where the principal is bogged down with too many managerial things." SL concurs and adds the issue of income:

> Then what I find too is that a lot [of industrial technology teachers] are more comfortable working in the shop with machines rather than to get tied down, [as] some of them would be as a principal or vice principal. . . A lot of these people would say they prefer working in the shop, do some work on the side, to make some money. Some of them might be in some cases probably teaching and at the same time they actually working as a contractor on some site, you know like

> probably overseeing activities . . or probably working between schools. . . It is not too bad now, especially when there was a shortage [of teachers] in the system, some people would be like teaching at two schools. On the morning shift at one place and the afternoon at another. Right now if you are in that type of leadership position, if you're a principal or vice principal for example, you are not able to do that as you will be there [at school] dealing with other things. . . Income could be an issue!

3. Under-qualified teachers without a bachelor's degree. This is largely due to limited opportunity for further study or upgrading of qualifications. SL stated:

> Now to be a principal at one of these institutions, you have to at least have a bachelors [degree]. From that standpoint, you find that a lot of them would really aspire to be up there [aspire to be principal] [*sic*].

4. No vacancies for principal and vice-principal positions due to seniority of incumbents. PD stated:

> There are persons who have completed the industrial technology program at the degree level; one has to wait until that person [a principal] retires before that opportunity turns up. What has been good, is that vacancies have been created in a few technical vocational high schools because of retirement. And in four of these schools persons who have completed that degree program have taken on principalship.

SL questioned the assertion that a lot of industrial technology teachers have qualified over the last few years and should be vying for principalships:

> How many posts actually came up over the period? And what positions were they in prior to that? It would take some time for the system, going through the system to come up there[to become a principal] [*sic*].

Interviewees appear to have accepted or resolved that the low number of industrial technology teachers as principals is due to lack of seniority on the teacher's part.

5. Possible historical bias. AD suggested:

> Many have acted in that capacity [as principal]. But it has to do with a lack of training for industrial tech teachers. I mentioned how most of the industrial

> technology programs have originated in many schools by a tacking on to the academic/traditional education institution and as a result [industrial technology program] plays a minor part in the whole institution. They would then prefer to put an academic person as a principal.

SA dismisses historical bias as being an issue today:

> Perhaps in the past it was not a level playing field, today I can't say that. The field is more level. I think that if an industrial technology teacher who is qualified with a first degree and additional qualification in say management or leadership went out for a job as principal, I think that that teacher would have a good chance as any to be selected, providing that he/she perform well at the interview.

All interviewees were optimistic that this situation will change. The desire for this change was expressed by AD:

> But this is changing because UTech has embarked on this new program which is providing an opportunity now for Industrial Technology teachers to be trained in the skills required of a principal. So it will pay off in the long run.

It was generally believed that the industrial technology teacher's individual choice and desire are the main factors in not aspiring to leadership positions for which they are academically qualified. AD also suggested the communication skills deficiencies as another barrier to the career mobility of industrial technology teachers.

> There is a serious problem. There is an attempt to assist students who are weak [in their communication skills]. We have put in place a language lab, we have also strengthened our communication courses, and there is now talk about bringing back some of the courses we have cut out such as RCA [Reading in the Content Area]: The course related to their specialist area that could assist in improving their communication skill.

The Impact of Sideline Employment.

PD, SA, and SL recognized that industrial technology teachers occasionally supplemented their incomes by working after school hours on industrial projects in the workshops. In some situations, an arrangement is made between the teacher and the principal to reimburse the school for overhead expenses. Difficulty in finding competent

teachers in these industrial technology areas also sway principals to allow industrial technology teachers concessions in sideline employment with school property. This practice sometimes compromises the teacher's relationship with the principal and reduces goodwill, especially where it is not officially endorsed. This may result in a teacher who is reluctant to approach the principal for legitimate program needs. PD provides an alternative perspective of the sideline employment issue--the development of entrepreneurial education skills:

> Also the whole idea of entrepreneurship education, helping students to recognize that when they acquire the skills in the schools, they may not immediately get a job after leaving school. But how can they use these skills to earn some money until they are ready to move on to further education and training. So they must have the entrepreneurship spirits and entrepreneurship skills and help to pass this on to their teachers who in turn will help to develop these skills in students.
>
> Q: Is there a conflict in interest in entrepreneurship skills that we call 'roasting' [sideline employment] in schools with these technical teachers?
>
> Well I am not speaking about the 'roasting'. Because some of them, though they'll use the equipment and machines after school hours . . to build some furniture that somebody has ordered. Some schools have worked out some wonderful arrangements. 'Yes, you may use the equipment.' The schools recognize that these persons with these competencies, unless they can earn extra money, the schoolroom may lose them. So the schools work out a good arrangement, yes, but a percentage of the costs would go to defray electricity and other utility bills. And they are allowed. . . But what I'm talking about with entrepreneurship skills for students is to help students to recognize how they can utilize these skills to make a living. We are not just acquiring the skills to pass exams. But helping them to recognize that they can use these very skills to earn and to help them to develop this [entrepreneurial] spirit. Consequently, they do some accounting, so they are able to write a business plan. Students who acquire skills in electricity or woodwork can earn by performing certain services and making items; not just pass[ing] the exams. But they need to be able to prepare a business plan, being able to market the skills, and utilize the skills.

The ability to teach entrepreneurial skills to students has implications for training needs of Industrial technology teachers.

Vision: A Force to Reckon With

JP expressed passionately a vision of the future of the industrial technology teaching profession thus:

> My only wish is that our industrial technology teachers would see themselves as a force to be reckoned with in this country so that one would not have to ask whether or not their role is important in the whole scheme of things. I think if we are able to get them to, as I said before assert themselves in terms of pursuing degrees, seeking leadership positions, being principals, making a difference to the students whom they teach. So that one could say, I have to send my child to that school because that teacher gets great results. If we can get that going, I think the status of those teachers would really take a giant leap. But I think some of them are still living in the shadow of the perception by some people that they are not really first class teachers, that they are second class teachers. We need to dispel that myth completely. The only way I think we can do that is to get them to, like I said, to assert themselves in terms of pursuing further education, upgrading themselves professionally, and also seek to achieve leadership positions in the education system. So that people will recognize that you don't have to be a teacher of English, a teacher of Mathematics, teacher of science to be important and do a better job in molding the lives of children and making a difference in education but that the teacher of industrial technology can do just as well

Teachers' Comments on Leadership Issues-In their own Words

Item 3 on Part C of the questionnaire asked respondents: Have you ever been actively pursued to lead or "volunteered" to be on a committee at school or elsewhere? Describe the situation and how you responded. The majority of teachers responded and selected written comments follow. Sample written comments are in Appendix D.

Teachers saw themselves as genuine leaders. One wrote: "Yes. I believe I have always been a leader. I was a PTA president, and I led those parent[s] with respect and good leadership skills. One would come to believe that I was the principal of that school." Another related boldness in taking on a challenging post:

> The first school I worked, I was head of the disciplinary committee. My first year on the job I was given the responsibility, because the school was in an inner-city area and the students [were] generally undisciplined and nobody wants the job."

Support in a leadership role is an important factor in deciding on taking on the task. Another teacher commented:

> At one point, I was approached by one of my peers and asked the question whether or not, if I was approached about taking up the responsibility of HOD [head of department] would I be interested. I said yes, as long as a position would come with[out] a lot of opposition from the other peers.

Other teachers accepted leadership positions as an opportunity: "Yes I was asked to become the manager of the school's football team. And [*sic*] I was very glad to be part of this. So I gladly [said] yes to the person who ask[ed] of me to get involved." Refusal however, was sometimes the option for the teacher who wrote "I was asked, (elected) to be the president of the PTA at my daughter's school. I had to decline to position, because of my other responsibilities at work, and at church." Another wrote:

> At school I was pursued to lead my house and to participate in committee that was to provide guidance on teacher conduct with reference to the teacher as manager. On both occasions I had to decline because of circumstances (personal).

and

> I was asked to be a volunteer in a 'mentorship program' by the guidance counselors. I was reluctant to give my name up for offering my services because I knew little of the time I would have to commit, I had financial obligations; I knew too little of the programme [*sic*].

Finally, in two cases leadership was seen as a privilege for the few: "This privilege was mainly granted to teacher[s] in senior position[s] or long-standing staff. I was once asked to help in graduation preparation and I agreed." The frustration was borne out when he/she stated "Those older heads on the committee hardly gave the younger person a chance to make a point. When the younger ones made a point, the older ones try to ignore their suggestion." It was not known if this committee was at school or elsewhere.

An understanding of the challenges and principles of leadership was reflected by the respondent who wrote:

> Being on a committee away from school, can be stressful. To lead a group of people that do not share the same view, has no zeal, lack of participation, and so on, as a leader, you have to create an atmosphere that is friendly and conducive to take on challenges that seems [un]surmountable.

The last item on the questionnaire gave the respondents an opportunity to add any comment on leadership development. Teachers commented on the leadership styles and competences they observed: "I would like to see our leaders in these positions to be more flexible in the management of their job" and "Most leaders tend to be autocratic, than being democratic." Another teacher pointed to credibility of leaders when he/she stated: "I would like to see leaders, who can apply the theories and [are] able to carry out the task that they would assign their subordinates to carry out."

The integrity and fairness of the selection process was an issue for another when he/she wrote:

Whenever the leader of an organization delegates responsibilities to a person who performs the assigned tasks well and a position or vacancy for advancement opens, the leader is expected to appoint this person and not some other person who has not served in that position before.

Few respondents had recommendations on what needed to be done for leadership development. One suggested pre-service programs: "Module on leadership development should be included in teacher training programme (eg. Effective School Management)." Another suggested a compulsory program: "A lot of our teachers need leadership development courses and should be encouraged, if not mandated to get enrolled in some."

Industrial technology teachers' interest in leadership issues can be summed up in the comment by a respondent: "In today's society the role of leadership is of utmost importance. It is therefore fitting for leaders to be properly trained and developed. I strongly support any form of development as a leader!"

Summary

This chapter presented data collected from the questionnaires and interviews. Means, frequency, standard deviations, percentages, and ranks were presented in tables and written form. One-way and two-way ANOVAs were conducted to determine if there were any effects of the independent variables on the dependent variables. Where the F test and p-values at the 0.05 level suggested significant differences between the means, a Tukey-Kramer HSD test was performed to determine where the difference existed.

Open-ended item responses from the questionnaire were transformed to frequency counts and quantitatively analyzed. Qualitative data from the interviews and

questionnaire open-ended item responses were presented and categorized into common themes and sub themes.

CHAPTER FIVE

Summary, Conclusion, Discussion, and Recommendations

Summary of Study

This study sought to determine the future leadership potential of industrial technology teachers as perceived by industrial technology teachers in selected high and technical high schools in Jamaica. Specifically it sought to identify and understand environmental and personal factors that support or hinder leadership development and growth. This also involved a review of the existing leadership development programs and factors supporting the creation of a professional association for industrial technology teachers.

Twenty-seven schools from two administrative regions were randomly selected and the industrial technology teachers surveyed to provide quantitative and qualitative data. Education and training administrators, professional associations, and teacher training personnel were interviewed to determine administrative and policy perspectives.

The sub-questions that guided the study were:

1. What is the association between education, college of study, age, years of teaching experience, other experiences, and school type on industrial technology teachers' self-perceptions of leadership attributes?
2. What are the environmental and personal factors that hinder or help industrial technology teachers' leadership development and growth?
3. What are the leadership preparation needs as perceived by industrial technology teachers?

4. What is the role and contribution of Jamaican education and training administrators, professional associations, and teacher training institutions in leadership development of industrial technology teachers?

Quantitative data were analyzed (means, frequency, ANOVA, Tukey-HSD) using JMP 5 software. Qualitative data from interview transcripts and open-ended items of the questionnaires were analyzed using the constant comparative method.

Based on the data, the majority of industrial technology teachers in the study are more likely to:

1. be forty years old or younger,
2. be teaching for ten years or less,
3. be a graduate of the Vocational Training and Development Institute (VTDI),
4. be academically qualified at the Diploma level,
5. be classified as a Trained Instructor,
6. have industrial work experience,
7. be involved in a Civic/Religious organization,
8. have never been mentored in their job,
9. have never attended an event of the local professional association, and
10. not be currently enrolled in an academic upgrading program.

Conclusions, Discussions and Recommendations for practice and further study follow.

Conclusions

Within the scope of this study, the following conclusions were drawn:

1. There was no significant association between the demographic factors of Age Range, Qualification, College, Industrial Experience, and School Type with the respondents' perception of Leadership Potential and Leadership Experience.
2. There was a significant difference between the teachers with 16-20 years Teaching Experience and those with 0-5 and 6-10 years Teaching Experience with respect to dependent variable Leadership Experience.
3. There was a significant association between Attitude to Professional Development, Community Activity, and personality factors (Surgency, Adjustment, Agreeableness, Conscientiousness, and Openness to Experience) with the respondent's perception of Leadership Potential.
4. There was a significant association between school environmental factors of Communication, Time, Autonomy, TVET Image, and Community Activity with the respondent's perception of Leadership Experience.
5. Attitude to Professional Development and the personality factor of Agreeableness showed a significant association with both Leadership Potential and Leadership Experience.
6. The Member Civic/Religious groups factor had no significant effect on Leadership Experience or Leadership Potential.
7. The Leader Civic/Religious groups factor had a significant effect on Leadership Potential.

Research Sub-Question 1

What is the association between education, college of study, age, years of teaching experience, other experiences, and school type on industrial technology teachers' self-perceptions of leadership attributes?

Leadership attributes is a composite term for the dependent variables of Leadership Experience and Leadership Potential. There were some differences among the means of the various sub populations although there was no significant overall effect of the independent variables (Age Range, Qualifications, College, Industrial Experience, and School Type) on the dependent variables of Leadership Potential and Leadership Experience.

There was a significant difference in Leadership Experience between the teachers with 16-20 years teaching experience and those with 0-5 and 6-10 years teaching experience. Interestingly, the teachers with 6-10 years Teaching Experience had the highest ranked mean for Leadership Potential. It seems reasonable to expect that more opportunities for leadership would be associated with those with more teaching experience. The teachers with Certificate qualification had the highest ranked mean for Leadership Experience followed by those with Degree qualifications. This may be explained by the possibility that the older teachers, without recent pre-service degree study opportunities, had not upgraded their Certificate qualifications, which was an acceptable standard at the start of their teaching careers.

The untrained teachers (Untrained Tertiary Level Graduate and Untrained University Graduate) had higher ranked means for Leadership Potential than their trained counterparts (Trained Instructor, Trained College Graduate, and Trained University

Graduates). The Trained College Graduate i.e. those with Diploma qualification, had the highest ranked mean for perceived Leadership Potential among the trained teacher categories, including Trained University Graduates i.e. those with degree qualification. There was not a significant difference in the Leadership Potential and Leadership Experience based on College.

Research Sub-Question 2

What are the environmental and personal factors that hinder or help industrial technology teachers' leadership development and growth?

Environmental factors are seen as those situations that are outside the individual's direct control or influence that have an impact on the person. Personal Factors are seen as those factors that originate from within the individual that determine a person's choices, decisions, action, thinking and perceptions.

The respondent's mean personality scores in order of highest to lowest were Conscientiousness, Agreeableness, Adjustment, Openness to Experience, and Surgency. Based on motivation theory (Winter, 2002; Lussier & Achua, 2001) this ranking suggested that the teachers are primarily motivated by achievement and less by power and therefore are not as willing to take a leadership role. The Jamaica Association for Technical and Vocational Education and Training (JATVET) President, who, in an effort to get the association organized on a parish basis, could not find persons interested in leading or coordinating that effort echoes this apparent avoidance of leadership roles.

A two-way ANOVA of the personality factors of Surgency, Adjustment, Conscientiousness, and Openness to Experience showed no significant effect on Leadership Experience, while the factors of Agreeableness and Attitude to Leadership

Development had significant effect on Leadership Experience. This suggested that the ability to get along with others and having the proper attitude to developing one's professionalism opens up opportunity for leadership experiences.

All personal factors (Surgency, Adjustment, Agreeableness, Attitude to Professional Development, Openness to Experience, and Conscientiousness) had a significant effect on Leadership Potential.

The maximum possible score for School Environment (overall) was 30 points. The mean School Environment (overall) score for the sample was mid-range (15.45), which suggested that the school environment was a challenging one to work in. Time was the highest rated school environmental factor, followed by TVET Image, Communication, Work Stress, Community Activity, and Autonomy. School environmental factors of TVET Image, Communication, Work Stress, and Autonomy had no significant effect on Leadership Experience. However, Community Activity has a significant effect on Leadership Experience.

Mentored or Member Civic/Religious organization has no significant effect on Leadership Experience or Leadership Potential. However, there was a significant difference between those who had leadership positions in a civic or religious organization (Leader Civic/Religious) and all other respondents with regard to Leadership Potential.

Research Sub-Question 3

What are the leadership preparation needs as perceived by industrial technology teachers?

Education and training needs of teachers reveal that a Bachelor's degree is the greatest education need, followed by training in management, experience in teaching, and

skills in Human Relations/Resources. There is an overall emphasis on Administrative and Management preparation needs. Most teachers are not in an academic upgrading program, yet the majority has recognized their need for upgrading if they are to aspire to leadership positions. Upgrading qualifications on a full-time basis depends on opportunity (time, leave from job, location, access), and funding to pursue degree programs. There is no indication as to the particular circumstances affecting the current sample. The Ministry of Education Youth and Culture (MOEYC) policy allows official leave for no more than 10% of teachers and staff at a school at any one time. This includes vacation leave, sick leave, maternity leave, or study leave. This means that for a school with 85 members of staff, it cannot have more than eight teachers on officially sanctioned leave from the school. However, with one third of the teachers in the sample on an upgrading program, this can be considered a good ratio and suggests the teachers are doing their studies on a part-time basis.

The comments from 14 Heads of Departments' regarding the selection and preparation of a replacement for their post indicated they were concerned about the qualities and character of the replacement, and the process of selection. The preparation aspect of the process went unanswered except for one respondent who wrote: "No formal preparation is done."

The time taken to respond to the open-ended questions might not have allowed sufficient time for a respondent to reflect on all their needs beyond their greater academic qualifications. Deeper probing on an individual basis would likely reveal other needs, but this was beyond the scope of the study.

Research Sub-Question 4

What is the role and contribution of Jamaican education and training administrators, professional associations, and teacher training institutions in leadership development of industrial technology teachers?

The industrial technology teacher training institutions have official and unofficial programs for leadership development. Official programs have leadership content directly infused in education and professional development courses. Outside of these, leadership development involves indirect approaches, and it depends on the student, sometimes with encouragement, to seize leadership opportunities outside the formal class setting. No student association for industrial technology exists at the college level and thus leadership development is not specifically directed for future industrial technology teachers as is done for Technology Education Collegiate Association (TECA) in the USA. There are no written objectives or measures for leadership development to know how leadership is being infused into the official programs and to what extent objectives are being achieved. A post-hoc evaluation may reveal what has been accomplished over time. Teacher preparation programs plan to implement mentoring programs as these are seen as important in professional development.

The MOEYC's Technical Vocational Unit (TVU) considers the overall professional development of teachers, with leadership development being a part of it. Training sessions for teachers (mainly heads of departments) are planned based on what is the perceived need at a point in time. Although there is no written policy on leadership development, teachers are encouraged and mentored on an individual basis by officers in

the TVU. The TVU gives support to professional development activities in collaboration with the Professional Development Unit (PDU).

The PDU has overall responsibility and coordination for professional development for all personnel in the primary and secondary education system. There are not targeted programs for industrial technology teachers per se. It has an evaluation and monitoring framework for its programs. The Technical High Schools' Development Program has a professional development and leadership program for the Technical High Schools (THS). It has had workshops and attests through anecdotal, qualitative measures of improved successes in the leadership and management of the THS. Its professional development residential workshops have focused on the paid leadership positions (principal, vice principal, head of department) within the THS. Its next focus is to support the future potential leaders in the THS. The local professional association representing all technical and vocational teachers JATVET, has a professional development component within its meetings. Teachers within the study know of JATVET yet very few have attended any of its events. JATVET therefore needs to expand its professional development offerings and make them accessible for more persons to attend. Improved advertisement of events and recruitment by JATVET might also be helpful in increasing its impact.

Existing professional development programs are conducted in varying levels and intensity by the Technical High Schools' Development Project (THSDP), PDU, and TVU. Except for the PDU, the professional development programs are without a written, structured policy or plan. There is not agreement on the entity or person(s) who should initiate or lead a leadership development program, even though all entities are involved in

various programs. No entity or institution has taken full responsibility for leadership development of industrial technology teachers. This responsibility appears to be that of the individual teacher.

Interviewees suggested reasons for the apparent lack of aspiration by industrial technology teachers to take on principal or vice principal roles to include a lack of personal interest, the unattractiveness of administrative roles, academic under-qualification, and no vacancies due to seniority of incumbents. Historical bias against industrial technology teachers taking on principal roles was not considered as being relevant.

Recommendations for Practice

1. The VTDI graduates need to be given more opportunities to upgrade themselves with bachelor's degrees. As the vast majority of teachers in the system, their upgrading will affect the overall performance of the industrial technology teaching profession. A comparison of the population of the secondary school teachers (See Appendix F) and the sample in the study (Table 7) shows differences in the MOEYC classifications. In the secondary schools, there are 4% Trained Instructors, 50.1% Trained College Graduate, and 24.7% Trained University Graduates compared to 45.6%, 21.7%, and 17.5% respectively in the sample. Increasing the proportion of industrial technology teachers that are Trained University Graduates should be a short-term goal for the profession.
2. JATVET should have more than twice yearly meetings and should work in collaboration with the Technical /Vocational Unit of the MOEYC and the THSDP, the universities and colleges to have ongoing professional development

courses. The sharing of resources and energy should improve the potential synergy for the profession.

3. The THSDP leadership development program, should be expanded outside the technical high schools and offered more than a few times per year to include the high schools. The willingness expressed by teachers to support their own professional development can be considered in supplementing the costs involved.
4. As an umbrella organization, JATVET caters to a wide cross-section of technical/vocational disciplines such as Home Economics, Agriculture, Business Education, Art and Craft and thus is general in its mission and goals (See Appendix G). A sub-unit or affiliate body should be formed within JATVET for the industrial technology teachers catering to their specific needs. This sub-unit would benefit from the existing network and goodwill enjoyed by JATVET.
5. Opportunities for leadership practice should be increased for industrial technology teachers. Principals and Heads of Departments are to encourage industrial technology teachers to take on administrative roles and responsibilities within the schools and give support and guidance as necessary. Leadership experience helps to build leadership skills.
6. Civic and religious organizations can play a role in leadership development. This is where the majority of the respondents have gained some leadership skills. Therefore, industrial technology teachers as individuals, should also seek leadership opportunities outside of the classroom setting to build their leadership skills. The leadership skills are transferable and would impact their effectiveness in the profession.

7. Establish a collegiate industrial technology education association at the teacher training institutions to develop leadership skills of the future industrial technology teachers (Havice, 2001). The collegiate organizations are a training ground for future leaders as it provides a formal structure for mentoring, confidence building and developing management and leadership skills.

Recommendations for Further Study

The following are potential areas of research to further understand leadership development of industrial technology teachers:

1. The majority of the schools in the study from Regions 1 and 6 are located in or near the major metropolitan areas of May Pen, Spanish Town, and Kingston. A replication of the study in other geographic regions in Jamaica and the Caribbean region, considering rural and urban dichotomies could add to understanding other potential environmental issues affecting leadership development.
2. Conduct cross-sectional longitudinal studies of leadership growth and development of pre-service, beginning, and mid-term career industrial technology teachers. This would allow for the measurement of the effectiveness of existing leadership development programs and determine how to design future leadership programs.
3. Conduct a life-history study of industrial technology teachers who have excelled in their profession and attained leadership roles (principal, vice principal, directors, and supervisors). This life history should add to the story telling record and inspire or model the way for future industrial technology teacher-leaders.

4. The industrial technology teachers with 11-15 years teaching experience was the smallest group in the sample (N = 8). A study to determine what accounts for this decline in numbers at this career stage might reveal mid-career issues affecting industrial technology teachers.

Concluding Remarks

The perception of the professional status of industrial technology teachers in Jamaica appears to be improving, partially due to access to bachelor's degree programs. Factors suggested to ensure an improved status are a strong professional organization, support from the Ministry of Education, Youth and Culture, linkages with industrial organizations for industrial technology teachers, minimum standards of operation, and continuing professional education.

With a relatively young cadre of industrial technology teachers, and increasing numbers of university degree graduates, now is an opportune time to implement appropriate academic and leadership development programs. It is hoped that industrial technology teachers, with the proper attitude to professional development, and with opportunities to develop their skills through leadership experiences, will have a positive impact on the profession and thus the output from the secondary school education system.

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Appendix A

Schools in Population

Region 1	Region 6
Ardenne High	Ascot High
Calabar High	Bog Walk High
Camperdown High	Bridgeport High
Campion College	Bustamante High
Charlie Smith High	Central High
Clan Carthy High	Charlemont High
Denham Town High	Clarendon College
Dunoon Park Technical High	Claude McKay High
Edith Dalton James High	Cumberland High
Excelsior High	Denbeigh High
Haile Selassie High	Dinthill Technical High
Holy Trinity High	Edwin Allen High
Jamaica College	Eltham High
Kingston College	Ewarton High
Kingston High	Garvey Maceo High
Kingston Technical High	Glengoffe High
Mavis Bank High	Glenmuir High
Meadowbrook High	Greater Portmore High
Merl Grove High	Guys Hill High
Mona High	Innswood High
Norman Manley High	Jonathan Grant High
Oberlin High	Jose Marti Technical High
Papine High	Kellits High
Pembroke Hall High	Kemps Hill High
Penwood High	Lennon High
Priory High	McGrath High
St. Andrew Technical High	Old Harbour high
St. Anne's High	Spanish Town High
St. George's College	St. Catherine High
St. Hugh's High	St. Jago High
Tarrant High	St. Mary's College
Tivoli Gardens High	Tacius Golding High
Trench Town High	Thompson Town High
Vauxhall High	Vere Technical High
Wolmer's Boys School	Waterford High
Yallas High	

Appendix B

Instrument Analysis

Questionnaire Cover Letter to teachers

Letter to principals

Leadership Assessment Questionnaire

Questionnaire Evaluation Sheet

Letter to Ministry of Education, Youth and Culture

Approval letter from Ministry of Ministry of Education, Youth and Culture

NC State Institutional Review Board Approval letter

Post card

INSTRUMENT ANALYSIS

Sub Questions	Concept	Variables/factors	ITEM
1. What is the association between education, college of study, age, years of teaching experience, other experiences, and school type on industrial technology teachers' self-perceptions of leadership attributes?	Demographics	Age Range	D:1
		Teaching Experience	D: 8
		Work Experience	D: 11
		College	D: 4
		Qualification	D: 3-7
		School Type	From questionnaire code
		Region	From questionnaire code
		Classification	D: 9
	Leadership attributes	Leadership Experience	C: 3, A: 26, 27
		Leadership Potential	A: 16, 17, 18, 19, 29, 21, 22
2. What are the environmental and personal factors that hinder or help industrial technology teachers' leadership development and growth?	Environmental factors	Work stress	B: 33
		Communication	B:29
		Time	B: 32
		Autonomy	B: 34
		TVET Image	B: 31
		Community Activity	B: 32
		Leader Civic/Religious	D: 2
		Member Civic/Religious	D: 2
		Mentored	D: 12
	Personal factors	Attitude to Professional Development	A: 23, 24, 25, 28
		Surgency	A: 1, 9, 14
		Conscientiousness	A: 4, 7, 12
		Agreeableness	A: 2, 10, 15
		Adjustment	A: 3, 6, 11
		Openness to Experience	A: 5, 8, 13
3. What are the leadership preparation needs as perceived by industrial technology teachers?	Leadership Development needs		C:1
What is the role and contribution of Jamaican education and training administrators, professional associations, and teacher training institutions in leadership development of industrial technology teachers?	Policy and operational perspective		Interview

c/o 38 Mars Drive
Kingston 17
Jamaica
haldanej2001@hotmail.com

January 8, 2004

Dear Industrial Technology Teacher,

I am a technical teacher and UTech Lecturer completing doctoral studies in Technology Education at North Carolina State University in Raleigh, North Carolina, USA. I am conducting a study on the perception of leadership and leadership development among high school industrial technology teachers and instructors. I need your help in completing the attached questionnaire. I know and understand the pressures of start-of-term activities, but a few minutes of your time to complete this questionnaire will be invaluable for our profession.

A leadership development programme through workshops, short courses, conferences, continuing education, and collegial support will enhance our capacity for greater leadership, administrative responsibility and personal advancement in our schools. This in turn I hope will enhance our status, professionalism, teaching effectiveness and service to our many stakeholders.

The questionnaire will take about 20 minutes of your time. The information you give in this questionnaire will remain confidential. You do not have to give your name. The questionnaires however are coded so I can track the type of school that respond according to their zone, not the individual teacher. No one except myself and research advisor will have access to the codes or your questionnaire. Data will be summarized and reported in general terms and not a school or individual basis.

It is important to complete all sections of the questionnaire to facilitate proper analysis. Please complete the questionnaire carefully and return sealed in the enclosed envelope. To maintain anonymity, the envelopes will not be opened until all questionnaires from other schools are collected.

If you wish to have a summary of the findings from this study, please complete and send the postcard that is in your packet. Do not include the postcard with your questionnaire. Leadership development might be a very critical issue for you. Therefore, if you wish to ask any question or to be interviewed to provide more insight, you may include contact information for me to follow up or call me at 789-____ (cell). You may withdraw from answering any question at any time without penalty.

Thanks again for your time. I value your input. I believe this information will support the improvement of the leadership, professionalism and status of industrial technology/vocational teachers.

Yours truly,

Haldane Johnson (Mr.)

PS. Please accept the small token included.

38 Mars Drive
Kingston 17

January __, 2004

The Principal
_____
_____

Dear _____

I am Haldane Johnson, UTech Lecturer completing doctoral studies in Technology Education at North Carolina State University in Raleigh, North Carolina, USA. I am conducting a study on the perception of leadership attributes and leadership development among high school industrial technology teachers and vocational instructors. _____ High School was randomly selected for my sample, and I am asking for your permission to conduct this survey.

The following are facts about the study:
Title: *Individual perceptions of leadership attributes by industrial technology teachers in selected public high and technical high schools in Jamaica.*
Population & Sample: Industrial technology and vocational teachers of grades 10-11 courses in CXC and NCTVET in Regions 1 and 6 (Approx.155 teachers in 22 high schools and 4 technical high schools.)
Methodology: Questionnaire (6-point Likert), Open-ended items.
Safeguards: Anonymity and confidentiality will be maintained. Data will be summarized and reported in general terms and not on a school or individual basis.
Risks: None perceived.
Dissertation Committee chairman: Dr. James Haynie (919) 515-1748 (office) or Fax: (919)515-6892.
Approval: Mr. Wesley Barrett, MOEYC.

If you grant permission, the enclosed package(s) are for distribution to your industrial technology or vocational teachers that teach grades 10&11 courses in CXC or NVQ-J/NCTVET. The teachers are not to be forced to participate and they can withdraw at any time. It is my hope they are willing to contribute to a study that has implications for their professional and leadership development.

Within each packet is a letter to the teacher, a questionnaire, a self-addressed envelope, and a post card and a token. The questionnaire will take about 20 minutes of their time and should not unduly interfere with their work responsibilities. The information they give in this questionnaire will remain confidential. They do not have to give their names. The questionnaires however are coded so I can track the type of school that respond according to their zone, not the individual teacher. No one except my research advisor at North Carolina State University and myself will have access to the codes or the questionnaire.

If there are any questions concerning this study please contact me at haldanej2001@hotmail.com or telephone 789- ____ (cell), or my dissertation committee chairman, Dr. James Haynie (919) 515-1748 (office) or Fax: (919) 515-6892.

Thanks again for your time and support. I believe this information will support the improvement of the leadership and professionalism of industrial technology teachers to enhance their teaching effectiveness and service in your school and community.

Yours truly,

Haldane Johnson (Mr.)

Leadership Assessment Questionnaire

Please fill out the following information to the best of your knowledge. The information you give in this questionnaire will remain confidential. Data will be summarized and reported in general terms and not on a school or individual basis.

PART A: The following statements are about your Personality, Leadership Potential, Professional Development, and Leadership Experience. Indicate the extent to which you agree or disagree by circling the relevant number.

1 = Strongly Disagree 2 = Disagree 3 = Slightly Disagree 4 = Slightly Agree 5 = Agree 6 = Strongly Agree

6. I step forward and take charge in leaderless situations.	1	2	3	4	5	6
7. I am concerned about getting along well with others.	1	2	3	4	5	6
8. I have good self-control; I don't get emotional and get angry and yell.	1	2	3	4	5	6
9. I'm dependable; when I say I will do something, it's done well and on time.	1	2	3	4	5	6
10. I try to do things differently to improve my performance.	1	2	3	4	5	6
11. I perform well under pressure.	1	2	3	4	5	6
12. I work hard to be successful.	1	2	3	4	5	6
13. I go to new places and enjoying traveling.	1	2	3	4	5	6
14. I am outgoing and willing to confront people when in conflict.	1	2	3	4	5	6
15. I try to see things from other people's point of view.	1	2	3	4	5	6
16. I am an optimistic person who sees the positive side of situations (the cup is half full).	1	2	3	4	5	6
17. I am a well-organized person.	1	2	3	4	5	6
18. When I go to a new restaurant, I order foods I haven't tried.	1	2	3	4	5	6
19. I want to climb the education ladder to as high a level of management/responsibility as I can.	1	2	3	4	5	6
20. I want other people to like me and to be viewed as friendly.	1	2	3	4	5	6
16. I'm interested in and willing to take charge of a group of people.	1	2	3	4	5	6
17. When I'm not in charge, I'm willing to give input to the leader to improve performance.	1	2	3	4	5	6
18. I'm interested in and willing to get people to listen to my suggestions and to implement them.	1	2	3	4	5	6
19. When I'm in charge, I want to share the management responsibilities with group members.	1	2	3	4	5	6
20. I want to have clear goals and to develop and implement plans to achieve them.	1	2	3	4	5	6
21. I like to change the way my job is done, and to learn and do new things.	1	2	3	4	5	6
22. I enjoy working with people and helping them succeed.	1	2	3	4	5	6
23. All teachers should attend an upgrading course/seminar as a lifelong learner.	1	2	3	4	5	6
24. I seek out ways of improving my teaching content each term.	1	2	3	4	5	6
25. I would attend a seminar for my professional benefit at my own expense.	1	2	3	4	5	6
26. I have been given opportunity to chair meetings or committees at school.	1	2	3	4	5	6
27. I am able to make contributions to staff meetings when they are held.	1	2	3	4	5	6
28. I would benefit by being a member of a professional association for Industrial technology teachers.	1	2	3	4	5	6

PART B: The following statements are about your School Environmental Context
Please rate the following from Low = 1 to High = 5 by circling the appropriate number.

	Low				High
29. How would you characterize the quality of communication among your school's teaching staff?	1	2	3	4	5
30. Rate the amount of time you have to prepare for class?	1	2	3	4	5
31. Rate the image of industrial tech/voc education in your school.	1	2	3	4	5
32. How much time do you spend on community activities?	1	2	3	4	5
33. What has been your level of job-related stress at school over the past five years?	1	2	3	4	5
34. What level of freedom do you have to change the curriculum?	1	2	3	4	5

PART C: This section has open-ended questions. Please respond as accurately and completely as possible.

1. If you were to become head of department/section or principal/vice principal in the future, what preparation (experience, training, education, etc) do you think you would need to effectively perform that role? Please be as specific as possible.

_____

_____

_____

_____

_____

_____

If you are not a head of department/section go to question 3.
2. If you should move to another school, after giving proper notice, describe how your replacement as head of department/section is selected and prepared.

_____

_____

_____

_____

_____

3. Have you ever been actively pursued to lead or "volunteered" to be on a committee at school or elsewhere? Describe the situation and how you responded.

_____

_____

_____

_____

_____

PART D: Finally, I would like to ask questions about you and your school in order to interpret the results. Please fill out the blanks and mark the appropriate boxes. The information you give in this questionnaire will remain confidential. Data will be reported in general terms and not on a school or individual basis.
Please indicate your response by marking ☒ to all that apply. If a question is not applicable, write "N/A".

PERSONAL

1. Name:_____(Optional)

2. Age Range: ☐ 25 & Under ☐ 26-30 ☐ 31-35 ☐ 36-40 ☐ 41-45 ☐ 46-50 ☐ 51-55 ☐ 56-60 ☐ 61&over

3. Are you a member of a civic, service, sport, religious or similar organization/group? ☐ Yes ☐ No
   If yes, please name the organization(s) and the leadership position(s) held: _____

_____

EDUCATION

1. What type of secondary school did you last attend? ☐ Comprehensive ☐ Technical ☐ Vocational
   ☐ High ☐ All Age ☐ New Secondary ☐ Junior Secondary ☐ Other (Please state)_____

2. What tertiary or post-secondary institution did you attend? ☐ Mico ☐ VTDI ☐ HEART Academy
   ☐ UTech/CAST ☐ Community College ☐ Other (Please state)_____

3. Last qualification obtained: ☐ Statement ☐ Certificate ☐ Diploma ☐ Degree ☐ Other (Please state)_____
4. Specialization: _____
5. Are you currently enrolled in an upgrading programme? ☐ Yes ☐ No
   If yes, which one? _____

PROFESSIONAL

1. Current position: _____. Years in position: _____. Years of teaching experience: _____

2. What is your Ministry of Education teacher classification? ☐Trained University Graduate ☐Untrained University Graduate
   ☐Trained College Graduate ☐Untrained Tertiary Level Graduate ☐Trained Instructor ☐Untrained Secondary School Graduate

3. Subjects you teach and grade levels (Indicate if subjects are CXC, NVQ-J/NCTVET, ROSE or other.):
_____
_____

4. Do you have industrial working experience? ☐ Yes ☐ No. If yes, how many years? _____

5. Have you been mentored in your job? ☐ Yes ☐ No. If yes, when? _____

6. Have you heard of JATVET? ☐ Yes ☐ No. If yes, have you attended any JATVET sponsored event? ☐ Yes ☐ No.

7. Did you have any difficulty answering this questionnaire? ☐ Yes ☐ No

8. Is there any comment on leadership development you would want to add, please do so here or overleaf:

Thanks for your kind cooperation

Please return promptly using the self-addressed envelope to:

Mr. Haldane Johnson
38 Mars Drive
Kingston 17

Questionnaire Evaluation

Please use this form to evaluate the questionnaire. The feedback will help me improve its effectiveness.

1. Are the instructions clear and easy to understand?

2. Are the questions easy to understand?

3. Do you find any questions offensive?

4. Do you find any questions problematic? What changes might make the question better?

5. Is the layout acceptable?

6. Is the size of print readable?

7. Are any questions that seem confusing or redundant to you?

8. How long did it take you to complete the survey?

9. Is there anything else you can tell me about the questionnaire? Please make any additional comment below.

Thanks for you assistance.

914 Athens Drive,
Apt B.,
Raleigh, NC 27606

Date

Mr. Wesley Barrett,
Chief Education Officer,
MOEYC
edchief@cwjamaica.com

Request for permission to conduct survey
Dear Mr. Barrett,

I am Haldane Johnson, UTech Lecturer completing doctoral studies in Technology Education at North Carolina State University in Raleigh, North Carolina, USA. I am conducting a study on the perception of leadership attributes and leadership development among high school industrial technology teachers and vocational instructors. I am asking for your permission to conduct this survey in select high and technical high schools in Regions 1and 6.

The following are facts about the study:
Title: *Individual perceptions of leadership attributes by industrial technology teachers in selected public high and technical high schools in Jamaica.*
Population: Industrial technology and vocational teachers of grades 10-11 courses in CXC and NCTVET in Regions 1 and 6
Sample: Approximately 155 teachers in 22 high schools and 2 technical high schools.
Methodology: Mail-in questionnaire (6-point Likert), Open-ended items;
Safeguards: Anonymity and confidentiality will be maintained. Data will be summarized and reported in general terms and not on a school or individual basis.
Risks: None perceived.
Dissertation Committee chairman: Dr. James Haynie (919) 515-1748 (office) or Fax: (919)515-6892.
Other: There will be interviews of select educational leaders and administrators at teachers' college responsible for preparing industrial technology and vocational teachers.

It is my expectation that findings from this study will support the improvement of the leadership and professionalism of industrial technology teachers and vocational instructors thus enhancing their teaching effectiveness and service in our schools and community.

If there are any questions concerning this study please contact me at haldanej2001@hotmail.com or telephone (919)852- ____.

Thanks for your consideration to this request. I anticipate a favorable response.

Yours truly,

Haldane Johnson (Mr.)

MINISTRY OF EDUCATION, YOUTH AND CULTURE
2 NATIONAL HEROES CIRCLE
P. O. BOX 498
KINGSTON, JAMAICA W. I.

ANY REPLY OR SUBSEQUENT REFERENCE TO THIS COMMUNICATION SHOULD BE ADDRESSED TO THE PERMANENT SECRETARY AND THE FOLLOWING REFERENCE QUOTED:-

G410/017

December 31, 2003

Mr. Haldane Johnson
North Carolina State University
Raleigh
North Carolina
USA

ATTENTION: DR. JAMES HAYNIE, DISSERTATION COMMITTEE CHAIRMAN

Dear Mr. Johnson

The Ministry of Education, Youth and Culture uses this medium to congratulate you on your doctoral studies at ***North Carolina State University***.

The Ministry of Education Youth and Culture is pleased to grant permission for you to conduct a study on "***Perception of leadership attributes and leadership development among high school industrial technology teachers and vocational instructors***".

We believe the findings of the survey will contribute to the development of education in Jamaica and wish you success in your studies.

Yours faithfully

Wesley E. Barrett
CHIEF EDUCATION OFFICER

North Carolina State University is a land-grant university and a constituent institution of The University of North Carolina

Office of Research and Graduate Studies

NC STATE UNIVERSITY

Sponsored Programs and
Regulatory Compliance
Campus Box 7514
1 Leazar Hall
Raleigh, NC 27695-7514

919.515.7200
919.515.7721 (fax)

From: Debra A. Paxton, Regulatory Compliance Administrator
North Carolina State University
Institutional Review Board

Date: December 15, 2003

Project Title: Individual Perceptions of Leadership Attributes by Industrial Technology Teachers in Selected Public High and Technical Schools in Jamaica

IRB#: 271-03-12

Dear Dr. Johnson:

The research proposal named above has received administrative review and has been approved as exempt from the policy as outlined in the Code of Federal Regulations (Exemption: 46.101.b.2). Provided that the only participation of the subjects is as described in the proposal narrative, this project is exempt from further review.

NOTE:

1. This committee complies with requirements found in Title 45 part 46 of The Code of Federal Regulations.
   For NCSU projects, the Assurance Number is: FWA00003429; the IRB Number is: IRB00000330

2. Review de novo of this proposal is necessary if any significant alterations/additions are made.

Please provide a copy of this letter to your faculty sponsor. Thank you.

Sincerely,

Debra Paxton
NCSU IRB

Postcard

H. Johnson
38 Mars Drive
Kingston 17

To: Haldane Johnson
38 Mars Drive
Kingston 17

If you wish to receive a summary of this study or to be interviewed concerning leadership, please indicate [X] and provide contact information below. If you have a change of mind, you can withdraw at any time.

[ ] I would like the summary of this study

Contact name: _____ (you do not have to give your real name)

Mailing Address: _____

Email _____

[ ] I would like to be interviewed further.

Email: _____ Telephone number (___)_____

Appendix C

Interview Protocol and Schedule

Telephone Interview introduction

Hello_____, this is Haldane Johnson. I am completing doctoral studies in Technology Education at North Carolina State University in Raleigh, North Carolina.

My dissertation research is on "*Individual perceptions of leadership attributes by industrial technology teachers in selected public high and technical high schools in Jamaica.*"

I believe you / your office has an interest in the leadership development of technical teachers, and I would like you to consider being interviewed on this matter.

If you agree to the interview please send me an email confirming your decision to haldanej2001@hotmail.com. I will send the questions to you via email for you to peruse and prepare before the interview.

I will need your permission to tape-record the interview and to be able to quote you verbatim. You may decline to answer any question at any time. Before I use your statements in my study, I will send you via email the interview transcript (with our names coded) for verification. You can alter what your meaning and intent was.

When can we have the interview? At what number should I call you? I do not perceive we need more than 45 minutes.

Thanks for your assistance. I will send the questions to you within the hour.

Interview Schedule

- **Senior Administrator**

    - What is your philosophy of leadership?
    - How important is leadership in education?
    - What issues in education do you see the need for leadership?
    - How would you describe the status of the industrial technology teachers?
    - Without naming them, do you know any industrial technology teachers you consider to be leaders?
    - What would be required for them to step up to those positions?
    - How would you rate the professionalism of industrial technology teachers?
    - What do you see as the hindrances/challenges facing industrial technology teachers in their quest in becoming school principals?
    - How would you describe the opportunities for industrial technology teachers in comparison to other teachers in becoming principals?
    - What are the key things that principals should be able to do in order to be effective leaders?
    - How are teachers prepared for their jobs as principals?
    - What programs have been planned for the leadership development of technical teachers?
    - What is the role of your office in developing leadership for the school system?
    - Is there a formal leadership plan (policy) from your office/department?

- **Academic Director**
- **Senior Lecturer**

    - How are student-teachers prepared for leadership roles in the future?
    - How are student leaders developed?
    - How important is leadership at the classroom level? How would you describe that leadership?
    - What would be the initial steps in changing the status of industrial technology teaching profession?
    - What role does mentorship play in developing leaders? Do you have examples?
    - Few industrial technology teachers are principals. Why do you think this is so?

- **Project Director**

    - What is your organization's philosophy of leadership?
    - How important is leadership development for tech/voc teachers?
    - What type of leadership skills do technical vocational teachers require?
    - What leadership development programs are being planned?
    - What type of teacher would you target for leadership development?
    - What criteria do you use to identify persons for leadership development?
    - How intensive is the leadership development program in place.
    - What are the support systems?
    - What are the barriers?
    - Is there a budget for this activity? How many industrial tech teachers have participated?
    - Is there a written leadership development plan?

- **JATVET President**

    - How many members are in JATVET?
    - What is the profile of membership?
    - How many are industrial technology teachers?
      What would be the a) specific benefit b) general benefit for industrial technology teachers becoming members of JATVET?
    - How do you work with other discipline-specific professional groups?
    - What type of continuing education/professional development upgrading?
    - What programs do you have for members?
    - Describe JATVET's perception of the future leadership in industrial technology education.
    - Are there sufficient future leaders in the pool of technical vocational teachers?
    - What are the disciplines from which the leaders are emerging?

APPENDIX D

Description of Variables

Age Range	The chronological age of the teachers in defined ranges.
Qualification	The academic preparation of teachers at the post-secondary level.
Statement	The document given to teachers who attempted a post-secondary program of study or various courses that did not terminate in a certificate, diploma or degree.
Certificate	The award given after successfully completing a two-year full-time post-secondary program of study. A certificate is equivalent to an Associate's Degree.
Diploma	The award given after successfully completing a three-year full-time post-secondary program of study.
Degree	The award given after successfully completing a four-year full-time or equivalent post-secondary program of study.
Teaching experience	Years or proportion thereof that a teacher is employed in an instructional capacity in the classroom.
Industrial Experience	Years or proportion thereof that a teacher is employed full-time or part-time in an industrial or business setting.
Classification of teachers for remuneration are as follows:	
Trained Instructor	Graduates of vocational/technical programs in possession of a Diploma or Certificate in a specialization area (with teacher training).
Trained College Graduate	Graduates of teachers' colleges in possession of an education diploma.
Trained University Graduate	Graduates of a recognized University program in possession of a Degree in Education or posses a Bachelor's degree and post-graduate diploma in education.
Untrained University Graduate	Graduates of a recognized University program with a Bachelor's degree (without teacher training).
Untrained Tertiary Level Graduate:	Graduates of a recognized college, post- secondary or tertiary level program with a Diploma or Certificate (without teacher training).
Untrained Secondary School Graduate	Teachers with a secondary school diploma and/or subjects and a Statement from a college/university employed on a temporary basis. This person is oftentimes completing his/her program on a part-time basis at the college/university.
College	Post-secondary institution from which teacher or instructor training qualification is obtained

Description of Variables *(continued)*

Leadership Experience	Opportunities for teachers to chair committee meetings, and to contribute ideas and opinions at general staff meetings.
Work Stress:	A measure of difficulties faced by teachers that are job related.
Communication:	A measure of the level of communication among teaching staff.
Time:	The amount of time a teacher has for class preparation.
Community Activity:	A measure of the time teachers has spent on community activities.
Autonomy:	A measure of the freedom a teacher has to change the curriculum.
TVET Image:	A measure of the status and value of Industrial Technical/Vocational Education and Training within the school setting.
Leadership potential:	A measure of the innate and likely ability to: be assertive and take charge of a group, give unselfish support to others, motivate others to act on shared ideas and vision, implement clear workable plans, have flexibility to adapt and change, being sociable and helping others succeed.
Surgency:	tendency to display behaviors that reflect leadership, competition and extraversion.
Conscientiousness:	tendency to display responsibility, credibility and hard work.
Agreeableness:	tendency to get along with others, being sociable.
Adjustment:	tendency to show emotional stability, self control, secure, and positive.
Openness to Experience:	tendency to be willing to change and try new things.
Attitude to Professional Development:	A measure of the willingness of a teacher to improve teaching content, attend seminars, involved in life-long learning, and serving in a professional association.
Mentored:	A person that has received professional guidance from superiors at various stages during their career.
Member Civic Religious:	A person that is a member of a religious or civic organization.
Leader Civic Religious:	A person that is in a leadership position of a religious or civic organization.
School Environment	Overall measure of the quality of the school environment.

Appendix E

Open feedback from teachers

It is my hope that your instrument will bring some light to this dying sector, which is basically where self employ[ment] can emerge from, since our economy needs oxygen and imported medication. Peace 11-1-04
P.S. Keep the fire burning –Jah bless.

Untrained graduates should be able to access education course easily, and in an evening program. This is currently not available for secondary education.

1. It provides an opportunity to study the vast field of industries.
2. In the event you plan to attend the college or university, this development can give an excellent introduction into the study of industry and of technology as it affects our economy

I would like to see our leaders in these positions to be more flexible in the management of their job

I strongly believe that the study in this area is of importance and will shed light [on] a number of things/ issues.

In today's society the role of leadership is of utmost importance. It is therefore fitting for leaders to be properly trained and developed. I strongly support any form of development as a leader!

Personnel development for individuals in top leadership jobs

There should be seminars workshop for teachers to improve on their leadership skills.

Persons who are placed or get a leadership position should ensure that they perform well! As a result, the necessary authority should have leadership meetings/ conference/ seminar to constantly train those individual[s].

Whenever the leader of an organization delegates responsibilities to a person who performs the assigned tasks well and a position or vacancy for advancement opens, the leader is expected to appoint this person and not some other person who has not served in that position before.

Module on leadership development should be included in teacher training programme (Eg. Effective school Management)

A lot of for teachers need leadership development courses and should be encouraged, if not mandated to get enrolled in some.

I strongly believe every leader within an educational institution, should pursue courses in guidance and counseling, because students relate to all teacher and administrator within the institution

Appendix F

Table 38

Distribution of teachers in public secondary schools in Jamaica

Qualification	Frequency	Percentage
TCG	4817	50.1
TI	380	4.0
TUG	2378	24.7
USSG	527	5.5
UUG	747	7.8
UTLG	764	7.9
Total	9613	100

Source: Statistics Section, MOEYC (2003)

Key:
TI= Trained Instructor
TCG= Trained College Graduate
USSG=Untrained Secondary School Graduate
TUG= Trained University Graduate
UTLG= Untrained Tertiary Level Graduate
UUG= Untrained University Graduate

Note: Total of 155 schools

Appendix G

JATVET Brochure

JATVET: THE GENESIS

JATVET was born out of a concern to strengthen and professionalize Technical & Vocational Education and Training (TVET) in Jamaica.

The inspiration came out of an exposure of some outstanding Jamaican Technical & Vocational Educators to the American Vocational Association(AVA) Convention in Las Vegas Nevada, USA, in December 1986. They were convinced that the time was right for Jamaica to have its own Association especially as they saw the benefits of AVA in terms of the professional development of its members. The necessary groundwork was done by a steering committee between 1986-1989 which included drafting a constitution for the Association. With the final presentation and adoption of the constitution, JAVET was launched June 25, 1989.

Several of our members were potent forces in the development of a National Policy on TVET, and to- date, we have become a vital part of the TVET landscape as member of the National Council on Technical & Vocational Education & Training (NCTVET)

PHILOSOPHY

The good citizen, one who contributes effectively and responsibly to national economic development, can fulfill his/her role only if he/she possesses the necessary knowledge, skills, and attitudes. JATVET, therefore believes that Technical/Vocational Education and Training in Jamaica should prepare individuals to acquire such knowledge, skills, attitudes and (vocational) experience appropriate to the demands made by society so that they will be effective as workers and agents in nation building

GENERAL OBJECTIVES

1. Professional Impact:

To create national public awareness of the activities and ethos called Technical/Vocational Education and Training so that it can be recognized as a scientific body of discipline.

2. National Advisory Body:

To provide a forum of communication to political directors, policy makers and other public decision entities thereby acting as a strong lobby group and gaining acceptance as the body that speaks for Technical/ Vocational Education and Training in Jamaica.

3. Career Plan:

To encourage persons going into employment to recognize the discipline as an important means of acquiring the skills needed to perform competently.

SPECIFIC OBJECTIVES

1. To promote Technical/Vocational Education and Training from a professional standpoint.

2. To offer professional advice to government and international agencies in the preparation and monitoring of projects in the field of Technical/Vocational Education and Training.

3. To provide a link between the activities of government and the private sector in the field of Technical/Vocational Education and Training.

4. To lobby for the establishment of common standards in Technical/ Vocational Education and Training at the local level, and serve a monitoring role to ensure that these standards are maintained.

5. To encourage research in the field of Technical/Vocational Education and Training, and to encourage the documentation and exchange of ideas through the publication of a professional journal.