

Leadership Style in the Utilization and Effectiveness of ICT Application Tools by Educational Management

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Abstract: This study aimed to determine the level of utilization of ICT application tools, level of effectiveness in the implementation of ICT application tools, and the leadership style of academic heads, academic teachers, and administrative staff at Iloilo State College of Fisheries Main Campuses for Academic Year 2016-2017. The present study was a mixed method of research that employed descriptive-correlational and qualitative method of research. A total of 110 participants were employed in this study that made use of various instruments to gather data—questionnaires and interview guide, which were either standardized or validated by experts. Results revealed that academic heads have employed democratic leadership style. ICT application tools were highly utilized in different offices, in which, those with academic functions have very highly effective level of ICT utilization. Authoritarian leaders are very highly effective in terms of the level of effectiveness on ICT application tools utilization while transactional leaders are very highly effective in the use of ICT application tools. Based on the results of the study, Barrido's Leadership Style in ICT Efficiency Usage Theory was conceptualized that states: Democratic leaders were not as effective as the transactional leaders in the use of ICT application tools but they encourage their followers to do so as evidenced by the academic heads' very highly effective use of them. Recommendations in the light of the results of the study were made.

Keywords: ICT application tools, functionality, professional attribute, efficiency usage, leadership style.

1. THE PROBLEM

Introduction:

Managers perform many roles in an organization and how they handle various situations will depend on their style of management. A management style was an overall method of leadership used by a manager. One of the interesting things about style was that managers with the most flexibility in style get the best outcomes from their people. Leadership style was not about good or bad, right or wrong: leadership style depends on the task, people, and situation to be managed (Bush, 2007). Managerial styles were very important being studied in the current situation as effective and appropriate management enhances the attainment of the objectives. Mostly, democratic managerial style is being taken positively by department heads in educational situations.

Instructional leaders have a variety of educational roles like peer coaches, program coordinators, department heads, assistant professors, associate professors, and university professors. These plantilla positions were aimed to supervise faculty and assist them in the academe. It has been often seen that instructional leaders normally implement the indistinguishable managerial approach for all teachers whereas some approaches were more or less appropriate to a particular situation. It was a great challenge for instructional leaders to explore a variety of approaches to aide in the development of all types of teachers.

The management style in using technology was a managerial jargon often used to describe management as a function of behavior associated with personality. McGuire (2005) also explored rudimentary management styles of different managers in the pharmaceutical industry and came up with charismatic, persuasive, consultative, transactional,

transformational and delegating styles. Worrall (2005) performed a survey in United Kingdom and he found that most of the managers were bureaucratic and restrictive in their management using technology that were not favorable to development of high performance cultures for creativity and innovation to flourish in most organizations. Employees perceived the behavior and actions of managers as actions of the organization itself. He further stated that due to this perception, employees developed positive or negative attitude towards the organization based on the actions of the managers. Pathack (2005) also encouraged that management styles affected the effectiveness and performance of organizations.

In the current age of information technology, educational institutions were expected to play a crucial role as the engine for knowledge generation and learning environment. In this regard, Information and Communications Technology (ICT) became the vital means to facilitate this task. ICT has become an essential part of everybody's life. Accordingly, an integration of this in education was inevitable due to the fact that the use of ICT in education has become one of the most effective factors of school improvement (Tosun & Barris, 2011) not only for the purpose of teaching and learning but also for administrative use.

ICT applications in education can be considered as an effective enabler to create access, store, transmit, and manipulate different information in audio and visual form, due to the capability of ICT in providing proactive environment (Kawade & Kulkani, 2012). ICT application in education may be used in various ways. It may be used for effective teaching-learning processes to achieve quality education and overall development of students or for administrative purposes by teachers, staff and management team. Undeniably, technology was not new to the College. However, its setback lied in the fact that it entailed acquisition of more recent technology that probably paved more advances in the entire educational technology, making the ICT application tools potent means for educational management. But at times, there were some faculty members who resisted in the adoption of ICT applications due to differing reasons such as inability to adapt to new technologies, resistance to change, lack of motivation, and hesitant attitude towards the use of new technologies, among others.

The use of technology in education has become popular to the students. However, the motivation of students to perform better in school and the degree on how this activity in the teaching-learning scenario became more effective and meaningful depends on the extent of support the institution in general, provided to the faculty, staff, and students. The poor transmission of communication signal or poor internet connection in the college hinders the utilization of ICT application tools as it was important in the process of information and data needed in every office or department. Due to these enumerated reasons, there was no synchronized or standards set in the application of ICT tools used in the colleges. Thus, this study will determine how crucial the role of academic heads or managers was in an institution to improve the utilization and effectiveness of ICT application tools at Iloilo State College of Fisheries (ISCOF) Main Poblacion Campus and ISCOF Tiwi Campus.

Theoretical Framework:

Teaching is a major aspect of education process. The process involves planning, organizing, directing, leading and managing learning activities towards the desire goals and learning outcomes. To be effective in teaching, a great deal of instructional materials should be utilized. Computer technology in education is the most recent trend. The invention of the ages has brought new technologies and usage of Information and Communications Technology applications like internet; website; computer-assisted instruction that includes simulation and games, drill and practices, tutorials and discipline-specific programs; computerized enrollment system; on-line enrollment system; software applications like: bibliographic database, e-books, e-data archives, e-journal, e-mail, e-magazine, e-newspaper, e-thesis, e-maps, Management Information System, Modern Database (Cloud Computing), MS Excel, MS Power Point, MS Word ; and hardware like digital camera, DVD player, electronic bulletin board, flat screen television, glass board, iphone, laptop/netbook, ipod, LCD or LED television, multi-media projector, overhead projector, and white board.

Educators recognized the need for computer technology especially ICT application tools which essentially helped improve the overall efficiency of the teaching process that enhanced educational quality. Consequently, ICT application tools became part of the total in the educational process. Therefore, Iloilo State College of Fisheries has taken measures to introduce educators to the world of computer technology and computer-aided instruction.

Conversely, the challenges brought by ICT application tools revolution are diverged that may have differed the level of utilization and effectiveness of ICT application on educational management and how it relates to leadership style. It was in this context that the study was anchored to.

Basically, the following learning theories were the scaffolds of this study:

According to Ghavifekr and colleagues (2013), Information and Communications Technology (ICT) played an important role in enhancing the quality of education. Administration and management applications of ICT, types of applications and their effectiveness for administrative activities in schools were presented. Furthermore, in the current information age, educational institutions were expected to play a crucial role as the engine for knowledge generation and learning environment. In this regard, Information, Communication Technology (ICT) becomes the vital means to facilitate this task. ICT has become an essential part of our everyday life; accordingly, this integration in education was inevitable and cannot be avoided. This was due to the fact that using ICT in education has become one of the most effective factors in school improvement (Tosun & Baris, 2011) not only for the purpose of teaching and learning, but also for administrative use.

A theory on leadership style by Johnson (2017) underscored five (5) different types of leadership styles that existed in work environments. Advantages and disadvantages existed within each leadership style. The culture and goals of an organization determined which leadership style fits the firm best and dependent upon the departmental needs necessary tasks. The first was laissez-faire where leader lacked direct supervision of employees and failed to provide regular feedback to those under his supervision. Highly experienced and trained employees requiring little supervision fall under this leadership style. This leadership style hindered the production of employees needing supervision. The laissez-faire style produced no leadership or supervision efforts from managers, which can lead to poor production, lack of control and increasing costs.

Second was autocratic leadership, which allowed leaders to make decisions alone without the input of others. Leaders possessed total authority and imposed their will on employees. This leadership style benefited employees who required close supervision.

The third, participative leadership, which was often called the democratic leadership style. This style valued the input of team members and peers, but the responsibility of making the final decision rested with the participative leader. Participative leadership boosted employee morale because employees made contributions to the decision-making process. It caused them to feel as if their opinions matter. When a company needed to make changes within the organization, the participative leadership style helped employees accept changes easily because they played a role in the process. This style met challenges when companies need to make a decision in a short period.

The fourth was transactional leadership where managers in this leadership style received certain tasks to perform and provided rewards or punishments to team members based on performance results. Managers and team members set predetermined goals together, and employees agreed to follow the direction and leadership of the manager to accomplish those goals. The manager possessed power to review results and train or correct employees when team members failed to meet goals. Employees received rewards, such as bonuses, when they accomplished goals. Finally, transformational leadership style depended on high levels of communication from management to meet goals. Leaders motivated employees and enhanced productivity and efficiency through communication and high visibility. This style of leadership required the involvement of management to meet goals. Leaders focused on the big picture within an organization and delegated smaller tasks to the team to accomplish goals.

In conclusion, this theoretical study can also be applied within a school setting in order to further guide and assist educational management leaders. By Johnson's leadership theory, academic heads were considered as educational management leaders. Educational management leaders were often charged with the goal of integrating technology into the classroom. Their influence on their teachers was so infinite that it may cover all aspects of human life. However, this integration into multiple classrooms will surely be dependent on motivating teachers towards a goal of technology integration. Thus, this study will determine the leadership style on utilization and effectiveness of ICT application tools of educational management in order to have a significant impact on the entire school. Therefore, it was fitting to empower these educational management leaders with knowledge and skills on the use of modern technologies that were emergent in nature.

As regards to the conceptual framework illustrated in Figure 1, the paradigm of the study, the independent variables constitute the Academic Heads, Academic Teachers, Administrative Staff and the Available ICT application tools. On the other hand, the dependent variables were the Leadership Styles, Level of Utilization of ICT Application Tools, and Effectiveness in the Implementation of ICT Application Tools. The output of this research was the new model based on the relationship of the three (3) dependent variables.

Schematic Diagram:

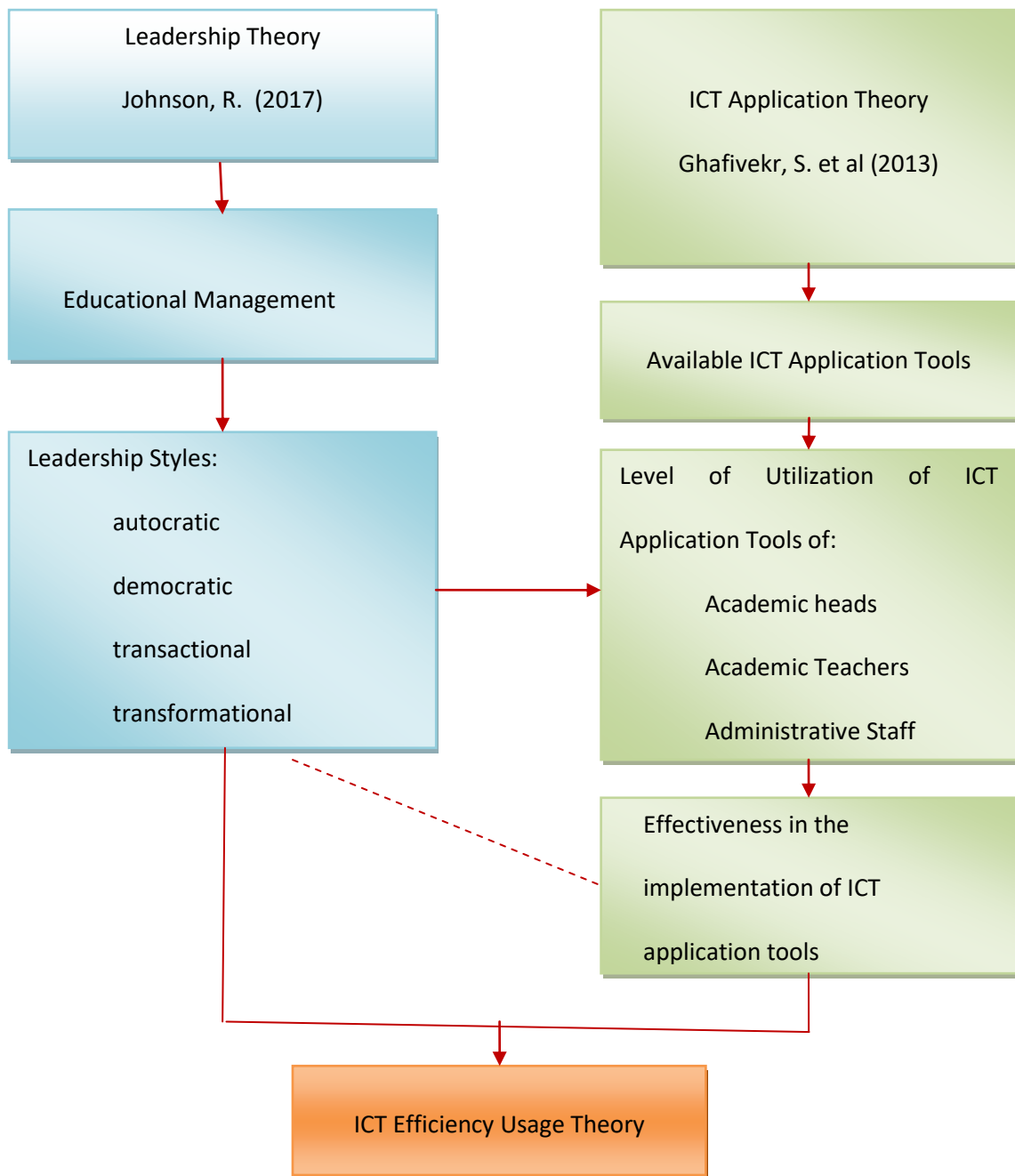


Figure I: Paradigm of the study showing the relationship of the variables

Statement of Purpose:

This study aimed to determine the level of utilization of ICT application tools, level of effectiveness in the implementation of ICT application tools, and the leadership style of academic heads, academic teachers, and administrative staff at Iloilo State College of Fisheries (ISCOF) Main Campuses for Academic Year 2016-2017.

Specifically, the study will seek answers to the following questions:

1. What was the leadership style of the academic heads?
2. What were the available ICT application tools in educational management for:
 - 2.1 academic heads;
 - 2.2 academic teachers; and
 - 2.3 administrative staff?

3. What was the level of utilization of ICT application tools in educational management by:
 - 1.1 academic heads;
 - 1.2 academic teachers; and
 - 3.3 administrative staff?
4. What is the level of effectiveness in the implementation of ICT application tools in educational management by:
 - 4.1 academic heads;
 - 4.2 academic teachers; and
 - 4.3 administrative staff?
5. Was there a significant relationship between:
 - 5.1 the leadership style and the level of utilization of ICT application tools? and
 - 5.2 the leadership style and the effectiveness in the implementation of ICT application tools?
6. What theory can be developed based on the findings of the study?

Hypotheses:

Considering the statement of purpose presented, the following null hypotheses were proposed:

Ho1: There was no significant relationship between the leadership style and the level of utilization of ICT application tools of educational management.

Ho2: There was no significant relationship between the leadership style and the effectiveness in the implementation of ICT application tools of educational management.

Significance of the Study:

The results of this study benefited the following:

Academic Heads: The Academic Heads (AHs) became more motivated to continue their mission of sharing ideas, knowledge and skills with their teachers so that the latter would share it as well to their subordinates. The results of the study would likewise lead to some breakthroughs in teaching-learning situations, especially on the use of technology to help enhance leader's or manager's computer knowledge and plan more effective and efficient training designs to raise the levels of computer self-efficacy in the use of ICT applications tools.

Academic Teachers: This study will serve as the basis of how the teachers in general, equip themselves with the different methods and strategies for integrating the theories and applications of ICT application tools into the educational curriculum that in turn may build up institutional excellence and global competitiveness.

Administrative Staff: The administrative staff can do their daily responsibilities faster and more accurately. With the use of different types of ICT application tools, the administrative staff can handle financial work, maintain communication with clients, keep records, process documents and collect data effectively and efficiently (Kawade, 2012; Kazi, 2012). This study likewise helped administrative staff in recording school financial documents as well as student evaluation and report overall student records for future references.

Students: The students became more inspired and motivated knowing how sincere and dedicated their teachers were in nurturing them and providing them the education and skills they need. The results of the study would also improve the programs and activities for the students to maximize learning while having fun in school.

Curriculum Supervisor: This study served as basis for the guidelines in the improvement and monitoring of curricula. It served as the bases for the needed support for educational programs.

Parents: The parents were encouraged to support the programs, projects and activities (PPAs) of the school, specifically in the use of technology. Provision of and support to educational technologies and equipment were also expected by the parents.

Community: This study served to inform the community about the importance on the use of technology in teaching-learning situations. This likewise encouraged them to extend their support in terms of technology provision for the good of the learners in the community, other neighboring communities, and the country as a whole.

Commission on Higher Education: The Commission on Higher Education was able to make use of the result of this study for better implementation of some policies in relation to the use of technology. Programs on leadership styles may also be revisited and reviewed in relation to the results of the study.

The Researchers: This study turned out to be beneficial to other researchers for they can make use of the results of the study in order to strengthen and/or validate the results of their study.

Future Researchers: This study was beneficial to future researchers to study the gaps not answered by this study but were deemed significant for the betterment of educational management and leadership program implementation.

Definition of Terms:

The following terms and concepts are defined operationally for better understanding:

Academic heads: As used in this study, academic heads referred to teachers with permanent plantilla position formally engaged in classroom teaching, research and community extension services and development. In addition, this also referred to faculty with designated administrative function and handling teaching loads as deemed necessary by the college.

Academic teachers: In this study, teachers were those who hold permanent plantilla positions as faculty of the college without designations.

Administrative staff: As operationally defined in this study, administrative staff serves as support personnel in the college who solely performed office or clerical jobs, and carried out other utility jobs.

Educational Management: In this study, educational management operationally means a group of academic heads who worked together to achieve institutional goals of ISCOF.

Information and Communications Technology: As used in this study, information and communications technology referred to the knowledge in the application of computer software and proper utilization of computer hardware of permanent academic heads, academic teachers, and administrative staff of the college.

ICT Application Tools: As used in the study, ICT Application Tools were computer software and hardware, or gadgets/devices used by college personnel in the performance of their duties.

Leadership style: As operationally defined in this study, leadership style referred to the respondent's manner or approach of providing direction, implementing plans, and motivating people. Furthermore, it referred to authoritarian, democratic, transactional and transformational leadership styles.

Proposed Theory: In this study, it referred to the developed theory based on the findings or results or relationships of variables as specified.

2. REVIEW OF RELATED LITERATURE AND STUDIES

This chapter discusses concepts related to educational management and the use of technology as well as concepts on leadership styles. Researches and studies conducted on the said topics are also presented in this chapter.

Educational Management and the use of Technology:

Educational Management using Technology was an approach (Wikipedia, 2016) in which an institution manages its employees, their programs and other related work activities, in the use of ethical practice of technology in facilitating learning and improving performance. It encompasses the several domains of learning theory, computer-based training, online learning, and where mobile technologies were used. A successful educational management style should effectively build teams and be able to motivate employees.

Azizi (2007) believed that leadership influences individuals' behavior based on both individuals' and organizational goals. McGregor (2005) defined management using technology as the ability of an individual to influence the behavior of a group to achieve organizational goals. It is possible to conclude from these discussions that the style of management is a group of phenomena, whereby leaders are distinctive from their followers, and influenced individuals' activities to achieve set goals in their organizations.

Administrator was a position for teachers who have the knowledge and experience which he may not be able to provide good performance. In other words, it does not mean that good teacher has to be good administrator. At times, when politics of education authorities was included in the selection of administrators, it additionally created difficulties in his work. The first working day of the administrator began with development of his style of leadership. Administrator created his style of management through work. Creating of style of educational management was a difficult task. It was necessary to take into account factors that affect the good functioning of the school, traits of employees, their mutual relations in school, the needs of users, the industry, local communities and the stakeholders. The administrator quickly realized the need to integrate more styles in the management. He consulted with teachers about administration of tests and curriculum found ways and means to reduce absenteeism and drop outs, and communicate better with students and parents in order to reduce conflicts.

Administrator was responsible for pedagogical work in schools. He or she was a manager and leader. Leadership in education was a process that was different from the ideas of leadership in other areas. The researchers in this field believed that the decisive factor in evaluating management performance was the different educational management style, because it determined the general social life. It was based on three key features: proactive responsibility, authenticity and affirmative presence (Azizi, 2007). All these functions and roles were interrelated in the organization and affected the motivation to work and results of associates (Garavnd, 2012).

According to Rhodes (2005), management style using technology was the adhesive that bound diverse operations and functions together. It was the philosophy or set of principles by which you capitalized on the abilities of your people. It was not a procedure on 'how to do,' but was the management framework for doing. An educational management using technology was a way of life operating throughout the enterprise. It permitted an executive to rely on the initiative of his people.

More specifically, power had been considered as: the potential of a process to influence people (Wilhelmson, 2006); a part of the influence process at the core of leadership; and the rights that allowed individuals to take decisions about specific matters (Azizi, 2007). Hence, leaders will be more effective when they know and understand the appropriate usage of power (Azadzadeh, 2009). According to Wilhelmson (2006) an autocratic style was embedded in leaders who have full organizational power and authority for decision making without sharing it with their subordinates. On the other hand, democratic style implied that leaders share their authority of decision making with employees and delegate, and finally a laissez-faire or free-rein style existed where they gave their employees most of the authority over decision making.

Management style using technology affected a range of factors such as job satisfaction, performance, turnover intention, and stress (Aviolo, 2007) and so contributed to organizational success (Azizi, 2007). Qablan (2005) argued that theories developed and tested in Western organizations were still valid for non-Western countries. Hence, the significant impact of management style on job satisfaction does not differ between west and east and can be considered an important factor in the success or failure of any organization (Simons and Ellen, 2007).

There had been a move away from an authoritarian style of management in which control was a key concept, to one that favors teamwork and empowerment. Managerial styles that focused on managers as technical experts who directed, coordinated and controlled the work of others had been replaced by those that focused on managers as coaches, counselors, facilitators, and team leaders. There were different management styles to name: they were the laissez-faire, participative and autocratic, etc, available and were utilized by educational managers both in office as well as in the field work to achieve the set targets aimed to enhance personal and collective efficiency of employees on one hand and the students on the other in the schools. In the prevalent educational scenario appropriate management style determined the possible improvement of the concerned personnel and the organization.

The study surveyed the type of management style practiced by the school managers in accordance with growing demands in the field of education in the present educational set up. The results also presented the actual state of affairs in the public sector schools where millions of children go to seek knowledge to use in the coming years but in light of the results it was difficult to say whether the students were able to learn the required skills necessary to utilize in the globalized world. There seemed less sense of belonging imparted by the employees because the school managers hardly ever allow employees to participate fully in managerial work and have to shoulder what is said or expected without their own willingness.

But things were different in the private sector so far as participation of the employees in schools or management was concerned. Matters were discussed with them and their input was given weight in decision making. Eventually employees generated confidence building attitude among them which was also transferred to the students/learners. Hence, people preferred to send their children to private schools which, on one hand, questioned the efforts of the government for uplifting the image of public schools and the standard of education at these schools on the other. Outcomes-based education was imperative for school managers to practice such management style that may contribute to employees/teachers and students' life in the development of the country because it was through quality education that determined the fate of a nation.

Behaviors displayed by teachers in classroom environment during the communication process in teaching activities showed their classroom management styles. Teachers were classroom managers and might have applied different classroom management styles (Asadzadeh, 2009). There were various classifications of teacher classroom management styles. Wilhelmson (2006) defined classroom management styles as non-disciplinary and disciplinary; whereas Meacham (2007) suggested the following: authoritarian classroom management, authoritative classroom management, laissez-faire classroom management and indifferent classroom management. Generally, these classifications were conceptualized from coerciveness to democracy.

Authoritarian classroom management was based on teachers' control over pupils and restrictions imposed by teachers. In this style, it was assumed that teachers thought pupils learned only when they listened to their teachers and when they paid attention to lessons. Pupils have to participate in activities voluntarily even if they were unwilling. Teachers made all kinds of decisions in classrooms and they never recognized pupils (Ekici, 2006). In other words, in this approach, teachers acted as representatives of authority in classrooms.

In authoritative classroom management, teacher controlled behavior over pupils was based on some reasonable reasons. Therefore, teachers often explained the reasons underlying rules. In this style, although there was some control and restriction behavior, pupils were encouraged to act independently. When they displayed undesired behavior, they were not scolded, but politely warned. In this style, teachers took pupils' views, suggestions and questions into consideration (Ekici, 2006). In a classroom where authoritative classroom management style was adopted, there was mutual communication.

Laissez-faire classroom management was a style where teachers displayed little behavior to control pupils and demanded little from them. In this style, teachers accepted and watched pupils' behaviors and reactions, and never hurt their feelings and emotions and hardly say "no" to their pupils. In this style, there was no continuous discipline, teachers became friendly with pupils at once and really appreciated them, plus teachers had difficulties in refusing pupil demands (McDonald and Gooding, 2005). However, in this style, innocuous behavior of teachers may lead to uncontrolled pupil actions and occasionally classes got out of control. Teachers with this style were much loved by their pupils.

In indifferent classroom management style, pupils had very few demands, as teachers do not participate in lessons and they were generally indifferent to their pupils. In this style, teachers were reluctant to pressurize pupils in any way; they do not spare time to prepare teaching materials. They only filed in time during lessons. As a result, those with this style lack disciplinary skills and do not build trust. As for their pupils, they hardly had motivation (Ekici, 2006). Teachers with this style were not generally interested in classroom activities. They taught lessons rapidly and let pupils do what they wanted for the rest of the lesson. They wanted to fill in lesson time and they pretended to be teaching properly.

As teachers and principals accepted their new roles within the organization, they realized that the leader, whether principal or teacher, cannot be an expert on everything (Rhodes, Brundett and Nevill, 2008). The relationship between principal and teacher leaders may become the key to lasting school improvement. How the principal supported and promoted teacher leaders and what role principals played in these groups determined the success of teacher leaders if they were to move beyond their classrooms.

Public concern about the quality of education was at an all time high and the public confidence that educators were able to fix the problems were at an all time low (Simons and Ellen, 2007). Yet, few school systems had moved to include teacher leaders in their planning, decision-making and assessment. Teacher leaders were positioned to provide this knowledge and leadership as they moved beyond their classrooms to shape school and division level policies that best fit student and community needs.

The need for instructional and curricular reform was providing another reason for encouraging teacher leadership in schools. Teacher leaders were already redesigning the curriculum in their classrooms. Their impact motivation made or could break any serious attempts to reform instruction and curriculum. With their leadership, new techniques and approaches that redesigned their work were more likely to take root and continued within a school building (Kolb, 2005).

With the proliferation of teacher leadership roles in schools, principals were facing new leadership dilemmas and opportunities with teachers (Qablan, 2005). Principals educated and socialized under power-centered role expectations lack the skills and knowledge necessary to practice a shared leadership model (Simons and Ellen, 2005). Principals in schools with strong teacher managerial skill had moved beyond the traditional views of leaders as people who set the direction, made the key decisions, and energized the troops. They now viewed manager as a role that must build learning organizations. McGregor (2005) saw three key skills required of these new leaders: leader as designer, leader as steward, and leader as teacher.

In educational management using technology, administrator continuously conducted research, analysis, made decisions and took risks for his actions. The administrator was "more a manager responsible for numerous tasks: planning, organization, management and control, and also, function of human resources was introduced" (Wilhelmson, 2006). In addition, an administrator was responsible for changes in organizational culture at the school, creating a favorable climate for students and parents, for example users with one hand and teachers on the other side. It was necessary to fit school into the local environment.

There were three factors that determined the type of management style (McAndrew, 2005): leaders' characteristics, subordinates' characteristics and the organization environment. More specifically, the personal background of leaders such as personality, knowledge, values, and experiences shapes their feelings about appropriate leadership that determined their specific management style. Employees also had different personalities, backgrounds, expectations and experiences. For example employees who were more knowledgeable and experienced may work well under a democratic management style, while employees with different experiences and expectations required an autocratic leadership style. Some factors in the organization environment such as organizational climate, organization values, composition of work group and type of work can also influenced leadership style. However, leaders can adapt their leadership style to the perceived preferences of their subordinates.

Avolio (2007) further stated that management style using technology has a process of interaction among individuals and groups that included a structured or restructured situation, members' expectations and perceptions. It can be explained as the ability of an individual to have power that focused on how to establish directions by adapting forces (G.M., 2008). From an organizational perspective, Wilhelmson (2006) believed that management style using technology was used to motivate and to influence others to work hard in order to realize and support organizational goals.

Conversely, McDonald (2005) believed that, in general, the concept of educational effectiveness can be found in the conformity of researchers' behavior with expectations, desires, and goals, doing the right things, the skills, knowledge and attitudes acquired by training which was an important and essential factor and mostly was concerned with the teachers teaching quality (Qablan, 2005). So, the quality of teaching could lead to teacher's training effectiveness. Effectiveness means directing towards worthwhile goals such as focus on results, doing the right thing at the right time, achieving short-term and long-term goals (Maleki, Avarsyn and Asadzadeh, 2009). Adeyemo (2012) in a study on 20 teachers and 80 students showed that there was a significant relationship between effective classroom management style and techniques with the academic achievement of the students in physics courses. Simons and Ellen (2009) showed that there was a relationship between the teachers' classroom management style and their real teaching (quoted by Rosser & Johnshrud, 2008). The class management to create the best possible environment for learning was the teacher's first priority of responsibilities in the classroom (Martin & Shoho, 2006; quoted by Lustik, 2008). According to the researches which focused on educational effectiveness differences in classroom management style and also considering the expectations mentioned in the fundamental transformation of the second six-year period from middle school teachers. It consisted of enhancing the educational effectiveness to reach the training and educational goals, the author of the present study, as one of the middle school of Tabriz. He investigated about the question "Whether middle school teachers' effectiveness was different taking into account their classroom management style?" Through their education, training, and experience, managers developed their personal management style. This management style was a fundamental concern of managers and researchers due to its effect on subordinates who, it was suggested, work more effectively and productively when their managers adopt a specific management style (Mueacham, 2007).

If managers adopted their subordinates' preferred style giving employees the respect and fair treatment they deserved, then this was seen to lead to job satisfaction, which certainly affected the functioning of the organization (Qablan, 2005). Satisfied employees were absent less, showed less job stress, stayed at work longer, and made positive contributions to their organizations (Lustik, 2008).

To carry on these responsibilities, the administrator proposes staff promotion and uses divergent styles of leadership. According to this study, we concluded that a good leader would become an administrator who best combined the styles of leadership while respecting the needs and requests of stakeholders and employees regarding the actual situation at school. Quoted by Asadzadeh (2009), he argues that management style using technology was a fundamental issue in the school organizational effectiveness analysis.

On the other hand the effectiveness of teachers played an important role to predict the effectiveness of the school. There was increasing emphasis on improving quality and demonstrating accountability in the field of adult education. In the past, much of this emphasis focused on the assessment of instructor quality and learner outcomes. However, performance by instructors and learners depended, in part, on the resources available, the environment in which the program operated, and the level of support received from program administrators. Therefore, quality adult education programs need administrators of the highest caliber (Stephan and Vogt, 2005).

The Use of Technology in Education as a Pedagogical Source:

Educational Technology in Higher Education required to be aware about the theoretical comprehension of the teaching methodologies in relation to the global social practices, but also considering the evaluation of communication theories and the development of new cutting-edge technologies. For this, it must be considered the information and communication technologies as a pedagogical resource, by using them inside schools and universities in a scientific and critical way or by putting its critical power into practice in order to analyze the existent issues and, also, study it with colleagues and students, intending to offer new alternatives and more conscious possibilities for interpretation and decision making.

The Educational Technology was understood as a knowledge corpus that, basing upon scientific subjects that focused the teaching practices, incorporated all the means as possible and gave answers for the accomplishments of the social-historical contexts that gave significance, assuming another meaning in a contemporaneous situation.

The current discussions about educational technology may strengthen the ideological-political and ethical philosophical concerns such as criticism and overcome the technicality marks that were developed in the formation of citizens and professionals in the last decades in the country. By analyzing the historical point of view, for a long period the definition of the educational technology was combined to technocratic purposes that diminished the human beings and their professional formation downward into a mere training of "neutral" competencies that "molded" them as someone abstracted of the real social and human issues.

The technology not only allows acting on the nature, and should, but also mainly permits thinking about it. Differently from what was conceived during the technicality period, the educational technology needed to be thought, learned and used nowadays as a resource to qualify people, aiming to overcome the violence that destroyed the humanity. According to it and making critics regarding the overcoming process, affirmed that this kind of power was immeasurable since it possessed all the special effects in the most different ways of its production and that, because of it, seduced and "created" opinions and minds according to "mercantile interests", "audience interests" or "wicked interests" without respecting and preserving the different ages. It "orientated", but at the same moment disorientated people into the most chaotic directions.

It was up to the school and education the act of assuming the role and the real responsibility to learn and manage technologies, on both the information and the communication, presupposing to clarify and help to perceive the essential and the superfluous. With this in mind, it was important to enable the most conscious and wisest decision-making, establishing communication processes even more participative and richer in the daily construction of a more humanized, worthiest and happiest life.

The usage of information and communication technologies in education as a pedagogical resource was not only necessary but it was a valuable "support" for the formation of critical and creative thoughts when the apprentice took ownership of the theoretical-methodological and ethical-political fundamental principles of the information and communication technologies. By knowing the process in which this evolution started and its following development, considering its constituents, its working procedures and with whom it was developed, its consequences and implications positively contribute to raise in the learner, consciousness for using these resources. It also created an audience that does not exist when using other means.

The school and education relation—comprehended as “mediation that took place among the social practices” —with the communication means that need to go beyond the formation of the critical receptor as it occurred currently at homes or in all the places where people lived or worked with these technologies. The relation of the school and education with the information and communication technologies needed to be based on the awareness of developing a discerning relation in the user with the communication mean.

In this way, the compromised and the pedagogical work needed to overcome the usage of these means as auxiliary resources for the teaching process by observing its purposes frequently fulfilled with the change of the “representation” for the “capability”, using the unexpected potential of the representation chosen, and distorting the reality intended to focus.

Known as a resource, due to the theoretical-methodological and ethical-political basic principles, the information and communication technologies became a valuable pedagogical resource for an integral formation of children and adolescents, and also for the continuing formation of adults and professionals.

These information and communication technologies were valuable resources for networking environments and communications among teachers, giving the possibility to update themselves, shared experiences, create informative materials and theoretical improvements altogether. Researches and tangible experiences proved that the role of teachers in Higher Education and their networking discourse contributed in the creation of more symmetrical relations than the ones from a traditional educational context, since they worked in a wider universe of data and information. Therefore, their communication occurred consequently in a more competent and wider way.

For this reasons, when used in a wise way and for the specific purpose of its creation and development, the information and communication technologies were contributing for the evolution of knowledge and humanity.

Technological Leadership and its Influence on Technological Literacy:

Recently, regional departments of education had continued to provide instructors and administrators with information technology training or technological literacy training. Such training aimed to increase instructors’ ability to fuse technology with academics and thereby increase students’ academic performance. In Chang and Hsu’s (2009) study, they explored the current state of elementary school principals’ technological leadership and teachers’ information-technology literacy in six urban areas of Taiwan. The results showed that principals’ technological leadership had a significant and positive influence on teachers’ information technology literacy (.42). Wu’s (2009) study explored the relationship between principals’ technological leadership and teachers’ technological literacy, as well as the differences in these factors in terms of background variables of individual teachers and in terms of school environmental variables. Next, the study analyzed the predictive power of principals’ technological leadership on teachers’ technological literacy. The study found a significant positive correlation overall. Principals’ technological leadership had predictive power for various aspects of teachers’ technological literacy.

The Leadership Styles:

These were based on the model put in place by Daniel Goleman in the work “Leadership that Gets Results” that referred to an extensive study on managers and on the styles they employed at work. The styles were visionary or authoritative, coercive, affiliate, democratic, pacesetting and coaching. Each one of them had different characteristics but it isn’t pin pointed which one of them was the best as a great leader should have traits from all these groups and should be able to switch between these according to each situation.

The coercive leader: The coercive leader was the most aggressive of the six and was also known as the “do as I say” authority. He was the manager that led through fear and desires immediate compliance. Clear and precise in giving instructions and can handle crisis effectively but it rarely accepted feedback and inhibit the creativity and involvement of the employees. He can be efficient when drastic change was needed but should not be applied if the tasks were not straightforward because it demanded precision and might lead to serious problems because of employees not understanding what it was demanded of them.

The authoritative leader: An authoritative leader was a visionary leader among the six. A provider of a long term direction and motivated employees. He was known to create an innovative and agreeable environment. A manager perceived as an expert or as a figure of knowledge in the field and was well respected for its methods promoted self confidence while pursuing a strategy and interested in feedback and apply it constructively in its perpetual development.

The affiliate leader: The most tolerating and harmonious of all, more interested in the well-being of all members involved, sometimes even overlooking the final purpose. He was a very accommodating manager to whom everyone can come for advice and counseling. Interested to cultivate a relationship with its employees and tried to avoid conflict at all costs. A work-oriented person and geared up to boost team morale or gave positive feedback.

The democratic leader: A manager who was trying to build consensus among members and encompassed everyone to participate when taking important decisions. It was the manager that asked for opinions and tried to achieve its goals through fair play and communication. It was the one playing by the rules but can sometimes be side tracked by multiple opinions and doesn't always know how to react in emergency situations.

The pacesetter leader: A leader building great standards and then persuading everyone to rise up to them. He counted on everyone and sometimes pretended personal performance accounts for what others were doing. It might be a risky approach at times, especially if it inhibited people and led them to believe they were not good enough for the job. This was a highly personal style which doesn't trust others and although it had the right expertise, it sometimes got sidetracked by lecturing others.

The coaching leader: The manager who was the one standing in the middle of the employees, motivating and supporting them to achieve more. But unlike the affiliate leader, he was resistant to receiving any feedback and not very interested in what others feel. It risked undermining the self confidence of employees but it was a style required when quick action needed to be taken but also distributed to more persons. It sometimes micromanaged and considered everyone needed help with their tasks but it was indeed a great mentor when others were receptive to its advice.

Transformational and Transactional Leadership:

Leadership was perhaps one of the most important aspects of management (Wehrich, et al, 2008). This was because leadership was a major factor which contributed immensely to the general well being of organizations and nations. Organizations such as General Electric and Chrysler had been turned around from the brink of bankruptcy to become two of the world's most profitable organizations through the effective leadership of Jack Welch and Lee Iacocca (Robbins & Coulter, 2007). Great nations like the United State of America, Britain, France and India were some of the most prominent nations in the world today on the wings of effective leadership (Wehrich et al, 2008). This was because leaders in organizations and nations made things happen. This paper defined leadership as the process of influencing groups to achieve goals, while a leader was someone who can influence others (Cole, 2006; Robbin and Coulter, 2007; Wehrich et al, 2008).

Several theories had and were being put forward to explain leadership effectiveness. Two of the most prominent leadership theories were transformational and transactional leadership theories. Since the late 1980s, theories of transformational and charismatic leadership had been ascendant. Versions of transformational leadership had been proposed by several theorists. Although most authors agreed that transactional and transformational leadership were different in concept and in practice, many authors believe that transformational leadership significantly augmented transactional leadership, resulting in higher levels of individual, group, and organizational performance (Bass & Avolio, 2014; Howell & Avolio, 2013; Lowe et al, 2006). Others believed that transactional leadership was a subset of transformational leadership (Wehrich et al, 2008).

Transformational Leadership: A transformational leader was a person who stimulated and inspired followers to achieve extraordinary outcomes (Robbins and Coulter, 2007). He or she paid attention to the concern and developmental needs of individual followers; they changed followers' awareness of issues by helping them to look at old problems in a new way; and they were able to arouse, excite and inspire followers to put out extra effort to achieve group goals. Transformational leadership theory was all about leadership that created positive change in the followers whereby they took care of each other's interests and act in the interests of the group as a whole (Warrilow, 2012).

Warrilow (2012) identified four components of transformational leadership style: (1) Charisma or idealized influence: the degree to which the leader behaved in admirable ways and displayed convictions and took stands that caused followers to identify with the leader who has a clear set of values and acted as a role model for the followers; (2) Inspirational motivation: the degree to which the leader articulated a vision that was appealing to and inspired the followers with optimism about future goals, and offered meaning for the current tasks in hand; (3) Intellectual stimulation: the degree to which the leader challenged assumptions, stimulated and encouraged creativity in the followers - by providing a framework for followers to see how they connected (to the leader, the organization, each other, and the goal) they creatively overcame any obstacles in the way of the mission; (4) Personal and individual attention: the degree to which the leader attended to each individual follower's needs and acted as a mentor or coach and gave respect to and

appreciation of the individual's contribution to the team. This fulfilled and enhanced each individual team members' need for self-fulfillment, and self-worth, and in so doing inspired followers to further achievement and growth.

Within the context of Maslow's hierarchy of needs, transactional leadership worked at the basic levels of need satisfaction, where transactional leaders focused on the lower levels of the hierarchy. Transactional leaders used an exchange model, with rewards being given for good work or positive outcomes. Conversely, people with this leadership style also can punish poor work or negative outcomes, until the problem was corrected. Transactional leadership in contrast to transformational leadership does not allow leader to look forward but they looked to keep things the same. Meaning to say, transactional leadership looked at lower level needs while transformational leadership looked at higher level needs (Ogbonna & James, 2013). Transactional leaders were effective in getting specific tasks completed by managing each portion individually.

While there were many different theories on leadership in general, there was one specific theoretical framework that continually presented itself within the literature dealing with technology leadership. Because of the focus on innovation and the adaption of new technology, technology leadership was often viewed within the theoretical framework of change leadership. For example, Schrum & Levin (2009) viewed technology leadership within a framework of change because of the need to master the unpredictable nature of new and emerging technology. After recognizing the field of technology as being in a state of constant innovation and accepting the premise that technology leadership was essentially leading through consistent change, one can look to the academic works of leadership advocate Fullan (2011). He has devoted a significant amount of academic writing to developing leaders who can effectively adapt to change and promote their organizational goals within a changing environment. The development of a plan within a changing field may be difficult. For example, within technology, if plans were not enacted quickly enough, the technology implemented through those plans may become obsolete. This phenomenon of rapid change may produce leaders and organizations that were simply in a state of constant change, scrambling to keep up with the latest and greatest technology. In fact, Fullan (2011) cautioned against those leaders caught in the whirlpool of change by stating that the goal was not to improve the most and it was not enough to have the best ideas.

Taking lessons from Fullan's (2011) work meant that technology leaders must pace themselves in the implementation of technology within their organization. Prospective leaders should beware as there was a dichotomy of failure within this theoretical model of change. Those who were educational technology leaders would exhibit failure if they do not change enough to adapt to the modern times or if they changed too much. All technology leaders must be wary of the tendency to sacrifice the goals of their position or organization to pursue change for the sake of only innovation and not the proper and effective use of technology.

As stated by Lin, et.al (2011), effectiveness was a degree to which an organization's desired goals were correctly achieved bearing in mind the demands from both internal and exterior environments. School's effectiveness was a goal set by administrative leaders through their leadership strategies to help schools reach certain achievements across the board. Using ICT applications in educational administration helped them to achieve their goals easily. Evidence showed that teachers' response positively in job satisfaction in using ICT applications such as hardware and software to support their administration and management responsibilities (Afzaal, 2012).

Various studies had been conducted on the utilization and effectiveness of ICT application tools using several other variables. This study in addition to the expanding knowledge on ICT application tools citing disparity between variables including educational management, availability of ICT application tools with the furtherance of espousing the leadership style on utilization and effectiveness of ICT application tools of educational management.

3. RESEARCH METHODOLOGY

This chapter dealt with the methodology of the present investigation. It discussed the research design, identified the environment, distinguished the respondents, explained the research instruments, data gathering and data analysis procedures.

Design:

The present study utilized a quantitative approach specifically descriptive-correlational research design supported by qualitative data. Descriptive because it provided facts for scientific judgment through the questionnaire that was used as instruments in gathering quantitative data that served as basis for inferences; correlational because it determined the relationship between variables that were identified in the form of observed relationship and were generalized on the basis of the observed data.

Moreover, correlational research design was a quantitative method of research which involved two or more quantitative variables from the same group of subjects, and significant relationship (or co-variation) was determined (Leary, 2011).

Environment:

This study was conducted in two (2) main campuses of Iloilo State College of Fisheries, Barotac Nuevo, Iloilo. One campus is located in Barangay Tiwi, Barotac Nuevo, Iloilo and the other campus is in the poblacion of the same town.

Barotac Nuevo (Spanish for: New Barotac) is a second-class municipality in the province of Iloilo, Philippines. According to the 2010 census, it has a population of 51,867 people. The town is 31 kilometres (19 mi) from the provincial capital of Iloilo City. The town is bordered by Pototan to the west, Dingle to the north-west, Anilao to the north-east, and Dumangas to the south. The town is also officially known as the Football Capital of the Philippines.

ISCOF – Main Tiwi Campus is located at Barangay Tiwi, Barotac Nuevo, Iloilo. It is four (4) kilometers away from the town proper. It can be reached all the way through a tricycle ride. ISCOF Main Poblacion Campus is situated in the heart of Barotac Nuevo and it has ten (10) academic heads, twelve (12) academic teachers, and twelve (12) administrative staff. On the other hand, ISCOF Main Tiwi Campus is composed of twenty-nine (29) academic heads, twenty-seven (27) academic teachers, and twenty (20) administrative staff.

This town has excellent telecommunication facilities. Cellular companies provided sufficient coverage to its clients in the area. Smart Communications has a cell site in the middle of the town providing voice, texting and data services over the GSM network. Smart is likewise providing 3G and HSPA services, putting this town at par with European cities with its advance technology. This HSPA network can provide broadband internet connection with speeds up to 42 Mbit/s. Barotacnon can move around the town with their laptop connected to the internet. SmartBRO is also available for fixed internet service. There are also cell sites located at Bgy. Tiwi and other nearby locality provided with these services.

Participants:

Table 1 showed the one hundred ten (110) permanent employees at ISCOF Main Campuses, AY 2016-2017 as respondents of the study using one hundred percent (100%) enumeration.

Table 1: The Distribution of Participants

Adminis- Campus	Academic				Total		Total	
	Heads	Teachers	%	Staff	%			
	(n=39)	(n=39)		(n=32)				
ISCOF Main Poblacion	10	9	12	11	12	11	34	31
ISCOF Main Tiwi	29	26	27	24	20	19	76	69
Total	39	35	39	35	32	30	110	100

The study was conducted to a total of 110 respondents. There were 10 permanent academic heads, 12 academic teachers, and 12 administrative staff at ISCOF Main Poblacion campus for Academic Year 2016-2017 identified as respondents. At ISCOF Main Tiwi campus, there were 29 permanent academic heads, 27 academic teachers and 20 administrative staff for Academic Year 2016-2017 considered as respondents of the study.

Sampling Design:

Purposive sampling technique was used in this study. It involves examining the entire population that have a particular set of characteristics (e.g., specific attributes or traits, experience, knowledge, skills, exposure to an event, etc.) (Cohen et. al., 2013). In this study, total population sampling of academic heads, academic teachers, and administrative staff of two main campuses of ISCOF was used as respondents this academic year 2016-2017.

Instruments:

The study utilized different data gathering tools to collect relevant data to answer the objectives of the study: 1) Classification of Respondents; 2) Leadership Style; 3) Availability of ICT Application Tools; 4) Level of Utilization of ICT Application Tools; and 5) Level of Effectiveness in the Implementation of ICT Application Tools.

The first part of the questionnaire is the classification of respondents that consists of the academic heads, academic teachers, and administrative staff.

The second part of the questionnaire is the Leadership Style Survey. This is a standardized questionnaire model developed by Rose Johnson (2017). This questionnaire is designed to measure four common leadership styles: Authoritarian, Democratic, Transactional and Transformational. By comparing the scores, the leadership styles which are most dominant and least dominant can be determined by the following range:

If score is 26-30, the style is in a very high range;

If score is 21-25, the style is in the high range;

If score is 16-20, the style is in the moderate range;

If score is 11-15, the style is in the low range;

If score is 6-10, the style is in the very low range.

The third part is the Availability of ICT application tools. This part contained four categories that need to be answered as regards to the available ICT application tools. The availability of ICT application tools for academic heads, academic teachers, and administrative staff in the college can be validated by checking either the yes or no box.

The fourth part of the questionnaire, Level of Utilization of ICT application tools was composed of three part questions intended for academic heads, academic teachers, and administrative staff. This questionnaire was designed to measure the level of utilization of ICT application tools of academic heads patterned from (Singh & Muniandi, 2012; Afshari et al, 2012); academic teachers from (Mwalongo, 2011; Kawade 2012), and administrative staff from (Kawade, 2012; Kazi, 2012). The level of choices used to answer the questions were: 1) never, 2) seldom, 3) sometimes, 4) often, and 5) always.

The fifth part of the questionnaire included investigation to check the level of effectiveness in the implementation of ICT application tools. The level of effectiveness in the implementation of ICT application tools was done by checking any of the five options: 1) never; 2) seldom; 3) sometimes; 4) often; and 5) always.

The level of utilization and effectiveness of ICT application tools of the respondents may be described as:

<i>Scale</i>	<i>Description</i>
1.00 – 1.79	Not utilized/effective
1.80 – 2.59	Seldom utilized/effective
2.60 – 3.39	Moderately utilized/effective
3.40 – 4.19	Highly utilized/effective
4.20 – 5.00	Very highly utilized/effective

Establishing Validity and Reliability of the Instruments:

The procedures taken to establish validity and reliability of the questionnaire was adopted from the modified version of the instrument development scheme designed by Tibajares (2001) as cited by Sodusta (2006). The instrument development scheme had the following stages:

Stage I: Initial Formulation of the Instrument:

The items in the leadership styles questionnaire were formulated. The authoritarian and democratic, transactional and transformation styles were based on Johnson (2017) instrument.

The initial lists for the different ICT application tools were based from the review of related literature and studies of Ghaviferk & colleagues, (2013). Added to that was an interview conducted from the immediate past department head of the College of Information Technology who was responsible for the Level II accreditation and the issuance of Certificate of Program Compliance of the college. The level of utilization of ICT application tools was based on Mwalongo (2011); Kawade (2012), Singh & Muniandi (2012); Afshari et al (2012).

The level of effectiveness in the implementation of ICT application tools was based on Afshari et.al, 2012; Lin et.al, 2011; and Kawade et.al, 2012.

A draft of the questionnaire was constructed and submitted to a panel of experts for review, suggestions, and recommendations to establish its content validity. Revisions were made based on the panel's recommendations.

Revised document was submitted to the Institutional Review Board of the University. Corrections or modifications from the IRB-UV was submitted for clearance.

A letter asking permission to conduct the study was sent to the OIC-President.

Alpha was computed.

Stage II: Completing the Instrument:

The final version of the instrument was drafted based on the suggestions and recommendations of the panel.

Data Collection Procedure:

Preliminary Step: Approval of the title was secured from the dean of the Graduate School of the University of the Visayas. Subsequent to the design hearing and completion of the requirements set, and after the release of the Notice to Proceed issued by the Institutional review Board, the conduct of the study was made possible. The Researcher then asked approval to the OIC-President of ISCOF to conduct research in its two main campuses. A letter addressed to the Chair of Instruction of ISCOF Main Poblacion seeking permission and approval to conduct the study was then prepared by the researcher.

Actual Step: The researcher then personally distributed the questionnaire to the campuses through the deans of each college. With the thorough explanation of the contents specifically the items that each particular participant need to fill up, the Deans forwarded the questionnaire to respective program coordinators echoing the explanation so that the participants would not be confused of the data elicited from them. The program coordinators distributed the questionnaires to the participants and collected them as soon as they were answered. The instruments were administered on the same day, one after the other to maximize the use of time of the respondents. After the questionnaires had been collected, they were pooled together according to groupings of the participants. The questionnaires pooled together were then encoded in the computer using SPSS 20. After which, the data were analyzed and interpreted.

Data Analyses Procedure:

After all the data were gathered, they were tallied and encoded for analysis and interpretation. This research undertaking utilized descriptive and inferential statistics. The following statistical tools were utilized to analyze and interpret the results using SPSS 20.

Mean: This was employed in order to analyze the data in the level of utilization and effectiveness. This was used to determine the average score of the respondents on the said variable to unlock its descriptive meaning.

Percentage: This was used to determine the number of respondents in the different categories on the variables considered in the study.

Pearson Product Moment Correlation: This was used to determine the significant relationship on variables with nominal data such as the leadership style, level of utilization and effectiveness in the implementation of ICT application tools.

On the basis of the findings, a model is formulated. Ethical considerations on the process were taken cared of by seeking the respondents' consent. Likewise, safeguarding the interest of the respondents was the topmost concern.

Ethical Considerations:

The researcher, by virtue of the guidelines prescribed by the University, had fully complied with all the requirements in the conduct of the study. Before the study has been carried out, the project had undergone ethical review and approval by the Institutional Review Board (IRB), which was the ethics committee of the University.

A. Risk-Benefit Assessment:

Benefits: The researcher cannot guarantee or promise the participants that they receive any benefits from this research; however, possible benefits may include better understanding on the leadership style of the participants and its effects on the level of utilization and effectiveness in the implementation of ICT application tools of academic heads, academic teachers and administrative staff.

Risk: There are only minimal risks associated with this research. The researcher protected all respondents from physical and mental discomfort, harm and danger that may had aroused from participating in the study. The respondents were be informed of that fact if risks of such consequences exist.

B. Content, Comprehension in Documentation of Information Consent:

Participant status: The participants in this study were the academic heads, academic teachers, and administrative staff of the college. They comprised the permanent employees of the college.

Study Goals: The study determined the leadership style, level of utilization and effectiveness in the implementation of ICT application tools of respondents for academic year 2016-2017. The findings of the study served as a model or a theory generated.

Type of Data: The quantitative data for this research were nominal and interval data. Nominal data were the frequencies of the respondents of the study, while the interval data were collected using the instruments for the level of utilization, effectiveness, and the leadership style.

Procedures: The questionnaires were distributed to the participants. The instruments were administered on the same day, one after the other to maximize the use of time of the respondents. After answering the questionnaires, the data were collected, presented, analyzed and interpreted.

Nature of the Commitment: Among the essential values for research was the integrity of the researcher. This included the commitment to research questions that were designed to contribute to knowledge, a commitment to the pursuit and protection of truth, a commitment to reliance on research methods appropriate to the discipline and honesty. Only that, this took about 20 minutes of the respondent's time to respond on the questionnaires given to them. Moreover, they may set the schedule of the administration of the questionnaires at their most convenient time.

Sponsorship: This research was initiated by the researcher and funded personally as a requirement for the degree Doctor of Education major in Educational Leadership and Management and was solely conducted by only one investigator.

Participant selection: First and foremost things to do would be to pay respect to the respondents of the study. The researcher vowed for the humane treatment especially that person with diminished mobility and autonomy. Those that have questioned lucid status and all other vulnerable groups will not be included in this study. This study purposely included all participants in the study; total enumeration was the sampling technique used.

These participants will be permanent academic heads, academic teachers and administrative staff of the college.

Potential Risks: There are minimal risks associated with this research. The researcher protected all respondents from physical and mental discomfort, harm and danger that may have arisen from participating in the study. If risks of such consequences existed, the respondents should have been informed of the fact.

Research procedures likely to cause serious or lasting harm were used unless the failure to use these procedures might have exposed them to risk of greater harm, or unless the research has a great potential benefit, full and voluntary consent will be obtained from each respondent. In addition, if they felt that some of the questions were stressful or upsetting, if they do not wish to answer a question, they may skip it and get the next question, or they may stop immediately. If the respondents become upset or distressed as a result of their participation in the research project the researcher arranged appropriate support. Any support will be provided by qualified staffs who were not a member of the research team. The counseling will be provided free of charge.

Potential Benefits: The possible benefits may include better understanding of the leadership style on utilization and effectiveness of ICT application tools of educational management.

Alternatives: The respondents should be aware of the full range of options available to them to enable a rational choice about participating in the research study. Only complete enumeration was applicable in selecting the participants, no other alternative.

Compensation: There was no monetary compensation involved in the conduct of study. The researcher expressed her sense of gratitude to the respondents for sharing their precious time in answering the questionnaire.

Confidentiality Pledge: The researcher had done everything to protect their privacy. Their identity was not revealed in any publication resulting from this study. No names were included in the survey questionnaire so that no private information will directly affect the participants.

Voluntary Consent: Informant's participation in this research was voluntary. They may choose not to participate and they may withdraw their consent to participate at any time. They were not penalized in any way should they decide not to participate or to withdraw from this study.

Right to withdraw and withhold information: The researcher respected the right of any individual who refused to participate in the study or withdrawn from participating any time. The researcher's obligation in this regard was especially important when she was in a position of authority or influence over the participants in the study. Such position of authority include but were not limited to situations in which research participation was required as part of employment or in which the participant was the employee of the investigator.

Contact information. The researcher informed the participants about contact persons. The following was her statement; "If you have any questions or concerns about this study or if any problem arise, please contact the UV-IRB Ethics Review Panel reviewed this research and in the event the informants have any questions or concerns inclusive of their rights, grievances and complaints about this study, they may contact Marites G. Arcilla UV Main, Colon St. Cebu City (Tel #416-8607) or email at uvirb2015@gmail.com.

C. Authorization to Access Private Information:

This research undertaking utilized content analysis. After all the respondents had answered the questionnaires, the data were analyzed and interpreted. On the basis of the findings, a model was formulated. Ethical considerations on the process were taken cared of by seeking the information consent. Likewise, safeguarding the interest of the informants was the topmost concern.

Only the researcher and adviser had the authority to access the data gathered and no other personnel can access of the said data. Interview records were kept safely after they were transcribed and were destroyed a month after the researcher's graduation.

D. Confidentiality Procedures:

Before the researcher started to conduct and distributed the survey questionnaire, the researcher asked permission from the SUC President. After the permission was approved, the research study protocol undergone IRB process to assure and secure the ethical soundness of the study, specifically the validity and reliability of the survey questionnaire. Upon the completion of the requirements set by IRB, the survey questionnaire was distributed to the respondents. Respondents' tallied questionnaires were kept with utmost confidentiality until it was completely analyzed and interpreted. These were then destroyed and discarded a month after the researcher's graduation.

In the conduct of the study, the researcher took into considerations the ethical issues knowing that the study employed professional teachers and employees as participants. To protect the participants of the study, the researcher developed trust and confidence with them in order to promote the integrity of the research, guard against misconduct and any impropriety that can be reflected in their institutions, and cope with new challenging problems (Creswell, 2009). The researcher respected their rights, needs, values and desires.

E. Debriefing, Communications and Referrals:

Instructions were given to the informants prior to the actual survey. A letter of consent from the proponent of the instrument was given ahead of time through email. After the respondents answered the survey questionnaire, the researcher expressed her sense of gratitude for their valuable energy given in the participation of said activity.

F. Incentives or Compensation:

In participating with this research project, there were no costs associated nor participants were paid, for the researcher observed the "no monetary policy" in the conduct of the study.

G. Conflict of Interest:

The fact that the study's results were dependent upon the participants' answers, which were in turn, in a way, dependent upon the researcher's interpretation, biases might set in. In order to avoid personal biases in the interpretation of results, the researcher avoided personal interpretations of the participants' answers. To clarify the participants' answers, follow up questions were asked.

The researcher declared no conflict of interest in the conduct and distribution of the survey questionnaire. Given that the researcher and the respondents were in the same work environment, there was an enumerator who served as the mediator in distribution of questionnaire to prevent possible bias and conflict of interest.

Should there be any faculty or research adviser who utilized this study for any research presentation or publication purposes, the researcher should be acknowledged as the primary author of the said study

4. PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the presentation and analyses of the data collected. It also discusses the interpretation of the results of the study conducted based on the data collected, evaluated and analyzed.

Leadership Style of Academic Heads:

Table 2 presents the leadership style of academic heads. Democratic leadership style, with 11 academic heads confessing to have been employing such leadership style, topped as most favored; this was followed by transformational and transactional, both having ten (10) practitioners; and authoritarian emerged last with 8 academic heads using this leadership style.

Data signified that academic heads with a score of 28 had a very high range whose leadership style is democratic. Democratic leadership ranked first among the leadership styles, also presented in the table. Transactional and transformational leadership followed next in a very slim margin with a total score of 27, authoritarian leadership was pegged last with a score of 25. The first three leadership styles had a very high range while the remaining one was described as high range. Looking at the description, very high range would mean that the practitioner almost had an exclusive practice of such leadership style. This further means that the leadership styles of the academic heads are very clear and that they have been consistent with their practice or use of the said leadership style.

Table 2: Leadership Style of Academic Heads

Leadership Style	f	Score	Rank	Description
Democratic	11	28	1	Very High Range
Transformational	10	27	2.5	Very High Range
Transactional	10	27	2.5	Very High Range
Authoritarian	8	25	4	High Range

n=39

Legend: 26-30, very high; 21-25, high; 16-20, moderate; 11-15, low; 6-10, very low

The result of this study was consistent with the study conducted by Luft (2012) on transformational leadership of the principals, which showed that most of the principals employed transformational leadership style. The principal's job was to make known what was important and set the tone for worth, openness, and tolerance. Studies conducted on the effects of different styles of leadership in school found that controlling or manipulative behaviors on the part of a school principal jeopardized both academic and social standards (Luft, 2012).

Furthermore, the study of Chou, Lin, Chang & Chuang (2013), which explored the relationships among transformational leadership style, cognitive trust, and collective efficacy as well as the impact of these variables on distal team performance has made impact on this current study. Data collected from 39 teams found that team cognitive trust as two process variables involves a transformational leadership process in which cognitive trust in the team leader and cognitive trust among team members mediate the impact of this leadership style on collective efficacy. This result of their study was validated by one of the interviewees who stated that transformational leader made the team work and made everybody understand their responsibilities by heart,

Similar sentiment was shared by another interviewee, who was even grateful that her academic head understands her in all of her struggles in life, "It's not that I always seek for attention but I really feel comfortable sharing my personal problems with Ma'am because she always understands and offers advice."

Availability and Utilization of ICT Application Tools

Meanwhile, data in Table 3 presents the available ICT application tools of educational management. According to academic heads, ICT application tools that were available include computerized enrollment system, computer-assisted instruction/simulation and websites. This observation was supported by the academic teachers and administrative staff. On the other hand, due to the low speed of internet connection, the educational management considered it as a problem including the on-line registration. This was supported by the academic teachers and administrative staff as revealed in their responses. In terms of software application, the available ICT application tools according to the academics heads were e-books, e-mail, management information system (MIS). MS Excel, MS Power Point, and MS Word. Similar observations were reported by the academic teachers. However, the administrative staff specified that the software applications available for them to use were only management information system (MIS), MS Excel, MS Power Point, and MSWord. Hardware and equipment available for use by the educational management were digital cameras, DVD players, flat screen television, laptops, LCD/LED TV, multi-media projectors and overhead projectors.

Table 3: Availability of ICT Application Tools of Academic Heads, Academic Teachers and Administrative Staff

ICT Application Tools	Academic Head (n= 39)				Academic Teachers (n=39)				Administrative Staff (n=32)			
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
1. Computerized enrolment system	24	62	15	39	27	69	12	31	21	66	9	28
2. Computer-assisted instruction/simulation	30	80	9	23	27	69	12	31	18	56	14	44
3. High speed Internet connection	15	39	24	6	9	23	30	77	8	25	14	44
4. On-line registration	1	3	38	97	5	13	34	87	10	31	22	69
5. Websites	27	69	12	31	19	49	20	51	20	62	12	38
6. Software Application:												
6.1 Bibliographic Database	18	46	21	54	10	26	29	74	14	44	18	56
6.2 e-books	21	54	18	46	21	54	18	46	12	38	20	62
6.3 e-data archives	12	31	27	69	8	21	31	80	10	31	22	69
6.4 e-journal	12	31	27	69	9	23	30	77	9	28	23	72
6.5 e-mail	33	85	6	15	30	77	9	23	14	44	18	56
6.6 e-magazine	11	28	28	72	5	13	34	87	10	31	21	66
6.7 e-newspaper	11	28	28	72	7	18	32	82	10	31	22	69
6.8 e-thesis	7	18	32	82	4	10	35	90	7	22	25	78
6.9 e-maps	11	28	28	72	8	21	31	80	10	31	22	69
6.10M-Information System (MIS)	34	87	5	13	30	77	9	23	21	66	10	31
6.11 Modern Database (Cloud Computing)	6	15	33	85	7	18	32	82	7	22	25	78
6.12 MS Excel	37	95	2	5	37	95	2	5	28	88	4	12
6.13 MS Power Point	38	97	1	3	38	97	1	3	32	10	0	0
6.14 MS Word	38	97	1	3	38	99	1	3	30	94	2	6
7. Hardware:												
7.1 Digital Cameras	36	92	3	8	36	92	3	8	20	62	12	38
7.2 DVD Players	30	77	9	23	34	87	5	13	16	50	16	50
7.3 Flat screen Television	31	80	8	3	33	85	6	15	17	53	14	44
7.4 Glass board	7	18	32	82	5	13	34	87	6	19	25	78
7.5 Iphone	11	28	28	72	10	26	29	74	7	22	24	75
7.6 Ipod	14	36	25	64	11	28	28	28	9	28	22	69
7.7 Laptops	28	72	11	28	32	82	7	18	24	75	8	25
7.8 LCD/LED TV	31	80	8	21	37	95	4	10	17	53	15	47
7.9 Multi-media Projectors	32	82	7	18	37	95	2	5	18	56	14	44
7.10 Overhead Projectors	30	77	9	23	23	59	16	41	17	53	15	47
Total (n) = 110	22	57	17	43	18	53	21	47	15	46	17	54

n=110

Based on the interview conducted by the researcher, most of the respondents agreed that these ICT application tools were available in school but not sufficient for everybody in case many decided to use them at the same time. Furthermore, it was true that they found it useful and efficient but it took time to study and used the applications especially if they were new.

Utilization of ICT Application Tools by Academic Heads:

Table 4 shows the levels of utilization of ICT application tools by academic heads. Data revealed that academic heads have very high utilization of ICT application tools because as academic heads, they encouraged the use of power point during instruction, applied power point presentation in giving instruction and in the conduct of in-house training, applied ICT applications to prepare school, teacher and staff meetings, announcements and reports, and being an academic head they have the basic skills of using ICT in school daily administrative and management job.

Other ICT application tools were highly utilized like facilitating teacher’s integration of computers in teaching and learning, using them in student registration and in decision-making processes, store information as well as online application. ”Apply ICT Applications to prepare school, teacher and staff meetings, announcements and reports” (mean = 4.56, SD = 0.64) topped the list as the very highly utilized way of making use of the ICT application tools.

Table 4: Level of Utilization of ICT Application Tools by Academic Heads

No. Utilization of ICT Application Tools (n=39)	Mean	SD	Description
1. Facilitate teachers' integration of computers in teaching and learning.	4.18	0.76	Highly Utilized
2. As school head, encourage the use of PowerPoint during instruction.	4.36	0.71	Very Highly Utilized
3. Have basic skills of using ICT in school daily administrative and management job	4.38	0.81	Very Highly Utilized
4. Apply PowerPoint presentation in giving instruction and in-house training.	4.44	0.88	Very Highly Utilized
5. Apply ICT Applications to prepare school, teacher and staff meetings, announcements and reports.	4.56	0.64	Very Highly Utilized
6. Use ICT Application Tools in student registration.	4.13	1.06	Highly Utilized
7. ICT application tools are used in decision-making processes, store information as well as online applications.	4.15	0.96	Highly Utilized
Grand Mean	4.31	0.83	Very Highly Utilized

n=39

Based on the interview conducted by the researcher, most of the respondents, the academic heads specifically, agreed that these ICT application tools were available in school and can be utilized, yet, they were not sufficient for everybody in case many decided to use them at the same time. Furthermore, it was true that they find it useful and efficient but it took time to study and used the applications, especially if they were new.

Utilization of ICT Application Tools by Academic Teachers:

Table 5 presents the levels of utilization of ICT application tools by the academic teachers. The data shows that academic teachers very highly utilized the following ICT application tools like using computer/ICT files for students cumulative records, formative and summative evaluations which can be printed out from the software application for a hardcopy documentation, using them in the preparation of notes, teaching-learning resources and examination, preparing timetable, schemes of work, course syllabus, and school reports, and creating a positive environment for technology adoption. Most of them agreed that they “Use ICT applications to prepare timetable, schemes of work, course syllabus, and school reports” (mean = 4.33, SD = 0.74).

On the other hand, ICT application tools that were highly utilized by the academic teachers include setting up tests and online assignments, generating research results and using them to cut up websites and online portals for students to access and use.

Table 5: Level of Utilization of ICT Application Tools by Academic Teachers

No. Utilization of ICT Application Tools	Mean	SD	Description
1. Use computer/ICT files for students' cumulative records, formative and summative evaluations which can be printed out from the software application for a hard copy documentation.	4.21	0.80	Very Highly Utilized
2. Use ICT for teaching in the preparation of notes, teaching-learning resources and examination.	4.18	0.88	Very Highly Utilized
3. Use ICT applications to prepare timetable, schemes of work, course syllabus, and school reports.	4.33	0.74	Very Highly Utilized
4. Set up tests and online assignments that can be automatically graded, which saves a lot of time for the making of correction process.	3.72	1.21	Highly Utilized
5. Use ICT to generate research results.	4.08	1.04	Highly Utilized
6. Use ICT applications to cut up websites and online portals for students to access and use.	3.78	1.18	Highly Utilized
7. Encourage creativity, open-mindedness and facilitate conditions and events that create a positive environment for technology adoption.	4.23	0.87	Very Highly Utilized
Grand Mean	4.08	0.96	Highly utilized

n=39

To support the results of the study, the ICT Test Bed Evaluation (Underwood et al, 2006) provided evidence that many teachers used ICT to support innovative pedagogy.

As noted, new technologies that provided a good fit with existing practices, such as interactive whiteboards were first embedded, but others like video conferencing, digital video and virtual learning environments were now being incorporated, providing evidence of on-going learning by the workforce. Training needed to continue to support innovative pedagogy.

Both examples showed that ICT was being integrated in a continuous process. Therefore, ICT improved teaching by enhancing an already practiced knowledge and introducing new ways of teaching and learning. Transforming teaching was more difficult to achieve. As cited by Underwood and colleagues changes that take full advantage of ICT, Underwood and colleagues (2006) will only happen slowly over time, and only if teachers continue to experiment with new approaches.

In an evaluation coming from a teacher training seminar in IT during the ITMF project, it showed that teachers have not fully changed their use of ICT in education; however, most of them changed their way of thinking about the application of ICT in education. Teachers have increased their use of ICT in lessons where students look for information on the net and used it afterwards for subject specific areas, but hardly any use of ICT for class presentations.

Nonetheless, teachers do not made use of ICT to engage students more actively to produce knowledge. Similarly, the e-learning Nordic study showed that there was an increase in the use of ICT to teach but not to innovate teaching methods. ICT generally had a positive impact on teaching and learning situations, but compared with the ideal expectations; the impact of ICT on teaching and learning must still be considered to be limited (Punie, Zinnbauer, & Cabrera, 2006).

Many teachers used ICT to support traditional learning methods, for example, information retrieval in which students were passive learners of knowledge instead of active producers able to take part in the learning process. In a document entitled teaching and learning with ICT, Mumtaz (2010) explained how ICT can promote teaching and learning. According to her, there were two main reasons behind increasing the use of ICT in education in UK. Firstly, ICT can change the lessons' pace: she stated that children in modern society need to develop sufficient potentials and skills that enabled them to take full advantage from the new opportunities that ICT offer. Second, there were groundswells of interest of academic researches in UK in how technology tools had enhanced the quality of teaching and learning in schools, and so helped learners to achieve better outcomes.

Furthermore, it had been proved that new technologies have lots of benefits on the students. ICT allowed for a higher quality lessons through collaboration with teachers in planning and preparing resources. Students learned new skills: analytical, including improvements in reading comprehension. ICT also developed some writing skills: spelling, grammar, punctuation, editing and re-drafting (Underwood and colleagues 2006). Still new technologies encouraged independent and active learning, and students' responsibility for their own learning. ICT proved that students who used educational technology felt more successful in school they were more motivated to learn more and have increased self-confidence and self-esteem. It was also confirmed that many students found learning in a technology-enhanced setting more stimulating and much better than in a traditional classroom environment (Punie, Zinnbauer, & Cabrera, 2006).

Utilization of ICT Application Tools by Administrative Staff:

Utilization of ICT application tools by administrative staff are shown in Table 6. Data revealed that all the ICT application tools were highly utilized by the administrative staff. These tools were part and parcel of their routine functions.

The data in Table 6 shows the level of utilization of ICT application tools by administrative staff. It revealed that most of them use ICT application tools in recording school financial documents through: balance sheet, pay slip, audit reports, non-salary grants, stocks keeping/inventory, student/faculty evaluation reports, and overall student/faculty records for future references.

Table 6: Level of Utilization of ICT Application Tools by Administrative Staff

Utilization of ICT Application Tools	Mean Score	SD	Description
1. Uses Application Tools in:			
1.1 Doing daily responsibilities	3.95	1.45	Highly Utilized
1.2 Communicating with clientele	3.91	1.28	Highly Utilized
1.3 Keeping of records	3.94	1.43	Highly Utilized
1.4 Processing documents	4.0	1.39	Highly Utilized
1.5 Collecting data and information	3.88	1.45	Highly Utilized

2. Uses ICT application tools in recording school financial documents through:			
2.1 Balance sheet	3.97	1.26	Highly Utilized
2.2 Pay slip	4.03	1.28	Highly Utilized
2.3 Audit reports	4.0	1.27	Highly Utilized
2.4 Non-salary grants	3.81	1.42	Highly Utilized
2.5 Stocks keeping/inventory	3.97	1.23	Highly Utilized
2.6 Student/Faculty evaluation reports	3.78	1.45	Highly Utilized
2.7 Overall student/faculty records for future references	3.91	1.39	Highly Utilized
Grand Mean	3.93	1.35	Highly Utilized

n=32

ICT was used in maintenance of student and staff records and for communication and document management. Ashish Kumar and Arun Kumar (2005) had mentioned about the positive perception towards the use of ICT in education. It was mentioned in the study that students of different universities reported the usage of ICT for communication and for on-line discussion forums.

Also, ICT facilitated contact and information exchange and also promoted access to higher education. ICTs included systems for student admission and records, examination results and transcripts, finance database, human resources database, and management information. Various literature reviews revealed that Information administration was one part of overall administration of education institutions which mainly covered general and day-to-day operational activities.

Generally, the use of ICT was more advantageous to the administration staff, teachers, and students. However, in the study conducted by Selwood (2004), even though primary teachers were generally positive about ICT and its ability to support their administrative and management duties, the findings pointed to low levels of use of ICT for administration and management. Reasons for this lack of use were related to lack of quality training and the availability of time and quality ICT resources.

Level of Effectiveness of ICT Application Tools by Academic Heads:

Meanwhile, Table 7 shows the level of effectiveness of ICT application tools as used by the academic heads. Almost all the ICT application tools as used by them were very highly effective except for retrieving school records and pertinent data easily which was only highly effective

Table 7: Level of Effectiveness of ICT Application Tools by Academic Heads

Effectiveness of ICT Application Tools	Mean Score	SD	Description
1. Integrate ICT Application Tools in teaching learning activities.	4.26	0.68	Very highly effective
2. Keep records and information in a well-organized manner.	4.26	0.75	Very highly effective
3. Retrieve school records and pertinent data easily.	4.18	0.82	Highly effective
4. Apply basic skills in the use ICT in school daily administrative and management job.	4.38	0.75	Very highly effective
5. Present information through Microsoft Office and PowerPoint creatively.	4.28	0.76	Very highly effective
6. Facilitating the use of Excel in generating grades.	4.38	0.78	Very highly effective
7. Provide data/records needed using ICT	4.31	0.77	Very highly effective
Grand Mean	4.29	0.76	Very highly effective

n=39

From the findings of this study by Archibong, Ogbiji & Anijaobi-Idem (2010), ICT skills development undertaken by academic heads was effective but mainly self-funded. They found out that ICT use was of great help to the tasks of the academic heads. However, in essence, funding from the university towards ICT development was very minimal.

The same study equally revealed that relatively high percentage of academic heads have personal computer, indicating their interest in acquisition of ICT skills. Again, access to internet by academic heads was mainly at public cyber café compared to private school, indicating inadequacy of such facilities on campus. Majority of the academic heads in this study rated their ICT competence as low. In terms of ICT usage, the highest areas of competence were in research, e-mail and word processing, while their competence in the other areas studied were low. Finally, it was also concluded that the major challenges to ICT usage among academic heads were related to funding, facilities and work load (Archibong, Ogbiji & Anijaobi-Idem, 2010).

Level of Effectiveness of ICT Application Tools by Academic Teachers:

Table 8 shows the level of effectiveness of ICT application tools as used by the academic heads. Almost all the ICT application tools as used by them were very highly effective except for retrieving school records and pertinent data easily which was only highly effective.

Table 8: Level of Effectiveness of ICT Application Tools by Academic Teachers

Effectiveness of ICT Application Tools	Mean	SD	Description
1. Utilize ICT files and computers for students’ cumulative records, formative and summative evaluations which can be printed out from the software application for a hard copy documentation.	4.15	0.90	Highly effective
2. Utilize ICT for teaching in the preparation of notes teaching-learning resources and examinations.	4.31	0.77	Very highly effective
3. Utilize ICT applications to prepare timetable, schemes of work, course syllabus, and school reports.	4.26	0.79	Very Highly effective
4. Set-up tests and online assignments that can be automatically graded, which saves a lot of time for the making of correction process.	3.90	1.07	Highly effective
5. Employ ICT applications to generate research results.	4.23	0.77	Very highly effective
6. Make use of ICT applications to cut up websites and online portals for students to access and use.	3.92	1.20	Highly effective
7. Promote creativity, open-mindedness and facilitate conditions and events that create a positive environment for technology adaptation.	4.31	0.69	Very highly effective
Grand Mean	4.15	0.88	Highly effective

n=39

ICTs were seen as tools to help teachers create more 'learner-centric' learning environments. In advanced countries, research consensus held that the most effective uses of ICT were those in which the teacher, aided by ICTs, can challenge pupils’ understanding and thinking, either through whole-class discussions and individual/small group work using ICTs. ICTs were seen as important tools to enable and support the move from traditional 'teacher-centric' teaching styles to more 'learner-centric' methods.

ICTs can be used to support change and to support/extend existing teaching practices. Pedagogical practices of teachers using ICT can range from only small enhancements of teaching practices using what are essentially traditional methods, to more fundamental changes in their approach to teaching. ICTs can be used to reinforce existing pedagogical practices as well as to change the way teachers and students interact.

Using ICTs as tools for information presentation was of mixed effectiveness. The use of ICTs as presentation tools (through overhead and LCD projectors, television, electronic whiteboards, guided "web-tours", where students simultaneously view the same resources on computer screens) was seen to be of mixed effectiveness. While it may promote class understanding of and discussion about difficult concepts (especially through the display of simulations), such uses of ICTs can re-enforce traditional pedagogical practices and divert focus from the content of what was being discussed or displayed to the tool being utilized.

On the other hand, the factors which were found to be most important to these teachers in their teaching were: making the lessons more interesting, easier, more fun for them and their pupils, more diverse, more motivating for the pupils and more enjoyable. Additional more personal factors were improving presentation of materials, allowing greater access to computers for personal use, giving more power to the teacher in the school, giving the teacher more prestige, making the teachers' administration more efficient and providing professional support through the Internet.

These findings have implications for training other teachers to become regular users since as was discussed in section 2, many of the professional development courses focus on teachers acquiring basic IT skills. Our research has shown that the perceived usefulness factors were probably equally important to teachers, therefore, professional courses should increase the training of teachers in the pedagogical issues if teachers were to be convinced of the value of using ICT in their teaching.

Results in Table 8 show academic teachers signified that ICT application tools used such as preparing notes, teaching-learning resources, examinations timetable, schemes of work, course syllabus and school reports, generating research results and creating positive environment for technology adoption were very highly effective. Finally, other ICT application tools used were considered by the academic teachers as highly effective.

Level of Effectiveness of ICT Application Tools by Administrative Staff:

Table 9 shows the level of effectiveness of ICT application tools by administrative staff. All the ICT application tools as used by them were highly effective.

Table 9: Level of Effectiveness of ICT Application Tools by Administrative Staff

Utilization of ICT Application Tools	Mean Score	SD	Description
1. Uses Application Tools in:			
1.1 Doing daily responsibilities	3.97	1.36	Highly effective
1.2 Communicating with clientele	4.00	1.34	Highly effective
1.3 Keeping of records	4.09	1.17	Highly effective
1.4 Processing documents	4.09	1.17	Highly effective
1.5 Collecting data and information	3.97	1.40	Highly effective
2. Uses ICT application tools in recording school financial documents through:			
2.1 Balance sheet	3.97	1.23	Highly effective
2.2 Pay slip	3.97	1.26	Highly effective
2.3 Audit reports	3.91	1.42	Highly effective
2.4 Non-salary grants	3.94	1.32	Highly effective
2.5 Stocks keeping/inventory	3.97	1.20	Highly effective
2.6 Student/Faculty evaluation reports	4.09	1.30	Highly effective
2.7 Overall student/faculty records for future references	3.94	1.32	Highly effective
Grand Mean	3.69	1.29	Highly effective

n=32

Table 9 presents the level of effectiveness of ICT application tools as used by the administrative staff.

Relationship among Leadership Styles and Utilization of ICT Application Tools

Pearson Product Moment Correlation was used to assess the relationship between leadership style and utilization and effectiveness of ICT application tools.

Table 10 presents the relationship of leadership styles and utilization of ICT application tools.

Table 10: Leadership Style and Utilization of ICT Application Tools

Leadership Style	r-value	p-value	Decision on Ho	Interpretation
Authoritarian and Utilization of ICT application tools	0.367	0.022	Reject Ho	Significant

Data in Table 10 revealed that a relationship existed between authoritarian leadership style with utilization of ICT application tools. An authoritarian leader acts as the chief judge of the achievements of the members. This trait of a leader can be used in relation to the decision-making processes, in storing information as well as online applications. The r-value of .367 shows that there is a positive correlation at $p < .05$.

It further explained that out of the four leadership styles only authoritarian leadership style has complimentary relationship with utilization of ICT application tools.

Relationship between Leadership Style and Effectiveness of ICT Application Tools:

Pearson Product Moment Correlation was used to assess the relationship between leadership style and effectiveness of ICT application tools.

Table 11: Leadership Style and Effectiveness of ICT Application Tools (n=32)

Leadership Style	r-value	p-value	Decision	Interpretation
Transactional and effectiveness of ICT application tools	.409	.010**	Reject Ho	Significant
	.501	.001**	Reject Ho	Significant
	.447	.004**	Reject Ho	Significant
	.425	.007**	Reject Ho	Significant
	.363	.023*	Reject Ho	Significant
	.375	.019*	Reject Ho	Significant

Data shown on Table 11 revealed that transactional leadership style has a positive correlation with effectiveness of ICT application tools, some at $p < .01$ while others at $p < .05$. As transactional leader, one engaged with followers at an equal level of morality. In order to become effective in using ICT application tools such as keeping and retrieving records, presentation of information, facilitating and providing data, a leader must assess some level of morality. In an interview with the participants it revealed that ICT application tools has made work easier, more accurate, less time spent and effort exerted, convenient and useful, and it made their work interesting and colorful. It was effective because there was ease in retrieval of documents needed, and useful especially for research purposes. However, they really have to take time to learn how to use them.

5. THEORY ON LEADERSHIP STYLE AND ICT APPLICATION TOOLS

This chapter presents the theory that the researcher developed based on the intercontinental review of related literature and studies, results of the study and the interview conducted by the researchers. The theory development scheme in this investigation adopted the principles of logical and axiomatic approach developed by Roberto Padua, a research scientist.

As stated by Abadiano (2016) trends in empirical research into educational administration were toward ritualization because of deficiency in creativity. Therefore, theory building should consist of formal logic and creative abstracting whose prime goal was to provide explanation about phenomena.

Proposition 1: Leadership Style Influence Use of ICT Application Tools Democratic leaders are not as highly effective as the transactional leaders in the use of ICT application tools but they are more encouraging of their subordinates to use them.

In the interview conducted, interviewees agreed that their democratic leader encouraged them to use ICT application tools. They even made these ICT application tools available for use, "Our head always encouraged us to use these ICT tools. They even provided us and made these available for us to use." ICT generally had a positive impact on teaching and learning situations. Thus a democratic school head would always encourage its people to get to maximize the benefits of technology to enhance teaching-learning experience (Punie, Zinnbauer, & Cabrera, 2006).

Judge and Piccolo (2004) underscored that Transactional leaders relied on standard form of inducement, reward, punishment, and sanction to control followers. They likewise motivate followers through modelling. They often use technical knowledge to determine the change process. This implies that transactional leaders really have to learn to use ICT application tools, share their technical knowledge with their followers and at the same time model themselves on the effective use of ICT application tools.

Proposition 2: Purpose leads to effective application of ICT tools:

Academic teachers were very highly effective in the use of ICT application tools such as preparing notes, teaching-learning resources, examinations, timetable, schemes of work, course syllabus and school reports, generating research results and creating positive environment for technology adoption. "We need to be adept with the application because we can use it inside the classroom. Moreover, the current trend in CHED nowadays is that reports were submitted electronically. So you really have to learn," narrated by one of the academic teachers.

ICT can improve teaching by enhancing an already practices knowledge and introducing new ways of teaching and learning. Transforming teaching is more difficult to achieve. Changes that take full advantage of ICT will only happen slowly over time, and only if teachers continue to experiment with new approaches (Underwood and colleagues, 2006; Punie, Zinnbauer, & Cabrera, 2006).

Theory Developed:

Figure 3 shows the Barrido's ICT Efficiency Usage Theory. The figure shows that the Democratic leaders are very highly effective in the use of ICT Application Tools but it is the Transactional leaders who are very highly effective. However, democratic leaders are very encouraging in terms of the use of ICT application tools as evidenced by the very high effectiveness of academic heads' use of them as compared to academic teachers.

Tentative Hypothesis:

Based on the quantitative and qualitative data derived from the results of the study, the tentative hypotheses were formed:

Hypothesis 1: Democratic leaders are not as highly effective as the transactional leaders in the use of ICT application tools but they are more encouraging on the use of it.

Hypothesis 2: Academic heads are effective users of ICT Application tools.

Hypothesis 3: Transactional leaders are better users of ICT Application

As regards to the schematic diagram of Barrido's ICT Efficiency Usage Theory illustrated in Figure 2, the paradigm of the study, the independent variables comprised the functionality of academic heads, academic teachers and administrative staff. On the other hand, the dependent variables were the professional attributes of ICT efficiency. The result was the new theory.

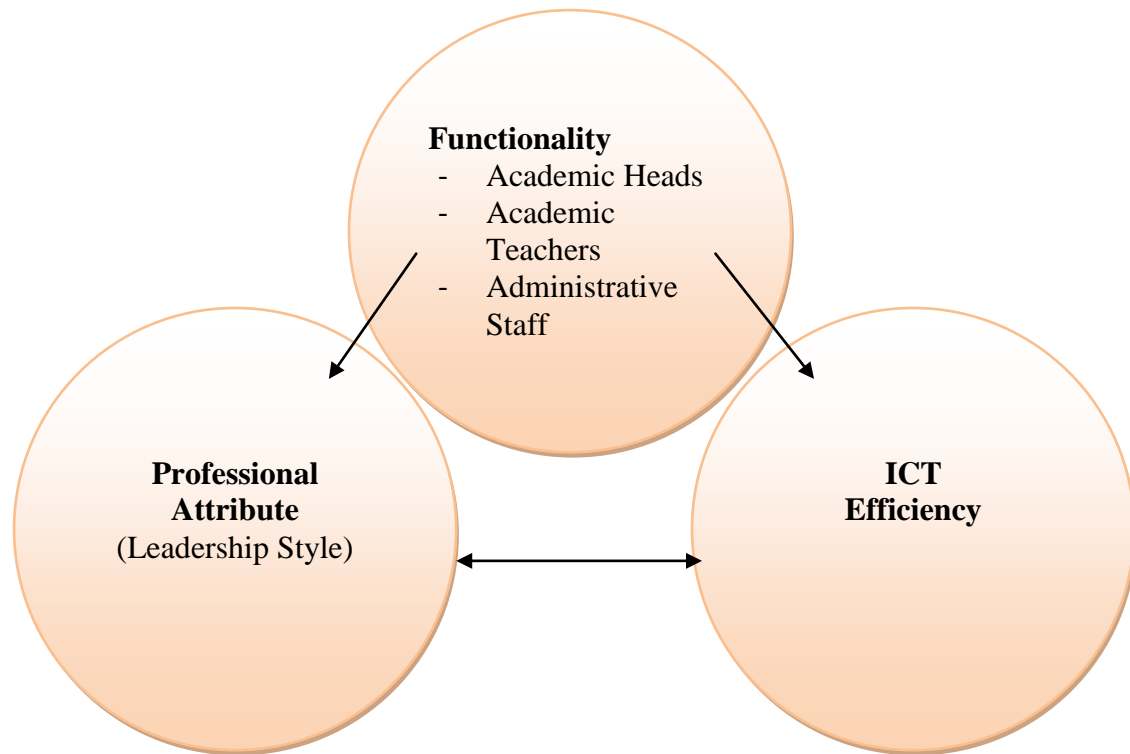


Figure 2: Schematic Presentation of Barrido's ICT Efficiency Usage Theory

6. SUMMARY OF THE FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter discusses the summary of findings, conclusions, and recommendations. It also discusses the overall findings based on the conduct of the study.

Summary of the Findings:

The findings of the study revealed that:

Only permanent employees of ISCOF Main Campuses were utilized as participants of the study. They were composed of academic heads, academic teachers, and administrative staff.

Majority of the academic heads had democratic leadership style. Some were transactional and transformation leaders while only a few were authoritarian. Data signified that democratic academic heads had a *very high range of leadership style*. They ranked first among the leadership styles. The scores of transactional and transformational leaders were the same with *very high range of leadership style*.

Moreover, academic heads were considered authoritarian which means that they have *high range of leadership style*.

Data reveals that high speed internet connection and online registration were the most needed tools as perceived by the academic heads. Similar observations were made by the academic teachers and administrative staff.

For software applications, the following tools were most needed namely: bibliographic database, modern database (cloud computing), e-maps, e-thesis, e-newspaper, e-magazine, e-journal, and e-data archives while the available software applications were e-books, e-mail, management information system (MIS), MS Excel, MS Power Point, and MS Word.

In terms of most needed hardware were glass board, i-phone, and i-pod. Hardware available for use by the educational management were digital cameras, DVD players, flat screen television, laptops, LCD/LED TV, multi-media projectors, and overhead projectors.

Data revealed that academic heads have *very high utilization* of ICT application tools because as academic heads, they encouraged the use of powerpoint during instruction, applied power point presentation in giving instruction and in the conduct of in-house training, applied ICT applications to prepare school, teacher and staff meetings, announcements and reports, and being an academic head they have the basic skills of using ICT in school daily administrative and management job.

Other ICT application tools were highly utilized like facilitating teacher's integration of computers in teaching and learning, using them in student registration and in decision-making processes, store information as well as online application.

The data showed that academic teachers very highly utilized the following: ICT application tools like using computer/ICT files for students cumulative records, formative and summative evaluations which can be printed out from the software application for a hardcopy documentation, using them in the preparation of notes, teaching-learning resources and examination, preparing timetable, schemes of work, course syllabus, and school reports, and creating a positive environment for technology adoption. On the other hand, ICT application tools that were highly utilized by the academic teachers include setting up tests and online assignments, generating research results and using them to cut up websites and online portals for students to access and use.

Data revealed that all the ICT application tools were *highly utilized* by the administrative staff.

Data revealed that the academic heads signified that ICT application tools were *very highly utilized*. Almost all the ICT application tools as used by them were *very highly effective* except for retrieving school records and pertinent data easily which was only *highly effective*.

Data revealed that academic teachers signified that ICT application tools used such as preparing notes, teaching-learning resources, examinations, timetable, schemes of work, course syllabus and school reports, generating research results and creating positive environment for technology adoption were *very highly effective*.

Other ICT application tools used were considered by the academic teachers as *highly effective*. The level of effectiveness of ICT application tools used by the administrative staff revealed that all these tools were *highly effective* when used.

Pearson Product Moment Correlation was used to assess the relationship between leadership style and utilization and effectiveness of ICT application tools.

Data revealed that relationship existed between authoritarian leadership style with utilization of ICT application tools. An authoritarian leader acts as the chief judge of the achievements of the members. This trait of a leader can be used in relation to the decision-making processes, in storing information as well as online applications. The r-value of .367 shows that there is a positive correlation at $p < .05$.

Moreover, transactional leadership style reveals a positive correlation with effectiveness of ICT application tools, some at $p < .01$ while others at $p < .05$.

As transactional leader, one engages with followers at an equal level of morality. In order to become effective in using ICT application tools such as keeping and retrieving records, presentation of information, facilitating and providing data, a leader must possess some level of morality.

Conclusions:

Based on the findings of this study, the **Barrido's ICT Efficiency Usage Theory** is composed of independent variable functionality which constitutes academic heads, academic teachers and administrative staff and dependent variables which are professional attributes or the leadership styles of the participants and ICT efficiency.

The leadership styles of the academic heads were authoritarian democratic, transactional and transformational leadership. Majority were democratic followed by both transactional and transformational and the last was authoritarian.

As regards to the utilization of ICT application tools, high speed internet connection is a requirement in order to make it more effective. Online registration, computerized enrollment system and modern database (cloud computing), bibliographic database, e-thesis, e-journal, e-newspaper, e-magazine are identified as the most needed software ICT application tools of the college.

Recommendations:

Based on the findings of this research, the following are the recommendations:

1. Annual leadership training for educational management must be conducted to enhance the capabilities of academic heads, teachers, and administrative staff.
2. Continuous training workshop to update the academic heads, teachers and administrative staff with the recent technology advancement.
3. Installation of computerized enrollment system at ISCOF Main Poblacion Campus which is an immediate need in the application for universityhood.
4. Prioritized the purchase of ICT application tools needed by the academic heads, academic teachers and administrative staff to boost the utilization of ICT application tools to further build up teaching-learning processes.
5. Provide enough budget for the purchase of the most needed ICT application software and to improve the learning facilities.
6. Enrichment of moral values to sustain transparency, integrity and zeal in government service.

Recommendations for future researchers

1. Applicability of ICT application tools in Industry Management
2. Useability of ICT in the Socialized Urban Community
3. The Implications of ICT applications to Growing Up Kids

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