

Language Teachers' Technological Leadership Roles and Job Satisfaction Levels

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Abstract

Technological Leadership is a combination of strategies and techniques that require technology-specific attention, including an understanding of how technology can be used in teaching and developing strategies to help teachers use technology in their classroom. Therefore, Technological Leadership requires new information, policies and strategies to facilitate the efficient use of technology knowledge in the learning environment and in the teaching profession. Unfortunately, school administrators assume new leadership roles and responsibilities without the necessary professional development. This situation may lead to inclusion and wrong decisions without having leadership qualities. Under these circumstances, job satisfaction levels of teachers may decrease. The use of technology is of great importance, especially in the language education which is of high importance in our country. In this study, the relationship between technological leadership and job satisfaction in language teaching is examined. The research was conducted on 284 teachers. When the findings of the study are examined, it is determined that there is a relationship between technological leadership and job satisfaction. This shows that the level of job satisfaction of teachers during language teaching will increase with the effect of leadership styles in the direction of technological leadership.

Keywords: Leadership, technological leadership, job satisfaction

Introduction

The school teachers may not be able to use the technology at a desired level, however, they can be efficient technology leaders displaying their leadership characteristics (Banoğlu, 2011).

According to (Tanzer, 2004), technology leader is the person who directs in using technology within the organization efficiently and fruitfully, affects the organization on this matter and manages. In this sense, technology leader is the person who uses the technology when activating the power of the employees and makes them use it (Can, 2003).

Thus, the teachers should take on responsibilities in using efficiently the information and communication technologies in the school management and in the classroom (Bülbül & Çuhadar, 2012). According to Hamzah, Nordin, Jusoff, Karim, and Yusof (2010), the technology leader is the person who establish communication between technology and leadership trying to reconcile information technologies (IT) and human primarily having an active role in using technology. The differences emerging while defining the technology leader bring to the forefront the

standardization and identification of the leader's roles and responsibilities. One of the most comprehensive studies conducted in this sense is American International Society for Technology in Education (ISTE) (Hacifazlıoğlu, Karadeniz, & Dalgiç, 2011). The technology planning should be active within the organization, be used efficiently and meet the organization's needs. Thus, a technology plan to be prepared by the education stakeholders could be efficient for the organization (Banoğlu, 2011).

Turan (2002) discusses that this new type of leadership role for the school administrators leads to pioneer the school, teachers and students, and encourages them to use these technologies. Thus, the school administrators should attach importance to use and make others use the technology to support and enrich education keeping away from traditional management understanding (Can, 2003), be in peace with information and technologies and even bring them into their daily lives (Sincar & Aslan, 2011).

Technological leadership in education is a holistic process including technology planning, integration, creating the necessary infrastructure, professional development of education

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components, and providing support services (Anderson & Dexter, 2005).

Technological leadership behaviors of the educators to manage the change at school as a result of the integration of IT and education are important for that process. A technological leader should create his own vision and cooperate with school members within the school, manage the change and always attach importance to inspection (Banoğlu, 2011).

This study aims to investigate views of foreign language teachers on job satisfaction and technology leadership. In this regard, the research question is whether there is any relationship between teachers' job satisfaction levels and technological leadership ideas that have occupied an important position today and emerged in parallel with the expansion of technology in education. The subscales of technological leadership will seek answers for the questions whether the opinions of foreign language teachers about technological leadership differ by gender (male or female) and whether the job satisfaction levels of foreign language teachers vary according to their gender (male or female).

Conceptual Foundations and Related Research Technological Leadership and Training

Rapid developments in technology, global view on education and changes in educational policies increase sanctions on education and the expectations from schools; also, they cause tight competition among schools, new educational approaches to emerge, and more complex and varied roles expected from teachers (Jermisittiparsert & Urairak, 2019).

In school management, leadership entails tackling problems realistically and having certain qualifications to resolve them. While a formal leader shows impact on his group through authority, an informal leader integrates with his group through his leadership acts (Chavaha, Lekhawichit, Chienwattanasook & Jermisittiparsert, 2020).

Instructional technology is one of the computers and technology applications in education (Bozeman & Spuck, 1991). The training of technological leadership should be considered under the scope of the school, regional education representatives and experts. The important thing is that these three factors work at the same time (Kearsley & Lynch, 1992). Yaacob (2000) reported that if the administrators believe information and communication technology (ICT) will be beneficial for them, then they will encourage its use at school

too. Since the efficiency and productivity in management increases with the use of technology, the administrators deemed it necessary to receive training about the use of new tools and materials, technologies and methods at school.

What is important for technological leadership is the ability to be able to make use of the existing and new technology. For example, there are many social and philosophical technological applications existing in schools but not in technology courses. Educators who can focus on the effect of technology on people and its possible side effects can be said to contribute more to application process of technology at school (Kearsley & Lynch, 1992). Technology is an assistant for establishing more efficient and productive school and bringing solution for the problems faced when establishing it (Turan, 2002). How to form such an education program and what subjects will be included are important issues. The courses to be provided may reflect these matters using different methods. These could be; providing courses on the issues which the leaders have a lack of, forming courses level by level from the basic level, and providing computer applications within other courses (Bozeman & Spuck, 1991).

Objectives of Technological Leadership Training Program;

- Benefiting from technology-based solutions regarding educational problems.
- Knowing and applying strategies for technology-based training solutions.
- Predicting and explaining changes to adapt to new technologies.
- Explaining the features of new technologies.
- Being able to make evaluation for active use of technology and cost and benefit analyses.
- Being well-informed about theoretical and conceptual basis regarding the application of instructional technologies.
- Subjects:
 - Using computer during education.
 - Using computer in management of education.
 - Educational "hardware" systems.
 - Organizational dynamics and technology.
 - Leadership theories.
 - Instructional theories and program development.
 - Program evaluation.
 - Making use of education policies.
 - Distance education.
 - Preparing education software.
 - Education systems.

Management of Technology in Education and Technological Leadership

Technology in education is to use multimedia technologies or visual-auditory devices to promote the educational process (Miller, 2008).

The role of technology in education increases day by day with the use of technology and innovations (Miller, 2008). The use of technology is very important for integrating innovations into education. The use of appropriate technology directs students to active learning and brings them collaboration and communication skills they need. This is ensured by the understanding of technological leadership in education but not the technology itself (Erden & Erden, 2007). Such an understanding is a tool supporting the curriculum, enriching the learning of students, and preparing them for technological future (Espey, 2000).

Technology improves education. Active use of technology entails individuals who will take part in technological environment to be educated in such environments. Only those individuals educated in such environments can keep with the era. The technological leadership which is a new concept in

education is not suitable for timid individuals. An effective technology leader should be able to direct the increasing knowledge and information such as the changes in education stemming from the use of technology (Wagner Jr, 2004).

We can list the scientific basis of the use of technology in education as follows:

- Motivation,
- Flexibility in learning styles,
- Individualization principle in teaching (considering individual skills),
- Supporting equality in opportunity,
- Supporting professional development for efficient use of technology.

Technological leaders are people who focus on development, integrate systematic development activities using new ways, methods and programs within organization. This structural process should be evaluated as fight against any barrier within the organization against the technology and change, and adapt the technology into the current structure (Watts, 2009). According to Anderson and Dexter (2005) the technological leadership that should be adapted in schools should be as table 1

Table 1. Technological Leadership Model

Infrastructure	Technology Leadership	Technological Outcomes
	Committee of technology.	
	School technology budget.	
	Regional support.	
Use of network.	E-mail.	Use of network for e-mail and websites.
Integration of technology.	Management days (about technology).	Integration of technology.
Use of tools by students.	Policy of personnel development.	Use of tools by students.
	Supports.	
	Policy of intellectual property.	
	Other policies	

Technological Leadership Dimensions in Educational Institutions

According to Turan and Şişman (2000) education is vital for personal, economic and cultural development, and educators define the aim of schools as students' academic achievement, gaining efficient study behaviors, socialization, self-realization and self-confidence. In this regard, the school administrators have an important role in the realization of education objectives of the school. Erdogan (2003) stated that a school administrator should have effective communication skills, strong leadership features, contemporary, familiar with communication technologies, able to organize information and believer of education (Erdogan, 2003).

We can say that technology era could only be ensured by active leadership of the school

administrators and teachers. School administrators and teachers are key persons for adopting and applying any changes in their schools. The trainings of school administrators regarding their leadership in the use of education technologies oriented to educate them pre- and in-service are not cared much, and the responsibilities of school administrators regarding the use of education technologies at schools increase day by day with the improvements in technological facilities in the 21st century. Sharp stated that a part of the education leadership process includes the active use of technology, and management role has turned out to be technological leadership in education in the 21st century (Altun, 2004; Turan, 2002).

Technological leadership is one of the modern technological approaches of the 21st century.

Leadership manifests itself by authorization, performing tasks and effect in educational institutions. Authorization is divided into formal and informal types. Formal authorization is only given to the administrators by status, and so provides them with status leadership. Informal authorization is given to the leader by the group, and in fact, this means to give leadership to the administrator. In school management, leadership entails tackling problems realistically and having some qualifications to solve them. Formal leader shows his effect on the group by authority, while informal leader integrates with the group by his actions. Although school administrators are deemed as formal leaders, they may play informal leader roles when they motivate teachers and direct them with his values (Banoğlu, 2011; Kuruüzüm, & Çelik, 2005).

Yılmaz (2005) Traditional learning and teaching environment have been replaced by IT in recent years. It is pointed out that technology should be used actively, investing in hardware and software, and efficient leadership is a necessity. Technology is not used only in education at schools but also in education management, and it causes the use of IT to enter into this field through computer. Pointed out that the way of using IT in school management and in the classroom effectively, evaluating the "software" used in the school, technological innovations and their reflection to the school forces school administrators to have some qualifications. Our schools are the first institutions that those innovations are integrated in. The most important innovation is educational technologies in general sense and computers in private (Altun, 2004; Turan, 2002).

Technological leadership behaviors of the educators to manage the change at school as a result of the integration of IT and education are important for that process. A technological leader should create his own vision and cooperate with school members within the school, manage the change and always attach importance to inspection (Banoğlu, 2011).

Technological Leadership of Teachers

People and organizations use the technology today (Unal, 2012). The changes and innovations in technology influence education as society are two integrated conceptions. The information society stemming from the developments in IT represent computer technologies. If information is the schools in a society, it is the institutions that use the technology actively, following up innovations and integrating them (Görgülü, Küçükali, & Ada, 2013).

Educators should have some characteristics regarding the roles of technological leadership. An educator should integrate education technologies with the school by having knowledge on the conceptions of technology, selecting software and hardware that are appropriate to the school, creating a vision including technology, providing in-service trainings for educators, procuring the necessary equipment and education tools that may be used at school, and providing a certain budget and support (Irmak, 2015).

Inability of educators in more active use of education technologies, and in directing indicates the importance of education leadership roles (Görgülü et al., 2013). Because educators who do not have sufficient knowledge and skills may mislead people and thus, cause inappropriate technological tools to be used (Bülbül & Çuhadar, 2012). This may affect learning and teaching negatively. Therefore, educators should firstly have an understanding of technology and be aware of it. Educators should not only prepare teachers, students and personnel but also let them be informed of technology, have a technological vision and share it with them (Bülbül & Çuhadar, 2012). Voluntary participation of teachers in planning process highly influences technological leadership as well as becoming a leader (Banoğlu, 2011). Thus, educators play an important role here.

Job Satisfaction

The job satisfaction is taken as a degree that an employee is satisfied with his/her job, and an important concept to determine his/her behaviors towards the employees of an enterprise. The first systematic studies regarding job satisfaction were conducted in 1930s (Yüksel, 2005). There are many studies conducted on job satisfaction (Akkoç & Turunç, 2012). Locke defines job satisfaction as pleasure from evaluations on the employees, while Imparrote defines it as the degree of positive or negative emotions about the duties of employees (Pinar, Kamaşak, & Bulutlar, 2008).

According to Mrayyan (2005), job satisfaction shows the satisfaction level of employees, while Samad (2006) defined it as the name given to emotional behaviors of an employee as a result of comparing his/her expectations and outcomes (Akkoç & Turunç, 2012). According to Sparks, Diener, Wari and Brief, job satisfaction refers to the evaluation of an individual's satisfaction or work experiences or positive emotional status (Seker & Zirhoglu, 2009).

Muchinsky and Fritzsche & Parrish defined job satisfaction as the satisfaction level of employees

when their expectations and works coincide, while Weiss defined it as emotional behaviors of employees towards their job (Akkoç & Turunç, 2012). Cranny, Smith and Stone defined job satisfaction as emotional reaction or the emotions that an employee feel towards his/her work based on the comparison that s/he expects and desires and the outcomes realized (Pinar et al., 2008). According to Spector and Schermerhorn, job satisfaction refers to positive emotional situations that an employee acquires from work experiences since reactions could be positive or negative, and negative emotional situation of employee towards his/her work is defined as work dissatisfaction (Akkoç & Turunç, 2012).

Spector defined job satisfaction as the level that an individual love or does not love his/her work, while Oshagbemi defined it as positive emotions of an individual towards a certain work (Pinar et al., 2008).

One of the most important evidences pointing the change of conditions within a school is the low level of job satisfaction. Work dissatisfaction is among the reasons of; leaving the work, delay of work, low performance, problems relating to adaptation, and other problems within a school more secretly. Thus, high level of job satisfaction has become important for employees (Çalışkan, 2005). The main reason why job satisfaction is so important is defined by Bledsoe & Hayward, Harrell, Chewing & Taylor, Podsakoff & Williams, Augo, Meuller and Price, Moyes, Williams & Quigley, Oshagbemi, Strivestava, Locke & Bartol, Mayes, Ansah and Ganguli, and Cranny, Smith and Stone that people spend most of their daily life at work, and as a result, there are many studies regarding job satisfaction (Pinar et al., 2008).

Job satisfaction is defined as an emotional response and this response is given as an emotional behavior as a result of the interaction of the employee's values towards his job and acquisitions from his work. Job satisfaction is an emotion felt as a result of coincidence of an employee's acquisitions in return for his labor with his needs, expectations and value judgments (Hartinah, Suharso, Umam, Syazali, Lestari, Roslina & Jermisittiparsert, 2020).

Day by day in the modern world, participation in work life increases and gains importance. Being having to work to meet people's needs and demands makes business and thus work life an important part of their life (Chavaha et al., 2020; Hartinah et al., 2020; Jermisittiparsert & Urairak, 2019).

Variables Affecting Job Satisfaction

The elements affecting job satisfaction are the size of organization, salary, conditions of work, social interaction, social environment and facilities, education facilities, work structure, perception of an individual's work by his/her environment, etc. These are mentioned in the followings (Tor & Esengün, 2011).

Personality

Personality contributes to distinguish people's major humane features. Many dimensions of personality come through actions of individuals within organization. First of all, personality is probably unchangeable and it is shaped in the first years of an individual. Therefore, when an individual comes to work, his/her personality comes as well. Furthermore, personal features are at general dimension. People do not give up their personality when start working, and personality motivates people. It covers people's needs, problems, desires or tendencies. There are many aspects that an employee attaches importance depending on his/her personality. Some employees care individualism at work and do not want administrators to intervene in their work, while some want to be directed and work in groups. Furthermore, it was found out that social network pattern also has an impact on job satisfaction of the employees, which is one of their personal characteristics. Job satisfaction of employees not having strong family bonds is low. Individuals who are less satisfied with their jobs have a lack of talent, low social communication and stressful life (Akkoç & Turunç, 2012; Çalışkan, 2005; Gözen, 2007; Tor & Esengün, 2011).

Profession, Quality of Work, Job and General Perception of Job within Society

Similar results were obtained from many studies conducted on profession and job satisfaction. Job satisfaction levels of the employees in learned profession groups were found to be higher than those of working in unqualified or semi-qualified profession groups (Çalışkan, 2005).

The quality and significance level of work are among important factors affecting devotion to the enterprise. Significance level of a work is the effect of a work on people's lives within an enterprise or social life. The necessary qualifications, motivators regarding work and working conditions are declared in job specifications determined by staff managers within organizations. The theory stating that work experiences will increase as work area of employees expands is approved (Akkoç & Turunç,

2012; Gözen, 2007). The job satisfaction of employees will increase as there is a positive correlation between job satisfaction and organizational devotion.

Employees should be honored with their job. The indicator of feeling honored at the end of a work is the happiness for having produced something that corresponds with individuals' needs. The yield obtained as a result that a person who loves his/her job only honors him/her, and this makes him/her be satisfied with the work. In addition, if an employee has the right to use his/her qualifications when organizing and managing a work, s/he will be satisfied with the job and positively influence success. The more tasks an employee undertakes, the less s/he will be bored. If a job allows employees use their skills and qualifications, then they will feel they provide more benefits for the work they do. The jobs that are different, interesting and cause competitions increase job satisfaction level (Çalışkan, 2005; Eronat, 2004).

Content and quality of a work, role conflict and uncertainty, managing style, prime systems, work overload, work-related stress, community awareness, authorizing for using initiative, autonomy and education opportunities are factors affecting the general sense of a job within a society (Tor & Esengün, 2011). According to social understanding, high job satisfaction can be observed in people working at high status jobs (Akkoç & Turunç, 2012).

Management and Supervision

Administrator is an important factor for a person to get satisfied with work. Some investigations indicated that only a good administrator and well management policy in working life where salary, which is an important motivation factor, is not sufficient can play a major role in increasing employees' job satisfaction. This shows the importance of management policy on predicting job satisfaction. Today, consulting employees regarding managerial issues, letting them get satisfied and be happy with their jobs, and increasing their productivity have become necessary for management and management policies. Administrators should consider this and encourage their employees to take part in the management of the organization, and bring new methods to motivate them. Administrators who do not care ideas of their employees, remain insensitive to their problems, and unaware of the work cause employees to get dissatisfied with their jobs (Akkoç & Turunç, 2012; Bozkurt & Bozkurt,

2008).

Employees who have a voice in the management will be satisfied psychologically and feel the dissatisfaction and stress disappear slowly. Having a voice in the management offers employees important opportunities for their satisfaction and increases their ties with the enterprise, and motivates them to support the enterprise achieve its goals. Employees will be more satisfied as much as their solutions are recognized and approved by the administrators and other workers (Çalışkan, 2005).

Management is an important factor for ensuring job satisfaction. Statements of aged people like "Turkey went further during the period of x administrator." prove the effect of administrators on people. Considering the conditions of the period, we have become an influencing country among underdeveloped countries by well-management (Kılıçgün & Göksen, 2012).

The manner of inspection influences job satisfaction either positively or negatively. A continuous inspection of individuals decreases the chance of using personal initiative, and this type of administration causes negative behaviors on the worker relationships. Contrarily, in the case of a good relationship between the inspector and workers, this will increase satisfaction level (Çalışkan, 2005).

Working Hours, Social Opportunities and Safety

Working in shifts and the working hours impact employees in terms of health and motivation. Working in shifts may sometimes stem from economic troubles, insufficiency of technological tools and unemployment and employment policies. Working in shifts that requires people to work at night when their metabolism prepares for sleep, and forces to sleep when a new day comes causes people to have both physical and mental problems. Sleeplessness stemming from shift system causes productivity to decrease, to increase mistakes and the possibility of working accidents, to health deterioration and deterioration of family life and social relations. So, devotion of the employees in such an environment will be difficult however much their mental and social status and the work conditions are good. New applications, intervals, shift works, flexing working hours can be put into practice to increase job satisfaction. Thus, mental and physical workloads caused by new working conditions can be minimized and job satisfaction can be promoted (Akkoç & Turunç, 2012; Tor & Esengün, 2011).

The presence of job security is another

satisfactory factor. If employees think that safety is ensured properly in the organization and they are cared, they will be motivated to have job satisfaction. In addition, if employees feel that there is no safety or there is negligence, it will be difficult to motivate them. Feel of safety is a feeling comprising many aspects rather than being a financial guarantee. The feel of safety comprises self-confidence arising from adaptation to working conditions or a certain workplace. Such a feeling is generally provided by the administrators to the employees. It is not a factor directly affecting the level of self-confidence performance and the safety ensured by monetary factors. However, it is possible that motivation of the employees working under tense conditions will decrease. Contrarily, those working with safety feeling seem more willing and motivated (Gözen, 2007; Tor & Esengün, 2011). Thus, job satisfaction of the employees with a good motivation will naturally be higher.

Appreciation and Performance Test Criteria

One of the components that are mostly cared by the employees is the sense of appreciation. Appreciation is one of the main methods bringing success. Job satisfaction of an employee is affected when s/he is appreciated or liked due to the work accomplished. Appreciation is an indicator of job satisfaction. However, it may differ from one culture to another, from one company to another, even from a department within the organization to another. Employees' appreciation, evaluation according to their productivity, being paid as a premium, being honored due to a task, being satisfied with promotion opportunities influence positively their job satisfaction (Bozkurt & Bozkurt, 2008; Çalışkan, 2005).

Performance determining criteria should be specified benefiting from academic works by direct observation and fairly asking advice of employees as well (Kılıçgün & Göksen, 2012). Thus, trust of employees on the organization increases, so does job satisfaction.

Job Satisfaction of Teachers

The study conducted by Liu and Ramsey in America suggested two factors for teachers' low satisfaction levels, which were salary and working conditions. We can that income level especially is not effective in job satisfaction of teachers (Belfield & Heywood, 2008; Liu & Ramsey, 2008). However, teachers cannot find adequate time to get prepared in intensive work conditions, and this causes dissatisfaction (Liu, Ramsey, 2008). The same research indicated that teachers were more

pleased with managerial approaches, relationship with students and professional development opportunities (Liu, Ramsey, 2008).

Teacher satisfaction was examined under seven subheadings in the study conducted by Liu and Ramsey. Those were school management, student interaction, professional development opportunities, safety, working conditions, resources (equipment and material regarding education and technological facilities), and salary (Liu & Ramsey, 2008). The report prepared by Perie in the National Center for Education statistics found out the followings regarding job satisfaction (Perie, 1997):

- Managerial support and leadership, student behaviors, school atmosphere, working conditions that are called as the autonomy of teachers are among the important factors affecting job satisfaction.
- Teachers in private sector and at primary schools have more tendency for job satisfaction than those in public sector and secondary schools. The study indicated that the reason was probably better parents' support in those groups.
- Satisfaction level of young and less experienced teachers at public schools is higher than that of more experienced teachers. This has two poles at private schools. Satisfaction levels of very young and very old teachers are higher.
- Satisfaction is higher in teachers who have a good level of autonomy than lower ones.
- There is low relationship between satisfaction and salary and other financial possibilities.
- Job satisfaction of secondary school teachers who have a good parental support is higher.

Besides these factors affecting job satisfaction, another important factor is the student success. Teachers' morale and job satisfaction increase when their students become more successful. Because student success also promotes their teacher's belief on individual efficiency (Caprara, Barbaranelli, Steca, & Malone, 2006). Student success is usually an indicator of teacher's capacity of transferring knowledge.

Another factor affecting teachers' job satisfaction is vagueness of role. According to the study conducted by Munthe, vagueness of role directly and negatively affects teachers' job satisfaction (Munthe, 2003).

Another factor regarding teacher satisfaction is studying habits of students. Low studying habits of students played an important role in teachers' job satisfaction. Another factor is trust. Teacher who have faith in their students are happier, yet trust is

related to students' studying habits (Houtte, 2006). Bogler stated that teachers with lower satisfaction levels are those who take their school administrator as transactional leader and do not deem teaching as a profession (Bogler, 2002).

Feedback about teachers' performances is another factor affecting job satisfaction. Job satisfaction of teachers increases when they get feedback from their students, colleagues, and senior workers (Cockburn, 2000).

Seniority, leadership of the administrator and organizational environment of the school are some of the major factors in job satisfaction (Evans, 1997).

In their study on the impacts of school type on job satisfaction, Kuruüzüm and Çelik indicated that the school management and student factor were the most important two factors affecting job satisfaction. The same study showed that financial and social status had the least impact on job satisfaction (Kuruüzüm, & Çelik, 2005).

The importance of performance and productivity in service industry manifests with the feedback between employees and leaders. Feedback determines both positive and negative outcomes affecting not only commitment to the organization but also performance of individuals (Chavaha et al., 2020; Hartinah et al., 2020; Jermisittiparsert & Urairak, 2019).

Method

The study was conducted using quantitative research method through which observations and measuring methods can be repeated and conducted via numerical researches. It was conducted using scanning method which is one quantitative method. Scanning researches can be defined as "the researches made on greater samples than other studies that investigate views or interests, skills, abilities, attitudes, etc. characteristics of participants regarding a subject or an event" (Karasar, 2015).

Population and Sample

A researcher identifies the most appropriate universe to his research objectives and creates the appropriate sample and study group (Can, 2016). The population of the study consisted of foreign language instructors enrolled in Istanbul in 2018-2019 academic year. The sample consisted of 284 foreign language instructors selected randomly from the population.

Data Collection Tools and Interview Form

The data collection tool regarding technological

leadership was the "Investigating Teachers' Technological Leadership Self-Efficacy Scale" developed by Görgülü & Küçükali, 2018. The scale included 19 items and five-point Likert scale consisting of five subscales.

The Minnesota job satisfaction scale was used to investigate the mediation effect of personality traits in the job satisfaction relationship of foreign language teachers' technological leadership roles. The scale is also used as MSQ in the literature. This scale developed by Weiss, Davis, England and Andlofquist commonly is a Likert type scale. A five-point Likert-type scale is used in the questionnaire consisting of 20 items (Bektaş, 2012).

Data Analysis

SPSS 21.0 statistical package was used to analyze data when evaluating the results in the study. Descriptive statistics methods were used to analyze the data (frequency, mean, standard deviation). Correlation analysis was used to determine numerically the direction and level of correlation between two variables for determining the correlation between independent t-test and the scales regarding technological leadership among predictive statistical techniques. The results provided 95% confidence interval, and $p < 0,05$ significance level.

Validity and Reliability

Responsibilities of the researcher towards individuals in the study group (foreign language teachers) took place within an ethical framework. Guaranteeing that the participants would not be subject to any damage and there would be no questions to determine credentials is the main responsibility of the researcher (Fraenkel & Wallen, 2000). The researcher is responsible for explaining the objective of the study to the participants clearly, providing them information about data collection tools during data collection and codes of conduct, and ensuring the accuracy and reliability of information.

During the data collection, the study group was informed about the study, the questionnaires were coded for data safety purposes and the data analysis was made. The data obtained substantially conformed to preestablished statements and hypothetic framework. Validity and reliability are one of the most important qualifications that should be in a measurement tool. Validity and reliability is the ability of measurement tool to provide consistent and similar results in separate measurements.

The validity and reliability of the questionnaires

were measured using Cronbach's alpha. The Cronbach's alpha varies between 0 and 1; as the score approaches 1, the reliability of the data increases. With the analyses made, the general reliability of the study (Cronbach's alpha) was calculated as 0.92. The reliability of the technological leadership scale was found to be 0.929, while that of the job satisfaction scale was calculated 0.93. Considering that reliability of the studies over 0.70 in terms of social sciences are deemed reliable; the internal consistency, thus

reliability of this study can be deemed high. The data obtained from the findings are given in tables. Interpretations of tables are given as transformation of digital data.

Findings on Quantitative Data

After the data were collected using data collection tools, the findings from the analysis made using packaged software were included. The data obtained from the findings are given in tables. Interpretations of tables are given as transformation of digital data.

Table 2. Descriptive Statistics of Views on Technological Leadership

Statement	N	Mean	Std. Deviation
I encourage, support and become a role for creative thinking and discovering.	284	3.11	0.418
I become a mediator for my students to discover life-related problems using digital tools and resources and solve real-life problems.	284	3.11	0.418
I encourage my students to express their ideas using their collaboration tools to discover and clarify their levels of conceptual understanding, thinking and planning processes.	284	2.87	0.479
I share my knowledge and ideas with students, parents and colleagues using different digital era media and styles.	284	3.24	0.844
I contribute to teaching profession, the school and the society to be productive, keep vivid and renovate themselves.	284	2.76	0.522
I design appropriate learning experiences including digital tools and resources encouraging students' permanent learning and creativity or I utilize them appropriately for their own purposes taking them from any place.	284	2.96	0.674
I create learning environments including different technologies that allow students to satisfy their personal curiosities and be active in setting their educational objectives, direct their own learning process, and evaluating their own developments.	284	2.74	0.511
I can promote learning activities appropriate to students' abilities, changing learning styles, and strategies using digital tools and resources.	284	3.17	0.623
I use my competence on using technological systems and transfer my present knowledge to new technologies and situations.	284	2.91	0.711
I perform many interim and final evaluations in different types appropriate to the standards for the content and technology and i reflect the results in their learning and teaching process.	284	3.07	0.721
I collaborate with students, colleagues, parents and other members of the society to support student success and innovativeness using digital tools and resources.	284	2.73	0.621
I ease and become a model for effective use of digital tools that are present and under development for looking up, analyzing, evaluating and using resources to support the research and learning.	284	3.01	0.418
I encourage and become a model for safe, legal and ethical use of digital information and technology including respect to copyrights, intellectual properties and documenting resources appropriately.	284	3.04	0.766
I meet different needs of students using student-centered strategies and providing equal access to digital tools and resources.	284	2.99	0.821
I encourage and become a model for responsible social interaction and digital ethics about the use of technology and information.	284	3.14	0.725
I raise cultural and global awareness and become a model on communicating with colleagues and students from different cultures using digital era communication and collaboration tools.	284	3.11	0.622
I participate local and global learning communities to discover innovative technological applications ensuring permanent learning.	284	3.07	0.762
I lead others to help them develop their leadership and technological skills showing a vision for effective use of technology by active participation on making decision and creating association process.	284	3.14	0.782
I always monitor, evaluate and interpret research and professional applications for effective use of digital tools and resources that are present and under development to support permanent student learning.	284	3.37	0.491

Considering participants' mean levels regarding their technological leadership scale views, there was a high agreement on these following views; "I encourage, support and become a role for creative thinking and discovering", "I become a mediator for my students to discover life-related problems using digital tools and resources and solve real-life problems", "I raise cultural and global awareness and become a model on communicating with colleagues and students from different cultures using digital era communication and collaboration tools", "I lead others to help them develop their leadership and technological skills showing a vision for effective use of technology by active participation on making decision and creating association process", "I encourage and become a model for responsible social interaction and digital ethics about the use of technology and information", "I can promote learning activities

appropriate to students' abilities, changing learning styles, and strategies using digital tools and resources", "I share my knowledge and ideas with students, parents and colleagues using different digital era media and styles", "I always monitor, evaluate and interpret research and professional applications for effective use of digital tools and resources that are present and under development to support permanent student learning".

Conversely, agreement on these following views was low; "I collaborate with students, colleagues, parents and other members of the society to support student success and innovativeness using digital tools and resources", "I create learning environments including different technologies that allow students to satisfy their personal curiosities and be active in setting their educational objectives, direct their own learning process, and evaluating their own developments".

Table 3. Descriptive Statistics of Views on Job Satisfaction

Statement	N	Mean	Std. Deviation
It always occupies me.	284	3.8745	0.745
It has the chance of independent work.	284	3.1024	0.648
It sometimes may do different things.	284	2.9745	0.415
It gives me the chance to be "a respected person".	284	3.2945	0.641
It manages well the employees under the administrator's service.	284	3.4911	0.745
The ability of the administrator to decide.	284	3.4722	0.491
It gives me the chance to have a conscientious responsibility.	284	2.7944	0.751
It assures me a guaranteed future.	284	2.8144	0.744
It makes me feel that I can do something for others.	284	2.7844	0.214
It gives me a chance to direct others.	284	2.9867	0.641
It gives me the chance to do something by my own abilities.	284	2.7855	0.422
It puts into effect the decisions about my job.	284	2.7458	0.642
The price I am paid in return for my labor.	284	2.9155	0.482
I have an opportunity of promotion	284	2.7955	0.581
It gives me the chance to express my own ideas and beliefs.	284	2.8454	0.617
Due to working conditions.	284	2.7845	0.754
Colleagues agree with each other.	284	2.9845	0.251
I am appreciated with my job.	284	3.2144	0.478
The feeling of success in my job.	284	2.1548	0.225
It gives me the chance to use my own methods while doing my job.	284	2.9874	0.475

Considering the views of the participants regarding job, the following subscales had the highest participation with high job satisfaction: "It always occupies me", "It manages well the employees under the administrator's service", "It gives me the chance to be a respected person", "The ability of the administrator to decide", "I am appreciated with my job", and "It has the chance of independent work". The subscale having low participation was "The feeling of success in my job".

Considering Table 3, difference analysis of views

regarding the participants' technological leadership subscales was tested using independent t-test based on gender. Accordingly, the number of male era work life and learning process" subscale was higher, while "being active in professional development and leadership" subscale was higher in female participants.

Table 4 compares the scores of the 284 foreign language teachers in the study group (male and female) from the Minnesota job satisfaction scale t-test. Based on the findings from the Minnesota job

satisfaction scale, there was no statistically significant difference between the genders

($p < 0,05$). Therefore, the scores of teachers based on the scale were found to be similar.

Table 4. Variation Analysis of Technological Leadership Subscales Based on Gender

Statement	Gender	N	Mean	Std. Deviation	F	Sip.
Ease permanent students' Learning and creativity and inspiring.	Male	124	2.8756	0.6522	1.475	0.125
Design and develop processes.	Female	160	2.9244	0.3542		
	Male	124	2.7855	0.5477	2.147	0.097
	Female	160	2.8544	0.6215		
Be a model for digital era work life and learning process.	Male	124	2.9754	0.3154	4.587	0.001
	Female	160	2.6251	0.4785		
Encourage and being a model for digital citizenship and responsibility.	Male	124	3.0454	0.4725	2.587	0.642
	Female	160	3.1748	0.1147		
Be active in professional and development leadership.	Male	124	3.1154	0.5214	7.625	0.000
	Female	160	3.5462	0.2341		

Table 5. Difference Analysis of Job Satisfaction Based on Gender

Statement	Gender	N	Mean	Std. Deviation	F	Sip.
Job	Female	160	3.71	0.54	-0.834	0.404
Satisfaction.	Male	124	3.73	0.57		

Table 6. Descriptive Statistics of Views on Technological Leadership Job Satisfaction

Statement	Test	Job satisfaction
Ease students' permanent learning and creativity and inspire them.	Pea. Cor	0.475**
	Sig. p.	0.000
Design and develop digital era learning and evaluation processes.	Pea. Cor	0.511**
	Sig. p.	0.000
Be a model for digital era work life and learning process.	Pea. Cor	0.483**
	Sig. p.	0.000
Encourage and being a model for digital citizenship and responsibility.	Pea. Cor	0.387**
	Sig. p.	0.000
Be active in professional development and leadership.	Pea. Cor	0.617**
	Sig. p.	0.000

Considering Table 5, the relationship between technological leadership and job satisfaction was analyzed using relationship correlation analysis. There was a correlation between job satisfaction and subscales of technological leadership. Thus, teachers' job satisfaction levels were mostly influenced by professional development and being active in leadership.

Discussion

A technology leader carries on all managerial and functional activities that are necessary in using technology effectively. A leader can be a school principal as well as a teacher (Görgülü & Küçükali, 2018; Uşun, 2013; Tanzer, 2004). Furthermore, different leadership roles and theories based on the acts and position of the actor have emerged. These are instructional leadership, managerial leadership and technology teacher leadership. The studies have proven that there are teachers who are

leaders or have potential of leadership in every school (Can, 2006).

Teachers as technology leaders were found to be those who established the relationship between leadership and technology by taking the active role of the principal in applying technology and trying to mediate by comparing student and information technology conformity during education (Hamzah et al., 2010). This study seemingly conforms to other studies.

Male foreign language teachers were found to have significantly higher scores than female teachers from the overall technological leadership scale. This finding conforms to the related literature. Genç (2000) stated that male foreign language teachers obtained significantly higher scores than female teachers.

Based on the comparison of overall scores from the Minnesota job satisfaction scale, there was no statistically significant difference based on the

gender. Thus, both male and female teachers obtained similar results regardless of gender. This finding conforms to the related literature (Genç, 2000; Yavuz & Karadeniz, 2009).

The study by Biçer (2013) showed conformity with the finding that job satisfaction has no relationship with gender variable. In the study by Kılıç (2011), no strong relationship was found between gender and job satisfaction. The study by Yıldız (2010) showed that there was no significant relationship between general job satisfaction and teachers' gender. The studies conducted to determine job satisfaction levels of teachers (Ayan, Kocacık Taşdan & Tiryaki, 2008; Can, 2006) found that there was not statistically significance between gender and job satisfaction.

The gender variable has no impact on job satisfaction of teachers. As seen above, there is no significant difference in job satisfaction in terms of gender. Individuals who work in educational institutions achieve similar job satisfaction with no difference found. We cannot say there is a clear difference regarding job satisfaction levels of female and male teachers. Both male and female teachers are satisfied due to the priorities of their profession, the spiritual pleasure and the opportunity of preparing new individuals to life (Soyer, Can & Kale, 2009; Şenel, 2019).

Results

The study shows that the scores from the Minnesota job satisfaction scale increase as the scores obtained from the technological leadership scale increase. The scores of foreign language teachers from the technological leadership role scale predicted the scores from the Minnesota job satisfaction scale to be significant.

It is technology leaders who ease the integration of education into technology, use the present resources of the school and provide additional resources when needed for the procurement of learning and teaching technologies, monitor closely professional development and qualifications of teachers regarding the use of education technologies, follow and evaluate teaching activities and student success on computer environment.

Technical and financial resources of the school should be used very efficiently and realistically for the activities to develop technological infrastructure of the school and organize professional development activities for teachers while making a technological plan.

However, leadership behaviors of those who will make the plan as much as the designer gain

importance when a more holistic evaluation is made. The quality of education is related much to teachers' satisfaction levels.

We need to satisfy teachers regarding their job in order that they do their best and as a result, to ensure a quality work. Besides, teachers who have high job satisfaction may become more efficient within classroom. The conceptions that are related to job satisfaction of teachers are quality of teachers, organizational devotion, organizational performance, academic achievement, student behaviors, student satisfaction, and teacher's period and administrative performance.

In this respect, having administrative qualifications at technological leadership in educational institutions may have an impact on many factors including teachers' performances.

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