

Visionary Leadership in Total Quality Management: Efforts to Improve the Quality of Education in the Industrial Revolution 4.0

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Abstract: The principal as an educational leader is an important aspect in moving all available resources in educational institutions to be able to take advantage of technological developments in the industrial revolution era 4.0. Visionary leadership is one of the leadership models that can be carried out by an educational leader in facing the era of the industrial revolution 4.0. Education 4.0 is not only focused on the use of technology but also must be able to build quality educational institutions and be able to satisfy all customers in educational institutions. Total Quality Management (TQM) as quality management strives to create a quality education system. The TQM leadership perspective is focused on improving methods and ways of working that are carried out through a continuous improvement process. The concept of visionary leadership in TQM is an effort to build quality management oriented to the vision, mission, and principles to achieve customer satisfaction through continuous quality improvement. The writing of this article aims to conceptualize the important role of visionary leadership in TQM as an effort to improve the quality of education in the era of the industrial revolution 4.0. The result of this discussion is the role of visionary leadership in TQM is the effort of an educational leader who is not only able to formulate a vision and strategic steps forward but is also able to improve the quality of education that can be done through the application of TQM principles through continuous improvement to satisfy customers education.

Keywords: industrial revolution 4.0, total quality management, visionary leadership

I. INTRODUCTION

Education is a process that will last a lifetime. The development of an increasingly advanced era has an influence on the education management system. Technological progress in the current era has entered the era of the industrial revolution 4.0, known as the era of disruptive innovation (*disruption*). The industrial revolution 4.0 has a very significant impact on the paradigm shift in thinking and working, where the era of the industrial revolution 4.0 requires humans to be able to work together with technology through the use of information and communication technology.

The industrial revolution 4.0 had a very strong influence on the management of educational institutions. 4.0 The industrial revolution 4.0 is inevitable, so that adjustments are needed by all human resources in educational institutions such as school principals, teachers, students and education personnel. The human resource factor has a very important role in the management of educational institutions. Progress of technological revolution 4.0 with the presence of various kinds of artificial intelligence must be balanced by human resource competencies to be able to take advantage of technological advances properly.

The principal as the leader of an educational institution that acts as a mobilizer of human resources in educational institutions must be able to mobilize the available resources in educational institutions effectively. The principal's leadership role will greatly affect the performance of the people around him. The progress of the industrial revolution 4.0 requires an educational leader to have 21st century competence that is able to think critically,

collaboratively, and innovatively. According to Rohiat (2008) leadership is the ability to create the most effective changes in group behavior for others it is the process of influencing group activities towards setting goals and achieving goals. Educational leaders as agents of change must be able to bring all the elements that exist in educational institutions to be able to adjust and follow developments in the era of the industrial revolution 4.0.

Komariyah and Cipi (2005) explained that the principal as a manager in a school showed himself as a managerial technical implementer who had the skills to run a school. To be able to play the role of regulator, a principal needs a leadership trait. Principals in their leadership need conceptual knowledge and skills, the ability to see the organization as a whole which includes the ability to clearly see the organization's role in the overall development situation. Principal's leadership is very useful in building motivation that can color staff attitudes.

Danim (2005) explains the principal's leadership abilities as a major determinant of teacher empowerment and improving the quality of learning processes and products. The principal is the person who is most responsible for whether teachers and school staff can work optimally. The principal's ability to direct and encourage the teacher will greatly influence the achievement of the quality of learning.

In the era of the industrial revolution 4.0 principals are expected to be able to clearly formulate the goals of educational institutions set out in the vision and mission statement of the school. The ability to formulate goals in the future has a very important role to be able to bring educational institutions to follow the advances in

technology, information and communication that developed in the industrial revolution era 4.0. Visionary education leaders will more easily prepare themselves both in terms of human resources or the facilities and infrastructure needed by educational institutions.

Visionary leadership alone is certainly not enough in developing education amidst the challenges of the industrial revolution 4.0, but it is necessary to develop ways of thinking for an educational leader not only to be able to formulate a vision for the future but also to be able to provide maximum service to the users of educational institutions. Visionary leadership in Total Quality Management (TQM) strives to provide leadership concepts that are able to formulate future goals and are accompanied by activities that fulfill customer satisfaction through continuous improvement.

Blumberg & W. Greenfield (1980) describes leadership as a way to be able to maximize the roles of educational organizations in order to improve the overall quality of educational institutions. TQM perspective of leadership is based on the philosophy of improving methods and work processes that will continuously improve the quality of education.

The TQM approach according to Peter and Waterman (1982) provides a definition as an organizational culture that is determined and supported by the continuous achievement of customer satisfaction through an integrated system consisting of various tools, techniques and trainings. TQM is the totality that instructs everyone in the organization to be involved in efforts to improve or improve.

The principal through visionary leadership in TQM seeks to formulate a vision to direct the organization and educators. Visionary education leadership in the 4.0 industrial revolution through the TQM approach is very interesting in the context of formulating a clear vision by utilizing advances in digital technology to continuously improve quality, focus on customer satisfaction, and always strive to make improvements continuously and continuously.

II. VISIONARY LEADERSHIP OF THE INDUSTRIAL REVOLUTION 4.0

Principal's leadership is one very important factor in the success of educational institutions. Sergiovanni (1998) stated that the leadership has a very important role to enhance the learning and development of students, teachers and the effectiveness of classroom learning. Leadership is a very influential thing on the enthusiasm of teachers and employees. Through the leadership of the principal provides strategic concepts that can encourage teachers and employees to improve their knowledge and abilities. By paying attention to the style and function of the principal's leadership, it can be seen the extent of the principal's role in carrying out their duties.

Education in the industrial revolution 4.0 requires educational leaders to have the ability to think and formulate a vision going forward. The concept of visionary leadership is one of the leadership models that can be carried out by school principals in the face of technological changes that develop in the field of education. Principals who have a vision of the future can be a capital in the face of demands for change and the ideality of education in a

time of rapid technological development. Usman (2009) explains that one of the principles of 21st century leadership that is needed by principals to successfully lead their schools is that a leader must produce a good vision.

The leader must have a vision, which is able to direct and bring the organization into clear goals. There are at least three elements to be able to make a vision, namely first determining the long-term goals to be achieved, second providing a clear picture of the expected future and third, making agreed-upon values to be followed together.

Visionary leadership is the ability of leaders to create, formulate, communicate and implement the thoughts of all components of the organization that must be realized together. Visionary leadership in the educational era 4.0 is needed to formulate strategic steps as outlined in the ability to formulate a vision well. The vision of the future is a comprehensive picture of how the organization will see the conditions in the future. The development of a shared vision is an important aspect to appreciate every human resource in the school. Leaders develop and maintain collaborative relationships that encourage individual contributions.

According to Little (2013) the ability of educational leaders needed in the industrial era 4.0 is a leader who is able to think critically, collaboration, communication, creativity, innovation, global connections, the use of technology and learning tools. The concept of visionary leadership in the era of education emphasizes the importance of the principal as an educational leader to be able to have the concept as a visionary leader who is able to see and take advantage of opportunities in the future.

The visionary leader in the era of the industrial revolution 4.0 has several characteristics: (1) trying to create a productive educational vision in the era of the industrial revolution 4.0 through the use of information and communication technology; (2) making himself an agent of change for the surrounding environment by being able to adapt to technological developments in the era of the industrial revolution 4.0; (3) it is positioned as a determinant of the direction of the organization, (4) professional coaches and mentors; and (5) able to display the power of knowledge set in the vision and elaborated in the mission.

III. THE CONCEPT OF TOTAL QUALITY MANAGEMENT

Sallis (2011) defines TQM as a philosophy of continuous improvement, which can provide a set of practical tools to every educational institution in meeting the needs, desires, and expectations of educational customers. The word total in TQM means that everyone in the organization must be involved in efforts to continuously improve. The word management in TQM applies to all people in educational institutions according to their respective responsibilities.

Total Quality Management focuses on efforts to make continuous improvements to satisfy customers. Sallis (2011) provides the view that students are the main customers. While Arcaro (2007) defines the meaning of customers in the context of education into two parts, namely internal service and external customers. The main internal customers are students or students, the emergence of parents, teachers, and staff. While external customers

such as the public and universities. Institutions that apply the TQM concept will always strive to make improvements continuously. To be able to create a culture of continuous improvement, a manager or principal must trust his staff and delegate decisions at the right levels. It aims to provide staff with a sole responsibility for delivering quality in educational institutions.

Arcaro (2007) provides characteristics about integrated quality schools identified as pillars of TQM. The five pillars are: first, focus on customers, second total involvement, third measurement, fourth commitment and fifth is continuous improvement. Quality in education requires a commitment to create an environment that allows staff and students to do their best work.

Edward Sallis focuses TQM as the responsibility of all parties to contribute to quality. According to him an effective TQM requires a team work that is given the widest possible function to make a decision and solve existing problems. Team work must also be at all levels of staff, academics, and supporters. Integrated teamwork in TQM is an important component in implementing TQM in educational institutions because it will increase self-confidence and develop collaboration.

Hensler and Brunell in Usman (2009) there are at least four main principles in TQM namely: first, customer satisfaction, second caring for everyone, third management based on facts and fourth is continuous improvement. West Burnham in Usman (2009) states that in the implementation of TQM there are at least four components that must be carried out, namely: (1) principles, namely everything that must be done by school residents to realize the vision, mission, goals, and school policies; (2) process, namely the efforts carried out by all elements in the educational institution to satisfy its customer; (3) prevention, namely the efforts made by schools to avoid mistakes from the beginning; and (4) humans, namely the resources available in educational institutions to work together collegially by promoting human relationships.

While Sallis (2003) gives the thought that in TQM there are frameworks of quality components which include: (1) leadership and strategies related to commitment, quality policy, organizational analysis, mission and strategic plans and leadership; (2) systems and procedures used include aspects of administrative efficiency, data meaning, and ISO; (3) teamwork, which includes aspects such as empowerment, self-organization, group and quality tools used; and (4) self-assessment relating to monitoring, evaluation and surveys relating to customer needs and testing standards.

IV. TO THE VISIONARY LEADERSHIP IN TQM

Leadership in education in the industrial revolution era 4.0 has an enormous influence on the progress of educational institutions. Likewise, the principal's leadership role is an important element in the successful implementation of TQM. The principal as an educational leader must have a vision and mission that is able to look far ahead that is oriented to improving the quality of education. Principals who have the ability to formulate a vision in the future will be easier to formulate strategic steps to overcome various educational challenges in the industrial revolution 4.0. Leadership in relation to TQM Goetsch and Davis (1994) defines leadership as the ability

to inspire others to be willing and have total responsibility for efforts to achieve or exceed organizational goals. The concept of leadership in relation to the application of TQM is a leader who is able to arouse the motivation or enthusiasm of others by providing inspiration.

Nasution (2005) explains that in the perspective of TQM leadership is focused on improving methods and ways of working that are done through a process of continuous improvement. To be able to carry out these actions requires leadership oriented to improving quality. Ross (1994) explains leadership qualities that have several characteristics such as: (1) visible, committed, and knowledgeable, (2) passion, (3) having targets, (4) strong, (5) communicating values, (6) organization, and (7) contact with customers.

According to Scholtes in Goetsch and Davis (1994) leadership in TQM includes several principles as follows: (1) customer focus is quality leaders always focus on fulfilling customer satisfaction both internal and external customers, (2) obsession with quality namely that each employee aggressively strives to achieve quality, (3) understanding of the work structure, namely the need for a clear structure, (4) controlled freedom, namely the process of human control of work methods and processes, (5) unity of purpose, namely the existence of targets in achieving a common goal, (6) finding mistakes in the system that is focused on finding problems and overcoming problems, (7) teamwork, namely believing that teamwork will be able to provide better results, and (8) continuing education and training namely continuous learning to make improvements.

Leadership in TQM is not to look for mistakes and failures made by employees, but to identify and then be able to eliminate the causes of failure, and be able to help all people to be able to do the job well. Effective leadership according to the concept of quality management is leadership that is sensitive to change and does its work in a focused manner. Leading activities include creating a positive culture and climate in achieving common goals.

While Juran stated that leadership that leads to quality includes three managerial functions, namely: First, Quality Planning which includes steps; customer identification, identification of customer needs, develop products based on customer needs, develop work methods and processes that can produce products that meet customer expectations and turn planning into action, second, quality control which includes steps; evaluating actual performance, comparing actual performance with objectives, and taking corrective actions to overcome differences in existing performance. And third, quality improvement which includes steps; forming infrastructure, identifying processes or methods that need improvement, forming repair teams, determining problem solving and making improvements to problems.

Leadership in TQM is basically a process of influence in order to improve quality. The ultimate goal of quality leadership is customer satisfaction. The application of effective quality leadership is a combination of leader characteristics and managerial behavior. In leadership quality a leader simultaneously sets the direction and purpose of the quality of educational institutions and motivates members of the organization to progress together towards continuous quality improvement.

Through visionary leadership in TQM a school principal seeks to determine future steps about what should be done and how the organization should work well towards the quality goals that have been formulated in his vision. Visionary leaders can exert a strong influence in the context of preparing strategic plans that lead to continuous improvement and making effective decisions in order to meet customer satisfaction.

The steps that embrace visionary leadership in TQM develop vision and mission and targets with strategic plans, implementation of objectives, and improving services. The final goal of implementing this leadership is to increase total customer satisfaction. The concept of visionary leadership in TQM can be combined to build a quality management-oriented vision, mission, and principles to achieve customer satisfaction through improved quality s e cara continuously.

Sallis (2011) explains that this leadership style is concerned with communicating the vision and values of the institution to other parties, as well as mingling with staff and customers. The principal as an educational leader must be able to communicate to all staff, students and the wider community. The role of leadership in implementing TQM is very much needed. Without leadership at all levels of the institution the improvement process cannot be carried out and realized. Commitment to quality must be the main role for a TQM leader.

Visionary leadership in TQM a leader must be able to provide direction, vision and inspiration. Leadership in TQM includes changes in management mindset and role changes. The function of the leader is to improve the quality and support all educators and education personnel to carry out the strategic steps that have been formulated by the leader. Leadership in TQM empowers teachers and provides opportunities for them to take the initiative. This empowerment of teachers has an important role to give teachers the freedom to develop themselves and improve the quality of learning.

V. IMPROVING THE QUALITY OF EDUCATION IN THE INDUSTRIAL REVOLUTION 4.0

The term regarding the concept of quality often means different meaning from someone. Quality is often spoken and listened to, but when someone is told to explain about the concept of a quality often experience difficulties and even differences in opinions between one another. This kind of thing is then the concept of quality becomes subjective. In this case it means that a quality product is in accordance with its purpose. Quality is often interpreted as a product or service that is superior or in accordance with standards.

Sallis (2011) gives the concept of quality into three things, firstly interpreting the concept of quality as something absolute, secondly defining the concept of quality as something relative and third, defining quality as something according to the customer. In accordance with the meaning of the concept of quality as something absolute is when something is said to be of quality if it meets the highest standards. Meaning of quality as something that relatively gives an understanding that quality is not an attribute of a product or service, but quality is something that comes from the product or service itself.

The concept of quality in terms of meaning from the customer gives the understanding that quality is defined by the customer. In this case the quality is focused on something that can satisfy the desires of customers and even exceeds that. And therefore, customer satisfaction and desire are an abstract concept, the notion of quality in this case is called quality in perception.

Arcaro (2007) explains that in quality schools, quality standards are set for each set of work in the whole work process. Quality eliminates the need for inspection after work is carried out. Sallis (2011) provides a relative definition of quality consisting of two aspects. First is adjusting to specifications. Second is meeting customer needs.

Quality is very important in order to support the school improvement process. The school improvement model and the quality process are both trying to identify best practices. Best practice is used as a standard used to measure all improvements. Both models look for alignment of organizational practices with expected outcomes and school missions. Continuous improvement is a key component of both models. Quality is nothing but the process of a management system that can be used to implement a school improvement model.

Sallis (2011) provides an understanding of the implementation of TQM in relation to improving academic quality based on improving the quality of learning carried out in educational institutions. When most educational institutions are required to do better, it is important for educational institutions to focus on learning activities. Educational institutions using integrated quality procedures must take seriously the issues of style and the need for the learning process to create the right strategies used to satisfy students as education customers.

In relation to improving the quality of learning in the industrial revolution 4.0 according to Trilling and Fadel (2009), the current learning process must be able to be adapted to the characteristics of students with digital lifestyles, thinking tools, learning research and the workings of knowledge.

Digital lifestyle is the ability to adapt, with the development of digital technology with the presence of various kinds of artificial intelligence, tools of thinking is a skill in the use of technology, digital tools, and services and way of working knowledge is the ability to collaborate with other people or teams in a place that is different and with different tools.

Improving the quality of education in the era of the industrial revolution 4.0 must be able to be adjusted to the principles of cyber-based education 4.0. According to Herman et al (2016) there are three principles that can be applied to industry era education 4.0. First, interconnection is the ability to connect and communicate through the use of machines, devices and sensors, also known as the Internet of Things (IoT) or the Internet of People (IoP).

Collaboration, security and standards are indispensable in the application of this principle. Second, there is transparency of information systems to make virtual copies of the physical world into digital models. Third, technical assistance which includes; the ability of the system to support humans and the visual and physical aids used as support.

VI. CONCLUSION

Leadership is a very important factor in the progress of educational institutions. In the development of industrial revolution 4.0 education requires all human resources to make changes in thinking and working. The ability of a school principal as an educational leader is very influential in the progress of an organization. In the industrial revolution era education, it requires leaders who can think far ahead to formulate strategic steps that will be taken in order to develop quality educational institutions that can meet customer needs.

Visionary leadership in TQM is the effort of an educational leader who is not only able to formulate vision and strategic steps forward but is also able to always apply quality-oriented educational principles, namely through continuous improvement efforts in order to achieve customer satisfaction in education.

Visionary leadership in TQM in the industrial revolution 4.0 in order to improve the quality of education in the industrial revolution 4.0 must be able to be adjusted to the principles of education 4.0 through; First, interconnection through the paradigm of the Internet of Things (IoT) or the Internet of People (IoP), Second, there is transparency of information systems to make virtual copies of the physical world into digital models. Third, visual and physical technical assistance which includes; the ability of software and hardware systems to support humans in facilitating their work.

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