

WILLIAM EDWARD DEMING'S MODEL PLANNING

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ARTICLE INFO

Article history

Received January 27, 2024

Revised February 18, 2024

Accepted February 18, 2024

Keywords: William Edward
Deming's, Model
Planning

ABSTRACT

The study of Total Quality Management (TQM) according to William Edward Deming's perspective is very important to carry out in order to find theoretical constructions for the application of Total Quality Management (TQM) in educational institutions. Implementation of Edward Deming's theory can be done by applying 14 points of management transformation. In an institution, especially education, planning is the main pioneer or spirit of the founding of an institution. This literature review of Edward Deming's planning model, apart from being widely used as references by institutions or companies in formulating programs, cannot be denied, also found several polemics that are important to study, starting from the Deming cycle, PDCA and PDSA. The purpose of this research is to find out William Edward Deming's planning model, especially in the field of education. This research uses a qualitative library research type approach. Data sources used as references in this research are books, websites, papers and scientific articles from various journals. The results of this research are that in general, William Edward Deming prioritizes anticipatory or preventive steps in quality improvement management. In line with that, it can be seen that Deming wants to convey that improving quality starts from the goal, making continuous improvements by focusing on education and training with the hope that activities run smoothly producing good quality.

1. INTRODUCTION

The progress and decline of Indonesian education has become a familiar topic in the eyes of the world. The demands of the world of education have triggered many institutions to enter into competitive competition. One of them is by improving and developing quality, both in terms of services and products produced with effective and efficient achievements. The product in the world of education is to produce a generation of high-quality graduates. ('Peningkatan mutu lembaga pendidikan ISLAM (Tinjauan konsep mutu Edward Deming dan Joseph Juran)', 2018) The quality of education is very important to achieve consumer satisfaction in using products or services at an educational institution. The management quality improvement model can be implemented by all educational institutions to improve the quality of human resources. Increasing attention to the quality of education has grown rapidly in the last twenty years. Starting from the point of development in the industrial world that is considered to have achieved success in product sales. This has an impact on every institution or company. To improve its performance, management or planning is needed. If management is implemented in an educational institution well, it will produce quality performance and quality graduates.

Quality in Deming's concept is conformity to market needs. Talking about education, Deming said that quality education is education that can provide quality service and produce graduates who meet their needs. While the review of quality in Deming's perspective is something dynamic, in the current era quality is considered an absolute concept (Supriani, 2022). So it can be concluded that quality is a dynamic concept related to services, products, people, processes and the environment.

Problems with the quality of education, in Deming's perspective, are 85% caused by management or planning. Meanwhile, 15% is caused by human resources. This can be attributed to the fact that suboptimal quality is caused by unprofessional planning and unprofessional planning stems from a reflection of incompetent leadership and policy processing. (Luwiharsih, 2019) In line with Deming's concept, the director general of basic education at the Ministry of National Education emphasized that the quality of education can be seen from its components, it is relative and comparative. What is meant here is the school's planning ability to overcome conflicts and institutional deficiencies by analyzing SWOT. According to Deming, the low quality of education is caused by several conditions not being met properly, such as a poor work environment, weak curriculum design, inappropriate work systems, failed communication, insufficient human resources, buildings that do not meet the requirements, development inadequate educators, and all other problems related to education.

Addressing planning problems in all fields, both companies and educational institutions, Deming came up with a concept of educational quality management. Total Quality Control (TQC), which is now known as Total Quality Management (TQM), was first launched in the 1920s by William Edward Deming in Japan. (F. R. Wantini, 2022) Deming was an American citizen who became a corporate consultant in Japan. The TQM concept was initially used to develop quality products, until finally it spread to all fields, including education.

TQM in education has resulted in guaranteed quality education. However, theoretically, the main theory that pioneered the formulation of TQM in education has not yet been explained. It is only mentioned that there are three theories behind the emergence of TQM in the world of education, namely William Edward Deming's theory, Juran's theory, and Crosby's theory. The implementation of these three theories is also theoretically different. Apart from TQM, many people are familiar with the term Deming cycle, namely the PDCA cycle, Plan – Do – Check – Act, which was actually created by Deming's colleague and teacher, Dr Shewhart or is called the grandfather of total quality management.

William Edward Deming's planning model is known worldwide, many have studied and implemented it in various institutions, both companies and education. Japan is a clear example of a country that uses Edward Deming's planning model, because of its success in selling products in fantastic quantities at relatively cheap prices. Until finally Japan developed the Deming planning model in terms of education. This proves that planning in an institution, especially education, is the main pioneer or spirit of an institution. Therefore, in this research study we will discuss more broadly what and how to plan William Edward Deming's model, especially in the world of education.

2. METHODS

This research examines William Edward Deming's planning model. Judging from the literature reviewed, this research uses a qualitative approach. The type of research in this study is library research. This type of research, library research, is a type of research that uses a variety of things found in the library room in order to collect data and obtain valid information. Library or literature study is a series of activities related to collecting library data, reading, reviewing, studying books and various written sources related to the problem being discussed for research. The data sources used as references in this research are books, websites, papers and scientific articles from various journals which have been studied by previous researchers by looking for points of difference in each literature review. Data analysis is not only carried out after the data is collected, but from the data collection stage. In this research, the analysis technique used is content analysis of a text, after collecting material that is appropriate to the content of the study, then analyzing and narrating to obtain conclusions.

3. RESULTS AND DISCUSSION

4.3.1.TQM for Improving the Quality of Education

Total quality management (TQM) or total quality management is a form of school quality philosophy that repeatedly contributes to the school in the form of hopes, desires and needs for society by involving various school components. There are 2 most popular TQM methods, namely the William Edward Deming and Joseph M. Juran methods. ('Peningkatan mutu lembaga pendidikan ISLAM (Tinjauan konsep mutu Edward Deming dan Joseph Juran)' This article specifically discusses William Edward Deming's TQM model. The father of the TQM movement, his method is better known as the Deming cycle. This cycle refers to continuous improvement, which consists of four interrelated components, namely Plan – Do – Check – Act (PDCA). This cycle was developed to link production with needs and resources to meet needs.

The stages of the Deming cycle are a) Plan, developing an improvement plan. This plan is prepared based on 5W 1H (what, why, who, when, where, and how) which is made clearly and in detail along with the targets that must be achieved; b) Do, carry out the plan. The plan that has been prepared is implemented from start to finish, from small to large and the overall distribution of tasks to members according to their areas of ability. (Supriani, 2022) In implementing the plan, of course there must be good management, as an effort to regulate the course of the plan so that it is carried out well and the objectives are achieved; c) Check, ensuring that the results are in accordance with the plan. In this process, the implementation of TQM must be ensured in accordance with the plan or out of the planning concept, so that developments and progress that will be implemented in the future can be continuously monitored according to the plans that have been made; d) Act, market or carry out a promotion. (W. Wantini et al., 2023) This action is based on the results of the analysis, which will be used as a preventive measure in the future. So it is hoped that the same and repeated problems will not occur, and can set new targets for future improvements. After the four stages above have been carried out, an analysis of the public's response to the presentation given by the institution is required. These include quality, finance, quality standards and analysis of other criteria. In an institution or company, the four stages above are always carried out continuously and repeatedly, and analyze everything related to public acceptance of the products offered. Implementation of TQM in the World of Education. Steps for implementing Total Quality Management in improving the quality of education, based on a case study at MTs Negeri Bangko. (Sirojudin, 2022)

1. Total Quality Management (TQM) Planning. Planning is made with various considerations from various parties involved. Just like the expectations of student parents, which are one of the foundations for determining future direction for the institution in realizing community satisfaction. For example, creating a school vision and mission.
2. Implementation of Total Quality Management (TQM). The focus of the implementation is the satisfaction of the community or student parents. The ongoing implementation of TQM can be achieved through intensive communication with all institutional parties in implementing the planned program. Efforts to provide community satisfaction can be done by improving internal quality, namely school principals, teachers, technicians and education staff.
3. Evaluation of Total Quality Management (TQM). Evaluation of the TQM model can use reflection to see the extent to which everything that has been planned has been achieved. And used for further improvements in terms of both student achievement and the quality needs of the institution's teaching staff.

3.2. PDSA and PDCA Cycle

The PDSA and PDCA cycles are in the spotlight of world development because they are both well-known for their ability to contribute to management development. The following is a picture of the evolution of the scientific method and the PDSA cycle.(Nashihin, 2021)

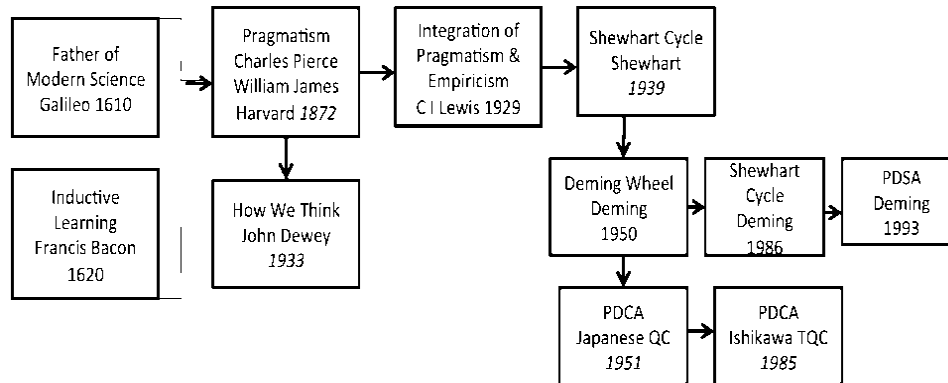


Figure 1. Evolution of the scientific method and the PDSA cycle

The figure above provides a brief sketch of the history of the scientific method starting with Galileo in 1610 through the pragmatism of the early 1900s and the evolution of the PDCA cycle until 1993. Deming emphasized the importance of constant interaction between design, production, sales and research. (Rahayu, 2020) These four steps must be rotated constantly, with product and service quality as the goal. The Shewhart Deming Cycle or what the Japanese call "Deming's Wheel" was modified in 1950 to look like the picture below.

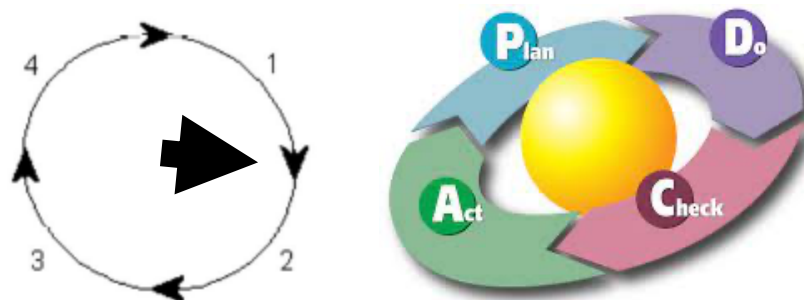


Figure 2. Deming Wheel and Japanese PDCA cycle

Japanese executives recast the Deming wheel from the 1950 JUSE (Japanese association of scientists and engineers) seminar into the Plan-Do-Check-Act (PDCA) cycle. The correlation between the Deming wheel and the Japanese PDCA cycle is 1) Design Planning: product design in accordance with the management planning stage; 2) Production Doing (Do): related to making or working on designed products; 3) Sales Check: check sales figures to ensure whether customers are satisfied; 4) Research Action: action if a complaint is filed, the complaint must be included in the planning stage, and action taken for further efforts.(Mubin, 2020)

But to date no one has provided details about who and how the executives translated the Deming wheel into the PDCA cycle. No one claims to be the author. This PDCA cycle is used for problem solving, including planning (discussion starting from the problem, hypothesis, as well as possible causes and effects and solutions), doing, checking (evaluating the results), and action (re-planning if the results are unsatisfactory or not in accordance with standardization).(F. R. Wantini, 2022) This PDCA cycle emphasizes preventing the recurrence of errors by establishing standards and continuous modification.

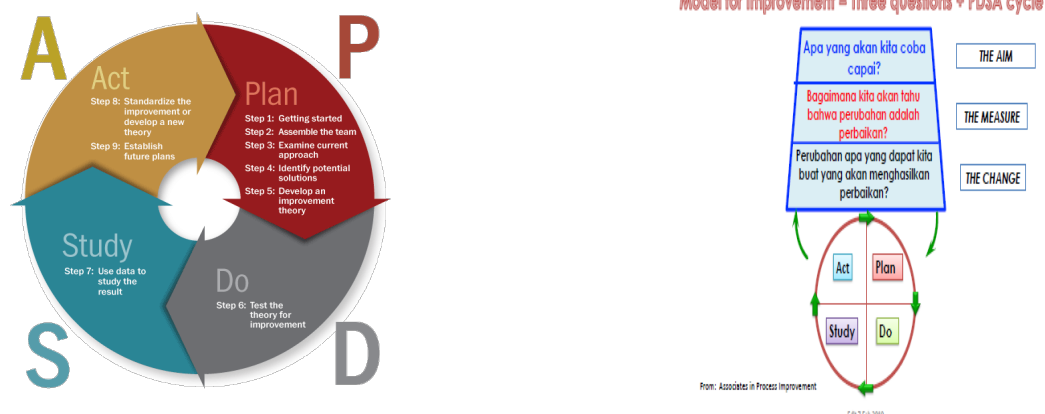


Figure 3. PDSA Cycle, 1991 and PDSA Cycle 1994

From the many narratives above, it can be seen that Japan developed the PDCA cycle based on JUSE Deming's seminar in 1950 and no one claims to be the author. PDCA is used for implementation and compliance and has not changed in the last 40 years. Deming never adhered to the PDCA cycle, what he developed was PDSA from 1986 to 1993, always calling it the Shewhart cycle, namely for learning and improvement.(Moen, 2009)

3.3. Deming's Concept of Quality

William Edward Deming, who was born in 1900 and died in 1993, and received a Ph.D degree in 1927, in his life provided many contributions to knowledge, one of which was the concept of quality improvement. Deming conveyed his opinion that the main problem of quality lies in management. Therefore, Deming put forward 14 points for management transformation, namely 1) Creating definite goals for improving products and services; 2) Help members to see themselves as components in a system, to work together with previous and subsequent stages towards optimizing the efforts of all stages to achieve goals; 3) Understand that everyone is different. So create interest, challenges and excitement for all members at work, as well as optimizing each person's background, education, skills, hopes and abilities. This does not mean making rankings between workers, but recognizing differences between members, and trying to place everyone in a position that supports development; 4) Continuous learning. Always encourage all members to learn, and provide seminars or courses to advance continuing education learning; 5) Position as a coach and advisor, not a judge or jury; 6) Understand stable systems; 7) Has three sources of power, namely authority, knowledge and personality – persuasive power, wisdom; 8) Create trust and eliminate fear. This can start from creating an environment that encourages freedom and innovation, as well as relentlessly trying to eradicate covert and overt fear in the organization; 9) Try to find out who, if anyone, outside the system needs special help. This can be done with simple calculations, if there is a production lift or failure itself. Specific assistance can be simple or more complex job arrangements; 10) Reducing warning slogans and targets, but replacing them with strengthening methods that can improve work quality; 11) Do not expect perfection, but rather support it in a spirit of excellence and judgment; 12) Listen and learn without judging the people you listen to; 13) Hold informal, spontaneous, unhurried/non-feedback conversations with each member at least once a year (ideally more often) not to judge, just to listen.(Wantini, 2023) The aim is to develop an understanding of its members, their goals, hopes and fears; 14) Understand the benefits of win-win cooperation and the magnitude of losses due to win-win competition between people and between groups.(Suyatno Suyatno1, 2023)

In general, William Edward Deming put forward anticipatory or preventive steps in quality improvement management. In line with that, it can be seen that Deming wants to convey that improving quality starts from the goal, making continuous improvements by focusing on education and training with the hope that activities run smoothly producing good quality

William Edward Deming reintroduced the Shewhart cycle in 1986. He stated that the cycle came from the 1950 version. Deming stated that version, plan, do, check, and act were inaccurate, because

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the word "check" in English means "hold". Deming modified the Shewhart cycle again in 1993 and called it the Shewhart cycle, which is used for learning and improvement, namely the PDSA cycle. The PDSA cycle is a model for improvement providing a framework for developing, testing and implementing changes that lead to improvement. The PDSA cycle is designed for learning and for improving a product or process. On August 19, 1980, Deming was asked about the QC (quality control) circle, namely planning, checking, and acting, the fiber of Deming's circle, namely designing, making, selling, then testing. (Wantini Wantini, 2023) Deming's response was "They have nothing to do with each other." In his letter to Moen on November 17, 1990, Deming commented on Moen, Nolan, and Provost's text that "...be sure to call it PDSA, not the corrupt PDCA." The owner of the full name William Edward Deming also has views on the chart labeled Plan – Do – Check – Act. Deming said "what you are proposing is not the Deming cycle. I don't know the source of the cycle you proposed. How PDCA came to be, I don't know" .(Suyatno, Wantini, Ahmadong, Khosiin, & Samaalee, 2023) In 1991, Moen, Nolan and Provost added to the planning step of the improvement cycle the necessary predictions and theory. This is not enough to determine that a change results in improvement during the trial period. When building knowledge, of course it must be aligned with the ability to predict whether a change will result in improvements in various conditions that will be faced in the future. The following is a picture of the PDSA cycle and its improvement model: (Hasanah et al., 2022)

Quality in Deming's concept is conformity to market needs. Talking about education, Deming said that quality education is education that can provide quality service and produce graduates who meet their needs. Quality or good quality can be realized with a plan. According to Deming, 85% of management or planning problems lie in the system and only 15% are caused by human resources (HR). So the essence of quality management is to combine system and human resource problems at once. This means that without careful planning, serious quality management will not be created. Overcoming planning problems in all fields, especially educational institutions. Therefore, Deming introduced a concept of educational quality management. Total Quality Control (TQC), which is now known as Total Quality Management (TQM), was first launched in the 1920s by William Edward Deming in Japan. However, the cycle that is known is the Deming wheel, which is a Japanese modification of the Shewhart cycle which was modified by Deming and is widely misunderstood by the general public that this is an improvement on Deming's cycle, namely the Plan – Do – Check – Act (PDCA) cycle. But to date no one has provided details about who and how the executives translated the Deming wheel into the PDCA cycle. No one claims to be the author. This PDCA cycle is used for problem solving, including planning (discussion starting from the problem, hypothesis, as well as possible causes and effects and solutions), doing, checking (evaluating the results), and action (re-planning if the results are unsatisfactory or not in accordance with standardization). This PDCA cycle emphasizes preventing the recurrence of errors by establishing standards and continuous modification. While PDCA itself was never embraced by Deming, instead he provoked the Plan – Do – Study – Act (PDSA) cycle. (Iflaha, 2022) The PDSA cycle is a model for improvement providing a framework for developing, testing and implementing changes that lead to improvement. The PDSA cycle is designed for learning and for improving a product or process. When making a plan, of course it must be aligned with the ability to analyze whether a change will result in improvements in various conditions that will be faced in the future.

5. CONCLUSION

Total Quality Management (TQM) in the world of education has contributed a lot to ensuring good quality. However, theoretically there are not many theories underlying the formulation of Total Quality Management. There are at least three theories behind the emergence of Total Quality Management in the world of education, namely William Edward Deming's theory, Juran's theory, and Crosby's theory. Implementation of Edward Deming's theory can be done through 14 points for management transformation. Apart from that, the planning cycle developed by Deming was PDSA, not PDCA, namely from 1986 to 1993, always calling it the Shewhart cycle, which was used for learning and improvement. In general, William Edward Deming put forward anticipatory or preventive steps in quality improvement management. In line with that, it can be seen that Deming

wants to convey that improving quality starts from the goal, making continuous improvements by focusing on education and training with the hope that activities run smoothly producing good quality.

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