

WORKSHOP FOR LEARNING VISUAL MANAGEMENT IN JAPAN: A REPORT

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ABSTRACT

This paper provides a report regarding a visual management workshop conducted for business persons in Japan from September to December 2022. The aim of the workshop was to aid the participants in solving their problems via the visual management theory developed.

Based on literature review, recent research trends pertaining to visual management show that the concept has disseminated widely. Nonetheless, the presence of various related studies with different contexts suggests the insufficient understanding of the concept. Hence, academics must endeavour to explain the details of visual management in a unified manner such that it can be applied more effectively. The purpose of this study is to address such issues based on the workshop above, as well as to describe and discuss the state of the workshop.

For the study, the plan–do–check–action (PDCA) cycle, which is a well-established problem-solving process used in various fields, is applied. This paper summarises the workshop based on four categories: planning, implementation, evaluation, and discussion (based on the PDCA cycle). Data obtained from the workshop include relevant materials, observations from the workshop, as well as interviews with the participants.

The conclusions obtained are as follows: First, participants from various industries with their respective issues can participate in the workshop. Second, the outcome of the workshop, i.e., the understanding that visual management connects people, instead of being a tool, is recognised by all the participants.

KEYWORDS

Visual management, lean education, workshop, PDCA cycle, Japan context.

INTRODUCTION

Visual management is a core lean management methodology used to increase operational transparency. People's lives and work involve various operations. A public transportation system is an ensemble of operations that allow people and vehicles such as cars and trains to move at comfortable speeds. The function that provides alerts regarding abnormalities on the transportation system is equipped with signals that protect pedestrians from iron lumps. Hence, visual management provides transparency to various operations. In addition, in the digital age, smartphones are used to publicise one's interests and behaviours. In addition, digital platform providers that offer these services are equally interested in such information as users and are striving to improve service quality as well as develop new products. Clearly, visual management demanded in many situations.

To understand visual management more comprehensively, the concept must be theorised and disseminated widely to society. Various studies have been conducted regarding the former. Tezel et al. (2015) and Valente et al. (2019) presented various examples and discussed their

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common denominators. Similarly, Murata et al. (2010) proposed a horizontal expansion system via a detailed case analysis. Additionally, studies have been performed to interpret cases using affordance theory (Beynon-Davies et al., 2017), of which the latter will likely be included in lean management courses in universities. Furthermore, visual management workshops, consulting services, and books are available.

The purpose of this paper is to provide a report on the workshop, "Tsudanuma Mieruka Juku", which was conducted from September to December 2022 (Herein, "Tsudanuma" is the name of the area, "Miekaka" means visual management, and "Juku" means workshop in Japanese). The laboratory associated with the workshop, in which lean management is investigated, is where visual management workshops for business persons are designed and operated. The purpose of the workshop is to contribute to society by applying the results obtained from a university to the local community. The target is business persons in the area where the university is located. The main features of this workshop are as follows: First, the participants are not specific to one industry or company. The organisers of the workshop attempt to embody the fact that the concept of visual management is of widespread social interest. Second, a particular perspective management theory is used (Murata, 2021). The program is structured around one theory for diverse participants, which is the first feature. Although most of the participants are aware of the practical use of visual management, the robustness of the concept is tested in the workshop. This paper presents the results of this workshop to provide a more comprehensive understanding.

In the next section, recent trends in studies pertaining to visual management as well as the visual management theory used in this workshop are expounded. Section 3 describes the research method, and Section 4 provides the results obtained. Section 5 presents the overall overview.

LITERATURE REVIEW

RECENT VISUAL MANAGEMENT STUDY

Recent studies pertaining to visual management can be classified into four categories: 1) Description and consideration of usage situations; 2) evaluation and use of toolboxes; 3) effect of usage history; and 4) integration with other theories.

The first is the description and consideration of the usage scene of visual management. Some papers describe several cases comprehensively, where the role of visual management in each case and barriers to the introduction are expounded (Kurpjuweit et al., 2019; Tezel et al., 2017; Tjell et al., 2015).

The second is the evaluation and use of toolboxes for visual management. Tools for visual management abound. Owing to the progress in digital technology, visual management continues to evolve. Hence, studies related to each tool have been performed. Singh et al. (2021) attempted to determine the tool (among 12 tools) that was the most applicable. Bateman et al. (2016) focused exclusively on communications boards and conducted two years of utility survey.

The third is the effect of usage history, which pertains particularly to nurses. Williamsson et al. (2019) classifies users into nondaily, start, and daily users, and measured their usage effects. Dalain (2020) categorised the history of VM usage into less than 5 years, 5-10 years, 10-15 years, and 15+ years, and investigated the effect of tool usage on work performance.

The fourth is integration with other management concepts, which aims to determine the applicability of visual management by considering its integration with other concepts. According to Brady et al. (2018), visual management may effectively enhance one's ability to execute plans in project management. Additionally, the relationship between performance

management and continuous improvement (Eaidgah et al, 2016) as well as the contribution of visual management to change management (Eriksson et al, 2018) were considered.

Based on the studies above, the following two conclusion can be inferred.

First, the concept of visual management is pervasive. The fact that related studies were conducted from various perspectives indicates the abundance of cases in this field. This is also supported by the fact that visual management is a management concept in which the useful tools have not been clarified.

Second, the understanding of visual management is insufficient. As observed by Williamsson et al. (2019) and Dalain (2020), different users perform differently at work, which suggests the nonexistence of unified understanding regarding this concept. This is partly due to the complexity and ambiguity of the concept.

Based on the above, academics must endeavour to explain the concept of visual management in a unified manner such that it can be used more effectively. It means that they make an effort to discuss how to disseminate and teach visual management.

FRAMEWORK LEARNED IN THE WORKSHOP

The theory used in the workshop, which is used to explain visual management in a unified manner, is based on Murata (2021). It is developed based on control theory and describes the internal structure of visual management. Based on this theory, the following three basic principles are provided in this workshop:

Principle 1: Someone and someone else

Principle 2: Why, what, how

Principle 3: Sometimes I

Principle 1: Someone and Someone Else

Visual management is a tool that connects a person with another. When developing this tool, one must first ensure that a person is connected to another. Additionally, customers' requirements must be considered when developing products and services to ensure that they benefit from visual management. Henderson (1991) noted visual communication involves *boundary object*. Star et al. (1989) described that *boundary objects* are *both adaptable to different viewpoints and robust enough to maintain identity across them*. Also, good visual management is a *conversation for action* (Flores, 2012) that needs no interpretation and provokes desired behaviour. "Someone and someone else" imply a person and another person; however, it can also imply a human and a machine or a machine and another machine. The two connected entities have their own roles. One is the information sender and the other is the information receiver. However, the roles are not fixed. Similar to the two sides of a coin, the roles of each may be exchanged. Although two entities may know each other well, they must be re-understood.

Principle 2: Why, What, How?

This principle is applied to develop three elements, "reactions", "message", and "transmission" in a tool for practical visual management. It comprises the following three questions. They do not aim at promoting visual management. They just think about a component of a visual tool:

Why do you see?

What do you see?

How do you see?

The first question reveals the reason for developing the tool, i.e., the necessity for visual management. In this regard, one considers the type of change that can be expected from the newly created interaction via visual management. After visual management is introduced, it appears that the type of change is "reactions" from a person, which must be investigated

comprehensively. For the second and third questions, the specifications of the tools must be considered. The second question clarifies the "message", which is typically hidden prior to the development of the tool. However, its connection must be clarified. In the case of the pedestrian traffic light development in Figure 1, a "message" developed from the second question is about whether pedestrians should or should not cross. The third question clarifies "transmission". How to convey a message developed? There are many types of a traffic light in the world. Not only the physical method, but also the timing, environment, amount of information, combination of various methods, and the degree to which the opponent resonates differ.

Principle 3: Sometimes I

Principles 1 and 2 pertain to visual management tools and their users, i.e., visual management. Principle 3 is the designers' perspective of visual management. The manufacturer of a product or service contributes significantly to purchase decisions. What type of life do designers lead? Understanding the thoughts involved in developing visual management will promote its use. When the pedestrian traffic light is red, Japanese people wait until it turns green. But the British will cross if there is no car. Let's assume that the designer has extensive experience in developing pedestrian traffic lights. A designer's daily life and life influence the development of visual management.

Among the three principles, Principles 1 and 3 are related to people, whereas Principle 2 is associated with tools. Since the former two principles involve people, they provide a description of management based on people. Additionally, although Principles 1 and 3 pertain to meta-level knowledge and are used for designing visual management, the items to visualise in any area are not specified. Hence, they are general principles that are applicable to various visualisation targets.

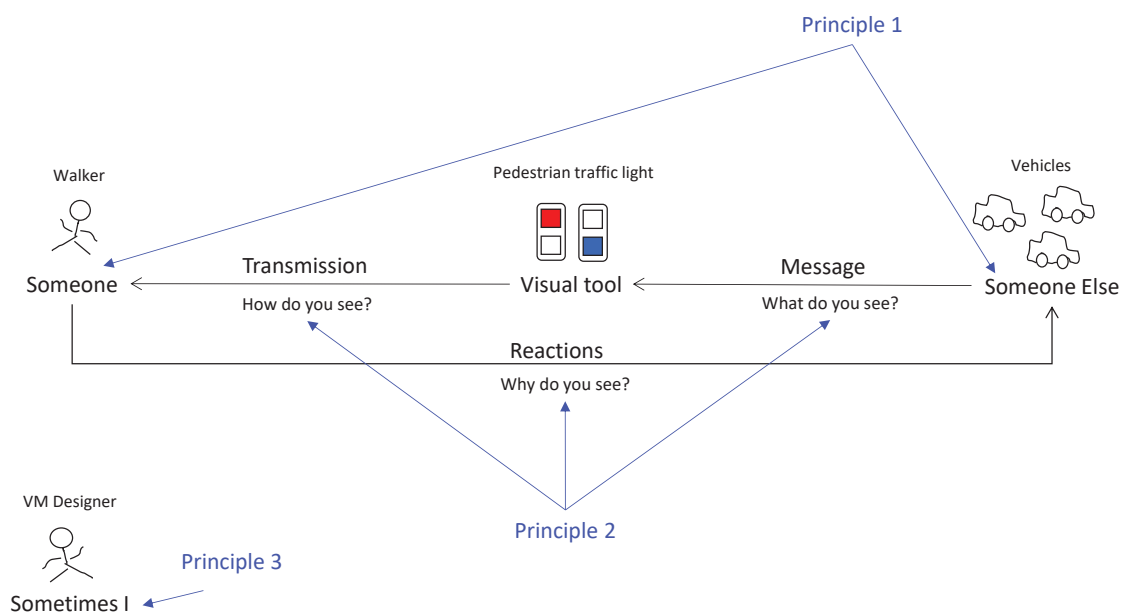


Figure 1: An example of pedestrian traffic light by the theory used in the workshop

RESEARCH METHOD

This study was performed based on the plan-do-check-action (PDCA) cycle, which is a typically used problem-solving method in quality control. In fact, it is well established and applicable to many areas other than quality control (Chakraborty, 2016; Kholif et al., 2018;

Pietrzak et al., 2015; Realyvásquez-Vargas et al., 2018). In the PDCA cycle, continuous learning can be expected by continuously rotating the processes involved. The planning, implementation, evaluation, and discussion of the workshop are discussed herein based on the four processes of the PDCA cycle.

WORKSHOP PLANNING (STEP 1-PLAN)

In this step, the organiser plans the workshop. This paper describes the purpose, expected results, implementation period, program, etc. pertaining to the proposal prepared for budget acquisition, as well as provides an overview of the workshop. Consequently, the configurations and conditions in which visual management is learned can be understood.

WORKSHOP IMPLEMENTATION AND EVALUATION (STEP 2-DO AND CHECK)

This step describes the implementation and evaluation of the workshop. The current author is the main instructor of the workshop. The contents presented herein are objective information obtained directly from lectures.

The data obtained from the workshop include the profiles of the participants, the participation status in the workshop, as well as the themes of each participant and their outlines.

Additionally, data are obtained from evaluating the workshop from the perspectives of the participants. This is performed after the workshop is completed. The evaluation method is a questionnaire, in which multiple questions regarding the workshop process as well as visual management theory are posed, and answers are obtained in a multiple-choice format. In addition, the participants are interviewed to qualitatively obtain their impressions of the workshop. Thus, knowledge will be gained by observing the participants and exchanging opinions with them during the workshop.

DISCUSSION OF THE WORKSHOP (STEP 3-ACTION)

This step considers the data obtained in Steps 1 and 2. Additionally, future issues identified from the workshop are considered and discussed based on visual management theory described in Section 2.

RESULTS

WORKSHOP PLANNING (OUTCOME OF STEP 1)

According to the workshop proposal, the workshop will provide opportunities to learn visual management theory via a mini-lecture and an informal practice for business persons (5 years or more of working experience) who will lead their company in the future. One of the purposes of this workshop is to develop the ability to identify problems using management resources and to foster communication with colleagues for solving them.

The expected results are as follows: The first is to provide the understanding that visual management is not merely a tool, but represents human and technical ability to identify the essence of a matter. The second is to achieve positive awareness in terms of the thought process and attitudes toward daily work and foster the Kaizen mindset. The workshop comprises four sessions, each of which is conducted once a month from September to December 2022. The first three are online workshop and the final one is a face-to-face workshop. The topic of each workshop is as follows: Part 1 - Basic theory of visual management: three principles of design; Part 2 - Visual management strategy in the era for digital transformation: Digital visual management; Part 3 - Nishida's philosophy and the future of visual management: Feeling and one step mind; Part 4 - Final presentation by all participants.

In addition, individual meetings are conducted prior to each session.

IMPLEMENTATION AND EVALUATION OF WORKSHOPS (OUTCOMES OF STEP 2)

Implementation of the Workshop

Initially, six people applied for the workshop before it was conducted, and all of them participated until the final presentation. The affiliations of the participants were as follows: two persons in the manufacturing industry, a person in the retail industry, a person in the real estate industry, a person in tax accounting, and a person in the public sector. Four males and two females participated in the workshop, and their ages ranged from 20 to 50. The theme of each participant was as follows:

Participant 1: Continuous management for several visual displays

In this theme, the participant considers the life cycle management of several visual displays used for plant operation. In particular, the incorporation of display maintenance into normal operations is considered.

Participant 2: Innovation in the manner by which meetings are conducted

In this theme, the participant considers the manner by which a meeting is to proceed. After solving the problems in meetings with multiple participants, the participant considers the manner by which a meeting is to be conducted with minimal loss. This theme pertains to communication when a task is performed.

Participant 3: Visual management for connecting operators and users

In this theme, the participant identifies a method to improve the motivation of operators in a factory, which involves consideration into the requirements of product users. In particular, the participant uses an example of a girlfriend who prepares bento (lunch box) for her boyfriend as a metaphor.

Participant 4: Preparing posters for tax accounting office

In this theme, advertising strategies for attracting customers in the area where the office is located are examined. In particular, an appropriate poster is created.

Participant 5: Attempt to use visual management theory via analysis

This participant did not address the subject of his own work. Instead, the participant analysed the theory introduced in the workshop and attempted to understand and use the theory.

Participant 6: Management and operation method for rental buildings using a visual management design framework

In this theme, the efficiency of daily building management is analysed. Timely information sharing and reduction in personnel costs by adopting digital technology are proposed. The participant attempted to understand the theory more intensively based on the communication between a husband and a wife.

Evaluation of the Workshop

Table 1 shows the responses to the questionnaire provided to the participants after the workshop ended. In addition, descriptions provided by the participants regarding their overall impression of the workshop are provided herein.

Table 1: Questionnaire results

| Questions | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| Q1 How difficult was the visual management theory? (1low \Leftrightarrow 5 high) | - | - | 1 | 3 | 2 |
| Q2 How useful was the visual management theory? (1low \Leftrightarrow 5 high) | - | - | 1 | 3 | 2 |

Descriptions by participants

Participant 1:

When I first viewed the theory, I thought that it was extremely philosophical. It took me a while to understand it; however, after I understood it, I was able to apply it to my theme to obtain new solutions. We will focus on introducing it in the future.

Participant 2:

I appreciated the opportunity to communicate with the teachers individually.

Participant 3:

The more I thought about the theory, the more difficult it appeared to me. However, I gained some new knowledge, which I appreciated very much.

Participant 4:

I would appreciate more practical cases.

Participant 5:

I would like to learn from the textbooks that I have received. Unfortunately, it was difficult to understand the connection between philosophical and technical topics. The cases provided were few, and I did not know how to proceed.

Participant 6:

In my opinion, working professional will benefit from the lectures, even if they are longer in duration.

DISCUSSION (OUTCOMES OF STEP 3)

As mentioned in Section 2, academics should endeavour to explain visual management in a unified manner such that it can be applied more effectively. In this regard, the following aspects should be considered:

Versatility of the visual management theory provided

The participants participated in all workshops and provided a final presentation. The industries represented by the participants were manufacturing, retail, real estate, tax accounting, and public sectors. The themes were life cycle management for visual displays, meeting management, advertisement, supply chain management, and building management. Hence, the theory provided in the workshop presents a certain degree of versatility.

Trends in participants' understanding of the theory provided

From the answers to Question 1, many participants seemed to find this theory difficult. An analysis of the materials presented by the participants showed a tendency to focus on Principle 2 of the theory. This suggests that visual management is primarily recognised as a tool. Based on Principle 2, designing a tool is the final output of visual management. However, the aim of visual management design is to connect people. Principles 1 and 3 involve processes that deepen the understanding of users and designers. The essence of the theory explained in the workshop is that Principles 1 and 3 are prioritised before and after the realisation of Principle 2; hence, Principle 2 is used to design a visual tool. Many participants successfully applied Principles 1 and 3, although at different degrees.

Undesired effects of conceptual learning and the countermeasures

Based on the comments provided in the questionnaire, participant 5's opinion looks like negative. This participant requested the introduction of actual examples. However, after visual management theory was explained in the first session, the lecturer implemented to illustrate actual examples in a question-and-answers session during the lecture as well as through individual online meetings. The second and third sessions were delivered while considering technical and human aspects, respectively, of recent visual management. Instead of providing the necessary knowledge for designing these tools directly, recent progress and thought processes related to visual management were introduced. The planned intentions of the workshop deviated slightly from the requests of the participants. The author of this paper was

workshop instructor and researcher. However, the merit of this dual role was not utilized. If the former communicated this problem to the latter and the plan was revised during the workshop, the resolution of the deviation might have enhanced the participant's understanding of the theory.

From the answer to Question 2, participants generally find this theory useful. Participants 1 and 3 expressed difficulties in understanding the provided theory; however, they gained new awareness in the process. A new concept is generally difficult to completely understand; consequently, a new thought process emerges. The participants' comments suggest that their impression toward this theory is positive.

CONCLUDING REMARKS

A report regarding a visual management workshop conducted in Japan was provided herein. In particular, the workshop was intended for business persons within a university area. The lecturer who participated in the workshop is the author of this paper. Information obtained from the workshop were organised, and the participants' understanding of the visual management theory provided were considered.

In lean management, visual management is a widely known methodology. However, to use it effectively, academics must endeavour to explain it in a unified manner. This was addressed in the workshop, and the results obtained were analysed.

Visual management is introduced to connect people and is not merely a tool. The workshop allowed the participants to understand the concept together. The results showed that they successfully acquired a unified understanding of visual management.

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