Learning From Mistakes in Project-based Organizations

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Abstract: Knowledge sharing and learning play a pivotal role in improving performance in organizations. Organizational activities such as projects provide the necessary arena for creating new knowledge (knowledge exploration) as well as sharing of existing, well-proven solutions (knowledge exploitation). This can lead organizations to increase their productivity, innovation and profitability. Sustainable competitive advantage can also be gained by being keen on knowledge sharing and learning, since focusing on continuous learning and improvement can make organizations as learning organizations. Learning organizations, which are characterized as having a genuine interest, willingness and ability to learn and improve continuously, can effectively deal with typical organizational phenomena such as changes and uncertainty both reactively and pro-actively. As a result, they can quickly adapt to and master changing environments. This paper will look at the topic of learning from mistakes in an organizational context. "To err is human" – As the idiom points out how natural it is to make mistakes, organizations too are prone to make mistakes. Though mistakes can be seen as natural in organizations, it is important to look at how the person who has made a mistake as well as other relevant people can learn from the mistake. Learning from a mistake helps to avoid doing the same mistake in the future and hence contribute to save time, energy and cost. It can also trigger to find a correct or better alternative way / solution to deal with the situation at hand, resulting in providing opportunities for single- or double-loop learning. **T**his paper will focus on (1) identifying barriers that hinder learning from own mistakes and sharing that knowledge with others and (2) how to facilitate learning from mistakes and sharing that knowledge with others in project-based organizations. The study on which this paper is based, uses qualitative research method. Data have been collected through conducting interviews with Norwegian public organizations.

Keywords: Learning, Knowledge Sharing, Mistake, Failure, Project Management

1. Introduction

Projects are one-time activities aimed at achieving a clear goal within a certain time-period and cost. Projects can be seen as learning arenas. These learning arenas provide opportunities for knowledge exploration and knowledge exploitation. Since projects are by definition unique, they have at least a certain degree of uniqueness that will lead to acquisition of new knowledge (knowledge exploration). At the same time, projects also include some known elements - for example known methods and solutions - which give the opportunity to utilize the existing knowledge (knowledge exploitation).

Exploring and exploiting knowledge can create several benefits in project-based organizations (PBOs). Figure 1 shows some of the benefits.

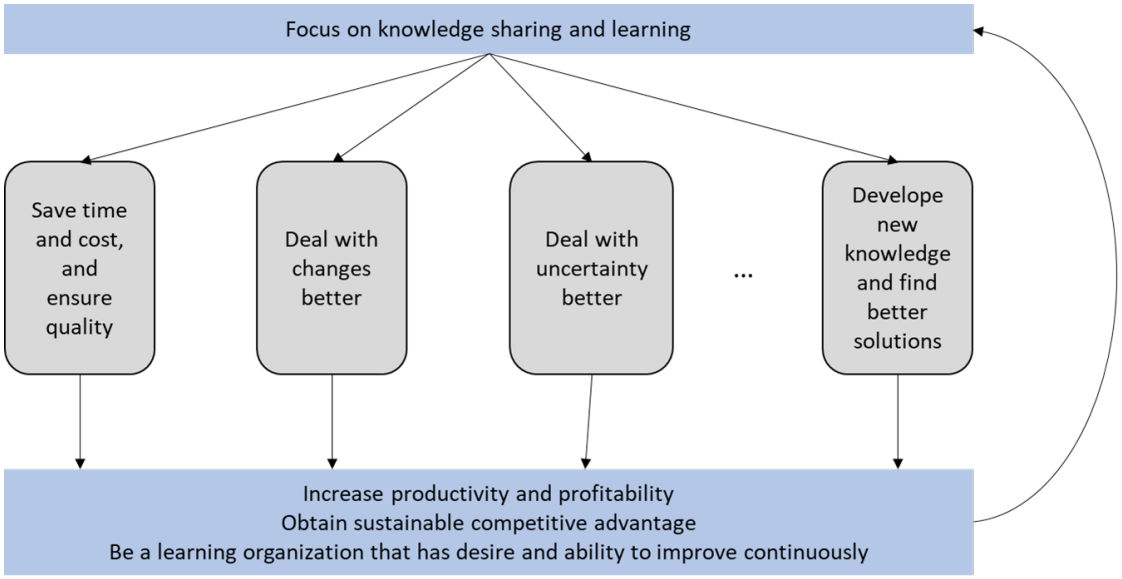

Figure 1: Positive effects knowledge sharing and learning

Several authors point out the importance and benefits of knowledge sharing and learning in project-based organizations (Abdellatif et al., 2019; Mahura & Birollo, 2021; Kvålshaugen et al., 2021; Zhang et al., 2024).

However, there are challenges to materialize the benefits – for instance, it is not always easy to share knowledge from projects to the base organization / the permanent organization (Williams, 2008; Duffield & Whitty, 2015; Evers & Chappin, 2020). This paper looks at one of the challenges: Learning from mistakes. Learning from mistakes can lead individuals and organizations to become smarter and to save time and costs in the future. Peter Senge mentions a quote (which he has read) in his book 'The fifth discipline – Art and practice of learning organizations' about learning from mistakes:

> "A mistake is an event, the full benefit of which has not yet been turned to your advantage (Senge 2006, p. 143)."

This paper focuses on the following two questions:

- What are the barriers that hinder learning from mistakes and share that knowledge with others?
- How to facilitate / enable learning from mistakes and sharing that knowledge with others in PBOs?

The structure of the paper is as follows: After the introduction, background information including research method that is applied in this study is provided, followed by relevant concepts. And then, results, analysis and discussion are presented. Finally, concluding remarks wind up the whole discussion.

In this paper, the terms “mistakes” and “failures” are used interchangeably.

2. Background Information and Research Method

This paper is based on a study connected to a pre-project called *Experience sharing and learning in project-based organizations* (ELPO), which is financed by Project Norway (https://prosjektnorge.no/). Project Norway is a national arena for the exchange of knowledge and experiences, where new knowledge about projects is developed through research-based collaboration with Norwegian business and industry.

This study applied qualitative research methods. Fourteen interviews were conducted online with five public PBOs in Norway during 2023 to collect information. An earlier meeting with the PBOs gave inspiration / pointers to develop an interview-guide. The interviews were semi-structured – having an overarching, flexible structure, and encouraging natural dialogue and discussion. The duration of the interviews varied between 1 and 1.5 hours. Those who were interviewed are anonymized and identified through a code (Respondent 1, 2, etc.). The respondents have experience of performing roles such as project member, project manager, project owner and department manager.

3. Relevant Concepts

3.1 Knowledge

Davenport & Prusak (1998, page 5) define knowledge as follows:

> "Knowledge is a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices and norms."

This definition points out that knowledge provides a framework for evaluating, interpreting and gaining new experiences and information. Learning from mistakes can contribute to evaluate and interpret new experiences in a different and better way.

3.1.1 Experiential Learning

The concept of experience-based learning is mentioned by Kolb (1984). This concept suggests that concrete experiences provide a basis for observation, reflection and abstract conceptualization. It consists of four stages:

1. Concrete experience
2. Observation and reflection on that experience
3. Formation of abstract concepts after that reflection
4. Testing the new concepts

Figure 2 illustrates it.

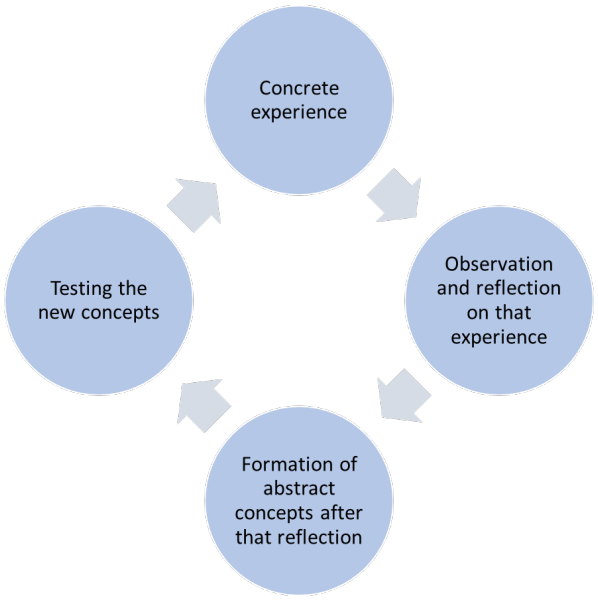

Figure 2: Experience-based learning (Kolb, 1984)

The four stagers can also be used to look at learning from mistakes from an individual perspective. An individual's ability, possibility and willingness to reflect on and learn from their own mistakes can help the individual to gain a deeper understanding or insight (lessons learned) that can further be applied to gather new experience and knowledge.

3.1.2 Single- and Double-Loop Learning

At the beginning of describing single- and double-loop learning, Argyris and Schön (1996) mention organizational inquiry:

> "In Deweyan inquiry […], doubt is construed as the experience of a "problematic situation", triggered by a mismatch between the expected results of action and the results of actually achieved. Such mismatch – a surprise, as we experience it – blocks the flow of spontaneous activity and gives rise to thought and further action aimed at re-establishing the flow. Inquiry does not become organizational unless undertaken by individuals who function as agents of an organization according to its prevailing roles and rules. Individuals may also inquire in ways that remain separate from the organization to which they belong (Argyris & Schön (1996, page 11).

If the mismatch is solved by adhering to existing norms, standards and frameworks, then the learning that emerges from this process can be called single-loop learning. If the solution is obtained by questioning and disregarding existing norms and frameworks (for example, reflecting on "why do we do that we do?"), then the learning that emerges from this process can be called double-loop learning.

3.1.3 Reflective Practitioner

A mistake that is recognized would point out that there is a mismatch between the expected result and the actual result, which can lead to either single- or double-loop learning. The inquiry process can include both reflection-in-action and reflection-on-action. According to Schön (1998), reflection-in-action is related to reflection during the ongoing action where a trigger or mismatch (a mistake or failure) appears, while reflection-on-action is associated with reflecting on what has happened before. Both can lead to understand the situation and learn.

3.2 Motivation

Motivation can contribute significantly to promote knowledge sharing and learning in organizations. There are two categories of motivation: Extrinsic motivation that can include, for example praise, public recognition,

money and promotion; and intrinsic motivation that is manifested in the form of, for example inner joy, interest and satisfaction in performing a task (Skyttermoen & Vaagaasar, 2015).

Incentive mechanisms can be used to motivate – to provide both extrinsic and intrinsic motivation to – organizational members to share knowledge including sharing information about and learning from their mistakes. Karlsen (2023, page 175) presents some of the significant factors that can create job satisfaction and motivation for project team members:

- Meaningful work: When team members feel that their work is meaningful and contributes to a greater goal, they are more likely to be motivated and satisfied.
- Well-defined goal: When team members understand what they are working towards and what is expected of them, they are more likely to be motivated and have a sense of achievement when they achieve their milestones and goals.
- Autonomy: When team members are given autonomy and are trusted to make decisions, they are more likely to be motivated and have a sense of ownership over their work.
- Feedback: When team members receive positive feedback for their work, they are more likely to feel motivated and engaged.
- Recognition: When team members feel that their work is recognized and appreciated, they are more likely to be motivated and satisfied.
- Opportunities for learning and development: When team members have opportunities to learn new skills and take on new challenges, they are more likely to be motivated and feel meaningful about their work.
- Supportive team culture: When team members feel they are trusted and supported by their colleagues and have a positive team culture, they are more likely to be motivated and satisfied.

4. What Recent Research Says About Learning From Mistakes in Organizations – A Summary

Possibly it may be not a big challenge for a person when it comes to accepting and learning from their own mistakes. However, sharing information about the mistake and learning from the mistake with others in your organization can be challenging, even though sharing it can help others not make the same mistake. Social barriers – psychological and organisational – discourage the reporting of errors (Cannon & Edmondson, 2005). Psychological safety is one of the relevant issues to consider in this regard.

Liu et al. (2021) examines how psychological safety, initiative climate and knowledge sharing contribute to team creativity in project teams working in research and development projects. In this context, they also look at how psychological safety and a climate of initiative affect knowledge sharing in projects. The authors describe the concepts of psychological safety and initiative climate as follows:

- Psychological safety: This is about (1) the expectation, approval, and practical support of attempts to introduce new and improved ways of doing things into the work environment, (2) tolerance for error, and (3) encouraging experimentation that empowers individuals to be more innovative. When employees feel psychologically safe to share knowledge, they are more likely to experience positive affective (emotional) states that in turn motivate them to explore new ideas, think broadly, and be more creative.
- Initiative climate: Initiative climate describes a phenomenon in which employees are initiative-taking, proactive, and persistent in overcoming obstacles to achieve a goal and are long-term oriented towards work.

In connection with factors that affect positive knowledge sharing in projects, Liu et al. (2021) mention the following results:

- Psychological safety is positively linked to knowledge-sharing behaviour. In other words, psychological safety can be seen as one of the enablers for knowledge sharing.
- Initiative climate moderates the relationship between psychological safety and individual knowledge-sharing behaviour, so that the relationship between psychological safety and individual knowledge-sharing behaviour is stronger when the initiative climate is high.

The link between psychological safety and knowledge sharing suggests that accepting and learning from mistakes positively affects knowledge sharing and learning in projects.

In their study, Kucharska & Bedford (2020) focus on how learning from mistakes and learning culture in organizations can promote organizational learning, development, and change. The findings show that the learning climate (work culture/environment that supports learning) has an effect on adaptability to change, and this effect is mediated/positively influenced by accepting and learning from mistakes. According to this study, this effect has been discovered among young students aged 18-24 years. However, this ratio is not significant for corporate employees (from knowledge-driven organizations) aged >24 years. This result indicates that organizations, unlike universities, do not use failure as a tool to support learning that will lead to change.

This study emphasizes the importance of accepting that mistakes happen in organizations, and learning from mistakes. The study proposes a learning culture that accepts mistakes as a method for learning and development. Furthermore, this study empirically shows the value of learning from mistakes in connection with increasing adaptability to change.

Kucharska & Bedford (2020) point out that whether organizations like it or not, mistakes have always been part of human life, and that this will never change. It is up to organizations whether they perceive failure as an opportunity for development or a worrying burden. Based on the findings, the authors recommend a love-hate relationship of accepting mistakes: Love them as an opportunity to learn and grow, hate them when this opportunity is lost.

Another study about learning from mistakes in knowledge-driven organizations in Poland (Kucharska & Rebelo, 2022) suggests that shame in making mistakes can prevent the sharing of knowledge learned from the mistake and that that knowledge remains hidden in such cases.

The authors recommend that organisations should ensure that it is easier to accept and learn from mistakes. This can be done by implementing practices that show employees that making mistakes, learning from mistakes, and continuing to work is a natural part of work in organizations. Nevertheless, organizations must also promote attitudes to avoid mistakes. This contradiction causes a significant cognitive bias that leads to the unconscious concealment of knowledge gained from learning from mistakes. This situation can be addressed by stimulating workers to engage in personal development and encouraging them to implement new ideas and seek new solutions, thus creating a learning climate. Knowledge workers should understand that they can report errors and discuss it without shame, guilt, or fear.

As a summary, Kucharska & Rebelo (2022) suggest that organizations can introduce a set of formal and informal solutions in organizations that support attitudes of accepting, managing, and learning from mistakes. In this regard, it is important to develop/ensure an organizational culture that supports this. Mahura & Birollo (2021) say that an organizational/work culture that avoids reporting errors is one of the barriers to experience sharing and learning.

To work on learning from mistakes in organizations, leadership behavior plays an important role. Based on their study in the hospitality industry, Alzyoud & Abuzaid (2023) suggest 3 leadership behaviors that can encourage employees to learn from mistakes:

1. Being open and available to employees
2. Encouraging them to speak up and share their experiences, especially their mistakes
3. Giving them constructive feedback instead of criticism.

Baker et al. (2024), who focus on the construction industry in their study, mention that there is a need to introduce incentives to learn from mistakes and emphasize the importance of individual and corporate leadership for the recognition of mistakes as a possible concept.

5. Results, Analysis and Discussion

Major findings from the interviews in connection with this paper can be grouped into three categories:

- Attitudes and personal aspects
- User-friendliness of knowledge sharing systems
- Involvement and support from top / senior management

5.1 Attitudes and Personal Aspects

Respondent 11 says that the sharing (sharing information about errors) can be seen as something negative. Respondent 2 points out that people may think about financial consequences that may arise by sharing

information about their mistake with others, and thus avoid sharing. Respondent 3 says that there is a lack of (psychological) confidence to share experiences related to mistakes one has made. This reflects lack of psychological safety that we have seen earlier (Liu et al., 2021).

This study takes into account the cultural dimension of organizations that includes, among other things, attitudes, norms, communication, inter-relationships and collaboration. If one's personality and attitudes towards sharing knowledge and learning are negative, then this will become a barrier. Several of the respondents of this study mention this issue as one of the central barriers. Respondent 4 mentions that there are different personalities and attitudes, and not all of them support knowledge sharing and learning. Respondent 2 gives an example of this:

> "[…] perhaps it is also because I have been project manager for 10, 15 projects. So I know this from A to Z, and I don't need someone to teach me my profession – When you have that attitude, it becomes a barrier to learning."

The above statement indicates two distinct barriers in connection with learning from mistakes:

1. A kind of closed culture that does not have a natural willingness to reflect critically on or question their own knowledge (from points of view that are different from their own) to find out whether the knowledge is obsolete, inadequate or comparatively ineffective, or has some hidden pitfalls.
2. Unwillingness to consider utilizing existing knowledge that is derived by, among other things, learning from mistakes.

The above statement also points out indirectly that a fundamental barrier to learning from mistakes is not necessarily lack of psychological safety or concerns over economic consequences but having a negative attitude towards sharing any knowledge with others or learning from others. When this attitude becomes positive, then other barriers (lack of psychological safety, etc.) can appear. When devising strategies for promoting learning from mistakes, it is important to take into consideration the fundamental barrier (attitudes towards sharing any knowledge with others) too. Respondent 12 says:

> "Knowledge is not registered all the time. There can be several reasons for this. There is a structure to register knowledge, but not a sufficient culture or attitudes to do so."

Respondent 6 says that if a project manager prioritizes knowledge sharing and learning in his / her projects, then that project manager will facilitate it. This depends on the person, clarifies respondent 6. Based on own experiences, respondent 8 says:

> "Managers who focus on or prioritize knowledge sharing allocate time for knowledge sharing in project meetings. However, it depends much on individuals and their choice […]. There is a lack of culture for learning."

Kucharska & Bedford (2020) (that we have seen in Chapter 4), Kjeilen (2021), Mahura & Birollo (2021), Alves et al. (2022) point out the importance of culture for learning.

As a negative attitude for sharing any knowledge with others being the fundamental barrier, the next layer of barrier may be indifference or lack of interest in sharing knowledge (though one does not have a negative attitude towards sharing knowledge). Respondent 13 says that not everyone is curious about learning something new and sharing their knowledge. Respondent 2 says the following:

> "It's not everyone who really sees the importance. You either forget about sharing knowledge or don't prioritize it".

Here it is relevant to refer to one of the barriers to knowledge sharing and learning that Maryse & Chappin (2020) mention: Lack of interest in other projects and not understanding the necessity for sharing knowledge with other projects.

5.2 User-Friendliness of Formal Knowledge Sharing Systems

Lack of user-friendliness of formal knowledge sharing systems can hinder sharing of knowledge (including learning from failure) even though organizational members are willing to share their knowledge (obtained by learning from their mistakes). Both knowledge-providers and knowledge-seekers can encounter challenges in this regard. Respondent 4 says:

> "If you have a database or a system in which it is very difficult to find the needed knowledge, then I think that the system will be very poorly utilized. If you want to obtain knowledge from such difficult systems, then you try a little, and then you don't want to spend so much time on it before giving up."

More on the role of user-friendliness of formal knowledge sharing systems in knowledge sharing and learning can be found in Ekambaram (2024-b).

5.3 Involvement and Support From Top / Senior Management

People who work in projects are generally busy with their work. Knowledge sharing and learning require time and resources, which a project manager cannot automatically / always allocate, since the project manager tends to focus primarily on delivering the project within the planned timeframe, cost and quality. In this regard, the project manager cannot prioritize knowledge sharing, and probably does not have the mandate and authority to allocate time and resources for it. Therefore, the issue of learning and knowledge sharing should be looked at from a top / senior management perspective. Several respondents mention involvement, commitment and support from top management / project owners / senior managers in this context. The top management perspective provides a strategic view of knowledge sharing and learning in PBOs – that is, considering knowledge sharing and learning as a means to increase productivity, effectiveness, profit and sustainable competitive advantage.

Respondent 9 points out that knowledge sharing is not seen as a key performance indicator. Project members do not naturally get motivated to spend time and energy on sharing knowledge due to busy everyday life in projects and the prioritization of completing project tasks. This situation can even more negatively affect sharing information of their mistakes and knowledge that is gained by learning from the mistakes. Pinkhasik & Hermann (2021), Iftikhar & Lions (2022) and Filstad (2010) mention the importance of motivation and incentive mechanisms to promote knowledge sharing and learning. Top / senior management can make use of incentive mechanisms (mentioned in Chapter 3.2) to develop a positive culture to make knowledge sharing and learning (including learning from mistakes) an important part of daily work. In addition, they can invest in proper and user-friendly formal knowledge sharing systems and ensure adequate training for organizational members to use the systems effectively. Furthermore, they can also invest in establishing informal learning arenas in their organizations that support collective reflection and single- and double-loop learning.

6. Concluding Remarks

This paper looks at one of the important factors that can contribute to learning and development in PBOs, namely learning from mistakes. In this regard, three key aspects are presented: Attitudes and personal aspects, user-friendliness of formal knowledge sharing systems, and involvement and support from top management.

The discussion on these three aspects (Chapter 5) points out different layers of barriers associated with learning from mistakes in organizations and a possibility to deal with the barriers. Figure 3 illustrates it.

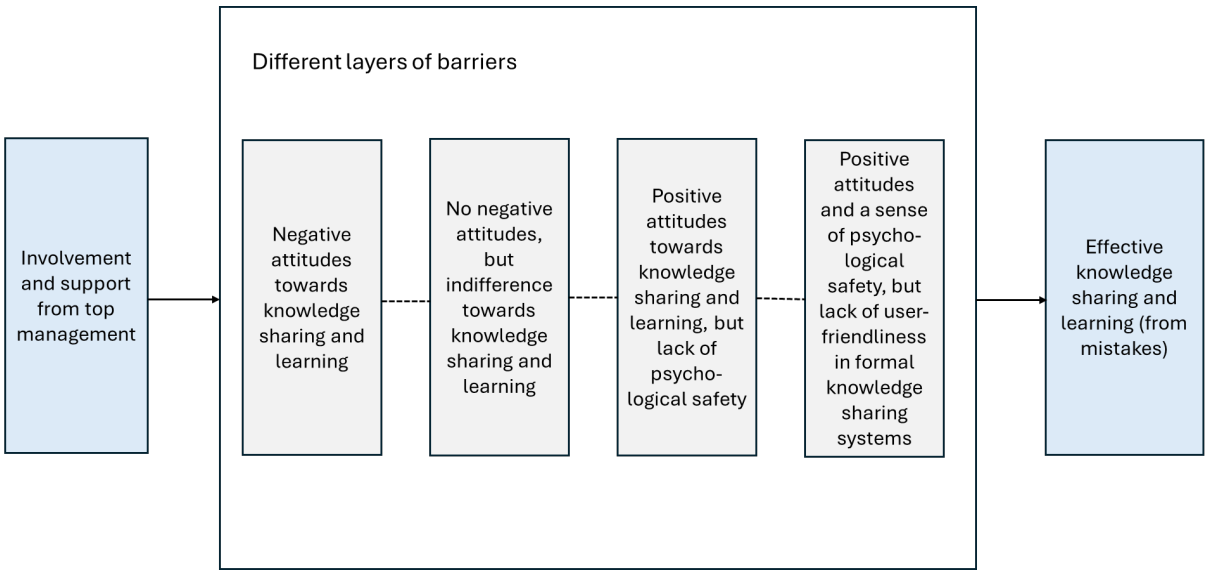

Figure 3: Different layers of barrier to learning from mistakes

As Figure 3 illustrates, involvement and support from top management can be used to deal with different layers of barriers to knowledge sharing and learning (from mistakes) to create effective learning processes and the desired effect.

Knowledge sharing and learning in PBOs can be seen in two dimensions: Cultural and structural dimensions. As attitudes and personal aspects that we have seen in Chapter 5.1 are directly connected to the cultural dimension of organizations, user-friendliness of formal knowledge sharing systems (Chapter 5.2) is primarily related to the structural dimension of organizations. The structural dimension also includes all formal systems, technology, tools and structures in organizations. The discussion in Chapter 5.3 points out that involvement and support from top / senior management encompass both the cultural and structural dimensions of organizations. Involvement and support from top / senior management are important to create a positive culture (positive attitudes towards learning from own mistakes and sharing that knowledge with others in the organization) and ensure a good and effective structure (user-friendly formal knowledge sharing systems that make knowledge sharing easier) that can lead to harvesting the benefits of learning from mistakes.

Top management's support and contribution to promote knowledge sharing and learning in PBOs should be operationalized at all professional levels in PBOs (for example, top management, project owners, project managers, project members, etc.). In order to do the operationalization effectively, both the structural and cultural dimensions of organizations are to be taken into consideration.

This study is based on experience that the respondents have gained from various projects. It can be useful to test out the research questions (presented in Chapter 1) in one or more case-projects in order to get a detailed and context-specific understanding of learning from mistakes. This is a suggestion for further study.

Mistakes can be considered as a taboo in organizations, though it is natural for human beings to make mistakes. The important thing is to learn from own mistakes, share the information of the mistakes and the knowledge gained from the mistakes with others in the organization, and learn collectively from the mistakes. This paper aims to emphasize the importance of this topic and will hopefully contribute to good discussions.

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