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Challenges of the levels of learning

Abstract

Purpose: The purpose of this paper is to highlight challenges and opportunities that surround the process of learning with an emphasis on higher-order learning and learning as behavior. Higher order learning has been conceptualized as learning behavior that can be learned.

Design/methodology/approach: The holistic framework regarding higher-order learning has been proposed based on the systems perspective and critical thinking of previous contributions.

Findings: A review and analysis of learning, especially higher-order learning resulted in its conceptualization and guidelines on how to implement it. High-order learning is a learning behavior that can be learned and implemented in many situations in complex social and organizational practice.

Research limitations/implications Conclusions and remarks provided in the paper need further empirical testing and validation.

Practical implications Implications for practitioners have been identified in terms of recommendations for implementing higher-order learning as a learning behavior that can be learned.

Social implications Dedicated implementation of higher-order learning and learning as behavior can bring true change to the current social and economic paradigm and bring lasting solutions to the so-called “stubborn problems” of pollution, abuse, destruction, poverty etc., and cause systemic transformation of our declining society.

Originality/value: Higher-order learning has been conceptualized and challenges surrounding it have been identified along with suggestions on how to overcome them.

Keywords: Learning organizations, learning, higher-order learning, triple loop learning, learning as behavior

Introduction

Learning is a challenge both for individuals and for organizations. Academics try to design conceptual frameworks to facilitate the learning process, which focus on the process of learning, its impediments and critical success factor. However, learning is a multifaceted process, which has many layers and levels. Conceptualization of the levels of learning poses a special challenge. However, understanding and conceptualizing the levels of learning is key

when studying and developing learning organizations. That is especially true for higher-order learning, which is necessary to master challenges of the complex social interactions. Contributors from various disciplines of social sciences have presented their views on the process of learning and its levels. However, the concept still presents a challenge for both empirical research and practice. In this paper, levels of learning are reviewed and discussed, guidelines for their practical implementation are presented and research challenges seeking practitioners' input are identified.

Learning as behavior that can be learned

Besides solving current operative problems, human beings are capable of predicting the future and dreaming about the desired outcomes. In order to make necessary changes, significant intellectual investment is required that involves taking a systems perspective, identifying system entities and their relationships, examining them critically, establishing current fundamental assumptions and designing new system's outlook based on a new set of assumptions that could ensure completion of the desired objectives. This cognitive process can be referred to as higher-order learning. Despite the fact that its phases are logical, the process is very intellectually demanding, and requires a significant amount of commitment and the ability to persevere despite internal and external challenges and failures. It is a process that rests upon the ability to continuously collect, analyze and synthesize information, critically reflect upon them and design adequate solutions from the systems' standpoint. It is also often challenging to determine a particular system's boundaries as well as to discover the true nature of the entities' relationships. The process is therefore complex, nuanced and varied and requires a significant amount of behavioral variety invested on the part of the agent pursuing learning and strategic changes.

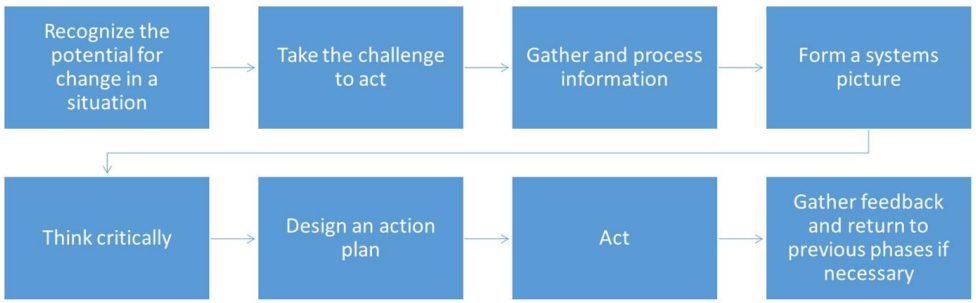
To provide greater conceptual clarity regarding the concept of higher-order learning, Rigolizzo (2018) introduced the framework entitled "Learning As Behaviors" (LABS), which delineates the levels of learning which lead to the greater ability to engage in higher-order learning. Essentially, higher-order learning is a behavior that can be learned by engaging in certain actions. Conceptualizing higher-order learning as a set of behaviors and actions enables practitioners to introduce such guidelines in their organizations and researchers to study its implications, inhibitors, stimulants and critical success factors. Higher-order learning is impossible without the ability to inspect the validity of the underlying knowledge of a specific situation, which is also referred to as the "domain or sphere of knowledge" (Rigolizzo, 2018). The individual capable of examining the underlying knowledge should be well equipped with accurate information, reach a higher level of their understanding based on previous knowledge, experience and critical reflection, and be able to interpret their value in the context of a specific value system. It should be noted that higher-order learning is not limited only to determining short-term causations. It requires establishment of a systems perspective based on the knowledge interpreted through a prism of embedded mental models and value systems.

Higher-order learning can be individual and organizational. In case organizations are engaged in higher-order learning, individual and collective mental models should be brought to surface and their validity should be determined. This process requires complete trust and openness on the part of organizational members for it to be successful, which is challenging in practical circumstances. Both individual and organizational higher-order learning is based on two processes: determining the underlying assumptions or mental models based on a specific value system and designing a desired outlook that integrates various perspectives and provides an incentive for action in that direction. The outcome is the same for both individuals and organizations – changes in the state of reality but also changes in the memory and changes in behavior, which is the starting point for future learning and action.

It should be emphasized that learning is behavior and not only reflection, which is delineated in the LABS framework by Rigolizzo (2018). In that process the learning entity transits from the phases of being aware to being informed, then knowledgeable and ultimately competent. This process is based on the individual learning behavior, which, if exercised collectively, becomes organizational learning behavior. It starts from the fact that an individual or a collective recognize the potential for change in a situation and take the challenge to act. Then the process of information acquisition begins. Information is processed according to recognized mental models and a systems picture is designed in which key relations between stakeholders are identified. The concept is the basis for critical thinking, which results in an action plan. After action, feedback is gathered in which an individual or a collective could be satisfied with the outcome or the conclusion could be reached that further adjustments and actions are necessary.

An individual or a collective pursuing the learning as behavior process might decide to return to any of the previous phases: reject the challenge to act further, gather more information, design another systems picture, think critically, design another action plan and act differently. The process could be iterative and reaches the end once the learning entity is satisfied with the outcome. Every new iteration raises the level of awareness of the learning entity regarding the present situation and the desired outcome, followed by a conscious decision to pursue actions that could bridge this gap. Every phase is therefore intentional and not incidental, even though occurring incidents are utilized to further accelerate the learning momentum. In addition, by continuous information encoding the learning entity becomes knowledgeable and eventually competent to act and make a change. It is important to note that information and knowledge gathered in all phases are stored and coded for easy retrieval when and by whom necessary. This process is delineated in Figure 1.

Figure 1: Learning as behavior (adapted from Rigolizzo, 2018).



Even though it may seem that this process is conducted only for matters of strategic importance, the complex organizational processes and challenges make almost any situation suitable for applying this model. In addition, this conceptual model could be the basis for further empirical work to confirm the validity of the model in practice. For practitioners, this model could be a benchmark for learning action. Its value could also be in helping practitioners identify which steps of the process are the most challenging or disregarded in their practice.

Learning from the (envisaged) future

In the previous part, the process of higher-order learning was based on recognizing the potential for change in a specific situation and circumstance and taking the challenge to act based on subsequent learning. Learning was conceptualized as acquisition and processing of information, designing a systems picture and critical thinking, which, results in knowledge and competence to act. The incentive for that process was the desired outcome. Learning and action based on learning were modes on how to active the desired state. However, one aspect might further enhance the process of higher-order learning and result in even better results. Keiser (2018) calls this "learning from the future", which can be further related to Bateson's (1972) levels of learning. Learning from the yet unmanifested reality (the future) is impossible. However, it is possible to learn from the envisioned future. The desired outcome essentially is the envisioned future of a certain situation. However, in the process of learning, entities often put more emphasis on the past than on the scenario planning of future options. If equal emphasis is put on both, discrepancies could emerge which could serve as stimuli for more learning and action based on learning.

Here, it is important to start from the definition of learning provided by Kolb (1984, p. 41), according to whom learning is "the process whereby knowledge is created through the transformation of experience". By gaining experience and upon its critical inspection, learning entities gain knowledge, which drives their subsequent action. However, the learning entity should not consider the future a mere projection of past experiences into circumstances coming ahead. Instead, the future is a blank canvas that could be filled by desired manifestations that stem from creative and innovative action and behavior. In other words, a learning entity "senses emerging futures" (Sharmer and Kaeufer, 2010, p. 25f) and shapes behavior and action accordingly. Based on experience, knowledge, competence but also creative and imaginative insight, the learning entity mentally envisages possible future scenarios in the form of thoughts of "emerging future episodes" (Szpunar, 2010, p. 143). It is then that the learning entity takes further action relative to the necessary learning and activities based on the desired and possible future outcome.

Bateson's (1972) learning on the Level 1 refers to choosing among the set of alternatives, which is based on the past experience and driven by the underlying mental model that is not necessarily brought to consciousness. By engaging in Level 1 learning, a learning entity gains

knowledge about the set of alternatives and chooses one based on that knowledge. By learning from the envisaged future, a learning entity gains knowledge regarding the desired envisioned future by exploring a set of alternatives and relating their content with the present situation and its demands. The one which best fits current expectations is chosen and implemented. However, the set of alternatives is not changed. In Learning 2, a change in the set of alternatives is made. Instead of viewing them as static conditions, alternatives are considered dynamic and subject to change. A learning entity learns about the possible alternatives, makes changes and chooses the best option that satisfies the desired criteria. If a learning entity learns about the envisaged future regarding the set of alternatives that are available, new knowledge emerges, which changes the alternatives and results in new knowledge about future actions.

Lastly, Learning 3 refers to the change in the learning itself. In this process, the underlying mental models are brought to consciousness and examined from the perspective of the desired values and needs. If Learning 3 occurs, a mental shift is on its way, resulting in knowledge about new desires and values. Learning 3 is the most fruitful level of learning because it brings new insight, mental clarity, understanding of past mistakes and reasons for future actions. That is why it is often conducted with a trained coach or a therapist, which help their clients gain a deeper insight into their own essence and reasons for existence. The process could also be done collectively. However, this process is very demanding and requires reflection, commitment, honesty and courage to face underlying shadows. It is strongly suggested that practitioners embark on the journey towards Learning 2 and 3 and experience their benefits.

Level 3 learning by Bateson (1972) is sometimes referred to as triple loop learning or N-learning as suggested by Simonin (2017) in which “the learner steps back and reflects on the underlying assumptions and goals and on the reflections themselves” (Arévalo *et al*., 2010, p. 32). In this learning loop mental models are brought to consciousness in order to elucidate the underlying value system which are then critically reviewed and reflected upon. Only in this fashion, true change in the current paradigm can occur and bring about new behavioral patterns and outcomes of a different nature. This type of learning should be used to solve the so-called “stubborn problems” of pollution, abuse, destruction, poverty etc. and cause a systemic transformation of our declining society. Triple loop learning is not possible without engaging in the systemic thinking as suggested by Flood and Romm (2018), which drives people to recognize current system connections and interdependencies and create new visions of reality based on desired interconnections and newly designed methodologies. Triple loop learning by employing systemic thinking thus refers to “learning to see in new ways”. The outcome of this new outlook could be new organizational processes, structures, routines but also a completely new organizational and strategic orientation.

However, it should be noted that triple loop learning, so socially desired and a bedrock of learning organizations is both constructive and paradoxical as it entails two concurrent dynamics: desire to change and resistance to change. That is why Vince (2018) calls the learning organization a paradoxical organization. Desire to learn and change is inseparable from the social context in which it is occurring, and which often embeds two polarizing

tendencies: enthusiastic learning action and learning inaction due to discomfort, ambivalence and inability. That is why practitioners should emphasize inclusiveness of emotions because enthusiasm can turn into fear and fear can turn into enthusiasm if the missing variable is lacking – effective servant and transformational leadership.

Implementing higher-order learning

Individual higher-order learning poses a great challenge. However, collective learning is even more difficult. Marcandella and Guèye (2018) examined higher-order learning in collaborative innovative projects (CIP). Considering the complexity of business challenges, collaborative innovative projects are on the rise and require specific guidelines regarding their management and progress based on individual and collective learning. The members of collaborative innovative projects are interdependent but they do not share the common culture and frames of reference, which can cause tensions. Tensions can emerge due to resource allocation decisions, incompatible interpretations of tasks and goals etc., which can be explained by the concept of equivocality. Equivocality can be defined as "divergent interpretations and understandings of tasks and knowledge", which can be "sensed or observed when team members are unable to interpret ideas and information effectively in order to undertake their tasks and combine different mental models and knowledge sets" (Eriksson *et al*., 2016, p. 691, 701).

The process of alignment is slow and challenging but it also presents numerous opportunities for learning, especially expansive or higher-order learning (Engeström, 1987; 2001). Practitioners should have in mind that the following areas of dispute and tension can emerge, as shown in the case study by Marcandella and Guèye (2018): differences in purpose, which can cause members to part their ways; divergence in the definition of task scopes and productivity levels; differences in the resource allocation plans; differences in the allocation of benefits; differences in expectations how the project should proceed and what results it should bring etc. These tensions could also affect the project's orientation and work schedule. However, if participants have the willingness and courage to address the issues of dispute, they could learn about other perspectives, find integrative solutions and redesign their collaborative practice. However, the continuance of collaborative work might require the design of new policies, procedures, rules and routines, which is the direct positive outcome of collaborative learning.

Conclusion

Challenges regarding levels of learning, especially higher-order learning have been presented along with guidelines on how to implement them. It should be concluded that higher-order learning is impossible without systemic thinking, critical reflection, unconstrained dialogue and tireless dedication of everyone involved. Its failure in practice should not be contributed to the lack of conceptualizations but to the human nature that is the representation of variety and diversity. Variety and diversity can be fruitful sources of learning and insight but also

barriers to communication and dialogue. That is why every individual should take the responsibility for their own personal growth and development, which could improve their ability to integrate perspectives, engage in systemic thinking and design system pictures of the current and desired reality. Along the way, disagreements are very likely. However, we must understand that this process is iterative and demanding in terms that is requires our patience, open mind, respect for others and tireless dedication. Only if these values are nourished in a group that calls itself a learning organization is true integration of perspectives possible based on learning, trust, honesty, integrity and care for the well-being of everyone involved.

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