*Article*

# Reflective Practice as a Fuel for Organizational Learning

**Sanna Hilden [1],\* and Kati Tikkamäki [2]**

[1]  Cost Management Center, Tampere University of Technology, FI-33101 Tampere, Finland
[2]  School of Information Sciences/CIRCMI, University of Tampere, FI-33014 Tampere, Finland;
     E-Mail: kati.tikkamaki@uta.fi; Tel.: +358-40-190-1309

\*  Author to whom correspondence should be addressed; E-Mail: sanna.hilden@tut.fi;
    Tel.: +358-40-728-3304.

**Abstract:** Learning theories and their interpretations in management research recognize the role of reflection as a central element in the learning process. There also exists a broad consensus that organizational learning (OL) happens at three intertwined levels of the individual, the group and the organization. This tri-level analysis has been most influentially presented by Crossan, Lane and White (1999), as a premise for their 4I framework of OL. Though the 4I framework builds strongly on existing literature on OL, it does not address the role of reflection as a factor operating between the inputs and outcomes in 4I sub-processes. Though a large body of research exists regarding the notion of reflection and its importance in terms of OL, this has not been discussed in the specific context of the 4I framework. This article contributes to the development of the 4I model by discussing how reflective practice—on three levels and within 4I sub-processes—fuels the OL process. The argumentation is based on an extensive literature review in three dimensions of learning, illustrated with an empirical inquiry into three business organizations and their reflective practice. In addition, the aim is to increase the understanding of reflection as not only an individual or group process, but as an organized practice, enabled by the tools of management control.

## 1. Introduction

Despite the extensive attention placed on organizational learning (OL), there is still a need to investigate further the actual practice and activity that leads to learning. We propose that to cope with this pressure of learning and renewal, reflective practice is needed. In addition, we aim to increase the understanding of reflection as not only an individual or group process, but as an organized practice, enabled by the tools of management control [1].

There is a broad consensus among learning theorists that reflection is at the core of adult learning and professional growth, transformation and empowerment [2–6]. Numerous definitions for reflection exist, but often, they are related to individuals' cognitive processes, such as becoming conscious of, analyzing, evaluating, questioning and criticizing experiences, assumptions, beliefs or emotions [7,8]. In Mezirow's definition [6] of critical reflection, also, cultural influences to norms and behaviors are included in the reflective process. From a more educational perspective, reflection examined within the work context also needs to be realized in processes of interaction, sharing opinions, asking for feedback, challenging groupthink and experimentation. This, in turn, can and needs to be supported by suitable organizational structures and practices. As Reynolds and Vince [9] argue, more emphasis needs to be placed on creating collective and organizationally focused processes of reflection. The three essential levels of analysis—individual, collective and organizational—are broadly accepted in learning theory and in the management literature [10,11]. However, relatively little is known about the organizations' managerial means to actively develop reflection in practice. As called for by Raelin [12]: "We need managers who can inspire reflection to the extent of generating new ways of coping with change".

This is the point where OL theories could utilize the extensive effort that has been made in management-control research. Management-control systems (MCS) represent institutionalized learning, and the structural reality in which learning and reflection are enabled and facilitated. The purpose of MCSs is to encourage the desired behavior within the organization [13]. To be successful, the control system should find a balance between competing forces, such as between freedom and constraint, empowerment and accountability and between experimentation and efficiency [14,15]. Research in management control is also reaching strongly towards a better understanding of control as an enabler for learning [16,17]; yet, the existing conceptualizations of learning mechanisms remain narrow and have not captured the richness related to reflective interpretative processes, communities of practice, dialogue and memory [18]. In addition, empirical inquiries on reflection in business contexts are nearly absent. A more in-depth examination is clearly warranted on the organizational-learning phenomenon, including the role of reflection.

In this study, we investigate the organizational-learning process as presented by Crossan, Lane and White [10], analyzing the role of reflection in each of the four sub-processes. Synthesizing the existing research, we provide a definition of reflection and a conceptualization of reflective practice, consisting of four factors in line with the 4I OL process [10]. The four factors represent the different requirements that an organization needs to ensure are present to enable reflection at work. Thus, assuming that reflection can indeed be actively inspired, the question remains as to how to do it. Additionally, informed by the critique of the value of reflection (e.g., [19]), our paper sets out to explore this question of "how" by looking at reflection and reflective practice in relation to management-control

elements [1]. This allows a pragmatic analysis of how people reflect in practice, in which kinds of circumstances the reflection takes place and how reflection is enabled by management control. In other words, reflection is not studied as a hidden mental process, but instead, as a visible practice directed at past, present or future objects. Finally, reflective practice is illustrated by the empirical data collected by a "survey of reflective practice". We argue that reflective practice should reside in, and that it becomes, visible through MCSs, not as a separate exercise. Management control represents the values, rules and routines, brings the individual and collective reflective capability and everyday work practices to the surface that fuel learning in distinct 4I sub-processes. This paper contributes to organizational-learning theory by examining reflection as a practice made tangible through management control. In addition, it opens avenues to management-control research and to managers in its attempt to understand the role of reflection in generating learning and renewal.

## 2. Reflection As a Fuel for Organizational Learning

### 2.1. Organizational Learning Requires Reflection

"Our core challenge is to become more reflective on the reasoning that guides our actions and gradually improve our theories-in-use" (Senge in [20]).

As a term, OL was originally introduced in the 1970s by Argyris and Schön [21]. For them, OL as an activity involves solving problems by examining the appropriateness of current learning behaviors and questioning the assumptions that underlie the existing ways of working, experimenting and creating (double-loop learning). In the highest form of OL, deutero-learning [22], more and more fundamental questions are asked and reflected on based on previous learning contexts. In addition to governing values, this level of learning focuses on questioning embedded traditions and systems. This type of learning can be also called generative or transformational learning.

The theories of OL have brought up the importance of the concept of reflection [2,4–7,21–29]. More specifically, reflection, transformational reflection and reflective practice have been seen as playing an important role as the driving force of OL [6,11] and as a crucial promoter and core of double-loop learning [30]. Reflection is characterized as an element of the deconstruction of self-evidence and transformative learning [31]. The benefits of reflection have been seen, for example, in that it sharpens professionals' perceptions of their usual methods and approaches to challenging situations, allows for the identification of the gaps between theory and practice and it is thought to contribute positively to job satisfaction [32].

Reflective practice is central in personal mastering, mental modelling, sharing visions, team learning and systems thinking—the critical disciplines of OL for Senge [27]. Creating a suitable work environment and time for reflection may be the key to helping practitioners to develop a personal vision and focus their energies in a positive way towards achieving this vision (personal mastery). The mental models should be tested through reflection and inquiry to determine how our views shape our actions and decisions. Shared core values and a common sense of purpose should also be subjected to reflection to expand thinking and define new practices. In team learning, dialogue encourages reflection and inquiry. Systemic thinking integrates all the disciplines into a community, in which it is safe and acceptable to engage in reflective conversations and inquiry [28].

*2.2. The Hidden Role of Reflection in the 4I Framework*

Here, reflection is examined as an enabler and facilitator of OL processes (see Appendix 1). OL processes are examined in the light of Crossan *et al.*'s [10] frequently cited 4I framework, where the associated processes of intuiting, interpreting, integrating and institutionalizing define learning within organizations. OL is seen as a dynamic process involving exploration (feed-forward) and exploitation (feed-back) [10,33].

OL deals with rather profound questions related to one's subjective experience and interpretation, identity and mental-model construction (intuiting and interpreting). The grounding premise for reflection to occur on the individual level can be called reflective capability [34], including individuals' ability and willingness to question routinized ways of thinking and acting, either when having already acted or while in the midst of acting [25]. Hodgkinson and Healey [35] call for research on the cognitive and emotional capacities of individuals and groups to sense, seize and transform. This, in turn, requires developing metacognition, emotion management and self-regulation, which is possible only by becoming aware of oneself through reflection [31]. Second, this reality is shaped in the social reality, where the organizational members interact and collectively produce shared understanding (interpreting and integrating) and reflect collectively [11,12], carrying out reflective dialogue [12,34,36]. This challenges individual and collective sense-making [37]. Third, this all takes place in a specific organizational setting, with a unique MCS (integrating and institutionalizing) [10,34], challenging the organization of reflection [28]. Organizations can be viewed as communities of learning, where the processes of intuiting, interpreting, integrating and institutionalizing are taking place in the processes of participating, constructing and sharing knowing, socially supporting and reflecting [38,39].

2.2.1. Reflection for Intuiting and Interpreting

The phase of intuiting is described as a uniquely individual process, consisting of the preconscious recognition of a pattern and/or of the possibilities inherent in a personal stream of experience [10]. Crossan *et al.* refer to experience as a source of learning, and they underline the role of the subconscious in the translation process; that is, how the experience transforms into new knowledge and action. The most influential model for understanding experiential learning is the Learning Cycle introduced by Kolb [5]. In principle, the intuiting phase, as described by Crossan *et al.*, can be understood based on Kolb's theoretical basis. It is broadly accepted that experience does not automatically lead to learning, unless we reflect on it in terms of our existing understanding and assumptions. Thus, reflection is needed for changing routine thinking and behavior. Kolb's model has been criticized for being overly individual and past focused, apolitical and for neglecting the experience of others as a source of learning [40].

Crossan *et al.* [10] discuss expert intuition, raising the question about how past experience constitutes mental models that allow efficient exploitation of acquired knowledge. In terms of learning, this expertise is hidden from the conscious memory. Consequently, expert intuition also tends to provide routine-like answers in situations where the old thinking ought to be questioned. It is very difficult for this knowledge to come to the surface, to be examined and explained. The ability to bring one's individual assumptions to the fore is considered as a key to perceiving new opportunities and

creating new thinking (entrepreneurial intuition). Through *interpreting*, these novel insights are crystallized [33] and explained to one's self and to others [18]. Interpreting requires capability and, also, motivation and direction. It is noted that metaphors have been recognized as a powerful reflective tool in surfacing the individual's interpretations and insights and in communicating them to others (moving towards the interpreting phase). Though metaphors clearly represent one tool for investigating the subconscious, the more generic requirement relates to also making the hidden knowing visible and susceptible to modification. As Vince [40] posits, learning is also a meta-level process that requires us to be "suspicious of our own suppositions".

From an individualistic angle, reflection can be seen as a cognitive process of introspection. Reflection can be seen as an active and purposeful process of exploration and inquiry, where one becomes aware of the assumptions that govern one's actions, thinking and feeling [2,7,41]. Reflection is a bridge between experience and learning [2]. When examining intuiting and interpreting, this means, for example, generating new insights, seeing things in a new light by breaking out of traditional mind-sets, taking experimental actions and developing one's competencies, scanning the external environment and being aware of the critical issues that affect one's thinking and behavior [33,42].

In the 4I framework, the intuiting phase and its theoretical argumentation stresses individual experience and *insight* as a source of exploitative and explorative learning. One could see that insight relates to concepts, such as awareness [40] and mindfulness [43], in organizations and managerial work. Awareness captures the idea of focusing on the here and now instead of reflecting on the past. This involves working with the unconscious processes and the resulting emotions, thus directing conscious attention to living in the moment. In fact, this represents reflecting on reflections, taking a critical stance towards the self to determine whether the past ways of acting remain appropriate. Though some authors tend to define reflection as something mostly focusing on the past, it is a concept that is also apt for using to investigate the self and events in the moment [43]. The ability to reflect on-action and in-action together form the individual capacity to investigate experience (one's own or others') within the personal, social and political realms [26].

2.2.2. Reflection for Interpreting and Integrating

How can I know what I think till I see what I say? [44]

In a situation in which an individual notices that the old patterns of thinking do not apply, he or she needs to test his or her emerging thinking and develop it further, collectively. This is the phase in which the experience is re-interpreted by the individual and group. The new meaning or thinking is made explicit through language, conversation and dialogue [10,28]. In these types of *interpreting* and *integrating* phases, the individual and others attempt to clarify the emerged idea, articulate and reflect on it to form a plausible story (in sense-making) or a shared understanding (in OL). According to the 4I model, the interpreting phase involves developing the cognitive maps, naming the experience and giving meaning to it. Interpreting is seen as a social activity that creates shared meaning and understanding, enabling the integration of meanings [10]. This can also be called collective sense-making [40]. Integrating is a coordinated action through mutual adjustment [18]. Language plays a crucial role in constructing and sharing the cognitive maps and in mutually adjusting. Stories and storytelling capture the complexity of actual practice and enable a richer understanding of meanings

and actions, constructing the collective mind/memory simultaneously [10]. In practice, interpreting and integrating takes place, for example, during informal and formal modes of action and in situations in daily work, such as problem-solving situations, and during formal and informal meetings and conversations with colleagues.

Dialogue is, and needs to be emphasized as, an enabler of collaborative learning and reflection. Dialogue is a process of discovering and interrogating to achieve understanding or agreement through listening, respecting, voicing and suspending [45]. Crossan *et al.* [10] present dialogue as a practice enabling interpretation and integration. Open dialogue as a form of collaborative reflection and inquiry aims at exposing the meaning constructions based on which the other thinks and acts, thus creating shared understanding [46]. It also aims at the collective questioning of assumptions [28], development of common language and a shared world view. Vince [40] suggests that dialogue is actually already necessary in the intuiting phase, since only through dialogue can an individual form an understanding of the social reality that ultimately also shapes the individual experience. The integration process is initially *ad hoc* and informal, but if it is meant to be institutionalized, integration should be embedded into the systems and structures of the organization [18].

### 2.2.3. Reflection for Integrating and Institutionalization

The process of institutionalization refers to prior learning (on the individual and collective levels) becoming embedded in an organization's structures, systems and procedures. The patterns of interaction and communication are formalized as the organization's intellectual property. This field of "structures" and their inherent dynamics is studied in sociology and management-accounting theory [13,47–52], where the focus is on understanding the cognitive and behavioral dimensions of unlearning and change. It is recognized that structures, referred to as MCSs, play a powerful role in influencing perceptions, changing language and infusing dialogue [16].

In understanding the structuring of organizations, one of the questions in this theoretical field is how knowledge is acquired and validated before it becomes routinized (institutionalized). This is explained through experiential learning theories that operate in the conceptual (cognitive) and the operational (behavioral) realms, moving from experience, through reflection, to testing in action and reflecting on the new experience [53]. Another critical question relates to unlearning and how the MCSs (structures) participate in collective questioning, thus reproducing the existing rules, roles and routines. A third still relatively little studied question relates to individual interpretations of the so-called socially shared reality. It has been recognized that management control (*i.e.*, the institutionalized practices) hold different meanings to different organizational members [47,54]. Even the level of institution is seen and shaped through un-conscious lenses, which greatly affect our judgment of what the rules and routines really are about. As Gherardi and Nicolini [55] remind us, unlearning and change are conditions that are built in and on practices. Only through critical reflection can actors investigate and re-assess the existing ways of thinking, feeling and existing in institutions [56].
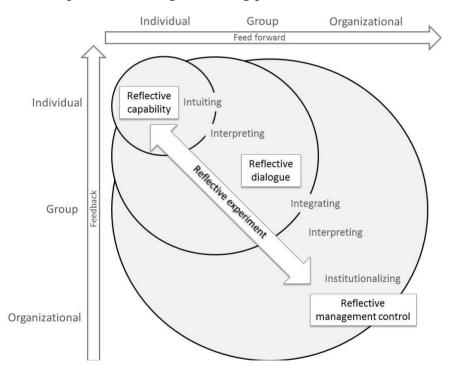
We can see that the institutionalizing process, structuration and re-structuration, require self-reflective abilities, as well as collective questioning and experimenting with new emerging ideas [57]. The reflective interventions might include supporting reflective actions, for example, reflective note taking and debriefing episodes after meetings on the individual and team levels. On the collective

level, there are one-off learning communities for small groups to share and test their ideas and knowledge, role-analysis groups or training sessions. Organizations might encourage the exchange of good practices and of giving feedback to each other. It is believed that feeding the culture of learning enables reflective work behavior to become a way of living in the organization [12]. However, the ideal is to integrate the reflective practices in the present strategy and work practices; that is, into MCSs as a whole. We argue that the learning theorists have not been able to dig deep enough into organizations' management-system realities; thus, ideas for incorporating reflection into corporate practice unfortunately remain largely unrealized.

## 3. Reflective Practice Enabling Organizational Learning

Synthesizing the literature presented earlier, we define reflection as:

a complex, active and purposeful mental process of becoming aware of old meanings, exploring alternative interpretations, engaging in dialogue and shifting modes of thinking, feeling and acting. It is triggered by meaningful experience and leads often to unexpected outcomes.

**Figure 1.** Reflective practice enabling 4I learning processes (based on Crossan *et al.* [10]).



Reflective practice, in turn, is the actual ways in which reflection is manifested through individual and collective action within the organizational realm. Reflective practice allows the members of the organization to slow down to critically evaluate their own thinking, but also, to investigate the shared, collective assumptions and expectations, as well as the institutionalized rules and routines. The reflective-practice framework (Figure 1), consisting of reflective capacity, reflective dialogue, reflective experiment and reflective management control, is based on the review and synthesis of OL theories (e.g., [10,22]), theories of reflection and reflective practice/practitioners [7,8,12,28,43], the process model for sense-making [28] and the tools of management control, as defined by Malmi and Brown [1].

Reflective practice is seen to support intuiting, interpreting, integrating (individual and collective sense-making) and institutionalizing in organizations. Reflective practice raises awareness of the actors and calls actors from passivity to action [58]. When integrating learning and reflecting into everyday work practices and structures, it calls for reorganizing the work. The aim is not always to develop new "tricks", but to create best practices out of present practices. In practice, this means challenging rigid mental models, cultural self-evaluation, making visible the possible inertia caused by shared assumptions about "how we do things around here" and deconstructing organizational barriers, the unrealized tensions between the managerial vision and forms of control.

The grounding premises for reflective practice to occur relate to individual *reflective capability,* which enables the usage of intuition and interpretation. Jordan [25] describes the reflective practitioner by (1) their ability and (2) willingness to question routinized ways of thinking and acting, either having already acted or in the midst of acting. This requires meta-cognitive capabilities, self-awareness and the ability to regulate cognitive and affective processes (e.g., [31,35]). Yanow and Willmott [59] describe the attitude suitable for reflective practice as passionate humility, which allows one to be surprised and to view a situation from diverse perspectives. Learning capabilities are crucial, including the capability to reflect in and on action [8]. The challenge is to learn to be surprised [25]. The prerequisite for being surprised is in having the ability and courage to ask relevant and critical questions—not always knowing the right answers. For Wesley and Buysse [60], reflection can take place in four different forms: (a) the technical examination of one's immediate skills and competences in specific settings, (b) a descriptive analysis of one's performance in a professional role, (c) dialogic exploration of alternative ways to solve problems in a professional situation and d) critical thinking about the effects on others of one's actions, when considering social, political and cultural forces (in [61]). From the point of view of interpreting, integrating and sense-making, the individual's skills/capacity and willingness to enter into dialogue are crucial. It is also important to notice how an organization's management controls and structures facilitate the development of reflective capacity and, also, how the organization benefits from it.

*Reflective dialogue* aims at exposing the meaning constructions based on which the other thinks and acts, thus creating shared understanding. Here, dialogue is seen as a tool for collective reflection. Reflection is a process involving internal and external dialogues. When carrying out an internal dialogue, one examines one's own articulations and listens to one's own voice, aiming at understanding one's values, assumptions and blind spots [36]. When promoting reflection through external dialogue, individuals together try to find something new and surprising—to be touched upon—in open interaction. In our practice-oriented study, it is thought that in order to be social, the dialogue requires a phase of verbalizing for verifying what is being collectively understood. Though dialogue can be described as an inter-subjective meaning construction that generically necessitates words, as an organizational practice, there needs to be a phase where the experience is explicated. Referring to reflective capacity, Raelin [12] has defined five reflective skills promoting dialogue: being, speaking, disclosing, testing and probing. The first reflective skill, being, means to open up to the experience and to the interpersonal environments around oneself. Speaking refers to articulating the collective voice at a given time, for example, by suggesting group norms and/or bringing out uncertainties or unfounded assumptions. When disclosing, the participants share their doubts or voice their passion. Participants unveil their feelings or tell stories to reveal their deep experiences. In

testing, members try to promote the process of collective inquiry to uncover possible new ways. Through probing, members of the group attempt to point out inconsistencies in members' reasoning patterns and uncover the assumptions behind the actions. In the organizational context, one can use various reflective tools to facilitate reflective dialogue: storytelling, reflective and reflexive conversations, reflective metaphors, reflective journals and critical incident analysis, repertory grids and concept mapping [62]. At its best, through dialogical reflection, we focus on bigger issues that impact on work and profession and broaden the scope for understanding the complexities of practice [46].

Based on our literature review, we suggest that reflection should be institutionalized in the MCS that we call *reflective management control*. In practical terms, this means that organization's values, measuring and rewarding systems encourage a reflective working style. In addition, strategic and operational planning, as well as processes and practices allow for taking time and space for reflection and following the results of it. In other words, at its best, management control enables intuiting, interpreting, integrating and institutionalizing. Reflective management control defines the strategy, structures, routines and procedures for individuals and groups to practice reflection in their everyday work. It also means that the MCS should be flexible, so that new learning and interpretation are allowed to change the control in use [16]. So far, research on OL has focused greatly on reflection-on-action through separate exercises and neglected the routines that take place within ordinary, on-going operations [4]; that is, how organizational structures, routines and control systems utilize the potential of reflective dialogue. It is crucial to examine how intuition becomes institutionalized and, inversely, how institutionalization impacts the development of intuition [18].

The coexistence of thinking and acting underlie *reflective experimenting*. In addition to the cognitive and analytical level of reflection, reflective practices take the form of embodied reflection, which widens the experience from the "cognitive forms of reflection on concrete experience" into the embodied level and re-embodies the experiential knowledge and learning [25,43]. The aim of the experiment is to apply and explore the ideas and principles in practice and, thus, acquire new experiences on which to reflect. This means inquiring about new ideas and work practices with a "reflective mentality". The on-going reflective experimenting intertwines the processes of intuiting, interpreting, integrating and institutionalizing. The relationship between reflective thinking and acting becomes apparent in the ideas of reflection *ex post*, in the midst of and before action. Reflection taking place before an action is called anticipative reflection [12], reflection during an action is called reflection-in-action and reflection taking place after an action is reflection-on-action [26]. It has been claimed that reflection "in-the-moment" is under-theorized and lacks attention compared to reflection "after-the-moment" [25,63]. Indeed, the ability to "think on your feet" is crucial in reflective practice.

As we know, these factors of reflective practice overlap in practice in a complex way, and we need a deeper understanding about how these factors are interrelated. We suggest that reflective practice should be organized and facilitated in a way that the individual, collective and OL processes are intertwined. The next chapter describes a preliminary, empirical attempt to operationalize the reflectiveness and the developed concept of reflective practice within the realm of management control.

## 4. Exploring Reflective Practice in Practice

Based on our literature review, we can see that more research is needed to understand reflective practice and its four factors as an integral part of everyday work. We have presented how an MCS represents the formal arrangement of work in practice; thus, it is well justified to investigate how well the formal arrangement, rules and routines support reflective practice at the required three levels.

The four factors of reflective practice were investigated in three business organizations with the help of a questionnaire, complemented with case-specific research and development interventions. The questionnaire represents a preliminary step towards operationalizing the idea of reflective practice and its realization as reflected against elements of management control. The goal is not to search statistical evidence for the theoretically grounded four factors of reflective practice, but rather, to deepen the understanding of how to further the understanding of reflective processes and their requirements in organizations; furthermore, to challenge the respondents to reflect on the role of reflection in their work and organizational practices by answering the questionnaire. However, these are preliminary findings that guide our future research regarding reflective capability, reflective dialogue, experimenting and management control.

The selected three organizations all represent different fields of operation. Case 1 is a non-profit health-care organization with 160 employees. Case 2 is an affiliate of a large, global pharmaceutical company with 150 employees. Case 3 is a local outlet of a consumer retail chain. The case outlet is part of a large parent company operating in construction, decoration and gardening. The case outlet has approximately 50 employees.

A questionnaire (The questionnaire framework and propositions have been developed as part of the REFINNO research project which investigates the potential of reflection in terms of business performance; thus, as a construct, it has been developed jointly by Hilden S., Rämö J., Tikkamäki, K., Pekkola, S., Ukko, J., Saunila, M. and Vauranoja S.) was constructed based on Table 1, where the columns are formed according to 4I processes on three levels: individual, group and organization [10]. The rows capture the tools of management control as defined by Malmi and Brown [1]: cultural, planning, cybernetic, reward and compensation and administrative controls. The table was filled with propositions capturing the idea of how a certain control tool supports a reflection on a selected level. For example, regarding values and reflective practice on the individual level, the proposition was "I think it is valuable to take time to think critically and creatively about my work". In addition, on a group level, values and reflective practice were proposed: "In our organization, it is considered valuable to regularly take time for critical and creative discussions and thinking". Similarly, on an organization level, "Critical and creative thinking individually or collectively is valued in our organization". The reflection propositions were tied to normal daily work and were formulated in colloquial language. The scale of responses was: 1 = I strongly agree, 2 = I agree, 3 = neutral, 4 = I disagree and 5 = I strongly disagree.

The reliability analysis supports the selection of propositions at the three levels of the individual, group and organization. The Cronbach's alphas that describe the survey's internal consistency for the three levels were 0.680 (reflective practice on an individual level), 0.725 (reflective practice on a group level) and 0.741 (reflective practice on an organizational level). Since the recommended

limit for reliability is > 0.60, the three sets of propositions can be argued as measuring the same selected thing.
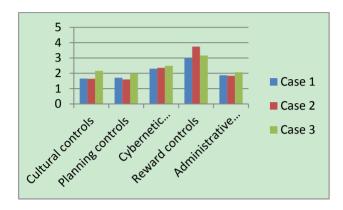
**Table 1.** The questionnaire for reflective practice reflected against management control.

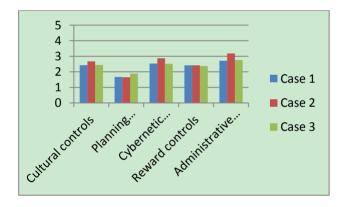| Reflective practice | Reflective practice on individual level (within intuiting and interpreting processes) | Reflective practice on group level (within interpreting and integrating processes) | Reflective practice on organizational level (within integrating and institutionalizing processes) |
|---|---|---|---|
| **Cultural controls: values, beliefs, social norms, mission statements, workspace design, dress codes, clans, rituals** | I think it is valuable to take time to think critically and creatively about my work. | In our organization, it is considered valuable to regularly take time for critical and creative discussions and thinking. | Critical and creative thinking individually or collectively is valued in our organization. |
| **Planning controls: strategic and action plans** | In order to achieve my work objectives, I regularly have to think critically and creatively about my work. | In order to achieve our work objectives, we regularly need to think critically and creatively about our work and working methods. | The strategic goals of our organization encourage sharing thoughts and creative thinking. |
| **Cybernetic controls: budgets, financial measures, non-financial measures** | I use financial and non-financial performance metrics in my work when I search for explanations and/or new ideas. | We use financial and non-financial performance metrics when searching for explanations or new ideas together with others (e.g., in teams/working groups). | The performance metrics (financial and/or non-financial) are developed based on new ideas and improvements we have made, e.g., to work processes. |
| **Reward and compensation controls: reward systems, incentives** | I regularly take time to think critically and creatively about my work because my organization rewards me for it. | We regularly take time to discuss critically and creatively with others about our work, because we are rewarded for it. | The current reward practices of my company rewards us for developing new ideas and improving work practices. |
| **Administrative controls: organizational design, governance structures, procedures, policies, work organizing, accountability** | I regularly review and evaluate my work and the ways I work. | We regularly review and evaluate with others our work and the ways we work. | The ideas and improvement suggestions we have developed individually or collectively change the processes and the ways we work in my company. |

Looking at the preliminary results, we can see that the three organizations produce fairly similar results regarding their reflectiveness (Figures 2–4). It is worth noticing that the general perception of reflectiveness at work is rather positive in all domains. In all organizations, the reward and

compensation produces most challenges in management control supporting a reflective way of working on the individual level (Figure 2). However, the same perception is not that clear when respondents have evaluated reflective working in groups (Figure 3) and as organizational (institutionalized) work arrangements (Figure 4).
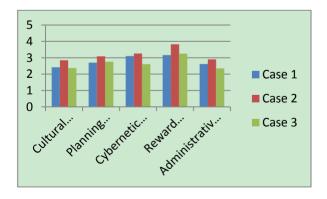
**Figure 2.** Amount of challenge for reflection—individual level.



**Figure 3.** Amount of challenge for reflection—group level.



**Figure 4.** Amount of challenge for reflection—organization level.



On the group level, the respondents are perceive to be slightly less supported by the control system, though the average remains on the positive side (below 3 = neutral). Further, on this level, the three case organizations give rather similar averages regarding the reflective practices in relation to management-control elements.

If we look, for example, at the proposition, "We regularly review and evaluate with others our work and the ways we work", one can notice the deviation between answers (Table 2).

**Table 2.** Regular work evaluation together with others.

|                     | Case 1 | Case 2 | Case 3 |
|---------------------|--------|--------|--------|
| I strongly agree    | 12     | 5      | 6      |
| I agree             | 34     | 26     | 46     |
| Neutral             | 27     | 26     | 22     |
| I disagree          | 23     | 31     | 19     |
| I strongly disagree | 3      | 12     | 7      |

The same tendency is visible in all three organizations. This might imply that collective reflection varies inside the organization or that respondents interpret the proposition differently. However, on average, 32% of all respondents feel that collective reflection about work and the ways of working is not a regular practice.

A generic finding related to *reflective capability* enabled by control tools was that individual skills and willingness are high, but organizations' structures seem to lag behind. Especially, the measuring and rewarding aspect was not considered as the weakest link for critical and creative thinking. As an example of the propositions regarding reflectiveness as part of individuals' everyday work, it was stated that, "I regularly review and evaluate my work and the ways I work". The negative neutral and negative responses are presented in Table 3 below.

**Table 3.** Reflective practice is not part of everyday work.

|                                          | Case 1 | Case 2 | Case 3 |
|------------------------------------------|--------|--------|--------|
| I strongly disagree/I disagree/neutral   | 12%    | 15%    | 20%    |

Though the great majority feels that self-reflection is part of their work, the number of employees who do not evaluate their work regularly is relatively high—considering that all respondents can be categorized as knowledge-workers.

Considering the *reflective dialogue*, the propositions tried to capture how well the organizational practices and routines support collective discussions, sense-making and groupthink. For example, it was proposed that, "We use financial and non-financial performance metrics when searching for explanations or new ideas together with others (e.g., in teams or working groups)" (Table 4). This was aimed at capturing the cybernetic controls and their interactive use.

**Table 4.** Performance metrics do not support reflective practice.

|                              | Case 1 | Case 2 | Case 3 |
|------------------------------|--------|--------|--------|
| I disagree /strongly disagree | 17%    | 24%    | 13%    |
| Neutral                      | 27%    | 40%    | 33%    |

Reflective experiment, the intertwining factor of the process of reflective practice, in this paper means applying and exploring the ideas and principles in practice and, thus, acquiring new experiences

to be reflected on. While some of the questions in the survey capture the idea of experimenting, filling in the questionnaire was complemented by reflective sessions, where organizations' members reflected collectively on the results and constructed a shared understanding about the results in their own case-specific context. Thus, the process of answering the survey itself is a reflective process, where its role is to trigger the respondents' intuition and interpretation. Discussing the results in informal and formal discussion forums enables reflective dialogue related to the organizations' reflectiveness. In addition, the utilization of the results gives a chance for management to evaluate and develop current control tools from the point of view of reflective practice, according to the results.

However, one of the illustrative propositions for *reflective experimenting* and, at the same time, for *reflective management control* is the variable: "The ideas and improvement suggestions we have developed individually or collectively change the processes and ways we work in my company" (Table 5). This describes how well the feed-forward process functions and how the ideas based on intuition and dialogue reach= the phase of institutionalization.

**Table 5.** Reflective practice changes institutions.

|  | Case 1 | Case 2 | Case 3 |
|---|---|---|---|
| I agree/strongly agree | 52% | 30% | 67% |

One might notice that, regarding this question, the organizations differ from one another. This type of result clearly highlights the need for taking the step from the survey towards reflecting on the results and considering what the interpretations and reasons are behind these perceptions. As a single observation, these results raise many questions on a more detailed level regarding the reflective learning process and the dynamics of management-control change. Why is it that in organizations where reflection seems to be active, the acquired ideas and learning are not perceived to better transform institutionalized practices?

As a limitation to the results, it can be noted that the propositions in their current form leave a lot of room for interpretation. Especially, one might argue that the distinction between group and organizational levels is a matter of how the respondents understand the propositions. This is clearly a point regarding the questionnaire validity that will be improved in further trials. Another weakness in the propositions could relate to fairly strong emphasis on new ideas as an outcome of reflection. Though the reflective process often leads to a "new" idea or "new" understanding, it does not have to mean doing things differently. Reflection may just as well crystallize how well the old ways actually work, and there is no point in developing new ones. This is something that needs further attention in verbalizing the reflective practice.

The arranged interventions remain as a subject for further research, as the results are currently being collected and analyzed. Thus, these results are not reported in this paper. While our research on reflective practice continues, we feel that the questionnaire and its operationalization for investigating reflective practice tied with management control already represent a valuable contribution to OL theory.

In the case interventions, constructed based on the results of the questionnaire, we have constructed "spaces" for intuiting, interpreting, integrating and institutionalizing and have observed whether and how the interventions reach the level of open and influential reflective practice. In addition, we try to

identify and develop reflective tools to share our grounds for thinking, thus producing more creative and multi-faceted ideas. In our research, we will facilitate intuiting and interpreting during interventions by arranging individuals and groups, so that they can reframe their knowledge base and train their reflection abilities [12]. In addition, we observe the organizational members and how their reflection manifests and develops in change-related sense-making interventions. We will also seek to understand how the other levels, namely, the collective and organizational levels, interact with the individual level of reflectiveness. We also organize spaces for reflective dialogue and observe whether and how the dialogue reaches the level of open and influential interaction. In addition, we try to identify and develop tools to share our grounds for thinking, thus producing more creative and multi-faceted ideas. Interventions and their follow-ups provide an understanding of the significance of this process phase, where experiences and knowledge become a professional activity: knowing. We also investigate how reflective practice may support the learning that continues when the new meanings are taken into real-life situations. We expect this to further clarify the question on reflection and action and how the sense-making process might be recursive during this testing phase. The interventions are closely tied to selected forms of control, so that we can analyze the role of management control in promoting reflective practice and, thus, sense-making and organizational renewal.

## 5. Conclusions

We have proposed that to establish reflective practices and to actively use reflection as a means to enable and facilitate OL, four domains of prerequisites are needed. *Reflective capacity* creates the preliminary grounding for individual ability and willingness to take the path of constructive questioning. *Reflective dialogue* fosters the collective process of discovering and interrogating to achieve common understanding or agreement. *Reflective experiment* captures the action-orientation needed for learning to integrate in the organizational reality through active exploring and probing. Finally, to create an environment that enables and encourages sense-making, there needs to be *reflective management control*. This means that the structures, practices and rules have built-in flexibility. These prerequisites explicitly connect two potential theoretical domains, OL and management control, to form a more comprehensive understanding of the drivers and mechanisms that are seen as valuable for fostering reflection, sense-making and renewal in organizations.

As shown by our study, there is a particular need to explicitly connect the processes at different organizational levels to holistically understand the reflection process. Based on the studied literature and early case evidence, our initial position regarding the role of these levels is that in any reflective practice, the three individual, group and organizational levels are simultaneously present and must be acknowledged according to their particular character. We admit the conceptual challenge in separating experimenting into its own "box", while we clearly state that it (action) is actually present in all of the process phases. This is something that needs to be further developed conceptually, but at this point, we wish to make a clear distinction between what happens as a conscious or sub-conscious mental process and what are the specific organizational requirements for experimenting. This stems from our practical observation that there is a significant gap between "good intentions" and action. This is why we want to bring out the experimenting as a distinct phase that might need a different kind of encouragement than the other phases. The most hermetic boundary exists between the management-control literature

and research on individual and collective learning. Learning-oriented studies focus on the human factors of reflection and are imprecise regarding the power and impact mechanisms of the surrounding control system. In a similar vein, management studies search to understand the role of control in learning; yet, they tend to overlook the established theoretical notions in the individual and collective psychology of learning. Our argument is that an empirical investigation of reflective learning with an analysis of all three dimensions, alongside combining cognition and action, is both valuable and needed.

In our continuing research work with the case companies, we expect to build a more analytical understanding of the intuitive hypothesis that "to renew means first becoming aware". During our literature review, we found that the reflective way of working incorporates not only the dimensions of the organization (individual, group and organizational), but also the hidden human processes of metacognition and emotions—forming the basis of our thinking and acting in change. Carrying out reflective practice in daily work primarily calls for the meaningful use of this meta-competence in "a flow of work process". Reflection should not be a separated work task, but a way of planning, carrying out and evaluating the work tasks, which we call a "reflective mentality". Reflective practice should also be a shared value in organizational strategy and legitimized practice. We hope to receive more theoretical and empirically enriched evidence for how this "reflective mentality" becomes visible and manageable in reflective practice.

In addition, we expect to see the practical contribution of piloting various reflective practices as creating channels through which companies may receive valuable feed-forward and strategizing information. The planned practices create the time and space for reflective practice and legitimize it by using time to make sense of the change, for employees to become heard and for them to have the possibility of being able to participate. In practice, this means that based on the questionnaire results, management is challenged in terms of reflective sparring and coaching regarding the five elements of control. This includes the evaluation of current control tools, their meaningfulness in current business situations and how they could be used more reflectively; that is, producing surprises, learning and innovative decisions. Thus, reflective practices demonstrate significant potential in supporting organizational renewal emerging from the ranks and being managed from the top down.

Indeed, we want to raise the question of risks related to engaging in a process, the outcome of which is, by definition, unknown. Reflection provides new interpretations, new ideas—and perhaps breaks some old patterns. Reflective practice is planned to challenge the existing norms and the existing social, cultural and political *status quo*. This can lead to mental and emotional anxiety [64] and the need for reorganizing identity. Thus, it will be an intriguing challenge for us to seek answers to questions, such as: in what situations and with what kind of rules does reflection remain constructive and productive?

It remains to be seen how, in real-life settings, reflective practice will make visible the existing power structures in organizations. The idea of posing challenging questions and engaging in open dialogue requires a fair amount of courage and trust. By asking the "wrong question", one might end up in the middle of a political conflict inside the organization. What makes the difference between constructive questioning and a holdout? What exactly is the potential of reflective practice, and how can it be established as a safe platform in practical organizations for mulling over and gradually taking on board the changes it triggers?

## Acknowledgments

## Conflict of Interest

The authors declare no conflict of interest.

## References

1. Malmi, T.; Brown, D.A. Management control systems as a package: Opportunities, challenges and research directions. *Manag. Account. Res.* **2008**, *19*, 287–300.
2. Boud, D.; Keogh, R.; Walker, D. What is Reflection is Learning? In *Reflection: Turning Experience into Learning*; Boud, D., Keogh, R., Walker, D., Eds.; Kogan Page: London, UK, 1985; pp. 7–17.
3. Dewey, J. *Logic: The Theory of Inquiry*; Henry Holt and Company: New York, NY, USA, 1938.
4. Kegan, R. What "form" Transforms? A Constructive-developmental Approach to Transformative Learning. In *Contemporary Theories of Learning: Learning Theorists ... In Their Own Words*; lleris, K., Ed.; Routledge: Oxon, MD, USA, 2009; pp. 35–52.
5. Kolb, D.A. *Experiential Learning: Experience as a Source of Learning and Development*; Prentice-Hall: Englewood Cliffs, NJ, USA, 1984.
6. Mezirow, J. An Overview on Transformative Learning. In *Contemporary Theories of Learning: Learning Theorists ... In Their Own Words*; Ileris, K., Ed.; Routledge: Oxon, MD, USA, 2009; pp. 35–52.
7. Mezirow, J. A critical theory of adult learning and education. *Adult Educ.* **1981**, *32*, 3–24.
8. Schön, D.A. *The Reflective Practitioner: How Professionals Think in Action*; Basic Books: New York, NY, USA, 1984.
9. Reynolds, M.; Vince, R. *Organizing Reflection*; Ashgate Pub Limited: Hampshire, England, UK, 2004.
10. Crossan, M.; Lane, H.; White, R. An organisational learning framework: From intuition to institution. *Acad. Manag.* **1999**, *24*, 522–537.
11. Hoyrup, S. Reflection as a core process in organizational learning. *J. Workplace Learn.* **2004**, *16*, 442–454.
12. Raelin, J.A. Public reflection as the basis of learning. *Manag. Learn.* **2001**, *32*, 11–30.
13. Chenhall, R.H. Management control systems design within its organizational context: Findings from contingency-based research and directions for the future. *Account. Organ. Soc.* **2003**, *28*, 127–168.
14. Simons, R.A. *Levers of Control*; Harvard Business School Press: Boston, MA, USA, 1995.

15. Tessier, S.; Otley, D. A conceptual development of Simons' levers of control framework. *Account. Organ. Soc.* **2012**, *23*, 171–185.

16. Hopwood, A.G. Accounting and organizational change. *Account. Audit. Account. J.* **1990**, *3*, 7–17.

17. Simons, R.A. *Seven Strategic Questions: A Simple Approach for Better Execution*; Harvard Business Review Press: Boston, MA, USA, 2010.

18. Crossan, M.M.; Berdrow, I. Organizational learning and strategic renewal. *Strat. Manag. J.* **2003,** *24*, 1087–1105.

19. Ecclestone, K. The reflective practitioner: Mantra or a model for emancipation? *Stud. Educ. Adults* **1996**, *28*, 146–161.

20. Ayas, K.; Zeniuk, N. Project-based learning: Building communities of reflective practitioners. *Manag. Learn.* **2001**, *32*, 61–76.

21. Argyris, C.; Schön, D.A. *Organizational Learning: A Theory of Action Perspective*; Addison-Wesley: Reading, MA, USA, 1978.

22. Argyris, C.; Schön, D. *Organizational Learning II: Theory, Method and Practice*; Addison-Wessley: Reading, MA, USA, 1996.

23. Elkjaer, B. The learning organization: And undelivered promise. *Manag. Learn.* **2001**, *32*, 437–452.

24. Eriksen, M. Leading adaptive organizational change: Self-reflexivity and self-transformation. *J. Organ. Change Manag.* **2008**, *21*, 622–640.

25. Jordan, S. Learning to be surprised: How to foster reflective practice in a high-reliability context. *Manag. Learn.* **2010**, *41*, 391–413.

26. Schön, D.A. *Educating the Reflective Practitioner*; Jossey-Bass: San Francisco, CA, USA, 1987.

27. Senge, P.M. *The Fifth Discipline: The Art and Practice of the Learning Organization*; Doubleday/Currency: New York, NY, USA, 1990.

28. Vince, R. Organizing reflection. *Manag. Learn.* **2002**, *33*, 63–78.

29. Weick, K.E.; Sutcliffe, K.M.; Obstfeld, D. Organizing and the process of sense-making. *Organ. Sci.* **2005**, *16*, 409–421.

30. Greenwood, J. The role of reflection in single and double loop learning. *J. Adv. Nurs.* **1998**, *27*, 1048–1053.

31. Mezirow, J. Learning to Think like an Adult. Core Concepts of Transformation Theory. In *Learning as Transformation: Critical Perspectives on a Theory in Progress*; Mezirow, J., Eds.; Jossey-Bass: San Francisco, CA, USA, 2000; pp. 3–33.

32. Page, S.; Meerabeau, L. Achieving change through reflective practice: Closing the loop. *Nurse Educ. Today* **2000**, *20*, 365–372.

33. Bontis, N.; Crossan, M.M.; Hulland, J. Managing an organizational learning system by aligning stocks and flows. *J. Manag. Stud.* **2002**, *39*, 437–469.

34. Hilden, S.; Tikkamäki, K.; Suomala, P. Reflection for Renewal. In Proceedings of the OCD—Organizational Change and Development Conference, Bern, Switzerland, 13–14 September 2012.

35. Hodgkinson, G.P.; Healey, M.P. Psychological foundations of dynamic capabilities: Reflexion and reflection in strategic management. *Strateg. Manag. J.* **2011**, *32*, 1500–1516.

36. Tsang, N.M. Reflection as dialogue. *Br. J. Soc. Work* **2007**, *37*, 681–694.

37. Weick, K.; Quinn, R.E. Organizational change and development. *Annu. Rev. Psychol.* **1999**, *50*, 361–386.

38. Tikkamäki, K. Työn ja organisaation muutoksissa oppiminen—Etnografinen löytöretki työssä oppimiseen. (Learning in Changing Work and Organisational Contexts—Ethnographical Discovery on Workplace Learning.). Ph.D. Dissertation, School of Education, University of Tampere, Tampere, Finland, 2006.
39. Tikkamäki, K. Communities of Learning at Work—Making the Invisible Visible. Paper Presented in the Conference on Researching Work and Learning, Stirling, Scotland, 19-21 June 2013.
40. Vince, R. Behind and beyond Kolb's learning cycle. *J. Manag. Educ.* **1998**, *22*, 304–319.
41. Jordi, R. Reframing the concept of reflection: Consciousness, experiential learning, and reflective learning practices. *Adult Educ. Q.* **2011**, *61*, 181–197.
42. Cope, J. Entrepreneurial learning and critical reflection. Discontinuous events as triggers for "higher-level" learning. *Manag. Learn.* **2003**, *34*, 429–450.
43. Jordan, S.; Messner, M.; Becker, A. Reflection and mindfulness in organizations: Rationales and possibilities for integration. *Manag. Learn.* **2009**, *40*, 465.
44. Weick, K. *The Social Psychology of Organizing*; McGraw-Hill: New York, NY, USA, 1979.
45. Isaacs, W.I. *Dialogue and the Art of Thinking Together*; Doubleday: New York, NY, USA, 1999.
46. Clouder, L. Reflective practice: Realizing its potential. *Physiotherapy* **2000**, *86*, 517–522.
47. Ahrens, T.A.; Chapman, C.S. The structuration of legitimate performance measures and management: Day-to-day contests of accountability in a U.K. restaurant chain. *Manag. Account. Res.* **2002**, *13*, 151–171.
48. Ahrens, T.A.; Chapman, C.S. Management accounting as practice. *Account. Organ. Soc.* **2007**, *32*, 1–27.
49. Berger, P.; Luckmann, T. *The Social Construction of Knowledge: A Treatise in the Sociology of Knowledge*; Open Road Media: Soho, NY, USA, 1966.
50. Barley, S.R.; Tolbert, P.S. Institutionalization and structuration: Studying the links between action and institution. *Organ. Stud.* **1997**, *18*, 93–117.
51. Burchell, S.; Clubb, C.; Hopwood, A.; Hughes, J.; Nahapiet, J. The roles of accounting in organizations and society. *Account. Organ. Soc.* **1980**, *5*, 5–27.
52. Burns, J.; Scapens, R.W. Conceptualizing management accounting change: An institutional framework. *Manag. Account. Res.* **2000**, *11*, 3–25.
53. Busco, C.; Riccaboni, A. Performance Measurement Systems and Organizational Culture: Interpreting Processes of Unlearning and Change. In *Business Performance Measurement and Management*; Taticchi, P., Ed.; Springler-Verlag: Berlin, Heidelberg, Geramny, 2010; pp. 357–376.
54. Mouritsen, J.; Hansen, A.; Hansen, C.O. Short and long translations: Management accounting calculations and innovation management. *Account. Organ. Soc.* **2009**, *34*, 738–754.
55. Gherardi, S.; Nicolini, D. The Sociological Foundations of Organizational Learning. In *Handbook of Organizational Learning and Knowledge*; Dierkes, M., Antal, A.B., Child, J., Nonaka, I., Eds.; Oxford University Press: Oxford, UK, 2001; pp. 35–60.
56. Nicolini, D.; Hartley, J.; Stansfield, A.; Hurcombe, J. Through the eyes of others: Using developmental peer reviews to promote reflection and change in organizations. *J. Organ. Change Manag.* **2011**, *24*, 211–228.
57. Kuntz, J.R.C.; Gomes, J.F.S. Transformational change in organizations: A self-regulation approach. *J. Organ. Change Manag.* **2012**, *25*, 143–162.
58. Wellington, B. The promise of reflective practice. *Educ. Leader.* **1991**, *48*, 4–5.
59. Yanow, D.; Willmott, H. Considering passionate humility. *Adm. Theory Prax.* **1999**, *21*, 440–454.

60. Wesley, P.W.; Buysse, V. Communities of practice: Expanding professional roles to promote reflection and shared inquiry. *Topics in Early Childhood Special Education* **2001**, *21*, 114.

61. Hatton, N.; Smith, D. Reflection in teacher education: Towards definition and implementation. *Teach. Teach. Educ.* **1995**, *11*, 33–49.

62. Gray, D.E. Facilitating management learning. Developing critical reflection through reflective tools. *Manag. Learn.* **2007**, *38*, 495–517.

63. Yanow, D.; Tsoukas, H. What is reflection-in-action? A phenomenological account. *J. Manag. Stud.* **2009**, *46*, 1339–1364.

64. Reynolds, M. Reflection and critical reflection in management learning. *Manag. Learn.* **1998**, *29*, 183–200.

## Appendix

Appendix 1. The multilevel dimensions and premises of organizational reflection (Hilden, Tikkamäki & Suomala 2012).

| Reflective practitioner | Collective reflective practice | Organizational reflective practice |
|---|---|---|
| Schön (1983)<br>Kolb (1984)<br>Eraut (1994)<br>Brookfield (1995)<br>Hoyrup (2004)<br><br>**Critical reflection:**<br>Mezirow (1990)<br>Reynolds (1998) | Dewey (1938)<br>Boud (1985)<br>Brookfield (1995)<br>Reynolds (1998)<br>Evans (1999)<br>Raelin (2002)<br>Hoyrup (2004)<br>Jordan (2010) | Elkjaer (2001)<br>Raelin (2001)<br>Vince (2002)<br>Hoyrup (2004)<br>Nicolini et al. (2004)<br>Boud et al. (2006)<br>Yanow & Tsoukas (2007)<br>Jordan (2010) |
| **Individual reflection premises** | **Collective reflection premises** | **Organizational reflection premises** |
| To be skilled to "think on your feet" (Weick 2002)<br><br>Individuals' meta-cognitive capabilities; self-awareness, regulating cognitive and affective processes (e.g., Hodgkinson & Healey 2011)<br><br>Passionate expertise tempered by humility and doubt, willingness to reflect (Yanow & Wilmott 1999)<br><br>To be sensitive and creative thinking, motivated, committed, passionate yet humble, able to maintain volition (e.g. Yanow & Wilmott 1999, Jordan 2010)<br><br>Managers' skills of facilitating reflective processes (Grey 2007) | Public scrutiny regarding organizational roles, practices, routines, and power relations (Reynolds 1998; Raelin 2001; Vince 2001, 2002)<br><br>"Educational setting" consisting of informal processes within organization based on situational learning theory (Jordan 2010) (compare "communities of practice" by Wenger 1999 and "communities of learning" by Tikkamäki 2006)<br><br>Organizational culture allowing public dialogue and critical reflection l. communication patterns and the use of artifacts (Elkjaer 2001; Nicolini *et al.* 2004)<br><br>Routinized, shared ways of thinking and acting, established power relations (Jordan 2010) | An account of work practices that<br><br>explores dimensions of acquiring competence and ability to judge competence (Yanow & Tsoukas 2009)<br><br>Sufficient interactive style of MCS used to promote individual and collective self-awareness (Brown & Starkey 2000)<br><br>Systems that balance use of expert and entrepreneurial intuition (Hodgkinson & Healey 2011)<br><br>Flexibility as an in-built feature of MCS to minimize control systems' internal |