# Recent Developments in Reflexivity Research: A Review

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#### ABSTRACT

Team reflexivity, or the extent to which teams reflect upon and modify their functioning, has attracted much recent research attention. In the current paper, we identify several predictors as well as consequences of reflexivity by reviewing the last decade of literature on team reflexivity. It is observed that team characteristics such as trust and psychological safety among group members, a shared vision, and diversity as well as leadership style of the team's supervisor influence the level of reflexivity. In addition, team reflexivity is related to a team's output in terms of innovation, effectiveness, and creativity. Explanations for these effects are discussed and a model including all current findings is presented.

#### Keywords

reflexivity-review-teams-effectiveness-innovation

## 1 Introduction

Teams are often important building blocks of successful organizations, especially for organizations that operate in dynamic environments. Team-based organizations can respond quickly and effectively in the fast-changing environments, they enable organizations to develop and deliver products and services quickly and cost effectively, enable organizations to learn, and promote positive outcomes such as creativity, innovation, etc. (Cohen & Bailey, 1997; West, 2004). In order to work effectively, however, it is important for teams to coordinate actions of team members. West and his colleagues identified reflexivity as an important determinant of effectiveness of complex decision-making teams (West, 1996; West, Garrod, & Carletta, 1997). West stated that when members collectively "reflect upon their objectives, strategies, processes and wider environments; plan to adapt these aspects of their task functional worlds and make changes accordingly, teams will be more effective" (West, 2000, p. 151).

An important aim of this paper is therefore to give an overview of recent developments regarding reflexivity. We will start by defining and explaining the theoretical underpinnings of the construct, review the past decade of empirical findings and conclude with a model of what has been found so far.

# Definition of Reflexivity

Reflexivity as a group level construct is defined as "the extent to which group members overtly reflect upon, and communicate about the group's objectives, strategies (e.g., decision-making) and processes (e.g., communication), and adapt them to current or anticipated circumstances" (West, 2000, p. 296). Swift and West (1998) distinguished between task and social reflexivity. Task reflexivity refers to reflexive behaviors with respect to the team's task. Social reflexivity refers to the extent teams reflect on the social processes within the teams. In his later work (e.g., 2000), West no longer distinguished between these two forms of reflexivity. Also, most research to date focuses on task reflexivity. In comparison to reflexive teams, non-reflexive teams show little awareness of the team objectives, strategies and the environment in which they operate. Such teams are inclined to be reactive rather than proactive and react defensively in case of environmental threat. Reflexive teams plan in more detail, pay more attention to long-term consequences and have a larger inventory of environmental cues to which they respond (West, 2000).

Reflexivity is thought of as an iterative process consisting of three components: reflection, planning and action / adaption. The relation between these three components is depicted in Figure 1. Although figure 1 suggests that the different aspects of reflexivity can be clearly discerned, they are probably less sequential and more highly interrelated than depicted.

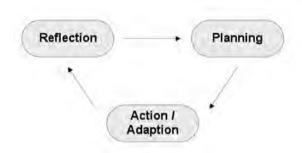


Figure 1: Aspects of reflexivity. Note: From West (2000)

## Reflection

Reflection refers to the consideration of work-related issues. In the literature on organizational learning, reflection is mentioned as an important factor in learning. Tjosvold (1991), for example, regarded reflection as an important instrument for recognizing how certain present ways of operating can be obsolete, because of environmental changes, thus, reflection is crucial in learning from experience. According to West (2000, p. 4) "reflection includes behaviors such as questioning, planning, exploratory learning, analysis, diversive exploration, making use of knowledge explicitly, planfulness, learning at a meta-level, reviewing past events with self-awareness, and coming to terms over time with a new awareness". Thus, the variety of behaviors described demonstrates that reflection can vary according to the depth of awareness of inquiry.

## Planning

Reflection as such does not lead to changes, adaptation needs to occur as well. Planning is seen as the bridge between reflection and action or adaptation (Miller, Galanter, & Pribram, 1960; West, 1996). In the planning phase, goals are presented and ways to achieve these goals are planned. These plans will then be implemented in the action phase. According to Weingart (1992), planning not only takes place before task execution, but often takes place during task execution as well. In that case, only the first actions are usually planned (Faludi, 1973). During task execution subsequent plans are developed and shaped by task feedback (Freidmann, 1966). Research by Weingart (1992) showed that this way of planning occurs relatively more than preplanning. According to West (2000), the planning stage is important in developing implementation intentions and is in going beyond the stage of reflection and towards action. Research by Sonnentag (1998) showed that detailed planning during task execution is important in coordinating the actions of interdependent team members. Research by Gevers, vanEerde, and Rutte (2001) among student project teams indicates that planning in the orientation phase did not contribute to progress, whereas planning in the execution phase was highly related to the teams' progress. So planning seems to be important for teams, but especially during the execution phase. Thus, planning can be seen as a bridge between reflection and action, indeed.

#### Action

According to West (2000), action refers to goal-directed behaviors relevant to achieving the desired changes in team objectives, strategies, processes, organizations or environments identified by the team during the stage of reflection. Action is seen as an important aspect in most learning cycles and as a way to test assumptions by practical experience. In action theory (Hacker, 1985, 2003), action is even regarded as the core of work psychology' per se (cf. Frese & Zapf, 1994). West (2000) asserted that action can be measured on four dimensions: Magnitude, novelty, radicalness, and effectiveness. The first three dimensions describe the innovativeness of the actions, whereas the fourth dimension is related to the performance of the team. The actions carried out by the team members lead to new information, which can lead to further reflection, planning and action as an iterative and ongoing process (West, 2000).

# Recent Developments

In practice, it is difficult to discern the three components, reflection, planning and action/adaptation, since teams may easily jump between the components, and phases may be not distinguishable, that is they are probably less sequential and more highly interrelated than depicted. When researching the topic of reflexivity, an important development is that researchers tend to focus on one of the aspects. All three components are represented by separate research lines, although the most essential part of reflexivity, but least researched so far, is reflection. Recent research tends to focus more on the reflection aspect of reflexivity (e.g., Schippers, Den Hartog, & Koopman, 2007).

In the following, we present a model of findings so far.

# 2 Antecedents of Reflexivity

It has been noted that teams generally do not engage in reflexive behavior spontaneously (Schippers, 2003). Several factors have been identified to enhance or diminish the possibility of reflective activities in teams. Following, we will present findings concerning the antecedents of reflexivity. In doing so, we will address findings about team characteristics first, followed by findings about leadership style.

#### Team characteristics

Several characteristics of teams have been found to have an influence on team reflexivity. The most important ones are trust, psychological safety, shared vision, and diversity. Empirical evidence concerning these characteristics will be discussed in the following.

# Trust and psychological safety

The concepts of "trust" and "psychological safety" similarly refer to the climate within a team in regard to the expectancy of cooperative or non-harming behavior of other team members (Kramer & Tyler, 1996). Such a climate seems an important condition for reflexive behavior. A higher level of reflexivity in a team is associated with greater probability for detecting discrepancies between actual and desired conditions. This might evoke uncertainty or even anxiety in individuals. Furthermore, by openly revealing feelings and thoughts related to team processes, team members make themselves vulnerable (Cunliffe & Easterby-Smith, 2004). It follows that an important prerequisite for the interpersonal risk taking involved in reflexive behavior is psychological safety among team members. Members who trust each other will not be afraid of speaking up freely because they do not worry that other team members will take advantage of them. In a study among 51 work teams, Edmondson (1999) found that, indeed, psychological safety was the most important predictor of team learning. With team learning, she referred to "an ongoing process of reflection and action, characterized by asking questions, seeking feedback, experimenting, reflecting on results, and discussing errors or unexpected outcomes of actions" (Edmondson, 1999, p. 353). This concept is very close to the concept of reflexivity and demonstrates the relevance of psychological safety to promote an open and constructive atmosphere for reflective group discussions. Similarly, Hoegl and Parboteeah (2006) found that team members' social skills that support the forming of trust, e.g. comprehension or sensitivity, positively predicted reflexivity. Schippers (2003) tested the direct relationship between trust and reflexivity in several studies and found high correlations. Trust also seems to have an important mediating function. In a study among 60 teams, Schippers (2003) demonstrated that the more inspirational leadership lead to trust (and a shared vision), the more it lead to evaluation and learning as well as better error management. Furthermore, in her study among 59 school management teams (Schippers, 2003), she found a mediating role for trust between attachment style and reflexivity demonstrating that teams are higher on trust when their members score lower on anxious and on avoidant attachment which in turn lead to increased evaluation/learning.

Trust might be particularly important when conflicts arise between team members. Conflicts, on one hand, create moments of potential awareness during which the group can step back from involvement in task related issues and take the opportunity to attend to team, organizational or environmental issues. On the other hand, conflicts - especially if they concern interpersonal issues - might also negatively affect the team climate. West (2000) expects that conflicts are likely to induce reflective behavior. However, Tjosvold, Hui, and Yu (2003) found that not the conflicts themselves, but the way they were managed, i.e. cooperatively, lead to more reflexive behavior. Jehn (1995) found that in groups with norms concerning the acceptance of conflicts in a group, promoting an open and constructive atmosphere for group discussion, conflicts were indeed beneficial. Similarly, Gurtner, Tschan, and Bogenstätter (2009) found no direct effect of social stressors on reflexivity but a moderating effect of task interdependence, indicating that in teams with high task interdependence, conflicts did favourably affect reflexivity. Surprisingly, however, the opposite was true for team stability; members of stable teams reported less reflexive behaviour, especially in the presence of social stressors. Thus, it seems that contrary to primary assumptions (e.g., West, 2000), conflicts do not induce reflexivity per se but can be a trigger for reflexive behavior if the necessary circumstances, i.e. high task interdependence or a climate of cooperative conflictmanagement, are given. Also, the role of conflicts in relation to reflexivity depends on team characteristics. The most crucial team characteristics are feelings of safety within the team and trust among its members. Task related conflicts within a psychological safe environment will lead to innovation by encouraging debate and consideration of alternative interpretations (West & Richter, 2008). Importantly, conflict acceptance or the way conflicts are dealt with plays a crucial role in either enhancing or inhibiting reflexivity in a team.

#### Shared Vision

A vision is "an idea of a valued outcome, a higher order goal, which is a motivating force for a work group" (West, 1990). For organizations to be innovative and to reach their long-term goals with the contribution of many teams and all team members, it is important that

this vision is shared among all employees. With a shared vision, there is a greater possibility for team members to implement an innovation that goes with this vision (Agrell & Gustafson, 1994). Thus, a shared vision creates a commitment to the team, a common identity, and, what is most important concerning reflexivity, fosters risk taking and experimentation (Senge, 1990). We therefore assume that teams with a shared vision are more likely to engage in reflective behavior than teams without a shared vision. This assumption has indeed found some support. Schippers (2004) found high correlations between shared vision and reflexivity in a study among 59 school management teams. Importantly, her results showed that inspirational leaders, i.e. leaders who exert behaviors such as acting as a role model for subordinates or communicating a vision (DenHartog, VanMuijen, & Koopman, 1997), manage to create such a shared vision among team members, highlighting the importance of the team leader's behavior on team processes.<sup>1</sup> A shared vision was also shown to mediate the positive relationship between transformational leadership and reflexivity (Schippers, Den Hartog, Koopman, & van Knippenberg, 2008). A study among 60 teams from different organization supported this perspective and also showed that having a shared understanding of the team goal may counteract possible negative consequences of diversity (Schippers, Den Hartog, Koopman, & Wienk, 2003). Thus, one can conclude that creating a shared vision among team members, which can be encouraged by inspirational or transformational leadership behavior, leads to increased reflective behavior.

# Diversity

In today's time of multicultural collaboration and global exchange, managing diverse groups has become a difficult but important challenge for organisations. Previous research has found evidence of both, stimulating and inhibiting effects of diversity in a team (van Knippenberg, De Dreu, & Homan, 2004; van Knippenberg & Schippers, 2007). The social categorization perspective proposes that overall group performance will be higher when groups are homogeneous rather than heterogeneous (Jehn, Northcraft, & Neale, 1999) as there will be fewer relational conflicts (Jehn et al., 1999; Pelled, Eisenhardt, & Xin, 1999) or higher member commitment (Riordan & McFarlaneShore, 1997). Besides, so-called deep-level diversity2 is said to lead to communication difficulties and therefore poor team functioning (Williams & O'Reilly, 1998). On the other hand, according to information and decision-making theory diversity can have a direct positive impact on

team performance (Hinsz, Tindale, & Vollrath, 1997). This approach suggests that diverse groups possess a broader range of knowledge, skills, and abilities and have to integrate different opinions and perspectives on the task which will lead to more creative and innovative ideas (Ancona & Caldwell, 1992; van Knippenberg et al., 2004). This "value-in-diversity" approach has also found broad empirical support (Cox, Lobel, & McLeod, 1991; Hambrick, Cho, & Chen, 1996; Jehn et al., 1999). One thought of diversity research is particularly interesting for the concept of reflexivity; members with different views will bring usefully differing perspectives on issues to the group (Williams & O'Reilly, 1998) which stimulates consideration of nonobvious alternatives (González-Romá & West, 2004) and therefore fosters communication and, in turn, reflective behavior. Some studies provide supporting findings for this assumption. West, Utsch, Borrill, and Dawson (2002) found a positive relationship between knowledge diversity and reflexivity in a study among 100 health care teams. They also showed that reflexivity moderates the relationship between knowledge diversity and innovation, demonstrating that in teams with high diversity, in which there is no conformity per se, it is more necessary to communicate and behave reflective to collectively achieve a goal. A similar finding is presented by Fay, Borrill, Amir, Haward, and West (2006); with two independent samples of 66 and 95 teams they found a moderating effect of team processes, such as reflexivity and shared vision, on the relationship between task-related (professional) diversity and innovation quality. Thus, professional diversity was positively related to the quality of team innovation if teams had good team processes, i.e. high reflexivity. Providing further support, Gibson and Vermeulen (2003) found positive relations between team heterogeneity in terms of demographic variables (cf. diversity) and team learning behavior (cf. reflexivity) among 156 teams and Van der Vegt and Bunderson (2005) found that team learning behavior partly mediated the relationship between expertise diversity and team performance. The positive relation between professional diversity in a team and reflexivity was also found by Haward et al. (2003) in a study on 72 breast cancer teams. Schippers et al. (2003) had a closer look on the direct relationship between diversity and reflexivity and their results in a study among 54 work teams from 13 different organizations reveal that the relationship is moderated by outcome interdependence and group longevity; groups that were highly outcomeinterdependent and diverse were more reflective than those that were less outcome-interdependent. Having

<sup>1</sup> The role of leadership behavior for reflexivity will be discussed in more detail in the section "leadership style".

<sup>2</sup> Deep-level, i.e. psychological diversity as opposed to surface-level, i.e. demographic diversity (Harrison, Price, Gavin & Florey, 2002).

a common goal might therefore be helpful for diverse teams to behave reflective, or, put differently, reflectivity is more required to understand the goal and work towards it together if the team is heterogeneous. Less diverse teams, on the other hand, do not need to reflect on a shared goal because they have a common understanding of it and each other per se, however, if their objectives are not clear, they might engage more in reflective behavior.

Overall, although the results about the direct impact of diversity on reflexivity are somewhat ambiguous, it seems that there is a relation between these two factors. Under certain conditions which require further examination, diversity can affect reflexivity. Reflexivity, in turn, seems to be an important moderator between diversity and team outcomes. This shows that the direction of the relationship between reflexivity and diversity is not clear yet.

## Leadership style

The patterns and styles of leadership are a very important factor to enhance or diminish reflexivity in a team. Although certain incidents might evoke situations in which the teams steps back from its original task and discusses e.g. team processes (e.g. when errors or team conflicts occur) the impact of these events on reflexivity is dependent on leadership style. A team's leader has to react to those incidents in an adequate way to achieve this positive effect. For instance, if the leader does not discuss errors within the team or only solves conflicts at short notice without considering long-term consequences, he might rather restrain the team from acting reflective than facilitate reflecting behavior. What is more, the leader has to create the conditions for exploration, experimentation and risk-taking. The team leader can also influence team reflexivity more directly by encouraging the team to reflect on their objectives, strategies, and processes and stimulating their communication. Several studies have supported the idea of an impact of leadership behavior on reflexivity. In a study of 50 Research and Development (R&D) teams, Hirst, Mann, Bain, Pirola-Merlo, and Richter (2004) showed that facilitative leader behavior - i.e. promoting respect and positive relationship between team members, productive conflict resolution, and open expression of ideas and opinions - was positively associated with team reflexivity, which in turn affected customer ratings of team performance. Similarly, in a study of 136 primary health care teams, Somech (2006) found participative leadership style – i.e. fostering joint decision making or shared influence by superior and employees - was positively related with team reflection, though, only in high functionally heterogeneous teams. On the other hand, directive leadership style i.e. providing the team with a framework for decision making and action in alignment with the superior's

vision - only increased team reflection when teams were low functionally heterogeneous. Hirst and Mann (2004) analyzed the relations between leadership role performance, team boundary spanning, communication safety, team reflexivity, and task communication developing a five-factor model of team communication which they tested in a one-year longitudinal study with 56 R&D teams. They found that team reflexivity mediated the link between innovative leadership and team performance whilst a cross-lagged analysis demonstrated that innovative leadership behavior led to team reflexivity. However, they did not dwell upon the question of why leadership does affect reflexivity. To fill this gap, Schippers et al. (2008) conducted a field study among 32 work teams looking at the processes through which leadership affected reflexivity in more detail. They showed that transformational leadership - a style of leadership that transforms followers by stimulating them to go beyond self-interest through altering their morale, values and ideals, and motivating them to perform above expectations - does enhance reflexivity, indeed, therefore supporting the findings from Hirst and Mann (2004). Moreover, in their study the impact of transformational leadership was fully mediated by a shared vision. In her survey among 60 teams, Schippers (2003) also showed this mediating effect not only of shared vision but also of trust in the team. The model she tested suggests that the stronger the effects of inspirational leadership on these two factors, the more it leads to better discussion processes, better error management as well as more evaluation and learning. These, in turn, are the three factors of reflection that she discerned in her model. Therefore, results again support the relationship between leadership and reflexivity.

## Other Influences

Several other factors have been revealed to have an impact on reflexivity. For instance, Haward et al. (2003), in a study among 72 breast cancer teams, found a positive relationship between number of leaders and reflexivity, indicating that a shared leadership style combined with democratic decision making worked best for clinical decision making. Another factor that seems to foster reflexivity is cooperation. Given that cooperation, or the desire to cooperate, leads to or rather requires constructive controversy (Tjosvold, Wong, Nibler, & Pounder, 2002), it is a reasonable assumption that it, in turn, provokes reflexivity. Indeed, results from studies among 100 Chinese teams suggest that cooperative conflict management (Tjosvold et al., 2003) and cooperative (but not competitive) goals (Tjosvold, Tang, & West, 2004) promote team reflexivity. Furthermore, several recent studies point to the importance of knowledge and skills of team members in terms of ability to interact with each other (i.e. social skills; Hoegl & Parboteeah, 2006) and in terms of ability to structure and control projects (i.e. project management skills; Hoegl & Parboteeah, 2006; Lee, 2008). Notably, team cohesiveness was a significant moderator indicating that teams with higher levels of cohesiveness and high levels of management skills as well as higher levels of existing knowledge tend to achieve higher levels of team reflexivity (Lee, 2008). Positive relationships have also been found between reflexivity and *personality* (e.g. proactive personality; Schippers et al., 2007).

Most recently, the question arose as to when, i.e. in what situations reflexivity is most useful and whether it is always useful. Similarly to the assumption that conflicts might evoke reflexivity, it can be argued that reflexivity is especially beneficial if circumstances are inauspicious, i.e. if improvements are necessary. Some first results provide support for this reasoning: In a study among 98 primary health care teams (Dawson, Schippers, & West, 2009), reflexivity showed the strongest effect on innovation when the quality of work premises was low. Schippers and Homan (2009) examined this moderating role of reflexivity among 73 student teams. They found that team reflexivity was most important for final performance (i.e. grade of bachelor thesis) after initial detrimental performance (i.e. grade of research proposal). Thus, reflexivity might be important for teams that have detrimental initial performance to improve their performance, as well as for teams that face adverse working conditions such as high demands.

# 3 Consequences of Reflexivity

First indications for the proposition that reflection will predict team productivity and effectiveness can be found broadly in both social and organizational psychology (West, 2000; West et al., 1997). More recently, however, there is increasing substantial evidence which support the direct impact of reflexivity on productivity and related constructs. In this paper, we will focus on studies that examine this direct relationship.

## Performance, Effectiveness, and Innovation

Carter and West (1998) were one of the first to study direct relationship between reflexivity and productivity. They conducted a longitudinal study over 18 months among 19 BBC TV production teams and measured reflexivity, team size and team climate. They found that reflexivity was a significant predictor of senior managers' ratings of the effectiveness and creativity of the programs the team produced. Reflexivity also explained more of the variance than did team climate for innovation. Several studies support their results; in a study among 22 student project groups, Gevers et

al. (2001) found that reflexivity was positively related to the progress of the group in the execution phase of the project. It also played a role in making up arrears; high reflexive teams made up arrears, while low reflexive teams seemed not to be able to do this. In studies among 100 teams in China, task reflexivity, promoted by cooperative conflict management and cooperative goals, was shown to result in team performance as indicated by supervisors (Tjosvold et al., 2003) as well as in team innovation as rated by managers (Tjosvold et al., 2004). Lee (2008) reports comparable results from a study among 132 members of R&D groups in Taiwan: reflexivity had a significant influence on both product innovativeness and on new product performance. Research by De Dreu (2002) among 32 organizational teams performing complex, ill-defined tasks showed a moderating effect of reflexivity on the relationship between minority dissent and team innovation and effectiveness. Results showed more innovation and greater effectiveness in teams with low levels of minority dissent, but only when there was a high level of team reflexivity. In a more recent study, De Dreu (2007) found positive direct effects of reflexivity on team effectiveness as rated by supervisors and on learning. Moreover, reflexivity had a moderating function insofar as it was a necessary condition to foster positive effects of team interdependence: Outcome interdependent teams engaged in more information sharing, learned more, and had higher levels of team effectiveness, but only if task reflexivity was high. Hoegl and Parboteeah (2006) conducted a study among 145 software development teams and found further proof of the positive relationship between reflexivity and effectiveness as rated by team members. Surprisingly, however, in their study team reflexivity was not related with higher efficiency as measured by self-rating questionnaires. They explain this unexpected result by the fact that engaging in reflexive actions involves additional time and other costs (such as training of reflexive behavior, altering work strategies etc.). The thought that reflexivity might have a downside in terms of resource consumption is interesting, indeed, and points to the fact that reflexivity might be more helpful in certain circumstances, such as detrimental performance and/ or adverse working conditions, as discussed before. The predominance of studies highlighting the positive effect of reflexivity on performance, however, indicate that this downsize is usually offset by its gains in terms of effectiveness benefits.

### 4 Enhancing Reflexivity

Taken the strong empirical evidence for the positive effects of reflexivity and considering the fact that teams are often not spontaneously reflexive (Schippers, 2003),

it might be important to know whether and how reflexivity in teams can be initiated and enhanced. Indeed, lately, there have been promising attempts to intentionally induce reflexivity in order to foster productivity. Gurtner, Tschan, Semmer, and Nägele (2007) tested the effects of an intervention to provoke reflexivity within hierarchically structured groups of three that have been given a complex and dynamic task. Reflexivity was implemented by instructions to reflect on the task either individually or communicating with the group. Their results confirm that reflexivity instructions are effective in initiating the postulated effect of reflexivity on performance with groups in the reflexivity condition clearly performing better. Surprisingly, however, individual reflexivity was superior to group reflexivity. Additional analysis suggested that group reflexivity increased discussion of strategies that were rather too general to be helpful. Thus, this study emphasizes the importance of focusing on taskspecific strategies when implementing team reflexivity. Similarly, Müller, Herbig, and Petrovic (2009) studied 48 students of mechanical engineering work on a product development task in groups of three. They operationalized team reflexivity as the explication of and reflection on implicit team knowledge and found that those groups that have been instructed to collectively explicate their implicit individual knowledge (,individual explication') or to stimulate team communication about the task (,collective explication') produced qualitatively better and more innovative products. Also, Vashdi, Bamberger, Erez, and Weiss-Meilik (2007) qualitatively analyzed the impact of the implementation of briefing-debriefing sessions as a team-based reflexive learning and found three paths

by which structured team reflexivity enhances team outcomes: (1) by means of problem identification and solution, (2) by questioning taken-for-granted procedures, and (3) by generating and entrenching a team learning culture. Hence, these results have significant practical implications as, given that reflexivity instructions do not necessarily require high effort or much time, they can be regarded as a very promising tool for fostering effective group performance.

To sum up, the results presented overall support the link between team reflexivity and team effectiveness. It has been shown that reflexivity leads to more innovation (Tjosvold et al., 2004), higher team performance (Schippers, 2003; Tjosvold et al., 2003) and fosters team processes (Gevers et al., 2001). These results and especially the promising approaches to intentionally evoke reflexivity in teams (Gurtner et al., 2007; Müller et al., 2009; Vashdi et al., 2007) suggest that reflexivity not only should but can be fostered in teams in order to help them work more effectively.

#### 5 Discussion

The purpose of this paper was to provide a review of the last decade of research focused on the rather new concept of reflexivity. The evidence from our review supports the claim that reflexivity can be important to guarantee and foster team functioning. In addition, the evidence reviewed points to the significance of certain environmental characteristics, such as trust in teams or diversity that provide opportunities for or promote reflexive behavior. Finally, we note that some team characteristics, such as team stability or task interde-

> pendence may be necessary to allow these environmental characteristics to lead to more reflexivity in teams. Figure 2 summarizes the findings reviewed in this paper.

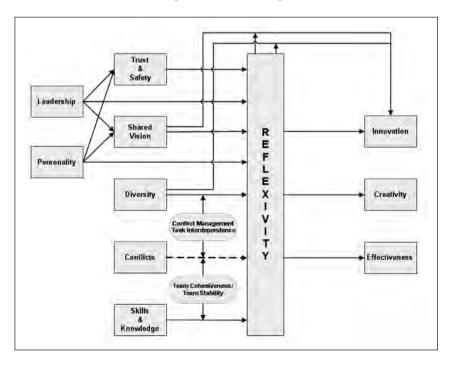


Figure 2: Summary of findings

Team working is demanding and complex since it requires team members to coordinate and integrate their efforts towards shared objectives. Teams are formed because their diverse skills are needed in order to accomplish a task that individuals working alone could not or would only do so less effectively or efficiently. However, the experience of team work for many is often characterized by an overwhelming workload leading to a survival mentality. High workload and acceptance of routines and standardized processes are both the enemies of innovation. It is therefore necessary for teams to find the cognitive, social and temporal space to enable them to reflect on the appropriateness of their objectives, the wisdom of their strategies, the efficiency of their processes and the reality of their changing environment. This reflection is likely to reveal the discrepancies in their ways of working which may produce work overload or argue against past routines and, consequently, define the space and direction of appropriate remedial or innovative action. Understanding whether and how reflexivity can enable team effectiveness is of huge importance in an organisational world increasingly dominated by team and inter-team working. The review above offers insights into our understanding in this area in order that our knowledge of how to develop and maintain truly effective team working can continue to be advanced.

## References

- Agrell, A., & Gustafson, R. (1994). The Team Climate Inventory (Tci) and Group Innovation - a Psychometric Test on a Swedish Sample of Work Groups. Journal of Occupational and Organizational Psychology, 67, 143-151.
- Ancona, D. G., & Caldwell, D. F. (1992). Demography and Design Predictors of New Product Team Performance. *Organization Science*, *3*(3), 321-341.
- Carter, S. M., & West, M. A. (1998). Reflexivity, effectiveness, and mental health in BBC-TV production teams. *Small Group Research*, *29*(5), 583-601.
- Cohen, S. G., & Bailey, D. E. (1997). What makes teams work: Group effectiveness research from the shop floor to the executive suite. *Journal of Management*, 23(3), 239-290.
- Cox, T. H., Lobel, S. A., & McLeod, P. L. (1991). Effects of ethnic group cultural difficulties on cooperative and competetive behavior on a groups task. *Academy of Management Journal*, *34*(4), 827-847.
- Cunliffe, A. L., & Easterby-Smith, M. (2004). From reflection to practical reflexivity: Experimental learning as livid experience. In M. Reynolds & R. Vince (Eds.), *Organizing Reflection* (pp. 30-46). Aldershot: Ashgate.

- Dawson, J., Schippers, M. C., & West, M. A. (2009). When do teams need to innovate? Reflexivity is key when the quality of work premises is low. Paper presented at the European Congress of Work and Organizational Psychology, Santiago de Compostela, Spain.
- De Dreu, C. K. W. (2002). Team innovation and team effectiveness: The importance of minority dissent and reflexivity. *European Journal of Work and Organizational Psychology*, 11(3), 285-298.
- De Dreu, C. K. W. (2007). Cooperative outcome interdependence, task reflexivity, and team effectiveness:

  A motivated information processing perspective. *Journal of Applied Psychology*, 92(3), 628-638.
- DenHartog, D. N., VanMuijen, J. J., & Koopman, P. L. (1997). Transactional versus transformational leadership: An analysis of the MLQ. *Journal of Occupational and Organizational Psychology*, 70(1), 19-34.
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350-383.
- Faludi, A. (1975). Planning theory. New York: Pergamon Press.
- Fay, D., Borrill, C., Amir, Z., Haward, R., & West, M. A. (2006). Getting the most out of multidisciplinary teams: A multi-sample study of team innovation in health care. *Journal of Occupational and Organizational Psychology*, 79, 553-567.
- Freidmann, J. (1966). The institutional context. In M. Gross (Ed.), Action under planning (pp. 31-67). New York: McGraw-Hill.
- Frese, M., & Zapf, D. (1994). Action as the core of work psychology: A German approach. In H. C. Triandis, M. D. Dunette & J. M. Hough (Eds.), *Handbook of Industrial and Organizational Psychology* (Vol. 4, pp. 271-340). Palo Alto, CA: Consulting Psychologists Press.
- Gevers, J. M. P., vanEerde, W., & Rutte, C. G. (2001). Time pressure, potency, and progress in project groups. *European Journal of Work and Organizational Psychology*, 10(2), 205-221.
- Gibson, C., & Vermeulen, F. (2003). A healthy divide: Subgroups as a stimulus for team learning behavior. *Administrative Science Quarterly*, 48(2), 202-239.
- González-Romá, V., & West, M. A. (2004). *Agreeing to Disagree: Climate strength and innovation in work teams*. Unpublished manuscript, Valencia, Spain.
- Gurtner, A., Tschan, F., & Bogenstätter, Y. (2009). Do social stressors trigger or inhibit task reflexivity? The moderating role of team stability, task interdependence and goal clarity. Paper presented at the Academy of Management Annual Meeting. Chicago, Illinois.

- Gurtner, A., Tschan, F., Semmer, N. K., & Nägele, C. (2007). Getting groups to develop good strategies: Effects of reflexivity interventions on team process, team performance, and shared mental models. Organizational Behavior and Human Decision Processes, 102(2), 127-142.
- Hacker, W. (1985). Activity: A fruitfull concept in industrial psychology. In M. Frese & J. Sabini (Eds.), Goal directed behavior: The concept of action in psychology (pp. 262-283). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Hacker, W. (2003). Action regulation theory: A practical tool for the design of modern work processes? European Journal of Work and Organizational Psychology, 12(2), 105-130.
- Hambrick, D. C., Cho, T. S., & Chen, M.-J. (1996). The influence of top management team heterogenity on firm's competitive moves. *Administrative Science Quarterly*, 41(4), 659-684.
- Harrison, D. A., Price, K. H., Gavin, J. H., & Florey, A. T. (2002). Time, teams, and task performance: Changing effects of surface- and deep-level diversity on group functioning. *Academy of Management Journal*, 45(5), 1029-1045.
- Haward, R., Amir, Z., Borrill, C., Dawson, J., Scully, J.,
  West, M. A., et al. (2003). Breast cancer teams:
  The impact of constitution, new cancer workload,
  and methods of operation on their effectiveness.
  British Journal of Cancer, 89, 15-22.
- Hinsz, V. B., Tindale, R. S., & Vollrath, D. A. (1997). The emerging conceptualization of groups as information processors. *Psychological Bulletin*, *121*(1), 43-64.
- Hirst, G., & Mann, L. (2004). A model of R&D leadership and team communication: The relationship with project performance. *R&D Management*, *34*(2), 147-160.
- Hirst, G., Mann, L., Bain, P., Pirola-Merlo, A., & Richter, A. (2004). Learning to lead: The development and testing of a model of leadership learning. *The Leadership Quarterly*, 15(3), 311-327.
- Hoegl, M., & Parboteeah, K. P. (2006). Team reflexivity in innovative projects. *R & D Management*, *36*(2), 113-125.
- Jehn, K. A. (1995). A Multimethod Examination of the Benefits and Detriments of Intragroup Conflict. *Administrative Science Quarterly*, 40(2), 256-282.
- Jehn, K. A., Northcraft, G. B., & Neale, M. A. (1999).
  Why differences make a difference: A field study of diversity, conflict, and performance in work groups. Administrative Science Quarterly, 44(4), 741-763.
- Kramer, R. M., & Tyler, T. R. (1996). Trust in organizations. Thousand Oaks, CA: SAGE.

- Lee, L. T. (2008). The effects of team reflexivity and innovativeness on new product development performance. *Industrial Management and Data Systems*, 108(4), 548-569.
- Miller, G. A., Galanter, E., & Pribram, K. H. (1960).

  Plans and the structure of behavior. London: Holt.
- Müller, A., Herbig, B., & Petrovic, K. (2009). The explication of implicit team knowledge and its supporting effect on team processes and technical innovations: An action regulation perspective on team reflexivity. *Small Group Research*, 40(1), 28-51.
- Pelled, L. H., Eisenhardt, K. M., & Xin, K. R. (1999). Exploring the black box: An analysis of work group diversity, conflict, and performance. *Administrative Science Quarterly*, 44(1), 1-28.
- Riordan, C. M., & McFarlaneShore, L. (1997). Demographic diversity and employee attitudes: An empirical examination of relational demography within work units. *Journal of Applied Psychology*, 82(3), 342-358.
- Schippers, M. C. (2003). *Reflexivity in teams*. Amsterdam: Vrije Universiteit Amsterdam.
- Schippers, M. C. (2004). Learning to learn at school: Reflexivity, team composition and school performance. Paper presented at the Academy of Management Meeting, New Orleans, Louisiana.
- Schippers, M. C., Den Hartog, D. N., & Koopman, P. L. (2007). Reflexivity in teams: A measure and correlates. *Applied Psychology-An International Review*, 56(2), 189-211.
- Schippers, M. C., Den Hartog, D. N., Koopman, P. L., & van Knippenberg, D. (2008). The role of transformational leadership in enhancing team reflexivity. *Human Relations*, *61*(11), 1593-1616.
- Schippers, M. C., Den Hartog, D. N., Koopman, P. L., & Wienk, J. A. (2003). Diversity and team outcomes: the moderating effects of outcome interdependence and group longevity and the mediating effect of reflexivity. *Journal of Organizational Be*havior, 24(6), 779-802.
- Schippers, M. C., & Homan, A. C. (2009). *Breaking the negative performance spiral: The role of team reflexivity and team learning.* Proceedings of the Sixty-Eighth Annual Meeting of the Academy of Management (online program).
- Senge, P. M. (1990). The fifth discipline: The art and practice of the learning organization. New York: McGraw-Hill.
- Somech, A. (2006). The effects of leadership style and team process on performance and innovation in functionally heterogeneous teams. *Journal of Management*, *32*(1), 132-157.
- Sonnentag, S. (1998). Expertise in professional software design: A process study. *Journal of Applied Psychology*, 83(5), 703-715.

- Swift, T. A., & West, M. A. (1998). *Reflexivity and group processes: Research and practice*. Sheffield: The ESRC Center for Organization and Innovation.
- Tjosvold, D. (1991). *Team organization. An enduring competitive advantage*. New York: John Wiley and Sons.
- Tjosvold, D., Hui, C., & Yu, Z. (2005). Conflict management and task reflexivity for team in-role and extra-role performance in China. *International Journal of Conflict Management*, 14(2), 141-163.
- Tjosvold, D., Tang, M. M. L., & West, M. A. (2004). Reflexivity for team innovation in China: The contribution of goal interdependence. *Group & Organizational Management*, 29(5), 540-559.
- Tjosvold, D., Wong, A., Nibler, R., & Pounder, J. S. (2002). Teamwork and controversy in undergraduate management courses in Hong Kong: Can the method reinforce the message? *Swiss Journal of Psychology*, 61(3), 131-138.
- Van der Vegt, G. S., & Bunderson, J. S. (2005). Learning and performance in multidisciplinary teams: The importance of collective team identification. *Academy of Management Journal*, 48(3), 532-547.
- van Knippenberg, D., De Dreu, C. K. W., & Homan, A. C. (2004). Work group diversity and group performance: An integrative model and research agenda. *Journal of Applied Psychology*, 89(6), 1008-1022.
- van Knippenberg, D., & Schippers, M. C. (2007). Work group diversity. *Annual Review of Psychology*, 58, 515-541.
- Vashdi, D. R., Bamberger, P. A., Erez, M., & Weiss-Meilik, A. (2007). Briefing-debriefing: Using a reflexive organizational learning model from the military to enhance the performance of surgical teams. *Human Resource Management*, 46(1), 115-142.
- Weingart, L. R. (1992). Impact of Group Goals, Task Component Complexity, Effort, and Planning on Group-Performance. *Journal of Applied Psychology*, 77(5), 682-693.
- West, M. A. (1990). The social psychology of innovation in groups. In M. A. West & J. L. Farr (Eds.), *Innovation and creativity at work. Psychological and organizational strategies* (pp. 309-334). Chichester: John Wiley & Sons Ltd.

- West, M. A. (1996). Reflexivity and work group effectiveness: A conceptual integration. In M. A. West (Ed.), *Handbook of Work Group Psychology* (pp. 555-579). Chichester: John Wiley & Sons Ltd.
- West, M. A. (2000). Reflexivity, revolution and innovation in work teams. In D. A. Johnson & S. T. Beyerlein (Eds.), *Advances in the interdisciplinary study of work teams: Product development teams* (pp. 1-29). Stamford, Connecticut: JAI Press.
- West, M. A. (2004). *Effective teamwork: Practical lessons from organizational research* (2nd ed.). Oxford: Blackwell Publishing.
- West, M. A., Garrod, S., & Carletta, J. (1997). Group decision-making and effectiveness: Unexplored Boundaries. In C. L. Cooper & S. E. Jackson (Eds.), *Creating tomorrow's organizations* (pp. 293-317). Chichester: Wiley.
- West, M. A., & Richter, A. (2008). Climates and cultures for innovation and creativity at work. In J. Zhou & C. E. Shalley (Eds.), *Handbook of Organizational Creativity* (pp. 211-236). New York: Psychology Press.
- West, M. A., Utsch, A., Borrill, C. S., & Dawson, J. F. (2002). *Diversity, demands and team innovation*. Unpublished manuscript, Birmingham.
- Williams, K. Y., & O'Reilly, C. A. (1998). Demography and diversity in organizations: A review of 40 years of research. In B. Staw & L. Cummings (Eds.), *Research in organizational behavior* (Vol. 20, pp. 77-140). Greenwich, CT: JAI Press.

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