Managing culturally diverse virtual teams:

A systematic literature review

Soo Jeoung Han
Michael Beyerlein
Texas A&M University

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Abstract

This study aims to identify factors that affect the processes and performance of culturally diverse teams in a virtual environment. Globalization of the economy has led to growth of multinational corporations and international supply chains. The technology revolution has enabled increased multiculturalism in the distributed workplace. Due to this trend, virtual teamwork is one of the prospective areas to study and practice. In this paper, a systematic review of the literature was conducted to identify previous empirical studies in virtual team research from 1998 to 2013 focusing on culturally diverse virtual teams (CDVTs). We reviewed findings focusing on the critical factors regarding processes and outcomes in CDVTs. Based on this review, we suggest implications for HRD research and practices regarding CDVTs.
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Multinational corporations are becoming commonplace in many countries supported by the technology revolution and resulting in a multicultural workplace (Bhadury et al., 2000). Today’s organizations increasingly recognize the importance of working in culturally diverse teams in a virtual setting. The need to connect experts located worldwide necessitates studying the impact of cultural diversity on virtual team performance. A recent management survey notes most offices (77%) say that they are increasingly required to manage cross-functional and virtual teams (Dent et al., 2013).

A growing area of Virtual Human Resource Development (VHRD) emphasizes the collaborative and social nature of virtual work in a culturally diverse environment (Bennett, 2009). However, virtual teams may face challenges in working at a distance, across time zones, and across cultures (Chevrier, 2003). Working effectively as a group remains a challenge, because people tend to resist working with those who have different goals, cultural values, and characteristics. The Similarity Attraction paradigm (Tziner, 1985) and Social Attraction theory (Mannix & Neale, 2005) argue homogeneous groups will facilitate better team performance due to similarity in values, beliefs, and attitudes. However, as the contemporary workforce becomes more diverse due to globalization, it is difficult to find homogeneous groups.

Problem Statement

This study adds values to theories and practices in several ways. First, it is important to investigate critical factors that affect global virtual team performance because the context and dynamics in virtual team settings tend to differ from those in face-to-face team settings (Staples and Zhao, 2006). For example, face-to-face teams can develop trust by social and emotional
interactions, whereas virtual teams tend to develop trust by sharing timely information and appropriate responses to electronic communication, which are task-based relationships (Henttonen and Blomqvis, 2005).

Second, there has been little work that provides comprehensive understanding of different cross-cultural experiences working as virtual teams. The effectiveness of face-to-face teams with culturally diverse groups and their teamwork have been studied for more than a decade by many scholars (Vodosek, 2007). However, the exploration of the virtual team phenomenon within culturally diverse teams is critical because of changes in business processes due to technological growth.

In addition, little analytical attention has been given to the impact of cultural diversity, compared to other types of diversity such as age, gender, and education. Especially, limited research has been developed on impact of cultural diversity in a virtual teamwork setting. Cultural diversity on the deeper level trait such as belief or value can affect negatively to members’ experiences in organizations (Martins et al., 2004). This study seeks to fill the gap in the literature by exploring multiple factors that can contribute to virtual team performance while working with people from different cultures.

**Research Purpose and Questions**

The purpose of this study is to examine critical factors that affect team processes and performance in a virtual environment when employees are working in culturally diverse teams. The following research questions guide this inquiry: (a) how does cultural diversity impact team processes and performance differently from face-to-face and virtual settings? (b) which aspects of cultural diversity affect team processes and performance in a virtual environment? This study
can help determine which aspects of cultural diversity influence team functioning significantly and provide implications for HRD professionals to take a role as team process facilitators.

**Research Methods**

**Method**

The purpose of this study is to examine cultural diversity in teamwork and its effect on team processes and performance in a virtual environment. To pursue this purpose, a systematic review of the literature was conducted to identify previous empirical studies in virtual team research focusing on culturally diverse teams. Systematic reviews clearly formulate the question, identify relevant studies, appraise their quality and summarize the evidence by use of explicit methodology (Moher et al., 2007). We construct the framework by integrating several well-known existing virtual team models available in the literature. The review is organized around a life cycle model adapted from Saunders (2000), which includes four general categories of variables: inputs, socio-emotional processes, task processes, and outputs.

**Selection Criteria**

This study focused on empirical studies of cultural diversity teamwork in a virtual setting to determine factors that foster team performance. For inclusion in this review, articles had to be: (a) published in peer-reviewed journals, (b) published between 1998 (when studies of virtual teams were launched) and 2013, and (c) empirical studies that involved cultural diversity factors pertaining to inputs, socio-emotional processes, task processes, and outputs in a virtual team setting. Among the total of 160 articles identified using the keyword search, only 70 of the identified studies met these selection criteria. A total of 70 empirical articles were included in the review with these settings: lab studies, case studies, and teams in both universities and organizations.
Search Process

Several steps were conducted to search articles. First, research studies and other scholarly content were found using multiple databases. By using ProQuest, four databases were utilized: PsycINFO, ERIC, Sociological Abstract, and ABI/INFORM. Through EBSCO, four additional databases were searched: Academic Search Complete, Business Source Complete, Communication and Mass Media Complete, and Communication Abstracts. The following search terms and an extensive list of relevant key words were used: cultural or ethnic diversity, virtual and team, virtual and group, e-team or e-virtual, cross-cultural or global or multinational, and computer-mediated communication. Second, a scan of the reference lists from the articles was conducted. The rationale of the choice is consistent with our focus: to identify different factors that affect virtual teams, which can be applied to the context of HRD.

Data Analysis Procedure

The first author created two matrices in a word document to code each study. The first matrix shows the summary of literature with several codes such as authors, year, study type, subject, team size, time frame, theory used, processes, factor(s) examined in processes, and results. In the second matrix, the first author visualized major factors investigated by the articles reviewed in this paper utilizing the life cycle model such as team input, socio-emotional processes, task processes, and outcome. The first author carefully read the abstract, introduction, literature review, and discussion sections to code each component using the matrix.

Cultural Diversity in Virtual Teams: A Review of the Literature

The purpose of this study is to examine how cultural diversity affects team processes and performance in a virtual environment. To pursue this purpose, first, culturally diverse virtual teams (CDVTs) were defined. Second, the relationships between cultural diversity and team
performance were explored in a face-to-face setting to understand the differences between a virtual and a face-to-face setting. Finally, several factors of team processes that influence team performance in a face-to-face setting were identified.

**Defining Culturally Diverse Virtual Teams (CDVTs)**

To define CDVTs, two components—(a) virtual team and (b) cultural diversity—were explored in the literature. In this section, definitions of virtual team, cultural diversity, global virtual teams, and intra-national virtual teams are discussed to fully understand the meaning of CDVTs.

**Virtual team.** As more teams interact virtually, there has been an increase of definitions of virtual teams. Virtual teams generally consist of geographically and/or organizationally dispersed members who work toward a shared goal by using various kinds of technologies (Ale Ebrahim et al., 2009). A virtual team relies on media interaction such as chat, e-mail, audio conference, and video conferencing for members to interact with one another without needing to meet face-to-face (Hertel et al., 2005). Most of the definitions of virtual teams include two factors, geography and time (Montoya-Weiss et al., 2001) in different time zones (Kayworth and Leidner, 2000).

**Cultural diversity.** Another literature stream is on cultural diversity. Typically, diversity is defined as a characteristic of groups of two or more people and usually indicates demographic differences among group members (McGrath et al., 1995). Two layers of diversity were categorized: surface-level such as age, gender, race, and physical disabilities (Mannix and Neale, 2005) and deep-level attributes such as cognitive ability, personality traits, values, beliefs, and attitudes (Harrison et al., 2002).
In this study, cultural value was mainly explored among different diversity factors. Many researchers agreed it is difficult to define culture itself because culture consists of many implicit and explicit elements such as behaviors, values, norms, and basic assumptions (Groeschl and Doherty, 2000). According to Cox (1994), cultural diversity means “the representation in one social system, of people with distinctly different group afflictions of cultural significance” (p. 6).

In the context of virtual teams, culture has several distinct aspects: individual, team, organizational, and national culture. However, this study focuses on national culture as a part of cultural diversity. A common definition of national culture is offered by Hofstede (1980) as a collective phenomenon and the collective programming of the mind that distinguishes the members of one group or category of people from another. The reason to focus on national culture in this paper is because it can cause more complex issues than organizational culture (Dreo et al., 2002). For example, national culture often dictates an individual's orientation toward hierarchy, time, individualism, etc.

We included studies of global virtual teams as well as multicultural virtual teams within one country, which are called intra-national virtual teams (Stahl et al., 2009). Much research uses the term, global virtual teams, to indicate one of the CDVTs. Global teams, as defined by Maloney and Zellmer-Bruhn (2006), differ from other teams on the following two characteristics: (a) a globally dispersed work environment, and (b) heterogeneity on multiple dimensions. Several researchers focused exclusively on “global virtual teams” (Maznevski and Chudoba, 2000).

On the other hand, intra-national diversity in teams is explored to understand domestic teams’ cultural differences, which influence the team members’ way of working (Duarte and Snyder, 2011). It is possible that a domestic virtual team could have as much diversity as an
international team, or even more. Subtler differences among team members from different regions of the same country may be enough to negatively impact a virtual team (Robey et al., 2000). Therefore, we examined the two types of CDVTs—global virtual teams and intra-national virtual teams.

Culturally Diverse Team and Impact on Team Processes and Performance

There is a body of literature that shows how cultural diversity within teamwork affects team performances in a face-to-face setting. Depending on different contexts, conditions, and research focuses, both positive and negative outcomes have been shown in previous research. The benefits of cultural diversity in organizations are that individuals can bring the broad array of knowledge, experiences (Cox et al., 1991), and possible alternatives (Carrell et al., 2000). Others contend the negative outcomes of diverse teams were explored compared to homogenous groups such as the lower level of social integration and team performance (Suwannarat and Mumi, 2012).

Depending on the team processes, the result of team performances can be determined in a face-to-face team setting. Team processes can be generally classified into task processes and socio-emotional processes (Marks et al., 2001; Saunders, 2000). Task processes occur among team members to accomplish a task or goal such as communication and coordination. On the other hand, socio-emotional processes refer to relationships among group members, so they focus on team cohesion, trust, affect, and social integration.

Regarding task processes in culturally diverse team studies, recent studies discovered that when the entire group shares common goals and values, cultural diversity has a positive effect on group work effectiveness (Chatman et al., 1998). Regarding socio-emotional processes, the emotional strengths of a team such as support, collaboration, and morale not only create good
team attitude but also contribute to increased organizational performance (Gardenswartz and Rowe, 2003).

**Research Findings**

To compete in the global economy, organizations are forced to work with global virtual teams (Lu et al., 2005). When it comes to cultural diversity in a virtual team, it is certain that culture represents one of the virtual team's most significant boundaries. CDVTs’ positive aspects enable companies to combine skills, talents, and other advantages from people across the globe. Even though there are some benefits of CDVTs, cultural heterogeneity means greater complexity (Pauleen, 2004). People tend to interpret information based on their cultural values and biases, which lead to misinterpretations. Perceived differences in national cultures can lead to unhealthy national stereotypes in CDVTs (Au and Marks, 2012).

In this section, a team input—the role of cultural diversity and virtuality—will be explored. Their effects on team processes and outcomes will then be identified based on recurring themes that have emerged in this research to date.

**Culturally Diverse Virtual Team Input**

It is important to understand specific knowledge about the potential barriers and opportunities that cultural diversity provides. In this paper, one of the CDVT input, cultural value, was explored to understand processes and outcome in a virtual team setting.

**Cultural value.** Most of the global virtual team studies hypothesize differences of cultural values can have influence team performance. Depending on which cultural values individuals possess, team processes and performance can be influenced differently. Cultural and regional influences play a major role in the behavior and operations of a team (Kirkman et al., 2001). The benefit of cultural difference in the form of diverse ideas, values, and attributes is in
the way that it helps teams achieve remarkable results (DiStefano and Maznevski, 2000).

However, virtual work environments can increase cultural barriers even more than face-to-face teamwork because it is difficult to learn others’ culture from simply interacting on-line. Culture can be learned naturally while one is talking to people face-to-face, but people tend to focus only on a job assignment during a virtual team meeting.

One possible difference in cultural values is based on individualism (self-interest) and collectivism (group interest) behavior, which can affect the effectiveness of global virtual teams. For example, national culture also appears to affect interaction in virtual teams, such that members from individualistic cultures tended to challenge majority positions more than members from collectivist cultures (Tan, et al., 1998). Another possible difference in cultural values can be on low or high context cultures. According to Kalbfleisch (2005), individuals raised in low context cultures experience more satisfaction and productivity in virtual teams than those raised in high context cultures. This is because the former depends more on precise language while the latter depends on non-verbal and contextual cues that would be unavailable to them in a virtual environment.

**Culturally Diverse Virtual Team Processes**

Cultural diversity influences team processes and the way team members interact with each other (Connaughton and Shuffler, 2007). Research suggests that cultural diversity affects a variety of team processes regarding task oriented and socio-emotional reactions, which in turn influence team performance (Mannix and Neal, 2005). In this section, each factor is discussed to examine how cultural diversity in a virtual setting impacts team processes and performance.
**Task processes.** As mentioned in the previous section, task processes include how team members can achieve a goal. Communication, goal-setting, coordination, and leadership are all factors to consider in task processes.

**Communication.** The majority of studies note communication is a major concern for CDVTs because cultural and language differences are common in global virtual teams. These findings coincide with the existing literature (Kayworth and Leidner, 2000; Suchan and Hayzak, 2001; van Ryssen and Godar, 2000). However, other researchers argue virtual communication can make cultural differences less noticeable, because electronic media may increase the perceived similarity among members (Jarvenpaa and Leidner, 1998). For example, the lack of nonverbal (e.g., dressing and greeting) and verbal cues (e.g., accent) eliminates evidence of surface-level diversity. Members also can have more time to process a message and respond, so there may be less chance to have language errors. Another study reveals that certain types of media are more useful for certain types of knowledge sharing depending on the cultural differences (Klitmøller and Lauring, 2013).

**Goal setting.** When different cultures are united in a team, goal setting procedures can be challenging. According to Pauleen (2004), the members may lack the shared meaning, language, pattern, and routine needed to agree on a shared purpose, goals, and priorities. CDVTs may even have issues dividing tasks, coordinating work, handling conflict, and formulating rules. In a virtual world, it would be difficult to negotiate the different visions of the team members into a coherent and workable scheme (Pauleen, 2004). CDVTs need to form and adhere to norms based on knowledge, skills, and abilities (Krumm et al., 2013).

**Coordination.** The component of coordination can be affected by different factors such as different time zones, gaps among technology infrastructures, and differences in technology
proficiency among team members (Kayworth and Leidner, 2000). When it comes to members’ cultural differences, management and coordination of CDVTs becomes extremely complex (Kayworth and Leidner, 2000). A number of virtual team studies have examined cultural differences appear to lead to coordination difficulties (Kayworth and Leidner, 2000; Maznevski and Chudoba, 2000; Robey et al., 2000).

**Leadership.** In CDVTs, the leadership roles of social facilitation and communications processing takes on added importance as compared to more traditional work groups (Kayworth and Leidner, 2000; Kayworth and Leidner, 2002). Virtual team leaders can help teams to develop supportive behaviors by offering the four categories of leadership behaviors that encourage virtual team performance: communicating, establishing expectations, allocating resources, and modeling desired behaviors (Duarte and Snyder, 2011). Kayworth and Leidner (2000) noted effective team leaders could set clear goals for each member and provide constant feedback of their performances. They could also be able to engage in activities to build cohesiveness and have empathy expressed towards other team members.

**Socio-emotional processes.** The socio-emotional processes of a team relate to relationships among group members. In this section, each factor in socio-emotional processes was discussed to examine how cultural diversity impacts team processes and performance in a virtual setting. Trust and relationships are factors to consider in the socio-emotional processes.

**Swift trust.** When facing such cultural disparity, it may be more difficult to establish trust, delaying the time a team requires to become effective. The results of case studies suggest trust appears to be fragile and temporal in global virtual teams (Jarvenpaa and Leidner, 1998). Therefore, virtual teams are known to develop “swift trust” rather than cognition or affect-based trust. Swift trust is different form of trust because team members, who have not yet built
confidence in the integrity and ability of their members, are required to suspend uncertainty to achieve the established goals (Germain, 2011). To maintain trust, social communication can strengthen trust rather than task communication, for example, members have to explicitly verbalize their excitement and optimism (Jarvenpaa and Leidner, 1998).

**Relationship building.** The teams’ processes and team members’ relations presented the strongest connections to team performance and team member satisfaction (Lurey and Raisinghani, 2001). This is an interesting point, because analysis of predictor variables such as the design process, other internal group dynamics, and additional external support mechanisms depicted weaker relations (Lurey and Raisinghani, 2001). Some studies demonstrate how a difference in individual cultural backgrounds will affect the group process and effectiveness when working with CDVTs. To increase social interaction and relationships, the study suggests encouraging team members to examine their own personal culture and share their prior experiences in working with culturally diverse groups (Humes and Reilly, 2008).

**Shared emotion display norms.** Shared emotion display norms could be important in CDVTs, because displayed emotions may impact team processes and performance either positively or negatively depending on the expresser’s intentions and the receiver’s interpretation (Elfenbein and Shirako, 2006). Many empirical findings suggest work-team processes and outcomes are influenced by team emotional context. Emotion display norms suggest rules for the appropriate display of emotions in different social settings. In virtual teams, the study shows CDVT members tend to show more agreement on the proper display norms for both positive and negative emotions than culturally homogeneous teams (Glikson and Erez, 2013). The emergence of norms about the display of emotions in CDVTs can influence interpersonal relationships, team processes, and decision making (Barsade and Gibson, 2012).
Discussion

In the previous section, we identified several critical factors that affect team processes and performance within CDVTs. We created a CDVT process framework categorizing them into task and socio-emotional processes (See Figure 1). Researchers classified most factors in CDVT processes a challenge rather than a benefit. This study found a body of CDVT studies that considers communication as a critical component for team success. Coordination, leadership, and shared emotional display norms received less attention in that sample of literature. Team performance was mainly explored rather than team satisfaction.

Figure 1. CDVT Process Framework

In this section, we will provide our interpretation of findings in relation to current literature. It is important to view team processes in an integrated way, because each process is interconnected and influences each another. Even if a majority of studies argue that both task and socio-emotional team processes in CDVTs are barriers due to cultural differences of individuals, it is important to consider other factors that affect CDVT performance. For example,
McDonough et al. (2001) find that challenges regarding task processes (e.g., setting goals, budgets, schedules, resources, identifying needs) are more related to distance between members rather than to cultural differences.

Socio-emotional processes represent an area in which major gaps exist in the literature on CDVTs. There has been little research conducted on interpersonal processes in virtual teams related to long-term group outcomes, such as affect management, group emotion, collective efficacy, and social integration (Martins et al., 2004). Even though many studies note socio-emotional processes are major barriers to CDVT performance, Walther (1996) found evidence that virtual interactions can lead to development of more intense interpersonal relationships than face-to-face, because virtual interactions allow individuals more control over how they present themselves. Thus, research needs to focus on how individuals can successfully present themselves in a positive way. Systems and leadership can help provide ongoing feedback and coaching to teammates so that members can be aware of each other’s performance (Geister et al., 2006).

**Recommendations for HRD Researchers**

In this section, we suggest several future research directions for HRD researchers. First, researchers can investigate the relationships between CDVT process variables and develop a cultural diversity team management model by additional investigations of a quantitative and qualitative nature. In addition, it would be useful to include a qualitative approach to know why and how cultural values lead to virtual team performance. Even though collaborative technologies can reduce the salience of surface-level diversity like ethnicity, it is critical to see how deep-level diversity like values can affect virtual team performance. Results showed in
CDVT studies, deep-level diversity has a more significant relationship with team processes of mutual trust and knowledge sharing than surface-level diversity (Pinjani and Palvia, 2013).

Second, further research needs to be done to understand how national culture and other types of cultures influence each other. This study mainly looked at the impact of national cultural diversity, but Dreo et al. (2002) describe corporate/team cultures as the culture that exists within an organization have more influence than industry, gender, or age. However, research has not yet systematically examined the aspects of organizational and team culture in the context of virtual teams (Connaughton and Shuffler, 2007).

**Recommendations for HRD Practitioners**

Managing culturally diverse virtual teams can be a new emphasis among HRD practitioners. The role of VHRD has become vital for increasing the learning capacity and the facilitating work processes of employees and teams in organizations (Fazarro and McWhorter, 2011). Therefore, we recommend the following for HRD practitioners who are preparing to manage CDVTs.

First, this study shows several challenges with CDVTs that can have a negative impact on an organization. Based on this study, HRD professionals can offer strong evidence for the need to identify and improve the critical factors of virtual team performance. Professionals could help in several ways with the challenges by considering who gets assigned to the team, what orientation training occurs before the team starts work, and how team processes should be facilitated to make the goal and values more explicit.

Second, this study helps HRD professionals to act as facilitators in the virtual environment to sustain the effectiveness of team processes from the perspective of learning and collaboration. Each professional should play a key role in building and supporting systems that
promote learning and knowledge sharing (Bennett, 2009), which is critical in virtual teams. Practitioners should understand the influence of cultural diversity in team functioning and help facilitate team processes by developing individual skills to fulfill the organization goal.

**Conclusion**

To conclude, it is important to fully understand factors that affect team process and performance of CDVTs because of their growing role in supporting organizational success. Virtual teams are not electronic representations, because they are made up of people who exist in the real world. Hence, the characteristics of virtuality need to be built into their culture. Through this study, we have found several authors, who have attempted to identify key success factors for virtual teams such as communication, shared purpose, norms, and trust. The negative effect of cultural differences may be alleviated by an effort to actively understand and accept the differences (Robey et al., 2000). Au and Marks (2012) argue the importance of encouraging team members to value and understand differences to promote a common goal that fosters identification in international virtual teams.

If cultural diversity is well managed, it can become an asset for a team, and if cultural diversity is overlooked, it may hinder team performance. Future researchers and practitioners need to emphasize how to make diversity an asset. Much research and theory has overly emphasized the negative aspects of team diversity (e.g., similarity-attraction theory and social attraction paradigm), which can limit the understanding of the dynamic nature of diverse teams. It is necessary to manage a positive approach to increase the benefits of diversity instead of focusing on negative issues and manage to minimize those issues in culturally diverse teams (Stahl et al., 2010). Organizations can use the creative side of teams and respect their different perspectives while utilizing their full capability, even in a virtual world.
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