Global Virtual Teams' (GVTs) Performance: Online Training and Development, Organizational Commitment, and Motivation

Ali Yahya Gheni, Yusmadi Yah Jusoh, Marzanah A. Jabar, Norhayati Mohd Ali

1Department of Software Engineering & Information System, Universiti Putra Malaysia (UPM), 43400 Serdang, Selangor, Malaysia; Department of Computer Science, University of Baghdad, Baghdad, Iraq.
2, 3, 4Department of Software Engineering & Information System, Universiti Putra Malaysia (UPM), 43400 Serdang, Selangor, Malaysia.

Received 17 June 2016; Accepted 28 July 2016; Published 20 August 2016

Address For Correspondence:
Yusmadi Yah Jusoh, Department of Software Engineering & Information System, Universiti Putra Malaysia (UPM), 43400 Serdang, Selangor, Malaysia.

Copyright © 2016 by authors and American-Eurasian Network for Scientific Information (AENSI Publication). This work is licensed under the Creative Commons Attribution International License (CC BY). http://creativecommons.org/licenses/by/4.0/

ABSTRACT
The global virtual teams (GVTs) comprise of team members who are geographically dispersed, culturally varied, and mainly depends on information and communication technologies (ICT) to communicate with each other's. In spite of technological leverages, the GVTs facing many challenges that affect their performance. Hence, the online training and development is very important for GVTs to perform. The main goal of online training and development is to improve the skills and behaviors of the GVTs, which leads to increase the performance of the team. A systematic literature review was conducted to answer two research questions. The first research question is to investigate the relationship between online training and development and global virtual teams' performance. The second research question is to find out the existing frameworks involving online training and development in GVTs. Then, the related frameworks are analyzed to highlight the gaps and limitations for each of them. The findings indicated that there is a positive relationship between online training and development and global virtual teams' performance. The existing frameworks are overlapped in some variables such as online training and global virtual teams' performance. However, the existing frameworks are still not sufficient to measure the performance of GVTs. A Performance Measurement Framework for GVTs was proposed to assist the project manager on measuring the global virtual teams' performance involving the online training and development, organizational commitment, and motivation based on defined key performance indicators (KPIs).

KEYWORDS: Global virtual teams (GVTs), global virtual teams’ performance, online training and development, organizational commitment, motivation, Key Performance Indicators (KPIs).

INTRODUCTION
Globalization and technology have major impact on work. In the global economy, new talent has to be developed to address the new challenges of global competition. Even as technology has addressed these complexities, it has unleashed new opportunities for connectivity and collaboration across national, cultural, social, and organizational boundaries. In a global business environment, organizations need to develop new...
skills with diverse stakeholders across borders. Online training has always been an important concern in organizations. It is now even more critical as a source of competitive advantage in the global economy [1]. The structures of the paper are as follows: Next section presents the related works to this research topic which include the definitions of concepts according to the literature. Section 3 presents the methodology that the researchers used to conduct this research. Section 4 discusses the results of this research. Next, the formulation of the proposed framework is presented in section 5. Finally, section 6 presents the conclusion and future works.

Related Works:
The definition of concepts:
The definition of the study as below:

Global virtual teams (GVTs):
The GVT is a group of people in two or more countries, working together on an interdependent task, using information and communication technology to achieve their goals. This is a minimal definition of GVTs. As discussed in the preceding text, GVTs can be further good based on the number and variety of cultures, time zone boundaries that are represented in the team, the extent to which they use information and communication technologies to interact, and the level to which they function as a true team [1].

Online training and development:

Bhattacharyya (2015), defines the online training or E-training as ‘a process of offering training programs to employees via the web through the internet or a networked computer’. Employees can pace their learning depending on their flexibility and development needs. Online training is a better option than the instructor-led face-to-face classroom training when the organizations are geographically dispersed and training is required for every employee and even the stakeholders, such as customers, dealers, vendors and investors [2].

Global virtual teams’ performance:

Many organizations develop a system to measure the performance of the teams’ and individuals’ outcomes. Some organizations focus on performance teams’ outcomes because they believe that they do not jeopardize team cohesiveness by focusing too much on individuals’ performance. Most organizations, however, choose the teams’ and individuals’ outcomes. In face-to-face teams, individual output may be more obvious than in a virtual setting. Thus, GVTs measures must provide for the explicit determination of individual contributions [3]. For example, from the team outcomes perspective, organizations assess typical team outcomes like the quality, quantity, creativity, cost, and timeliness of the team’s deliverables. In the individual outcome domain, organizations assess the same outcomes at the individual level, but they may also assess the extent to which each individual team member meets personal deadlines or milestones to the overall performance of the team [3].

Existing Frameworks:
The organizations conducted internal online training on GVTs management, as a basis for the course structure, to increase knowledge and proficiency on the collaborative tools and global project management practices. The GVTs managers and team members attending the online training programs to learn and discuss the main recommendations, practice coaching and brainstorming over distance, use the collaborative tools, rules and templates during the exercises and try the global communication techniques. Cross-cultural training can complement these sessions and, with, practical exercises on team leadership, conflict and negotiation skills, and cultural variety [4].

GVTs depends on (ICT) to communicate with each other’s. Most organizations spent money on these technologies but not on teaching people how and when to use it. There is a need to develop a formal training curriculum in using technologies, and make certain that team members have access to online training. Furthermore, there is a need to implement systems for sharing knowledge across functions, projects, and organizations and to consider the online training as a first step to use the system [5].

There is a need for direction in GVTs communication for the educators, corporate trainers, consultants, and corporate Human Resources development officers, as well as managers and leaders of GVTs. The communication channel, possibly with responsible ease and design either short- or long-term instructional experiences that have long-lasting implications for productivity in today’s global workforce. The most effective design for direction in GVTs communication is based on experiential learning where participants use cross-cultural, team, and virtual communication skills concurrently in realistic [6].

GVTs have many management challenges and conflicts as well. The study conducted by [7] to explore an approach on improving the effectiveness of global team measurement practices among GVTs members in Taiwan. The findings are summarized as follows: 1) there is a positive relationship between leadership and decision quality, between trust and decision quality, and between online training and decision quality. 2) Online training has a significant positive effect on the global virtual teams’ performance. 3) Synchronous communication has a better team performance than those of asynchronous communication [7].
[8] further states that a new (ICT) seems to have generated new leadership challenges such as trust, communication, distance and time, and diversity. It seems that the new technologies are not able to resolve traditional organizational, leadership, and work-related problems. As a whole, there seems to be relevant challenges related to the technology in virtual settings and, consequently, an urgent need for further research in the field to explore the challenges leaders will face while managing work in an ICT environment. On the basis of the discussion about the main challenges, e-leaders face some propositions are presented. It is proposed that effective e-leaders with high skills may address the challenges and even convert them into opportunities by actively adapting their behavior to new virtual settings, by adopting new skills, and choosing the right ICT application for the right task [8].

[9] highlighted the main areas of necessary knowledge for managing a GVTs project within the construction context based on a project lifecycle and how the training and development related positively to global virtual teams’ performance. GVTs training and its necessities are very important for the outcome of the GVTs and should be addressed in future researches. On top of that, investigating the trend of trust development and training requirements of the GVTs in the course of its lifecycle is amid the topics for forthcoming studies in the field [9].

Three important ideas from the body of literature related to GVTs [10]. First, the leadership capabilities by examining on the transactional and transformational leadership. The capabilities are categorized into cognitive, social, and behavioral types. Second, these capabilities are related to the various phases of GVTs stages. The researchers expect this linking will help the academic community of organizational behavior and strategy theorists, as well as practitioners of business. The analysis is helpful in understanding and theorizing on GVTs and other firm-level strategic moves that involve leadership. Business leaders will find the depicted relations helpful in determining leadership capability requirements for recruiting virtual leaders and online training future leaders to develop these capabilities. Finally, an extended knowledge in organizational leadership and strategizing for competitive advantage through the practice of virtual work was suggested [10].

GVTs variety of intercultural management issues such as lack of face-to-face communication, different time-zones and communication styles, language barriers and lack of common mechanisms to establish and develop trust. These differences become more marked in the context of India and Germany with their large cultural differences. Intercultural training is a useful tool to overcome these challenges. Training has to be adapted to the specific requirements of GVTs. The intercultural training should not be offered only to the virtual delegates but also to their team members in the home country, as well as their counterparts and their team in the host country. Moreover, training needs to adapt to the develop technologies [11].

The survey conducted by [12] shows that training could benefit GVTs. However, some doubted the ability of training to change the inherent cultural style and includes the needs of training to improve communication and cultural knowledge. There was also agreement that training is clearly needed for phone and email usage: “anything that can make your communication more effective, because these are our major means of communication”. However, cultural awareness is not seen as easy to address: “I know what the problem is, but I don’t know the solution”. The study also concludes that the ability to work at a distance with colleagues from variety cultural backgrounds came only with experience and is part of the “on the job training” [12].

[13] has focused on the relationship between team members’ training and teams’ performance. Earlier results suggested that consistent training among all team members improves team performance, while GVTs characterized by diverse technology skills may experience conflict when members are unable to resolve differences and compromise on the use of a specific skill during task completion. Early and uniform training has also been found to foster cohesiveness, trust, teamwork, and commitment to team goals, individual satisfaction, and higher perceived decision quality.

The training is increasing cohesiveness and team satisfaction compared to a control group. However, significant training effects on team performance could not be observed. In summary, initial evidence suggests that training of GVTs is possible and advisable. Th e training and development related positively to global virtual teams’ performance. GVTs training and its necessities are very important for the outcome of the GVTs and should be addressed in future researches. On top of that, investigating the trend of trust development and training requirements of the GVTs in the course of its lifecycle is amid the topics for forthcoming studies in the field [9].

The training is increasing cohesiveness and team satisfaction compared to a control group. However, significant training effects on team performance could not be observed. In summary, initial evidence suggests that training of GVTs is possible and advisable. The training and development related positively to global virtual teams’ performance. GVTs training and its necessities are very important for the outcome of the GVTs and should be addressed in future researches. On top of that, investigating the trend of trust development and training requirements of the GVTs in the course of its lifecycle is amid the topics for forthcoming studies in the field [9].

[16] conducted a study to find out the effects of relational link development training on group interactions by administering training to selected groups and tracking measurements of their cohesiveness, perceptions of the process, satisfaction with outcomes over time. The shifts on the participants’ attitudes over four time periods confirm the stated hypotheses that relational link training helps to improve cohesiveness, the perception of the team process, and satisfaction with the team’s outcome. [16]. The results of this study indicate that those organizations willing to understand what makes virtual teams more effective and can likely build up a positive result from GVTs.

[17] argue that the introduction of GVT technologies will highlight the fact that not every member will feel
equally comfortable with the technology. Similarly, differing workloads will prevent each person from remaining equally current on every piece of technology being used in the virtual environment.

This is a reality that exists in every organization, regardless of size or function. Given this fact, every organization must commit to provide each member of a GVTs with equal training. Every member requires to attend training sessions to remain current on each piece of software being used in his or her virtual environment. [17].

Reviewing the results of Rosen, Furst and Blackburn (2006) from a survey of 440 training and development professionals identify current organizational training practices aimed at preparing leaders and members for GVTs assignments. Comparing organizations with more effective and less effective GVTs training programs allowed us to identify a set of “best practices.” [18].

In conclusion, the reviewed literature in global virtual teams’ performance shown that many studies were conducted on GVTs training and development. The frameworks are proposed and highlighted the importance of the online training and development are obviously important to the GVTs. The existing frameworks overlap on some general variables such as online training and global virtual teams’ performance. However, these combined frameworks are still not sufficient to achieve a high level of GVTs performance and need to include more variables related to the characteristics of GVTs to achieve a high level of GVTs performance. Finally, team training programs have seen limited success within geographically diverse, virtually interactive teams. With the growing popularity of virtual teams and the unique challenges that these face, it is important for researchers to investigate new strategies for training and development that will aid in the management of these issues [23].

Methodology:

A systems literature review (SLR) was conducted based on original guidelines as proposed by Kitchenham [19]. The SLR starts with planning the review, identifying the research, selecting the papers, data extraction and data synthesis. Systematic literature review was conducted to answer two research questions (RQ) below:

RQ1: What is the relationship between online training and development and global virtual teams’ performance?

RQ2: What are the existing frameworks involving online training and development in global virtual teams (GVTs)? And what are the gaps and limitations of the existing frameworks?

The related activities in the methodology are as follow:

- **Planning the review:**
  The study started their research by providing a protocol for the systematic literature review to specify our research strategy. The strategy used is by searching for specific terms and resources from specific databases, journals, conference and electronic books.

- **Identification of research:**
  Next, the identification of the keywords and specific terms related to the topic of the research are specified. The general keywords used to search for the relevant papers are global virtual teams (GVTs), online training and development for GVTs, global projects, and global virtual teams’ performance.

  The search strategy for the review was directed towards finding the published papers in archival journals, conferences and electronic books from five electronic database, IEEEExplore, Elsevier’s Science Direct, Scopus, Emerald, and Wiley.

- **Selecting the papers:**
  Two techniques were applied on selecting the published papers, archival journals and conferences. The initial lists based on reading the abstract and conclusion of the papers. Then the final list is based on reading the full paper with details. The initial list consisted of 30 papers which are found relevant to our topic. The final list covers only 27 papers are considered.

- **Data extraction:**
  The readings from the selected papers aim in analyzing relevant information about the GVTs and the factors affecting global virtual teams’ performance.

- **Data synthesis:**
  The related papers were selected in order to cover the extent literature on GVTs in general than to the specific. The researchers began to understand GVTs by going through the definitions of global virtual teams (GVTs), and global virtual teams’ performance. The researchers discussed the importance of online training and development in GVTs by presenting existing frameworks related to the research topic. The researchers divided
the work into two parts, the first part focused on collecting the information about the concepts. The second part focused on discussing the existing of frameworks from previous research.

*Formulation of the framework:*

A proposed framework shall be synthesized from existing frameworks suggested by [4], [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17], [18] as follows:

a. *Online training and development:*

According to [27], Employee perceived training as operationalized with the multidimensional structure of access, support, and benefits.

- **Access to online training:**
  Access to training refers to employees' perception of the opportunities they are given to attend training programs regardless of eligibility, including support from their managers, fair criteria for being selected for a program or, a formal processes, selection for training [20].

- **Supervisory support for online training:**
  Employees who perceive that their organization supports upgrading and skill development in order to find better solutions work related problems, feel obligated to display a higher level of commitment toward their organization [20].

- **Perceived benefits from online training:**
  Training programs conducted by the organization. However, when employees sense that attending a training program benefits the organization and themselves, they show high level of interest in participating the training program [19], [21].

b. *Organizational commitment:*

Building the intraorganizational commitment is important in the storming and norming stages of the teams’ development. Commitment has been studied by many researchers. Many researchers did many researches on the organizational behavior in the literature. Organizational commitment related to how the people think about their relationship with the organization. It can be thought of as a “mind set” in which individuals consider the extent to which their own values and goals are congruent with those of the organization. Three forms of attitudinal commitment have been defined and generally accepted: Affective commitment refers to the employee’s emotional attachment to, identification with, and involvement in the organization; Continence commitment refers to an awareness of the costs associated with leaving the organization; normative commitment refers to the feeling of obligation to continue employment. From the previous existing frameworks, we conclude that there is a need to develop a new framework involving the organizational commitment. There is a need to study the relationship between online training and development and organizational commitment with global virtual teams’ performance.

c. *Motivation:*

Motivation is the main factor for the global virtual teams’ success. The global virtual teams (GVTs) consist of team members who are geographically disperse, culturally varied, and communicate mainly depends on information and communication technologies (ICT) to communicate with each other. Distance is negatively affect the motivation of global virtual team members and leads to many problems which affect the performance of global virtual teams. These issues are negatively impacted on the level of motivation of team members. From the previous existing frameworks, we conclude that there is a need to develop a new framework involving the motivation. There is a need to study relationship between online training and development and motivation with global virtual teams’ performance.

d. *GVTs Performance - Key Performance Indicators (KPIs):*

KPIs help organizations understand how well they are performing in relation to their goals and objectives. In the broadest sense, a KPI provides the most important performance information that enables organizations or their stakeholders to understand whether the organization is on track towards its stated objectives or not. Compare to the previous studies, in this study, we considered both the efficiency and effectiveness as our key performance indicators (KPIs) to measure the global virtual teams’ performance. Sundqvist, Backlund, and Chronéer (2014) argument that a project is only successful if it satisfies the project efficiency and effectiveness measures.
The proposed framework is shown in Figure 2. The proposed framework is formulated specially to measure the global virtual teams’ performance involving the online training and development, organizational commitment, and motivation based on defined key performance indicators (KPIs) for more enhancement for global virtual teams’ performance.

**Fig. 2:** A proposed framework for measuring the global virtual teams’ (GVTs) performance

**RESULTS AND DISCUSSION**

Reviewing the current literature in GVTs, has identified that there is an important relationship between online training and development and global virtual teams’ performance. Also, this paper discussed existing frameworks related to the research topic as shown in Table 1. The existing frameworks overlap on some general variables such as online training and global virtual teams’ performance. However, these combined frameworks are still not sufficient to enhance the global virtual teams’ performance. Therefore, the researchers proposed a framework to assist the project manager to measure the global virtual teams’ performance involving the online training and development, organizational commitment, and motivation based on defined key performance indicators (KPIs).

**Conclusion and Future Works:**

In conclusion, the reviewed literature in global virtual (GVTs), especially global virtual teams’ performance shown that many researchers proposed frameworks to measure the global virtual teams’ performance involving the online training and development. The study concludes that there is a significant relationship between the online training and development and the global virtual teams’ performance. This study shows that several variables included in the existing frameworks and the formulation of the proposed framework are to assist the project managers in measuring the global virtual teams’ performance involving the online training and development, organizational commitment, and motivation based on defined key performance indicators (KPIs) for more enhancement for global virtual teams’ performance. Further study should be conducted to validate the proposed framework for future works.

**Table 1:** Existing frameworks and comparative study

<table>
<thead>
<tr>
<th>Variables</th>
<th>Online Training and Development GVTs Performance (KPIs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binder [4]</td>
<td>✓</td>
</tr>
<tr>
<td>Duarte and Snyder [5]</td>
<td>✓</td>
</tr>
<tr>
<td>Brew [6]</td>
<td>✓</td>
</tr>
</tbody>
</table>
REFERENCES


