Going Global: Developing Management Students' Cultural Intelligence and Global Identity in Culturally Diverse Virtual Teams

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Taking a constructivist, collaborative experiential learning approach to education and training of global managers, we designed an on-line, 4-week virtual multicultural team project and tested its effect on the development of management students' cultural intelligence, global identity, and local identity. The total sample of 1221 graduate management students, assigned to 312 virtual multicultural teams, consisted of four cohorts, each participating in one 4-week project; one project was conducted every year between 2008 and 2011. All projects were designed in the same way, according to principles of collaborative experiential learning, and offered a psychologically safe learning environment that enabled trust building. Data on cultural intelligence, global identity, and local identity were collected by way of web-based questionnaires at the beginning and at the end of the project, as well as 6 months later. Team trust was assessed in the middle of the project. Hierarchical linear modeling analyses revealed that cultural intelligence and global identity, but not local identity, significantly increased over time and that this effect lasted for 6 months after the project had ended. Trust as a team level factor moderated the project's effect on team members' cultural intelligence and global identity, with significant effects under moderate to high rather than low levels of trust.

New developments in the use of computer- and Internet-based communication enable organizations to globalize and benefit from their culturally diverse and geographically dispersed workforce (Stanko & Gibson, 2009; Zigurs, 2003). Managing employees in this dynamic work context and directing organizational members toward the accomplishment of joint organizational goals, however, has become significantly more challenging than in the past (Drucker, 1995). Given the changes in the work context, management education programs must develop and implement the most suitable educational approach for educating professionals and future managers to successfully cope with the challenges of this global, virtual, complex, and dynamic environment.

The most frequently used traditional method is the objectivist approach to learning and education, based on knowledge transfer from experts to trainees. This method, however, does not provide trainees with hands-on experience to effectively prepare for future global positions in a dynamic and complex global environment (Hung & Chen, 1999; Leidner & Jarvenpaa, 1995; Rovai, 2004). In contrast, the constructivist approach, specifically experiential learning theory, creates opportunities for cycles of personal experience, reflection, and readjustment, enabling individuals to actively construct their knowledge, thoughts, and feelings (Kayes, 2002; Kolb, 1984; Kolb & Kolb, 2005).

On-line management education and training programs for coping effectively in a global, virtual, and culturally diverse work context could greatly benefit from the constructivist, collaborative, experiential learning approach (Arbaugh & Benbunan-Fich, 2006, 2007; Ng, Van Dyne, & Ang, 2009; Yamazaki & Kayes, 2004). Nevertheless, many business schools still rely on traditional learning methods in preparing management students to effectively function in the global, virtual world (Doh, 2010), thus keeping management students unprepared for the demands of the global work environment (Blasco, 2009; Egan & Bendick, 2008).

Härtel (2010) asserted that management scholars must dedicate more time to teaching global management issues, specifically addressing the culturally diverse environment of international business schools, as well as contemporary management requirements for intercultural competencies. Only a few business schools today have started to offer programs in international management, which rely on constructivist, collaborative, and experiential learning principles, enabling students to construct their global knowledge by accumulating experience in working and interacting with others in the global context as part of their educational program (Brower, 2011; Pless, Maak, & Stahl, 2011).

Working in the global work context often means working in virtual multicultural teams, consisting of members who are culturally diverse and geographically dispersed and who communicate with each other by way of electronic media (Gibson & Gibbs, 2006; Snell, Snow, Davidson, & Hambrick, 1998). Multicultural team members have disparate cultural perspectives and expectations regarding work norms and procedures, which create challenges that do not exist in local homogeneous teams (Cascio & Shurygalio, 2003; Janssens & Brett, 2006).

Despite the importance of effective multicultural team training for the future occupational success of management students, to the best of our knowledge, the empirical study of virtual multicultural team training in MBA programs remains mostly unexplored. Therefore, the objective of the current study is threefold: first, to contribute to the on-line management education of global managers and professionals by developing a constructivist, collaborative learning program, which offers on-line

experience in working in virtual multicultural teams. Second, to take a global cultural approach, rather than a cross-cultural approach, educating team members to focus on their joint global project and develop a global team identity, as opposed to focusing on cultural differences and similarities, which weakens team unity. Third, to study the effect of collaborative experiential learning on the development of participants' global characteristics, as they prepare themselves for working effectively in the global work context.

We propose that two global characteristics facilitate adaptation to the global work context: *cultural intelligence*, defined as an individual's capability to deal effectively in culturally diverse settings (Ang & Van Dyne, 2008), and *global identity*, defined as the sense of belongingness to and identification with the global work context (Erez & Gati, 2004; Shokef & Erez, 2006).

In the next section we present the theoretical basis of our research hypotheses and the collaborative experiential learning program that we developed. We then describe the empirical study in which we tested the effects of the program on the development of cultural intelligence and global identity, and we examine the moderating effect of trust on these relationships.

THEORETICAL FOUNDATION AND DEVELOPMENT OF HYPOTHESES

The Collaborative Experiential Learning Approach to Global Management Education

During the last decade, as a result of continuing technological developments, the delivery of education by way of computer-mediated communication has taken on increasing importance for business schools (Popovich & Neel, 2005). This on-line management education is based on "the use of the Internet to access learning materials; to interact with the content, instructor and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience" (Ally, 2004: 5). On-line management education is targeted at enhancing students' managerial capabilities by using a "pure" virtual communication environment or "blended" courses, where both traditional classroom face-to-face interaction and virtual on-line interaction are used to maximize learning effects (Arbaugh, Godfrey, Johnson, Pollack, Niendorf, & Wresch, 2009; Hwang & Arbaugh, 2009).

Recent literature reviews, covering more than 100 papers published in the last 15 years (Arbaugh et al., 2009; Arbaugh, Desai, Rau, & Sridhar, 2010; Arbaugh & Hwang, 2013), showed that the use of on-line management education methods has a positive impact on a wide range of disciplines (e.g., Operation Management, International Management, Organization Behavior, Information Systems) and that on-line management research in most of these fields is steadily growing. Furthermore, consistent findings indicate that on-line management education can be as effective as traditional face-to-face management education in enhancing students' management capabilities (Daymont & Blau, 2008; Fortune, Shifflett, & Sibley, 2006; Friday, Friday-Stroud, Green, & Hill, 2006; Mujtaba & McAtavey, 2006).

Arbaugh and Benbunan-Fich (2006, 2007) classified on-line virtual communication designed for education and training into two dimensions: knowledge construction, consisting of two types—objectivist versus constructivist approaches—and group collaboration, consisting of individual versus group work approaches (see also Benbunan-Fich & Arbaugh, 2006).

Knowledge construction by way of traditional management education programs is based on behavioristic and cognitive principles, which emphasize the objectivist model of learning. This model asserts that there is one true and correct reality that can be defined and transferred. Hence, the goal of teaching is to facilitate the transfer of knowledge from the expert to the learner (Jonassen, 1993; Lakoff, 1987; Vrasidas, 2000). The frontal lecture method, which dominates higher education programs, uses this approach (Leidner & Jarvenpaa, 1995).

In recent years, educators have recognized that management students must experience work-based events during their studies, in preparation for their future positions where they will encounter dynamic, complex social and managerial events (Chen, Donahue, & Klimoski, 2004; Graen, Hui, & Taylor, 2006; Kark, 2011). As an alternative to the knowledge construction approach by way of the objectivist approach, the constructivist approach proposes that knowledge is constructed by every learner and by interactions between learners, and it is not simply objectively transferred by an expert (Armstrong & Mahmud, 2008; Rovai, 2004). Individuals learn better when they have to discover things by themselves rather than when they are told what to do (Leidner & Jarvenpaa, 1995); therefore, the

expert's role is to provide tools for helping learners construct their own views of reality and gain experience in a context relevant to their real-life work context (Jonassen, 1993; O'Loughlin, 1992; Rovai, 2004).

Drawing upon the constructivist approach, the experiential learning theory asserts that "knowledge results from the combination of grasping and transforming experience" (Kolb, 1984: 41). The experiential learning cycle consists of four phases: Tangible episodes of concrete experiences (CE), which are the basis for reflective observations (RO), are assimilated into abstract conceptualization interpretation of ideas and insights (AC), which leads to active experimentation (AE) in the external world, wherein individuals test ideas and insights, which generates new experiences and triggers nascent cycles of learning (Kolb, 1984; Kolb & Kolb, 2005). The experiential learning approach can be implemented at either the individual or group level.

The second dimension of on-line virtual communication for education entails group collaboration, which represents the extent to which participants learn in isolation or through interaction with their peers (Benbunan-Fich & Arbaugh, 2006). A student can learn objectively or constructively, without contact with other learners (e.g., remote on-line courses, which emphasize individual work) or as part of collaboration with other students.

The combination of the two dimensions of knowledge construction with group collaboration produces a fourfold typology of web-based learning (Arbaugh & Benbunan-Fich, 2007): Transfer (objective)-individual, transfer (objective)-group, construction-individual and construction-group. The construction-group type reflects an environment of collaborative learning, where students construct their knowledge through collaboration on mutual projects or cases, mostly in small groups (Sharan & Sharan, 1992; Smith & MacGregor, 1992).

Education scholars emphasize construction-group collaborative learning as most effective for on-line education (Alavi, Yoo, & Vogel, 1997). For instance, Arbaugh (2002) suggests that "facilitation and access to interaction may be the key for successful Web-based courses" (218). Additionally, collaborative learning leads to positive outcomes such as knowledge sharing, critical thinking, and trust (Lee, Bonk, Magjuka, Su, & Liu, 2006) and to higher levels of involvement of passive students who may be intimidated in face-to-face collaborative work (Ramli, 2010). Collaborative on-line work

may lead to the creation of "on-line communities," which foster a shared sense of belonging, trust, expectation of learning, and commitment to participate and contribute to the community (Abedin, Daneshgar, & D'Ambra, 2010; Anderson, 2004). Hence, the constructivist-group of collaborative learning enables individuals to overcome the challenges facing virtual multicultural teams (Zhu, Valcke, & Schellens, 2009).

The presence of virtual multicultural teams in global organizations is steadily growing (Majchrzak, Malhotra, Stamps, & Lipnack, 2004; Stanko & Gibson, 2009) and it is, therefore, important to develop the educational program most suitable for preparing management students to effectively cope with the challenges of the global work context (Montoya-Weiss, Massey, & Song, 2001).

On-line Education for Virtual Multicultural Teams

Like every team, virtual teams are composed of members who perform interdependent tasks with a common purpose, being mutually accountable for their results and possessing similar or complementary expertise (Aubert & Kelsey, 2003). However, unlike members in co-located teams, virtual team members are geographically dispersed and rely on technology-mediated communication rather than on face-to-face interactions to accomplish their tasks (Gibson & Gibbs, 2006; Martins, Gilson, & Maynard, 2004; Zigurs, 2003). Communication media attenuates the presence of social cues by limiting nonverbal cues and social/contextual information. As a result, communication media may impede desirable team processes and outcomes (Furst, Reeves, Rosen, & Blackburn, 2004; Vignovic & Thompson, 2010). Furthermore, virtual teams, unlike co-located teams, face the challenge of overcoming time dispersions (Cascio & Shurygalio, 2003; Malhorta, Majchrzak, & Rosen, 2007). Finally, virtual multicultural teams are culturally diverse, consisting of team members from different cultures, with dissimilar meaning systems and spoken languages. While local team members have a shared meaning system, based on their common cultural heritage, virtual multicultural teams face the challenge of overcoming different cultural perspectives regarding work regulations, expectations, and decision making (Cascio & Shurygalio, 2003; Janssens & Brett, 2006). These differences may lead to cultural misunderstanding and to subgroup fault lines, which impede the creation of a cohesive and functioning

team (Brett, Behfar, & Kern, 2006; Earley & Mosakowsky, 2000; Hinds & Mortensen, 2005; Polzer, Crisp, Jarvenpaa, & Kim, 2006). Hence, overcoming these challenges is crucial for the effectiveness of virtual multicultural teams (Montoya-Weiss et al., 2001).

The research literature of on-line management education examined different educational methods and their impact on learning. The studies investigated different on-line learning class structures (e.g., class size, level of collaboration) and their impact on students' satisfaction (Arbaugh & Benbunan-Fich, 2006; Arbaugh & Duray, 2002); the relationships between students' virtual team training and virtual team performance (Dineen, 2005); between students' on-line collaborative work and their stress levels (Allan & Lawless, 2003); and class experiential learning exercises and their positive impact on students' learning (Clark & Gibb, 2006; Olson-Buchanan, Rechner, Sanchez, & Schmidtke, 2007).

Only a few studies examined educational methods for virtual teams in different cultural contexts, and most of these examined cultural differences in students' perceptions of on-line collaborative learning. For example, Western students perceived the on-line collaborative learning environment as more positive than did Eastern students (Nguyen, Terlouw, & Pilot, 2006; Zhu et al., 2009). Americans students were more active in on-line collaborative learning than were Finnish students (Livonen, Sonnewald, Parma, & Poole-Kober, 1998), and adding German students to American students' virtual teams increased discussion participation in these teams (Wresch, Arbaugh, & Rebstock, 2005). Yet, despite their important contributions to the understanding of the cultural factor in virtual environments, these studies did not examine the global capabilities that students developed through their collaborative, constructive interactions, which would enable them to successfully cope with the challenges of the virtual multicultural team context.

A number of researchers have recently advocated the use of experiential learning for acquiring the skills necessary for cross-cultural learning (Ng et al., 2009; Yamazaki & Kayes, 2004), but there are scant empirical studies on the effects of educational methods on the acquisition of global capabilities. One such study showed that concrete, real-life experiences, such as becoming involved in international work assignments, positively influenced global leaders' cultural intelligence (Li, Mo-

bley, & Kelly, 2013). Similarly, a study by Pless, Maak, and Stahl (2011) found that a service-learning program, which involved sending individuals to developing countries to work in cross-sector partnerships, enhanced their global mindset and their cultural intelligence. Another 8-week educational program, which used an experiential learning approach, enhanced the cultural intelligence of Australian and American management students who participated in the program (MacNab, 2012), and a combination of in-class and at-home exercises on intercultural sensitivity of American students enhanced their intercultural sensitivity at the end of the program (Sizoo, Serrie, & Shapero, 2007). Recently, Eisenberg et al. (in press) supported previous research by demonstrating that cultural intelligence of students who participated in a longitudinal cross-cultural course significantly increased at the end of the course, compared to students who did not take a cross-cultural course. These culture-related studies support the constructive approach, and specifically, the experiential learning approach, for the development of cultural capabilities.

The aforementioned studies, however, were not conducted in the educational virtual context of culturally diverse and geographically dispersed teams. In contrast, the proposed study introduces the constructive, group collaboration approach in management education to the virtual multicultural learning context.

Additionally, our work aims to enrich the research and practical knowledge on on-line management education in the context of virtual multicultural teams, which are most common in global organizations (Malhotra et al., 2007; Stanko & Gibson, 2009). The educational program developed and tested in our study is based on the constructivist, collaborative learning approach, in which members of virtual multicultural teams took part in team and individual experiential learning cycles that contributed to the development of their global capabilities of cultural intelligence and global identity. To the best of our knowledge, there are no published studies in the on-line management education literature that examined the development of global capabilities in virtual multicultural teams and the team processes that moderate the development of these characteristics. The next section presents the two global characteristics of cultural intelligence and global identity and the influence of the educational program on the enhancement of these two global characteristics,

followed by a section on the effect of team trust on facilitating or inhibiting the effect of the educational program on the development of the global characteristics.

Enhancing the Global Characteristics of Cultural Intelligence and Global Identity

Cultural intelligence and global identity are two malleable characteristics (Earley & Ang, 2003; Shokef & Erez, 2008) that can be shaped through training, specifically by working in a multicultural context (Ng et al., 2009). Cultural intelligence and global identity complement each other. Cultural intelligence pertains to the cognitive aspects of cultural awareness and cultural knowledge, as well as to the motivation to adapt to various cultural contexts and to behave accordingly. Global identity pertains to a person's self-concept. It reflects an individual's identity as shaped by a sense of belongingness to the global work context. Global identity is independent of any national local identity that is specific to a particular national culture (Erez & Gati, 2004; Shokef & Erez, 2008).

Cultural Intelligence

Cultural intelligence is operationalized as a specific form of intelligence focused on an individual's ability to grasp and reason correctly in situations of cultural diversity (Ang & Van Dyne, 2008; Earley & Ang, 2003). The growing body of research on cultural intelligence has revealed its impact on behavior in culturally diverse settings as a comprehensive ability (e.g., Ang, Van Dyne, Koh, Ng, Templer, & Tay, 2007).

Cultural intelligence is a multidimensional concept comprising four dimensions: metacognitive, cognitive, motivational, and behavioral (Ang, Van Dyne, & Koh, 2006). Metacognitive cultural intelligence is defined as the conscious cultural awareness of an individual's own culturally related assumptions and knowledge. It involves high-level cognitive strategies that allow people to adjust to new cultural environments and to develop more appropriate heuristics and rules for social interactions in new cultural situations. In particular, the metacognitive factor has a positive effect on individual task performance in intercultural settings (Ang et al., 2007) in terms of assisting team members in developing an affect-based trust in collaboration in cross-cultural dyads (Chua, Morris, & Mor, 2012) and in creating a fusion culture in

teams, blending the diverse cultural values into one (Crotty & Brett, 2012).

Cognitive cultural intelligence reflects the actual knowledge that a person has of other cultures, including aspects such as language, religious beliefs, and behavioral norms, as well as knowledge regarding economic, legal, and social systems of different cultures. The possession of such knowledge assists in building accurate expectations and interpretations of cultural interactions (Earley & Gardner, 2005).

The motivational factor denotes the amount of energy that individuals are willing to direct toward cultural learning and adjustment, the intrinsic motivation driving them to engage in interactions with people from different cultures, and the level of competence that they experience when interacting in a culturally diverse environment. It has significant impact on the success of expatriates (Chen, Kirkman, Kim, Farh, & Tangirala, 2010), and it was the strongest predictor of leadership effectiveness in cross-border contexts, when compared to intelligence quotient (IQ) and emotional quotient (EQ; Rockstuhl, Seiler, Ang, Van Dyne, & Annen, 2011). Indeed, Ng et al. (2009) asserted that motivational cultural intelligence enhances the likelihood of individuals on international assignments to actively engage in experiential learning and become more effective.

Behavioral cultural intelligence relates to the individual's ability to act according to culturally accepted rules and actively adjust to culturally charged environments (Ang et al., 2006, 2007). Individuals with high behavioral cultural intelligence exhibit culturally appropriate words, gestures, and facial expressions that enable them to function effectively in a multicultural context.

Cultural intelligence is considered a malleable state that may change based on cultural exposure and other multicultural experiences (Earley & Peterson, 2004). A number of studies have shown that cultural intelligence increases as a result of exposure to a cross-cultural context. For example, students who participated in service-learning programs in host countries exhibited an increase in their cultural intelligence level over time (Pless et al., 2011). Swiss army officers who served abroad for long periods had significantly higher levels of cultural intelligence compared to their peers who served mainly within their local country borders (Rockstuhl et al., 2011). Similarly, Kim and Van Dyne (2011) found that cultural intelligence mediates the relationship between prior intercultural

contact and international leadership potential. Additionally, cultural intelligence was found to be related to a positive change over time in multicultural team processes (Moynihan, Peterson, & Earley, 2006) and to multicultural team members' integration (Flaherty, 2008). Most of the aforementioned research focuses on adaptation to intercultural assignments where expatriates were assigned to one particular country (Takeuchi, 2010). There is limited empirical research on cultural training that examines the developmental aspect of cultural intelligence in a context of multicultural teams.

Our study offered participants the opportunity to work interdependently and virtually with team members from other cultures on a joint project in a multicultural team context. It enabled multicultural team members to gain knowledge about the global work context and to acquire actual experience working in this context. Task-related social interactions with members from other cultures enabled team members to gain knowledge and experience in working in a multicultural setting, which fostered the development of their cultural awareness and cultural intelligence. Therefore we hypothesize:

Hypothesis 1a: Cultural intelligence of virtual multicultural team members will increase as members gain experience working in a virtual multicultural team context.

Global Identity

Working interdependently in a multicultural team creates a social group, differentiated from the local cultural groups to which each team member belongs (e.g., family, friends, the social community, and one's national culture). The sense of belongingness to a global multicultural team reflects an individual's global identity, whereas the sense of belongingness to a local group and community reflects an individual's local identity (Arnett, 2002; Erez & Gati, 2004). Global identity widens the range of inclusiveness, allowing multicultural team members to see beyond their national differences and to perceive culturally diverse team members as belonging to one's in-group. Local identity, in contrast, narrows the range of inclusiveness, categorizing members of the same culture as the in-group and members of other cultures as the out-group (Shokef & Erez, 2006).

One may hold multiple identities, reflecting one's belonging to multiple groups (Stryker & Burke, 2000; Tajfel & Turner, 1986). Hence, local and global identities can coexist, as each becomes salient in a different social context. The global identity becomes salient in a global context, enabling individuals to adapt to their global group. In comparison, the local identity becomes salient in the local cultural context, enabling individuals to engage in their local community (Erez & Gati, 2004; Erez & Shokef, 2008). Such frame switching can be observed in bicultural individuals, who develop two cultural networks. Some researchers argue that even if contradictory, there is no dissonance between the two identities, because individuals are guided by only one network at any given time (Hong, Morris, Chiu, & Benet-Martínez, 2000).

The emergence of a global identity does not necessarily require physical interactions with members of the global community, as shown in a study on virtual newsgroups (McKenna & Bargh, 1998). Increased involvement with one's global team leads to increased salience of the virtual group, followed by increased acceptance of the group identity (Jarvenpaa & Leidner, 1999). Global identity, similar to bicultural identity (Leung, Maddux, Galinsky, & Chiu, 2008), was found to be related to working for global organizations, working in multicultural teams, speaking a number of languages, and living in more than one country for more than 2 years (Cohavi, Erez, & Shokef, 2007). In contrast, local identity was related to individuals' level of embeddedness, reflecting the extent to which individuals become part of their local work surroundings and their local community (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001). Multicultural work experience positively influences the development of a global identity (Cohavi et al., 2007; Shokef & Erez, 2008), which was positively related to multicultural team effectiveness (Shokef & Erez, 2008); to display of positive emotions (Glikson & Erez, 2013); and to global leadership effectiveness (Lisak & Erez, 2009).

We, therefore, suggest that working on a multicultural team project, which enables team members to get to know each other and to interdependently work toward the accomplishment of their joint project, will enhance multicultural team members' respective global identities. On the other hand, we do not expect any influence of working in multicultural teams on individuals' respective local identities, as the global context does not activate local identity.

We hypothesize:

Hypothesis 1b: The global identity, but not local identity of virtual multicultural

team members, increases as team members gain experience in working interdependently in a virtual multicultural team project.

Team Trust

Trust is considered to be an important social resource that can facilitate cooperation and enable coordinated social interaction (Gibson & Gibbs, 2006). The development of trust is based on two necessary conditions: risk and interdependence. Trust gains importance when there is an uncertainty regarding the appropriateness of another's intentions and future actions, and when the interests of one party cannot be achieved without reliance upon the other party (Rousseau, Sitkin, Burt, & Camerer, 1998). The meaning of team-level trust is based on shared perceptions (De Jong & Elfring, 2010). *Team-level trust* is defined as a "shared psychological state in a team that is characterized by an acceptance of vulnerability based on expectations of intentions or behaviors with others within the team" (Gibson & Manuel, 2003: 59; Rousseau et al., 1998). Trust promotes cooperation, which in multicultural teams enables capitalization of diverse sources of knowledge contained in team members' cultural diversity, which otherwise would not be realized (Van Knippenberg & Schippers, 2007).

Yet, a multicultural team context challenges the development of trust among team members (Branzei, Vertinsky, & Camp, 2007; Rockstuhl & Ng, 2008), as suggested by two theories: Similarity-attraction theory and social identity–social categorization theory. Similarity-attraction theory proposes that people are attracted to working with and cooperating with those whom they find similar to themselves in terms of values, beliefs, and attitudes (Williams & O'Reilly, 1998). In contrast, they are less attracted to working with culturally diverse members different from them (Stahl, Maznevski, Voigt, & Jonsen, 2009; Van Knippenberg & Schippers, 2007).

Social identity–social categorization theory (Tajfel & Turner, 1986) asserts that people develop a sense of belongingness to a group that is meaningful to them, and they concurrently differentiate themselves from others whom they categorize as outsiders, or out-group members. National identity and geographic location serve to categorize individuals into the in-group and out-group. Therefore, multicultural team members face the challenge of differentiating themselves from other team members who are from different nationalities (Brett et al., 2006; Earley & Mosakowsky, 2000). This categorization into in- and out-group negatively influences the performance of multicultural teams (Chatman & Flynn, 2001; Jackson & Joshi, 2011), as well as the level of creativity and innovation, as compared to culturally homogenous teams (Gibson & Gibbs, 2006; Jackson & Joshi, 2011).

Team-level trust may help team members meet the challenges in working in a multicultural team. Trusting relationships may attenuate the categorization process and enhance the acceptance of culturally diverse team members as part of one's in-group, enabling the emergence of a global identity. In contrast, a lack of team trust may result in categorizing others as the out-group, preventing team members from developing a global identity, which is enhanced through a sense of belongingness to their multicultural team. Trust may also influence the development of cultural intelligence. Trust attenuates the risk of disclosing information to others (Butler, 1999; Mayer, Davis, & Schoorman, 1995). A trusting atmosphere allows for inquiring more freely about teammates' customs, cultural values, and norms, which positively affects the development of cultural intelligence. In contrast, a lack of team trust may lead to biases in interpretation of team members' behaviors, resulting in misunderstandings and a reluctance to learn about others and adapt behaviors to fit in with others.

We, therefore, hypothesize:

Hypothesis 2a: Team trust enhances participants' cultural intelligence.

Hypothesis 2b: Team trust enhances participants' global identity.

Trust plays an important role in building the virtual multicultural team, and it is considered to be "the glue of the global workspace" (O'Hara-Devereaux & Johansen, 1994: 243). A plethora of studies indicated that establishing trust in virtual teams is related to positive outcomes, such as satisfaction, effectiveness, efficiency, and meeting project deadlines (e.g., Breu & Hemingway, 2004; Edwards & Sridhar, 2005; Morris, Marshall, & Rainer, 2002). In addition, team trust was found to reduce emotional conflicts in culturally diverse, virtual teams and to strengthen communication among team members and to commitment to the team (Jarvenpaa, Knoll, & Leidner, 1998; Martins et al., 2004; Spreitzer, Shapiro, & Von Glinow, 2002). Furthermore, team trust was found to be related to

positive outcomes in on-line learning environments (Coppola, Hiltz, & Rotter, 2001; Kreijns, Kirschner, & Jochems, 2003; Williams, Duray, & Reddy, 2006). Jarvenpaa and colleagues (Crisp & Jarvenpaa, 2013; Jarvenpaa et al., 1998; Jarvenpaa & Leidner, 1999), studied trust in virtual multicultural teams and found that members of such teams tend to develop models of "swift trust," allowing them to act as if trust were present from the start of the project. Hence, team trust enables members to act and deal with uncertainty, ambiguity, and vulnerability that arise while working with strangers on complex, interdependent tasks (Meyerson, Weick, & Kramer, 1996). This type of team trust focuses on task completion and may be fragile (Jarvenpaa et al., 1998; Jarvenpaa & Leidner, 1999; McKnight, Cummings, & Chervany, 1998). Hence, early trusting beliefs of team members, positive social interactions in early team stages, and a psychological safe communication climate were found to be important antecedents for trust in virtual teams (Crisp & Jarvenpaa, 2013; Iacono & Weisband, 1997; Jarvenpaa, Shaw, & Staples, 2004; Nouri, Erez, Rockstuhl, Ang, Leshem-Calif, & Rafaeli, in press; Sarker, Ahuja, Sarker, & Kirkeby, 2011).

We propose that team trust not only has a direct effect on the global characteristics of members of virtual multicultural teams, but also it serves as an indicator of a positive intra-group environment. Such an environment enables the development of global characteristics over time by facilitating communication, reducing conflict, increasing the likelihood of getting to know each other, and increasing the sense of being part of the group. The cultural intelligence and global identity of team members who gain experience in working in multicultural teams with high levels of trust will more likely increase over time than will that of members of teams with low levels of trust.

Therefore, we hypothesize:

Hypothesis 3a: Team trust moderates the effect of the virtual multicultural team project on developing cultural intelligence. Cultural intelligence increases in teams with high, rather than low, levels of team trust.

Hypothesis 3b: Team trust moderates the effect of the virtual multicultural team project on developing global identity. Global identity increases in teams with high, rather than low, levels of team trust.

Last, we expect that experiential learning enables the participants to internalize the new cultural knowledge gained through cumulative experiences and reflections, and therefore, the learning effect on cultural intelligence and global identity will last after the end of the project. We hypothesize:

Hypothesis 4: The participants' levels of global identity and cultural intelligence will remain stable over time, after the completion of the virtual multicultural team project.

METHODS

Designing an Experiential-Based, Virtual and Multicultural Team Educational Program

This virtual multicultural team project was designed in accordance with a constructivist, collaborative experiential-learning approach, consisting of experience-based cycles of acquiring new knowledge, experimenting, and reflecting upon the process (Kolb & Kolb, 2005). Prior to beginning the project itself, participants completed a cultural values questionnaire based on the inventory created by Dorfman and Howell (1988), as well as cultural intelligence, global identity, and local identity questionnaires. The students then began the virtual multicultural team project.

The project consisted of three phases. To complete their assignments in each, team members interacted in their team's chat room, on the project website, or by other means of communication technology. In Phase 1, students had a concrete experience (CE) of "getting to know each other." As part of the first two mandatory team chats, team members introduced themselves, shared biographical data, such as field of study and hobbies, and posted their photos in the team chat room. At the end of Phase 1, participants received individual feedback on their preproject cultural values questionnaire. In addition, the project coordinators provided all class instructors with graphs containing the mean scores of each one of the cultural values for each class, and each respective class discussed the results. Feedback on the cultural values' scores at the individual and class levels, as well as class discussions, enabled participants to reflect upon their cultural values (RO) and conceptualize their meaning (AC). At the end of this phase, participants filled out another on-line questionnaire, assessing their team trust.

The knowledge gained through the reflection and conceptualization process served the participants in Phase 2, "Preparing the Team Project," wherein they interactively worked (AE) on the team project in their chat rooms or by other means of communication technology. As part of the project presentation, each team prepared one or two slides on "Reflection on Team Processes" (RO), which is elucidated in the Procedure and Task sections. At the end of Phase 2, participants completed another questionnaire on cultural intelligence, global identity, local identity, team processes, and their level of satisfaction from the project (as further described in the Measures section).

Phase 3 of the project was the "Postproject Wrap-Up," in which all the students received feedback on their responses to all project questionnaires and discussed it in class. In addition, allteam members received feedback on the team processes, and on the change in their global characteristics during the project. This multilevel feedback enabled another opportunity for reflection, (RO), as well as new insight (AC), which participants will be able to implement (AE) in their future global jobs.

In addition, the project design enabled a psychologically safe learning space by implementing the following principles: (a) Diverse teams: Avoiding the dominance of one subgroup over another by assigning three or four students per team, each of whom came from a different culture and a different location (Earley & Mosakowski, 2000; Polzer et al., 2006). (b) Team building: We dedicated the first group interactions to the task of "getting to know each other" in order to build familiarity and promote a psychological safe communication climate (Ren & Argote, 2011). (c) High task interdependence

led team members to communicate with each other multiple times throughout the project in order to coordinate their work effort. The final project grade was team-based, and thus, team members needed to coordinate their work efforts well in order to assure themselves of a high score. (d) High task clarity, with specific instructions for each project phase and specific instructions for preparing the final team PowerPoint presentation, served to reduce misunderstanding and conflicts and improve team coordination (Nouri et al., in press). (e) The intensity of the project tasks assigned during a 4-week period enabled repetitive cycles of experiential learning.

Sample

Participants were 1221 MBA and graduate students from 17 universities in 12 countries who took part in the Multicultural Team Project, in four projects in 4 consecutive years (2008–2011). Each year the project lasted 4 weeks. Each year a new sample of MBA and graduate students participated (2008, $n = 295$; 2009, $n = 335$; 2010, $n = 234$; 2011, $n = 357$). Given that we used the same methodology and measures of global identity and cultural intelligence in all projects in the 4 years, we aggregated the scores across all four projects. The time line and phases of each project appear in Figure 1.

The participants were from universities located in the United States (six universities), Austria, China (Hong-Kong), England, Finland, France, Germany, India, Italy, Israel, Spain, and Switzerland. Seven of these universities participated in the project more than once. The entire sample of participants represented 66 nationalities. Forty-two percent of the participants were from Europe (26% of the Europeans from Italy, 21% from Germany, 10%
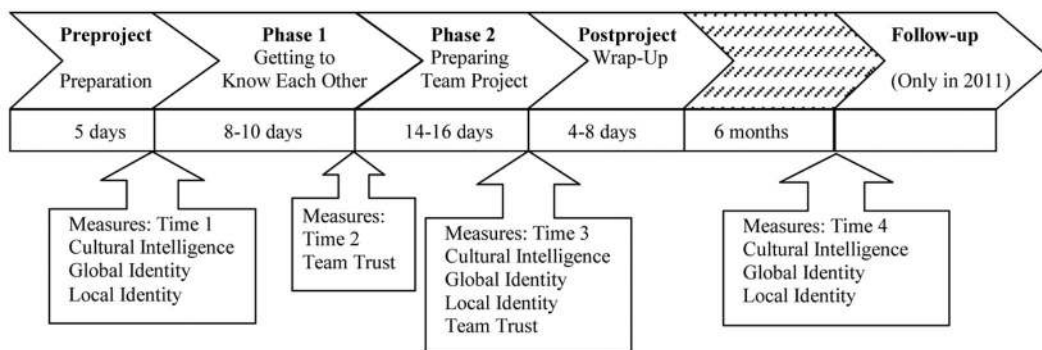

FIGURE 1
Project Phases and Data Collection Time Line

from France, and 6% from Switzerland); 19% were from North America (94% from the U.S. and 6% from Canada); 18% were from the Far East (85% from China and 6% from South Korea); 12% from Israel, 5% from India, and 4% from other countries (e.g., Egypt, New Zealand, Nigeria, Peru). The average age was 27.06 years ($SD = 5.77$), and 60.3% of the participants were male. English proficiency was a prerequisite for participating in the project. The mean self-reported level of English proficiency was 4.22 ($SD = .84$, 1–5 scale).

Participants were assigned to 312 virtual multicultural teams. Two hundred seventy-eight teams (89%) consisted of four members each, and the remaining teams consisted of three members each. Each team member came from a different culture and geographic location and spoke a different native language. For a summary, see Table 1.

Procedure and Tasks

The first author initiated the experiential, multicultural team project to enable MBA students who signed up for a global management course to experience work in a virtual multicultural team context. To do so, the first author contacted colleagues in other countries who taught a similar course at about the same time of the academic year and who expressed interest in having their students participate in a multicultural work experience. In each participating university the project was part of a local course with cross-cultural content (i.e., cross-cultural management, global human resources, global marketing, etc.), and students learned about cross-cultural differences in cultural values, using the typologies of Hofstede (2001) and House,

Hanges, Javidan, Dorfman, and Gupta (2004). The multicultural team project was run on-line by the Technion multicultural team project (TMCTP) coordinators, whereas feedback and reflection during the project took place in each class. At the end of the project, team members presented the final team project in their classes. The project continued for 4 weeks and consisted of the following phases:

Preproject Preparation

Each year, prior to the beginning of the project, participants filled out a web-based questionnaire assessing global and local characteristics (e.g., global identity, cultural intelligence, and local identity) and demographics. Project coordinators assigned participants into virtual multicultural teams, consisting of three or four members, each of whom held a different nationality, spoke a distinct mother tongue, and came from a different university, located in a different country, except for a few teams in 2010 and 2011, which had two members of different nationalities from the same university, who were instructed by their course professor to interact only on-line.

The teams included both men and women. A project website was created to enable on-line communication. Each team had a separate chat room, which allowed only the specific team members to enter it and hold joint meetings. In addition, the website was used for data collection by way of questionnaires and contained general information about the project, such as project guidelines and relevant material, as well as the project participants' pictures.

TABLE 1
Descriptive Demographic Information by Year of Project

Year of project	2008	2009	2010	2011	Total
No. of participants	295	335	234	357	1,221
No. of women	106	153	84	142	485 (39.7%)
Number of universities	8	10	5	10	17[a]
Average age	27.35 (5.70)[b]	26.20 (4.93)	26.90 (6.07)	27.76 (6.28)	27.06 (5.77)
Average level of English proficiency (1–5 scale)	4.54 (.70)	4.47 (.73)	3.74 (.84)	4.02 (.83)	4.22 (.84)
No. of MCTs	77	84	60	91	312
No. of 3-member MCTs	10	7	10	7	34

Note. MCT = multicultural team.
[a] Seven universities participated in the project for 2 years and above, hence the total number of universities is less than the sum over the years.
[b] Standard deviation is in parentheses.

Phase 1: "Getting To Know Each Other"

The pedagogical principle conveyed in this phase pertains to building a psychologically safe communication climate and trust; therefore, the first week of the project served to provide mutual acquaintance. Team members interviewed one another and had in-depth dialogues that expanded their knowledge about each other. In this phase, participants were asked to hold at least two online chats with all team members present, to engage in intensive daily mail exchange, and to conduct a discussion of a scenario with an ethical dilemma, intended to facilitate acquaintanceship with team members' respective values and perceptions (based on Schneider, White, & Paul, 1998). Participants were asked to "cc" (e-mail a copy) the coordinators in all their e-mail correspondence and save their chats in their team room. Coordinators reviewed all chats to ensure that all team members participated in them. In cases where a team member was unavailable and missed the chat, the coordinators asked the team to complete the mandatory chat with all team members before moving to Phase 2. There was no minimum required duration for the chats, but most of them took over 30 min. These intensive interactions aimed at familiarizing team members with each other and enabled them to build a shared perception of an in-group among team members in a relatively short time. At the end of this phase a web-based questionnaire served to assess team trust.

Phase 2: Preparing the Virtual Team Project

In this phase all teams received their team task, which they had 2 weeks to complete. The pedagogical principle employed in this phase was setting clear and specific goals to avoid misunderstandings and conflicts and to build team interdependence through establishing a joint goal of task completion and by having team members receive the team project grade as part of their final course grade.

The project tasks in 2008 and 2009 required students to develop guidelines for an expatriate who was going to be posted in a country selected by the team (not the current or home country of the team members). Participants prepared the guidelines for the expatriate based on their study of the host country's culture. The final product was a 12-slide PowerPoint presentation. Students were instructed to include very detailed information of what

should appear on each slide, as follows: Summary of the "getting to know each other phase" (one slide); description of the host country's culture (four slides); comparison between the host country's culture and team members' cultures (one slide); recommendation for expatriates from team members' cultures who plan to move to the host country (two slides); summary of an interview with at least one member of the host culture, to validate the information presented (one slide); a summary of the training guide (one slide); reflection on team processes during the project (two slides).

In 2010 and 2011, the project task required students to develop a business proposal for a foreign investor who was considering investing in a new venture in a host country. Team members were instructed to select a host country that was not any of their current residences or home countries. Participants were asked to provide information on the culture of the chosen country, to describe the specific type of business and explain why it was a good fit with the culture of the host country. Following Porter's (1990) notion that each country has a unique competitive advantage that should be exploited, each team had to prepare a 15-slide presentation as follows: Summary of the "getting to know each other" phase (one slide); description of the host country culture (three slides); description of the proposed business (two slides); comparison between the host country's culture and team members' cultures (one slide); analysis of the business fit to the host culture (two slides); advantages of the host culture (two slides); validation of the information that appeared in the presentation (by interviewing at least one member of the host county and someone who is familiar with the chosen line of business—two slides); reflection on team processes during the project (two slides).

Participants were instructed to work together on the different project parts. The project grade was at the team level, assuring high interdependence and high involvement of members in the teamwork; furthermore, coordinators monitored team communication to ensure that all team members actively participated and contributed to the final project assignment. In 2010–2011, teams started to use more on-line collaboration tools such as Google docs and Dropbox.

Phase 3: Postproject Wrap-Up

In Phase 3, we reassessed the levels of global identity, local identity, and cultural intelligence

using the same web-based questionnaires as in the preproject preparation phase. This procedure allowed us to assess changes in participants' global and local characteristics during the project. Following this, all participants received a complete report of their individual scores on these global characteristics and a report of the team-level performance scores. Participants' final assignment was to present their team projects in class, thus each project was presented in four different universities.

Phase 4: Follow-Up

Six months after the end of the 2011 project, we sent a follow-up web-based questionnaire to project participants to assess the long-term impact of the project on the levels of local and global identities and on cultural intelligence. One hundred twenty-one participants (33.9% of the original sample) voluntarily responded to the questionnaires.

The project was carefully monitored by the project coordinators from beginning to end. This monitoring included assigning participants to teams, sending information to participants, answering questions, building questionnaires, collecting and analyzing the data, providing personal-, team-, and class-level feedback during and after the project, monitoring team progress and correspondence, and intervening to facilitate work or resolve conflicts in teams and approving the teams' chosen country for the project.

We collected data at three different points of time: preproject preparations (Time 1), end of Phase 1 (Time 2), postproject (Time 3). In 2011 we had a follow-up phase 6 months after the project was completed, to assess the sustainability of cultural intelligence and global identity over time (Time 4). A chart describing the project time line appears in Figure 1.

Measures

Cultural Intelligence was measured by the Cultural Intelligence scale (Ang et al., 2006, 2007). This scale consists of 20 items, using a 7-point Likert type scale (1 = *strongly disagree*; 7 = *strongly agree*), assessing the total average score of cultural intelligence on the four subscales: metacognitive (e.g., "I am conscious of the cultural knowledge I apply to cross-cultural interactions"); cognitive (e.g., "I know the rules for expressing nonverbal behaviors in other cultures"); motiva-

tional (e.g., "I enjoy interacting with people from different cultures"); and behavioral (e.g., "I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it"). Overall scale reliability alpha coefficients for the total sample were .90, .90, and .91 for Times 1, 3, and 4, respectively (subscale alphas were metacognitive: .86, .88, .87; Cognitive: .87, .90, .92; Motivational: .86, .89, .87; Behavioral: .88, .90, .88, for Times 1, 3, and 4, respectively).

Global Identity was measured by the Global Identity scale, developed and validated by Erez and Shokef (Erez & Gati, 2004; Shokef & Erez, 2006, 2008). This measure consists of five items, using a 7-point Likert type scale (1 = *not at all*; 7 = *very much*). The items measured the individual sense of belongingness to the global context (e.g., "I relate to people from other parts of the world as if they were close acquaintances/associates"). The scale reliability alpha coefficients for the total sample were .85 and .91 in Times 1 and 3, respectively, and .87 in Time 4.

Local Identity was measured by the Local Identity scale, developed and validated by Erez and Shokef (Erez & Gati, 2004; Shokef & Erez, 2006, 2008). This measure consists of five items, using a 7-point Likert type scale (1 = *not at all*; 7 = *very much*). The items measured the individual sense of belongingness to their local context (e.g., "I feel a strong attachment towards the society I belong to"). Scale reliability alpha coefficients for the total sample were .88 and .91 in Times 1 and 3, respectively, and .90 in Time 4.

To confirm factor structure and that global identity, cultural intelligence and local identity were independent constructs, we applied a confirmatory factor analysis (CFA) to a 6-factor model (global identity, local identity, and the four dimensions of cultural intelligence). All items significantly loaded on their corresponding factors ($p < .01$), and the fit indices provided evidence of reasonable fit (Time 1 Comparative Fit Index (CFI) = .89, Root Mean Square Error of Approximation (RMSEA) = .07; Time 3 CFI = .90; RMSEA = .07).

Team Trust was measured based on the scale developed by Spreitzer, Noble, Mishra, Cooke, and Wageman (1999). In 2008 and 2009, we used the following three items: ("Team members are straightforward with each other," "Team members take actions that are consistent with their statements," and "I can rely on my team members to deliver their share as promised"). Participants responded on a 5-point Likert-scale, ranging from 1

("*Not at all*") to 5 ("*Very great extent*"). The scale reliability alpha coefficient was .76 in the combined 2008 and 2009 samples.

In 2010 and 2011, we used four items based on Spreitzer et al. (1999): ("I believe most team members communicate honestly with each other," "I believe most team members are reliable," "I believe most team members can be counted on," and "I believe most team members can be trusted"). Participants responded on a 7-point Likert scale, ranging from 1 ("*Not at all*") to 7 ("*Very much*"). The scale reliability alpha coefficient was .91 in the combined 2010 and 2011 samples.

Since trust was measured on a 5-point scale in the 2008–2009 samples and on a 7-point scale in the 2010–2011 samples, we standardized the trust scores and used the standardized mean scores of team trust of all teams in all four projects to test the research hypotheses. In addition, we made separate analyses of the projects in 2008–2009 and those in 2010–2011 and the results were similar to the ones of the entire sample. Therefore, we report the results of the overall sample.

We measured team trust by asking each team member to rate the level of trust in the team. We then aggregated the scores given by each respective team member and calculated the aggregated mean score of the team trust level. Following Bliese's (2000) recommendation, a within-group coefficient of agreement of Rwg(j) was used (James, Demaree, & Wolf, 1984). Additionally, intraclass correlations (ICC) of ICC(1) and ICC (2) were used to justify aggregation of the data to the team level (e.g., Bartko, 1976). As a preliminary step, ANOVA ("*F* test") was used to contrast within-group variance with between-group variance (Bliese, 2000).

Since the items were different and assessed on different Likert scales in the years 2008, 2009, and 2010, 2011, we calculated Rwg(j) and ICCs for 2008, 2009 and for 2010, 2011, separately. The results revealed high levels of mean Rwg(j) for the two samples (.88 and .93 for 2008, 2009 and 2010, 2011), respectively. The results for 2008–2009 were ICC(1) = .11, $F(162) = 1.43$, $p < .01$; ICC(2) = .32. The results for 2010–2011 were ICC(1) = .07, $F(150) = 1.24$, $p < .05$, ICC(2) = .20. These results demonstrate lower ICCs levels than what was expected (Schneider et al., 1998); however, similar levels of ICCs were reported in recent studies (e.g., Liao & Rupp, 2005; Wu, Tsui, & Kinicki, 2010), given sufficient between-group differences (significance *F* test, see Ilies, Wagner, & Morgeson, 2007), high within-group consensus (high Rwg(j)), and small sample size in each team (Bliese, 2000). Therefore, we retained the aggregated score of team-level trust (as previously elucidated), despite the lower than expected ICC levels.

Control Variables

Initially, we used participants' age and gender as control variables for each dependent variable. These effects were not significant (Age and Gender effects on Cultural Intelligence $F(2,1213) = 0.57$, *ns*; $F(2,1212) = 0.42$, *ns*, for Times 1 and 3, respectively; Age and Gender effects on Global Identity $F(2,1213) = 0.28$, *ns*; $F(2,1213) = 0.41$, *ns*, for Times 1 and 3, respectively). Hence, we chose not to include these variables in the analyses in the results section.

Postproject Multicultural Experience

To control for additional multicultural team experience in the follow-up phase, participants responded to the following question: "Did you work in a multicultural team after the project?" (Yes/No).

RESULTS

Table 2 presents the means, standard deviations, and correlations among the research variables, according to the times they were measured and the different levels of analysis.

Hypotheses Testing

To test Hypotheses 1a, 1b, 2a, 2b, 3a and 3b, we used hierarchical linear modeling (HLM) because of the multilevel nested structure of the data (Bryk & Raudenbush, 1992; Hofman, 1997). Cultural intelligence, global identity, and local identity were measured at the individual level at two discrete points of time (i.e., repeated measure analysis), with individuals nested within teams, and teams nested within four projects, each of which took place in one of four consecutive years (2008–2011). Moreover, using HLM enabled the examination of cross-level interactions of team trust and the change in global characteristics over time. All variables were centered in order to avoid problems of multicollinearity, and the variable team trust was standardized for each year.

Hypotheses 1a and 1b postulated that the multicultural team project would positively influence the increase in cultural intelligence and global identity but would not have any impact on local

TABLE 2
Means, Standard Deviations, and Correlations Among the Variables by Time and Level of Analysis
($N = 1,221$ Observations)

Variables	M	SD	1	2	3	4	5	6
Individual level								
Time 1								
1. Cultural intelligence	4.87	0.76	(0.90)					
2. Global identity	5.11	0.08	0.54**	(0.85)				
3. Local identity	5.09	1.11	0.06	0.1	(0.88)			
Time 3								
4. Cultural intelligence	5.09	0.76	0.47**	0.32*	0.05	(0.92)		
5. Global identity	5.28	1.08	0.29*	0.46**	0.07	0.59**	(0.91)	
6. Local identity	5.15	1.16	0.13	0.05	0.53**	0.18	0.13	(0.91)
Team level								
Time 2								
7. Trust[a]	0	1	0.07**	0.10**	0.00	0.14**	0.16**	0.02

Note. Internal consistency reliability (α) estimates are on the diagonal.

[a] Team-trust scores were standardized due to the different range of scales used in different years.

* $p < .05$.

** $p < .005$.

identity. These hypotheses were tested using HLM, accounting for repeated measures and for the nested nature of the data, as shown in Model 1 (see Table 3). The results supported Hypotheses 1a and 1b, demonstrating that both cultural intelligence and global identity significantly increased from the beginning to the end of the project, $F(1,361) = 96.63$, $p < .001$; $F(1,352) = 29.05$, $p < .001$, respectively, but there was no significant effect of the project on local identity, $F(1,337) = 3.07$, *ns.*

Hypotheses 2a and 2b suggested that team trust enhances cultural intelligence and global identity, but not local identity. The results, as shown in Model 2 (see Table 3) supported Hypotheses 2a and 2b, and showed that team-level trust significantly contributed to the increase in cultural intelligence and global identity, $F(2,327) = 19.55$, $p < .001$; $F(2,328) = 28.36$, $p < .001$, respectively, but had no significant impact on local identity, $F(2,326) = .01$, *ns.*

Hypotheses 3a and 3b proposed that team trust would moderate the positive effect of the project on cultural intelligence and global identity, but not on local identity. The cross-level interaction between

TABLE 3
Hierarchical Linear Modeling Testing the Effects of Team-Level Trust and the Cross-Level Interaction Effect on Change in Cultural Intelligence, Global Identity, and Local Identity
($N = 1,221$ observations)

Variable	Cultural intelligence			Global identity			Local identity		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Level 1 main effect									
Project	0.23**	0.23**	0.23**	0.16	0.16**	0.16**	0.06	0.06	0.06
Level 2 main effect									
Team Trust		0.08**	0.10**		0.13**	0.17**		0.002	0.03
Cross-level interaction									
Project*Team-trust			0.05†			0.08*			0.04
−2 log likelihood	5,240.1	5,225.8	5,225.4	6,709	6,685.4	6,682.4	7,136.2	7,139.7	7,140.9

β estimates are reported.

† $p < .06$.

* $p < .05$.

** $p < .005$.

the effect of the project and the team-level trust was then tested, as shown in Model 3 (see Table 3). Hypothesis 3a, on the moderating effect of team-level trust on the project effect on cultural intelligence was partially supported, revealing a marginally significant cross-level interaction between team trust and the effect of the project $F(3,380) = 3.60$, $p < 0.06$, as shown in Table 3. Hypothesis 3b on the moderating effect of team trust on the project effect on global identity was supported, showing a significant cross-level interaction $F(3,370) = 6.31$, $p < .05$. As predicted, there was no significant moderating effect of team trust on local identity growth, $F(3,353) = 2.09$, ns.

To understand the nature of the interactions, in accordance with Aiken and West (1991), we conducted a simple slope analysis (high and low reference points were plus or minus 1 SD from average). The results appear in Figures 2 and 3, demonstrating a significant increase in global identity under medium and high, but not under low levels of team trust, a significant increase in cultural intelligence under medium and high levels of team trust, and a marginally significant increase under low levels of team trust.

Hypothesis 4 postulated that the levels of cultural intelligence and global identity would remain stable over time following project completion and that they would be significantly higher than at the initial stage of the project. The postproject survey, which was conducted 6 months after the end of the project, indicated that most project respon-

dents (64%) gained additional experience in working in multicultural teams after the project ended. To test the impact of this experience on participants' levels of cultural intelligence and global identity, as measured in the postproject survey, we introduced "postproject experience" as a control variable in our model. The results showed that the within-subjects differences in levels of cultural intelligence and global identity between Times 3 and 4 stayed insignificant even when accounting for the postproject experience in multicultural teams, $F(3,119) = 3.02$, ns; $F(3,119) = 1.36$, ns, respectively, hence supporting Hypothesis 4. In addition, there was a significant between-subjects effect of postproject work experience on cultural intelligence and global identity at Time 4, $F(3,119) = 21.26$, $p < .001$; $F(3,119) = 7.60$, $p < .05$, respectively, further confirming that working in a multicultural team context enhances individuals' global characteristics. There was no significant change, however, in local identity between the different times.

DISCUSSION

The main question that our research aimed to answer was whether it would be possible to enhance team members' global characteristics of global identity and cultural intelligence through their participation in a virtual multicultural team project that was designed according to the construction-group model of experiential learning.
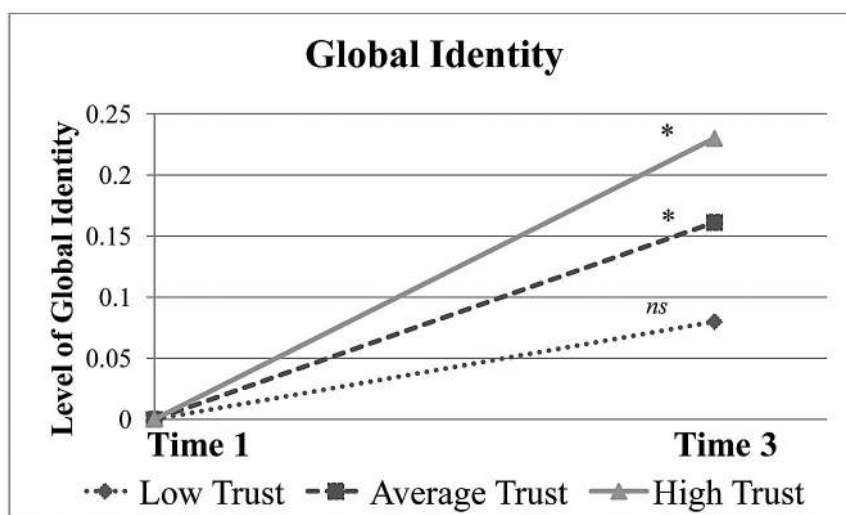

FIGURE 2
Simple Slopes Analysis of the Moderating Effect of Team-Level Trust on Global Identity Growth.
Note. * Indicates that the change from Time 1 to Time 3 was significant ($p < .05$). *ns* stands for insignificant changes.
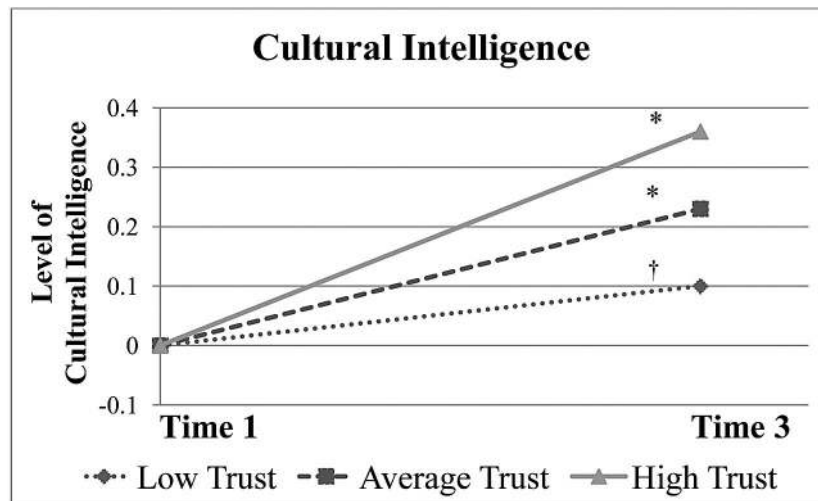
FIGURE 3
Simple Slopes Analysis of the Moderating Effect of Team-Level Trust on Cultural Intelligence Growth.
Note. * Indicates that the change from Time 1 to Time 3 was significant ($p < .05$). †Stands for marginally significant change ($p < .1$).

Furthermore, we explored the role of team trust in enhancing and enabling the development of global characteristics and the long-term robustness of the change in global characteristics.

We hypothesized that participation in multicultural teams, as part of a short-term project, would enhance participants' cultural intelligence and global identity, respectively, and that this effect would be enhanced and moderated by participants' respective team level of trust. Furthermore, we hypothesized that the enhanced levels of cultural intelligence and global identity, respectively, would last after the end of the project. The results generally supported all four hypotheses: Cultural intelligence and global identity increased while the project was being conducted, but the project had no effect on local identity. Moreover, the effect of the multicultural team project on students' cultural intelligence and global identity lasted beyond the project period.

Our study highlighted the importance of trust in virtual multicultural teams. Team level trust enhanced both cultural intelligence and global identity. Team level trust fully moderated the change over time in global identity and marginally moderated the change over time in the overall measure of cultural intelligence. Our research findings enrich the research knowledge on developing global characteristics in a multicultural team context (Mirvis, 2008; Pless et al., 2011; Shokef & Erez, 2006, 2008). Our educational project demonstrated that gaining experience in working in a virtual multicultural team context on a short term team project,

designed in line with the principles of the experiential learning theory, is important for the development of individuals' global competences.

Our research supports recent calls to apply a constructivist approach of experiential learning to the field of global training, educating managers and professionals to effectively reconstruct knowledge, thoughts, and feelings through cycles of concrete experience, reflection upon team process, conceptualizing its meaning and readjusting accordingly by actively experimenting with modifications in the work procedures and team processes in order to improve performance (Kolb & Kolb, 2005; Ng et al., 2009; Yamazaki & Kayes, 2004). In this experiential, virtual multicultural team project, we implemented the pedagogical principles of experiential learning by providing opportunities for direct experience in working in virtual multicultural teams, designing learning spaces of psychological safe climate and trust building, providing specific instructions to reduce misunderstanding and conflict, and monitoring the teams to assure smooth and continuous communication among team members (Kolb & Kolb, 2005; Rovai, 2004).

Theoretical Contributions

Our research contributes to the on-line management education research in two ways: first, by developing and implementing an on-line management education program designed for acquiring global characteristics, and second, by enriching

the research literature on global, virtual multicultural teams.

Most human resource programs in global organizations and business school programs focus on specific knowledge training and behavior modification training that is relevant to specific cultures (Bhawuk, 2009; Egan & Bendick, 2008). These programs hold a cross-cultural perspective, emphasizing differences and similarities of values and behaviors among countries (Zhu et al., 2009), rather than having a global perspective and developing the global characteristics needed to succeed in a global work context. In contrast to this approach, we assert that programs that aim to prepare managers to work in the global work context should reflect a "global mind-set" rather than a "cross-cultural mind-set" (Erez, 2010; Gelfand, Erez, & Aycan, 2007). This distinction is most relevant to business schools that aim to train their students to adapt to global demands.

Our virtual multicultural team project offers important insights to on-line educational programs aimed at preparing global managers to successfully lead global virtual multicultural teams. In accordance with the constructivism group, collaborative learning model (Arbaugh & Benbunan-Fich, 2006, 2007; Hung & Chen, 1999), participants in our project were able to socially construct their cultural knowledge by way of continuous social interactions and to learn from their personal experience when facing cultural challenges in the global context. In line with the experiential learning approach (Kolb & Kolb, 2005), the first phase in our project, "getting to know each other," provided a concrete experience for team members from other cultures. Feedback on cultural values at the individual and class levels enabled participants to reflect upon these values and learn about themselves as individuals and about the dominant cultural values in their local class and in other classes.

In most cases, the majority of students in a class represented the local culture (e.g., U.S., Germany, Israel, or Hong Kong). This reflection phase enabled students to articulate the meaning of culture and implement the knowledge and behavioral experience into the next phase of working on the project itself. As part of the educational program, each team had a team learning space for chats, pictures, and documents, which enhanced the psychologically safe communication climate. Furthermore, the project coordinators monitored written communication to control for conflicts and misun-

derstandings. Task instructions were clear and specific to avoid disagreement among team members on the project assignment. Our results highlight the effectiveness of the experiential learning approach to on-line management education. Specifically, they highlight the contribution of this educational approach to preparing management students for the global context of virtual multicultural teams, enabling them to acquire and internalize global knowledge and develop their global characteristics of global identity and cultural intelligence.

This study contributes to the research knowledge on the emergence of global characteristics in virtual multicultural teams in four ways. First, in support of previous research, we demonstrated that working in a multicultural team context enhances the global characteristics of cultural intelligence and global identity, respectively. While most previous research focused on a real work context with long-term exposure to the global work context (e.g., Gelfand, Lyons, & Lun, 2011; Rockstuhl et al., 2011), our study shows that working in a virtual multicultural team context and providing students with relevant knowledge on cross-cultural differences and similarities, even for a short period, influences the development of the global characteristics needed to successfully adapt to this context.

Second, our findings support the relevance of the person–situation fit model (Kristof-Brown, Zimmerman, & Johnson, 2005) by demonstrating that the effect of the multicultural team context is relevant to the development of the global competences of cultural intelligence and global identity, but not to the development of local identity. Global and local identities appeared as two separate factors in the confirmatory factor analysis, supporting their construct validity. The effect of the multicultural team project on the development of global identity, but not on the development of local identity, supports their discriminant validity. These findings confirm the theoretical argument that global identity and local identity are two independent social identities (Erez & Gati, 2004; Shokef & Erez, 2006, 2008) and that the educational context of virtual multicultural teams was relevant for the development of global characteristics, but not for the development of a local identity.

Third, team trust played an important role in developing global identity and cultural intelligence. Team trust positively influenced team members' cultural intelligence and global identity.

In addition, it moderated the project effect on the development of global identity from Time 1 to Time 3, and it marginally moderated its effect on the development of cultural intelligence. These findings enhanced our understanding of the conditions under which global characteristics develop in multicultural training programs. Extending previous research on multicultural teams (Gibson & Gibbs, 2006), we delineated and tested a multilevel analysis of the moderating role of team-level trust on the development of cultural intelligence and global identity.

In most global studies, team trust has been shown to function as an antecedent of desirable team processes (e.g., Jarvenpaa & Leidner, 1999), as a mediator of team effectiveness (e.g., Joshi, Lazarova, & Liao, 2009), or as the explained variable (e.g., Gibson & Manuel, 2003; Webster & Wong, 2008). The role of trust as a moderator of the effect of the global context on developing global competences has hardly been empirically investigated. Our study shows that training in a multicultural team environment per se is not sufficient to enhance individual global competences; rather, a certain level of team trust is necessary for such characteristics to develop.

In a multicultural team in which there is a high level of trust among members, the increase in team members' cultural intelligence reflects a sense of improvement in individuals' capability to effectively function in culturally diverse settings. Likewise, the enhancement of participants' global identity reflects their increased sense of belongingness to their multicultural teams. One team member stated: "It has been my experience that a culture is best learned through first-hand contact with its members and this project offers the opportunity to really learn a lot about all of the cultures of the team members." A member of another team stated: "This project was enjoyable because it showed me that I am able to communicate well with people who have very different cultural backgrounds. I also learned that our separate cultures share common values in the workplace."

Under low levels of team trust, however, it is likely that individuals did not perceive other team members as part of their in-group. As a result, they refrained from interacting with other team members and gaining cultural knowledge (Gibson & Manuel, 2003); hence, the multicultural team experience did not enhance their cultural intelligence.

It is also important to consider the challenges faced by a multicultural team when attempting to understand the moderating role of trust on team members' global identity. A multicultural team context challenges the development of trust among team members (Branzei et al., 2007; Rockstuhl & Ng, 2008), and both geographic dispersion and communication by way of virtual means may harm the communication processes needed to build trust (Gluesing & Gibson, 2004). Accordingly, it is reasonable that in some cases team trust will not reach a trust level sufficient to facilitate growth in team members' cultural intelligence and global identity, respectively, at least not during a short 4-week period. Our study advanced our understanding of *when* global characteristics of cultural intelligence and global identity will develop in virtual multicultural team.

Fourth, we aimed to explore the robustness of the training effect. We suggest that the structured multicultural team project, which takes a global culture approach and offers hands-on learning from experience, enables long-term internalization of the enhanced global characteristics of cultural intelligence and global identity, respectively. Although both cultural intelligence and global identity are malleable states and may change based on cultural exposure (Earley & Ang, 2003; Shokef & Erez, 2006, 2008), we found, as predicted, that the increase in cultural intelligence and global identity, respectively, was robust and was not attenuated 6 months after the project ended. These findings suggest that basic constructs, such as cultural intelligence, which encompasses four factors, including metacognition, cognition, motivation, and behavior (Ang et al., 2007) and global identity, which represents one facet of self-identity (Arnett, 2002; Erez & Gati, 2004), become part of one's individual competences and do not quickly fade away.

Practical Implications

Our research proposes practical implications for management education programs in business schools and global organizations: First, international management education programs should promote a hands-on experience in working in virtual multicultural team settings. Such programs should be adopted by business schools and by training departments of global organizations. Second, such programs should provide a psychologically safe communication climate by having the participants get to know each other and by monitoring the communication to control for potential conflicts and misunderstanding. Third, feedback

on cultural values and on team processes should be provided to enable reflection upon the meaning of culture and team processes. Fourth, our program created high task interdependence by assigning a team task, by instructing team members to have a minimum number of chats and providing an online chat room for each team, by monitoring that indeed such chats took place, and by giving the project grade at the team level. Fifth, participants received specific and clear instructions for each project phase and specific and clear instructions for the team task, to minimize misunderstandings. Previous research has demonstrated that clear and specific instructions were important in multicultural teams in particular (Nouri et al., in press). Sixth, trust building is important in the virtual multicultural team context, where team members cannot share nonverbal communication cues and other cues that increase familiarity (Rockstuhl & Ng, 2008; Van Knippenberg & Schippers, 2007). Our study showed that cultural intelligence and global identity developed over time after team trust reached a sufficient threshold. Educators in academia and human resources departments of global organizations should design educational programs that foster trust. In addition, they should identify and control sources of mistrust that hinder the acquisition of global characteristics. Last, our study demonstrated that cultural intelligence and global identity are malleable characteristics that are influenced by the global work context. These two global characteristics can be developed under an educational program that provides the opportunity to experience working in a multicultural team context and by offering a learning experience based on the pedagogical principles of experiential learning.

Limitations and Future Research

Notwithstanding its strengths, our research has some limitations that provide a venue for future research. First, participants in our study took part in ad hoc virtual multicultural teams in an educational setting. Their experience and team trust may differ from individuals working in stable and long-term multicultural teams (Saunders & Ahuja, 2006). Future research should test for the stability of global competences over time in real work settings. Second, the students participating in the virtual multicultural team project came from different university classes, with different instructors and distinct course syllabi. Since there was only one team member from each class in each team, we assume that the effect of class material was randomly distributed across all teams and we did not control for it. On the other hand, the multicultural team project was the same across all teams, monitored by the same team coordinators who initiated the project and managed it; therefore, we assume that we can attribute the effect on the change in cultural intelligence and in global identity to the multicultural team project, rather than to diverse class material. Furthermore, we found that under low levels of team trust there was no significant increase in cultural intelligence and global identity. This finding suggests that a change in global competences depends on team dynamics. Future research should specifically control for the diversity in class material and should also compare the experiential learning approach and the traditional approach in terms of students' acquisition of cultural knowledge, global characteristics of cultural intelligence and global identity and global behavioral skills. Last, team trust is one variable that moderates the effect of the multicultural team project on the development of global characteristics. Future research should examine other factors, such as team leaders' global characteristics, which may also influence team trust.

CONCLUSIONS

This study utilized methodologies espoused by the constructivism group-based experiential learning program designed for management students in the context of virtual multicultural teams. We demonstrated that global training programs, which consist not only of class material but also of hands-on experience in working in multicultural teams, can improve personal global characteristics, given that team members have positive and trustworthy relationships with each other. This improvement in global characteristics is relatively robust and stays meaningful across different samples and for a significant duration after the end of the program.

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