



Multicultural student group work in higher education An explorative case study on challenges as perceived by students

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ABSTRACT

This paper aims to examine challenges that are inherent in multicultural student group work (MCSG) in higher education and the differences between students from different cultural backgrounds in how they perceive the importance of challenges in MCSG. For this purpose, a 19-item survey was completed by students ($N = 141$) of the 9-EC (European Credits) Academic Consultancy Training (ACT) course of Wageningen University, a university in the Netherlands in the domain of life sciences with a student population consisting of over 30% foreign students from over 100 different countries. Students were required to rate on a Likert scale (from 1 to 5) the importance of a certain challenge in MCSG. Challenges for students in MCSG were analyzed using scales that centered on cross-cutting challenges and culture-related challenges in multicultural group work identified in exploratory factor analysis. To examine the extent to which culturally diverse students differed with respect to their perceptions of the importance of the challenges, a one-way analysis of variance (ANOVA) was conducted based on Hofstede's individualist–collectivist cultural dimension. Free-riding, insufficient English language skills and students not communicating properly were perceived by all participants of this explorative case study to be the most important challenges in MCSG. The results suggest that students' cultural background (the individualist–collectivist dimension) affects their perceptions of the importance of challenges in MCSG. Explanations for these results and recommendations for future research are provided.

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1. Introduction

The student populations of universities throughout the world are increasingly multicultural. After graduation a large number of today's students will work in international groups as part of their future professions. Therefore, the ability to work effectively in culturally heterogeneous groups should be an integral part of a student's competence. However, incorporating group work in higher education, specifically in multicultural settings, creates both challenges (in terms of coordinating students' different communication skills, behavioral patterns and intercultural competences) and potential benefits (in terms of sharing culturally diverse knowledge). Previous research indicates that cultural differences should be taken into consideration when designing and implementing collaborative forms of learning (Armstrong & Cole, 1995; Cox, Lobel, & McLeod, 1991; Flowerdew, 1997; Lemons, 1997; Vatrappu & Suthers, 2007; Zhu, 2009). While one of the pillars of

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today's higher education system is group work, which may pose challenges for both national and international students (Cox et al., 1991; Lal, 2002; Summers & Volet, 2008; Sweeney, Weaven, & Herington, 2008; Watson, Cooper, Neri Torres, & Boyd, 2008; Woodrow, 2001), knowledge of what challenges are inherent to learning groups in academia and how culturally diverse students perceive those challenges is still lacking.

Over the last 30 years, numerous studies have been aimed at providing valuable insight into multicultural group work as a collaborative approach to learning. In the scientific literature we can find positive research findings about multicultural group work in terms of (a) shifting to a more global and less ethnocentric approach in higher education; (b) preparing students for working effectively in culturally heterogeneous groups in both academic and professional environments; (c) sharing culturally diverse knowledge and development of intercultural competence (Cope & Kalantzis, 1997; De Vita, 2000; Staggers, Garcia, & Nagelhout, 2008; Volet & Ang, 1998; Watson, Johnson, Kumar, & Critelli, 1998; Watson et al., 2008). However, some studies have pointed to the problem of student group ineffectiveness in general (Bacon, Stewart, & Silver, 1999; Smith & Berg, 1997) and multicultural student group work in particular (Ledwith & Seymour, 2001; Watson et al., 1998). Notwithstanding these latter findings, group work of culturally diverse students can be positive and beneficial if the arising differences and similarities are properly managed (Distefano & Maznevski, 2000; Richard, 2000). Therefore, a better scientific understanding of cross-cultural cooperation while working in culturally heterogeneous groups of students is essential. In this context, the present paper aims to explore the challenges which students of different cultural backgrounds face in MCSG in higher education. Gaining insight into these challenges will help educators and instructional designers improve learning environments for culturally heterogeneous groups in higher education. Moreover, to effectively manage multicultural group work we need "to recognize underlying cultural causes of conflict, and to intervene in ways that both get the team back on track and empower its members to deal with future challenges themselves" (Brett, Behfar, & Kern, 2006, p. 3).

This study has a dual purpose: (1) to identify challenges inherent to multicultural learning groups in higher education and (2) to examine the extent to which culturally diverse students perceive different challenges to be important in MCSG in higher education. The paper is organized as follows: first, challenges that students face in multicultural group work are explored based on previous research studies. Second, this theoretical framework provides the foundation to examine challenges in MCSG in higher education as perceived by students with different cultural backgrounds. Next, results of this study are presented. The last part of the paper outlines conclusions based on the research findings, and consequently offers a set of recommendations for future research on multicultural student groups in higher education.

1.1. Theoretical framework

Multicultural student group work can be defined as a collaboration of two or more individuals from different (national) cultural backgrounds, who have been assigned interdependent tasks and are jointly responsible for the final results, who see themselves and are seen by others as a collective unit embedded in an academic environment and who manage their relationships within a certain educational institution (Bailey & Cohen, 1997; Marquardt & Horvath, 2001).

Referring to the notion of culture in this paper we used Hofstede's definition (1980, p. 25), which states that culture is "the collective programming of the mind which distinguishes the members of one human group from another. . . the interactive aggregate of common characteristics that influence a human group's response to its environment."

Apart from cultural aspects there are many other elements of diversity that affect group processes (e.g., age, gender, education). Based on the research findings of Behfar, Kern, and Brett (2006), it can be argued that some challenges are unique to culturally heterogeneous groups and others occur in groups regardless of their cultural makeup. According to Behfar et al. (2006, p. 258), monocultural and multicultural groups share challenges related to planning and task coordination, problem solving and decision making, conflict management, adhering to timelines, and agreeing on acceptable group behavior, "but multicultural groups have to overcome an additional layer of complexity due to culture-related differences". Following Behfar et al.'s (2006) line of reasoning, students working in multicultural groups have to deal with both challenges that are common for monocultural groups and challenges that are peculiar to multicultural groups. Due to cultural differences that members bring to a group "the web of intra-group dynamics" becomes more complex (Halverson & Tirmizi, 2008, p. 12). For this reason, a theoretical framework was developed taking into consideration the challenges that appear to affect both monocultural and multicultural groups.

Based on the literature, it is worth noting that the majority of studies on group work were conducted in the field of management and organizational research with a focus on the business world. Despite the fact that multicultural student groups in the university setting function according to their own intrinsic nature and special conditions, students still may encounter challenges that are typical for professional environments. Thus, the current study will focus on the challenges in MCSG in the context of higher education, including those that may also occur in a professional setting.

According to Salas, Stagl, Burke, and Goodwin (2007), more than 130 conceptual models and frameworks of group work can be found in the literature. Although the phenomenon of group work has been widely viewed from different perspectives, there are mainly three strands of research in the scientific literature about challenges that may occur in multicultural groups. Research studies on group work have focused on: (1) organizational-level factors (e.g., Offermann & Spiros, 2001; Tata & Prasad, 2004; Thomas, Ravlin, & Barry, 2000); (2) group-level factors (e.g., Cannon-Bowers, Tannenbaum, Salas, & Volpe, 1995; Hackman, 1987; Salas, Stagl, & Burke, 2003; Schermerhorn, Hunt, & Osborn, 1995; Thomas, 1999; Watson et al., 1998; Williams & O'Reilly, 1998), and (3) group climate, group effectiveness criteria, group performance (e.g., Druskat & Wolff, 2001;

Table 1
Summary of the group-level challenges that appear to affect MCSG in higher education.

| Group-level factor | Description of the challenges that appear to affect MCSG | | Authors |
|--------------------|--|--|--|
| Group membership | Members' experience and skills | Heterogeneous group composition (grouping students of a variety of age, gender and culture) Differences in content knowledge Differences in academic attitude Difference in ambitions Diverse educational backgrounds | Van den Bossche et al. (2006), Sweeney et al. (2008), Timmerman (2000), Pearce and Ravlin (1987), Sweeney and Lee (1999), Zimmerman et al. (1977), Pfaff and Huddleston (2003), Thomas et al. (2000), Summers and Volet (2008). |
| Group process | Communication | Students not communicating properly with fellow students and a supervisor Culturally different standards of interaction (direct vs. Indirect communication) Insufficient English language skills | Marks et al. (2000), Stevens and Campion (1994), Gudykunst and Ting-Toomey (1988), Gudykunst (1994), Gudykunst and Matsumoto (1996), Pitton et al. (1993), Andersen (1994), Gudykunst et al. (1996), Davison and Ward (1999), Hall (1990), Cox et al. (1991), Janssens and Brett (1997), Behfar et al. (2006), Brett (2001). |
| | Problem solving and decision making | The pressure to defend a group decision while not agreeing with it Culturally different styles of decision making and problem solving Culturally different styles of complying with supervisor's guidelines Ineffective group work management | Cannon-Bowers et al. (1995), Stevens and Campion (1994), Cox and Blake (1991), Cox et al. (1991), Allik and McCrae (2004), Watson et al. (2005), Kirby and Barger (1998), Matveev and Milter (2004), Hofstede (1991), Pope-Davis et al. (2003). |
| | Conflict management | Culturally different styles of conflict management Group conflicts Attitudinal problems such as dislike, mistrust and lack of cohesion | Doucet and Jehn (1997), Triandis (1994), Hall (1990), Jehn (1995), Anderson and Adams (1992). |
| | Leadership | Free-riding A low level of motivation Dominating group members | Wendt et al. (2009), House et al. (2004), Hofstede (2001), Dickson et al. (2003), Pillai and Meindl (1998), Earley (1989), Watson et al. (2002), Ingham et al. (1974), Johnson and Johnson (1984–1985), Joyce (1999), Latane et al. (1979), McCorkle et al. (1999). |

Hackman & Morris, 1975; Noroozi et al., in press; Thomas et al., 2000). For example, research studies of Watson et al. (1998), Watson et al. (2008), Watson & Kumar (1992), and Watson, BarNira, and Pavurb (2005) have contributed substantially to the understanding of relationships between personality and group process, age, gender and group heterogeneity. Hackman (1987) was one of the first scholars to study how group size, norms, satisfaction, and task accomplishment correlate with group performance.

Research studies addressing challenges faced particularly in multicultural groups have focused mostly on: (1) how group members' cultural differences affect group work performance (e.g., Behfar et al., 2006; Halverson & Tirmizi, 2008; Janssens & Brett, 1997; Kirkman & Shapiro, 2005; Tang, 1999; Watson et al., 1998), and (2) how group members' cultural dimensions of behavior affect their understanding of a collaborative situation and their actual actions/behaviors in a collaborative situation (e.g., Behfar et al., 2006; Cox et al., 1991; Earley & Mosakowski, 2004; Halverson & Tirmizi, 2008; Hofstede, 1980, 1993; Watson, Kumar, & Michaelsen, 1993; Watson, Johnson, & Zgourides, 2002). Hofstede's cultural dimensions or Hall's cultural factors provide classic analytical frameworks applicable to multicultural group work research. For example, people from collectivistic and high-context cultures prefer indirect communication, while representatives of individualistic and low-context cultures prefer direct modes of communication (Hall, 1990; Hofstede, 1980; Weldon, 1997).

Table 1 presents a summary of the MCSG challenges that may affect multicultural student groups in the context of higher education. All these challenges have been previously studied in the literature from various research perspectives. Departing from these theoretically relevant constructs we intend to examine the relative importance of MCSG challenges as perceived by students. The present study emphasizes group-level challenges in terms of the relationship between them and students' cultural backgrounds. Group-level challenges mostly determine group success and most challenges stemming from cultural diversity of group members occur at this level (Halverson & Tirmizi, 2008).

1.2. Group-level challenges

Group-level challenges for MCSG can basically be divided into two subcategories associated with group membership and group process (see Table 1).

Group membership implies a variation in group members in terms of their experiences and skills, personal characteristics (e.g., age, gender) and qualities, social and cultural backgrounds. In the context of higher education, group members may have diverse educational backgrounds that partly result in differences in their content knowledge; also they may differ in terms of academic attitudes and ambitions (e.g., aiming merely to pass with a mark of '6'- or striving for a '9'- on a ten-point grading system) (Zimmerman, Parks, Gray, & Michael, 1977). Heterogeneous group composition may help students achieve positive outcomes in at least two ways: first, it promotes a better understanding in a certain knowledge domain because a problem is approached from different perspectives (Van den Bossche, Gijsselaers, Segers, & Kirschner, 2006) and second, students can broaden their experience by working/studying with individuals who have diverse backgrounds (Sweeney et al., 2008).

Grouping students of a variety of age and gender together in a group might, on the one hand, capitalize on the differences in their experiences, knowledge and abilities. On the other hand, it might cause some problems related to differences in study strategies, priorities, social capital, cultural capital, financial background and other factors (Pearce & Ravlin, 1987; Timmerman, 2000). For example, the research findings of Sweeney and Lee (1999) indicate that female students perceived the cooperation in group work to be more important than the male students perceived it to be. The students' perception of the importance of cooperation is related to group success and synergy development in a group (Pfaff & Huddleston, 2003).

A number of variables concerning group diversity relate specifically to the studying and learning behaviors of students. For example, differences in ambitions may undermine the group working process, as a person with a relatively low level of ambition does not contribute to his/her full potential to the group work (Halverson & Tirmizi, 2008). This might affect other group members and the final result. Students usually have a certain academic attitude toward group work. While some students in group work are apt to benefit from the academic and social opportunities provided (in terms of developing social skills and attaining a better understanding in a certain knowledge domain through exposure to different perspectives), others prefer working individually and/or seem reluctant to participate in an interactive way of learning (Pfaff & Huddleston, 2003). Culturally diverse group members in a study of Thomas and Ravlin (1995) found both task accomplishment and satisfaction with the group process to be important.

Interdisciplinary group tasks require all members to actively work on synthesis and participate in the formulation of the final product. Previous research (Summers & Volet, 2008; Sweeney et al., 2008) suggests that diversity in terms of members' educational backgrounds should be taken into account when forming a group. Students educated in one country with particular traditions and characteristics may see group work, as a collaborative form of learning, differently than their counterparts who were trained in different education systems. Differences in content knowledge among group members can be challenging in terms of coordination efforts to reach disciplinary synergy, but advantageous in terms of the group's multiple viewpoints, and greater potential for creativity and innovation. However, according to Clark (1993), "putting people together in groups representing many disciplines does not necessarily guarantee the development of a shared understanding". It is necessary to set up a "high-performing" group which capitalizes on its diversity rather than being constrained by it (McCorkle et al., 1999).

Group processes play an important role in determining group dynamics and overall success of a group. They may pose considerable challenges in terms of communication, problem solving and decision making, conflict management and leadership issues (Halverson & Tirmizi, 2008).

Communication is an essential tool by which group members organize their work and cooperate with one another (Marks, Zaccaro, & Mathieu, 2000). More specifically, communication implies an ability to reach full comprehension among all group members, as well as to collect and disseminate necessary information related to the product of group work (Stevens & Campion, 1994). Both monocultural and multicultural groups experience similar challenges associated with interpersonal tension in the communication process. This interpersonal tension may result from a clash of different communication styles, for example, when group members "with a preference for more 'aggressive' communication styles worked with members with a preference for more 'consensus building' in expressing their points of view" (Behfar et al., 2006, p. 239). Apart from a large variability of communication styles among group members, there is also a strong relationship between communication and culture, as communication practices are greatly influenced by culture (Hall, 1990).

A large body of literature exists on differences in communication styles across cultures (Andersen, 1994; Davison & Ward, 1999; Gudykunst & Matsumoto, 1996; Gudykunst & Ting-Toomey, 1988, chap. 3; Gudykunst, Ting-Toomey, & Nishida, 1996; Gudykunst, 1994, chap. 4; Hall, 1990; Pitton et al., 1993). Sometimes collaborative partners with different cultural backgrounds may not benefit from the sharing of "culturally divergent knowledge" because of the lack of shared understanding of discourse rules and norms, underestimation of the role of clarity, etc. (Cox et al., 1991). For example, Western cultures typically have a direct, low-context and explicit communication style (Hall, 1990). People from these cultures usually act based on certain explicit rules and they have short-term interpersonal connections. While people from cultures that use an indirect and high-context mode of communication prefer less verbally explicit messages and act based on an overall situation, they are usually prone to providing less written and formal information and decisions are taken on the basis of personal relationships (Brett et al., 2006; Hall, 1990).

As English is the lingua franca for almost all multicultural groups, another important factor may be limited comprehension between group members due to different English proficiencies and great variation in accents (Davison & Ward, 1999; Janssens & Brett, 1997). It is worth noting, however, that a group member with insufficient English language skills need not necessarily be incompetent in a particular subject matter (Brett et al., 2006).

Over the last several years, numerous studies have focused on relevant competencies for group work (e.g., Cannon-Bowers et al., 1995; Stevens & Campion, 1994). Researchers identified a number of task- and group-generic competencies, one of which is collaborative problem solving and decision making. Both culturally homogeneous and heterogeneous groups should possess a set of abilities that help them effectively make decisions and solve problems arising in group work processes. However, culturally heterogeneous groups have an additional layer of complexity in that they must overcome cultural barriers caused by different frames of reference, values and norms (Cox & Blake, 1991). According to Behfar et al. (2006), monocultural groups are mostly challenged by procedural issues related to coordination, evaluation of ideas, planning and task division when it comes to decision making at any stage of group development. Multicultural groups need to handle all these issues as well, but they also experience challenges related to “legitimate approaches to problem solving” (Behfar et al., 2006, p. 240) or process legitimacy.

Previous research suggests that an individual’s decision making process depends to a great extent on his/her cognitive style (Myers, 1962). On the other hand, some scholars argue that there are cross-cultural differences in problem solving and decision making processes. For example, Martinsons (2001) found that “American, Japanese and Chinese business leaders each exhibit a distinctive national style of decision making”. Vygotsky’s (1978) social constructivist theory brings together these two viewpoints with a main emphasis on the importance of the background and culture of the individual, since an individual’s cultural context of cognition influences the way he or she attains knowledge and processes information.

Scholars have been divided on a very controversial issue with respect to clustering fixed personality traits across different cultures. Some of them consider that similar cultures show similar personality profiles (Allik & McCrae, 2004), while others state that personality is a unique set of an individual’s characteristics shaped by genetics and influenced by his/her environment over time (Kirby & Barger, 1998). According to Matveev and Milter (2004), the personality orientation in multicultural group work “comprises group members’ interest toward intercultural interaction, their emotional and physiological reactions toward foreign nationals, and the degree of empathy toward people from different cultures” (p. 106). Despite culture-related differences, individuals need to understand and relate to the feelings, thoughts and behaviors of their group members. Cultural empathy thus plays a significant role in group work, specifically during the collaborative problem solving and decision making processes.

With respect to culturally different styles of complying with a supervisor’s guidelines, both supervisors and students need to understand how power differentials may influence the supervision process (Pope-Davis, Coleman, Liu, & Toporek, 2003). As Hofstede (2001) explains, “the less powerful members of institutions and organizations expect and accept that power is distributed unequally” (p. 98), which implies that students from cultures with a high power distance may comply with a supervisor’s guidelines differently than students from cultures with a low power distance. Thus, culturally different styles of complying with a supervisor’s guidelines may pose challenges as teaching/learning styles vary across higher educational institutions in the world (Anderson & Adams, 1992).

One of the crucial aspects in group work management is the ability of all group members to effectively undertake and stimulate activities aimed at the final product of the group, and to uphold the group work process. Each group usually prepares a work plan that should at least address the mission/vision of the group. When a group establishes norms to proceed with work, this mostly corresponds with group goals. To function successfully, the group thus needs explicit goals (Avery, 2001). Mutual understanding and common ground with respect to group goals play a key role in a multicultural group’s success. Watson et al. (2005) examined the extent to which a group member tends to work with others or prefers working individually by using team-oriented and self-oriented behavior approaches. Different expectations and prevailing individual goals may cause serious problems in group work (Gardenswartz & Rowe, 2003). For example, one group member may prioritize his/her personal goals, while other members are working more toward a common group goal.

Multicultural group work may lead to conflicts within the group due to differences in members’ social norms, values, interests and opinions. According to Doucet and Jehn (1997), conflict is a culturally defined phenomenon, and what is viewed as a conflict in one culture can be seen as a ‘normal’ situation in another. Triandis (1994) explains that in collectivistic cultures individuals tend to avoid open conflict since it might obstruct group cohesion and negatively influence relationships within the group. Thus, culturally different styles of conflict management may be applied to handle problems/conflicts arising in group work processes.

Jehn (1995) defined two kinds of conflicts: relationship-related conflict and task-related conflict. Relationship-related conflict may arise due to attitudinal problems such as dislike, mistrust and lack of cohesion. The second kind of conflict may occur because of a clash of opinions with respect to the task (e.g., a group member may feel pressured to comply with a group decision he or she does not agree with). Such a conflict may stem from adhering to timelines or different attitudes toward deadlines (some students may want to complete assignments directly, while others prefer to wait for the deadline) (Hall, 1990).

Research on leadership in a cross-cultural context shows that the perception of leadership behaviors and attributes varies across cultures (Dickson, Den Hartog, & Mitchelson, 2003; Hofstede, 2001; House, Hanges, Javidan, Dorfman, & Gupta, 2004; Wendt, Euwema, & van Emmerik, 2009). According to Hofstede (2001, p. 388), “ideas about leadership reflect the dominant culture of a country. Asking people to describe the qualities of a good leader is in fact another way of asking them to describe their culture”. Pillai and Meindl (1998) argue that group members from collectivistic cultures are more in favor of charismatic leadership behavior (a leader is regarded as the foremost authority in a group), whereas people from individualistic cultures prefer task-oriented leaders.

In contrast to the group leader's role, some persons in the group may not contribute to the group work to their full potential or may undermine the group working process. This can affect other group members and the final results. Many researchers studying group work (e.g., Ingham, Levinger, Graves, & Peckham, 1974; Johnson & Johnson, 1984–1985; Joyce, 1999; Latane, Williams, & Harkins, 1979; McCorkle et al., 1999, and many others) have focused their attention on this issue of so-called free-riding or "social loafing". Based on the definition given by Latane et al. (1979), it is "a decrease in individual effort due to the social presence of the other persons" (p. 823). This free-riding phenomenon correlates closely with the cultural backgrounds of group members. Earley (1989) argues that people from collectivistic cultures see their individual contributions as very important in order to achieve common goals of the group. From this perspective every group member should work to the extent of his or her abilities for the sake of group success and free-riding behavior is not acceptable. In contrast, people from other, individualist, cultures prioritize their own interests. As a result, individualists tend to benefit themselves first and are more likely to "loaf" if their individual contributions to the group's final results go unnoticed or there is no reward system for individual effort (Earley, 1989). A low level of motivation among group members may influence overall group performance, as a group represents a collective unit of individuals who influence one another in the process of achieving group goals (Katzenbach & Smith, 1994).

1.3. Cultural background

The issue of the impact of cultural diversity on group work processes is of utmost interest for this paper and we need to examine it in more detail. Since the early sixties, many studies have aimed at providing valuable insight into various cultural values frameworks (Hall, 1990; Hofstede, 1980, 1991; House et al., 2004; Kluckhohn & Strodtbeck, 1961; Schwartz, 1994; Trompenaars & Hampden-Turner, 1998).

Despite strong evidence in the scientific literature about the impact of culture on the functioning of an individual or a community (Geertz, 1973; Schwartz, 1994; Triandis, 1994), there is not yet a determined and comprehensive conceptual model which establishes ground rules for applying the existing cultural values frameworks and their dimensions to multicultural group work. For this reason, on the basis of reviews of the literature, we examined some cultural values frameworks that might be relevant for better understanding general and culture-related challenges faced in MCSG. We screened the frameworks based on two principles: their theoretical significance in the scientific literature and practical relevance to multicultural groups in higher education.

In most of the examined cultural values frameworks the individualist–collectivist dimension has proved to be one of the most robust concepts. Research replicating and supporting the robustness and validity of Hofstede's dimensions of culture is large in scope and number, exceeding more than 1500 published studies (Metcalf & Bird, 2004). This dimension is relevant and has implications for group processes (Gelfand, Erez, & Aycan, 2007).

Many studies on the individualist–collectivist dimension have focused on group-work-related attitudes and behaviors. Scholars in the field of cultural studies, such as Trompenaars (1994), Hofstede (1980, 1991, 1993), Triandis (1994), and Triandis, Chen, and Chan (1998) researched the differences between individualist and collectivist cultures. Specifically, the research of Geert Hofstede has contributed enormously to our understanding of culture across more than fifty nations. Hofstede (1993) stated that some differences between individuals of collectivist and individualistic cultures are related to attitudes toward group work. Representatives of collectivist and individualistic cultures have different attitudes toward diversity among group members: (1) collectivists are apt to believe that diverse groups are unable to function effectively due to their divergence of interests and lack of shared values, while individualists believe that group work can be advantageous because it is considered as a place of confrontation between different perspectives in the pursuit of knowledge and problem solution (Sosik & Jung, 2002); (2) individualists are geared specifically to personal goals while collectivists tend to contribute substantially to group success and their behavioral motives are impelled by the common group identity (Shamir, 1990; Triandis, 1994); (3) individualists do not tend to work in groups as group work is commonly attributed to working together for common goals rather than individual ones, and it can be difficult to discern individual contributions by judging the final result of group work (Cox et al., 1991; Earley, 1989); (4) as mentioned above, people from individualist cultures are more likely to "loaf" because of their greater willingness to work individually than in a group (Earley, 1989).

1.4. Research questions

In line with the aims of this study, this paper addresses two research questions:

RQ1 What, according to students, are the most important challenges encountered during multicultural student group work in higher education?

RQ2 To what extent do students of individualistic and collectivistic cultures differ in their perceptions of the importance of challenges that may occur in multicultural student group work in higher education?

2. Method

2.1. Research setting

The Academic Consultancy Training (ACT) course of Wageningen University was chosen as a case study for this research because this course requires students to work in multicultural groups to carry out a project. This course trains students in the application of Master-level academic skills in a simulated professional setting of a small consultancy group working for a commissioner on a real work assignment. The small consultancy groups of 4–7 students are assigned a design type project for a client. This may be design of new technologies, policy papers, business plans, communication plans or draft research plans for integrated research programs. The ACT organizing staff forms these student groups on the basis of required disciplinary students' background, students' interests and their cultural background. Each group member works full time (i.e., 42 h per week) on the project of the group during 4 weeks and half time (i.e., 21 h) during the remaining 4 weeks. Students are members of groups only at times of the ACT course and work in these groups until they complete the project together. To strengthen the professional skills needed for such group work, brief training sessions on working in projects and on communication and self-reflection are integrated in the course. These additional brief training sessions focus on project planning, communication skills, argumentation skills, management skills, group dynamics, self-reflection, student group building exercises, and multicultural communication skills. Teachers use various teaching and training methods, such as: lectures, group discussions, case studies, role plays, audio visual methods, games and icebreakers.

Each student group should complete the following activities while being involved in the ACT course: regular group meetings, development of project proposal, assignment of group members' functions, development of work plan, project execution, formulation of the final product and recommendations to the client, deliverables reporting. Regular group meetings are organized to reflect on the functioning of the group and of individual members. At the start of the project each student group has to establish a project proposal where students should indicate a project description and a detailed planning with individual tasks. Concerning the assignment of group members' functions, prior to starting, the students are assigned functions with a clear task description. Also, students develop a work plan where they indicate all the necessary activities to be completed within a certain time-line. During project execution stage all group members actively work on synthesis and participate in the formulation of the final product and recommendations to the client. By the end of the ACT project, every group member is expected to prepare a self-assessment dossier (including application letter, expectation paper and final reflection paper). All group members present their final project paper and prepare an oral presentation in order to defend and sell their viewpoints and conclusions.

After the ACT course, students are expected to be able to: (1) determine the goals of a project and formulate tasks and a project plan on the basis of their disciplines; (2) recognize the challenges and benefits of working in multicultural groups; (3) assess the contribution of other group members on group functioning and execution of project tasks and give feedback in written and oral form; (4) successfully solve problems caused by different standards of interaction, styles of thinking and styles of problem solving in multicultural group; (5) recognize and develop their personal styles of communicating during meetings and conflicts (Study Handbook of Wageningen University 2009–2010).

2.2. Participants

The survey was conducted among students of the ACT course in the study year 2009–2010. Participants in this explorative case study were students enrolled in different educational programs in the life sciences and they were in the first year of their Master program. Our sample of 141 students comprised 66 Dutch and 75 international students; 60% of whom are women. Of the international students, 26 come from Europe (outside the Netherlands), 21 from Africa, 14 from Asia, 6 from Oceania, 5 from South America and 3 from North America. The total number of countries represented in our study was forty. The age group of the respondents ranged from 20 to 48 years, with a mean age of 25.71, and 96.7% of respondents were below the age of thirty. Well over half (63.7%) of the respondents stated that they had at least 2 years of prior experience working in student multicultural teams (the mean was 2.5 years).

2.3. Instrument

A questionnaire was developed to examine whether the students' cultural backgrounds affected their perceptions of the importance of challenges in MCSG. The instrument was divided into two sections: Section 1 was intended to register characteristics of the respondents such as country of origin, gender, age, student multicultural group work experience and educational program. Section 2 asked students to rate the importance of specific challenges that may occur in the group work process (see Table 1). A 5-point Likert-type scale format was employed to rate all items of the instrument (the perceived importance of challenges: 1 = very unimportant; 2 = unimportant; 3 = neutral; 4 = important; 5 = very important).

Five questions related to membership of a multicultural group. These were prompted mostly by the works of Van den Bossche et al. (2006) and Sweeney et al. (2008), who suggested that grouping students of a variety of age, gender and cultural backgrounds into one group may cause problems related to differences in study strategies, priorities, social capital, cultural capital and financial background.

Table 2
Results of exploratory factor analysis of challenges in multicultural group work items.

| Reliability analysis and loadings of extracted factors | Factor 1 | Factor 2 |
|---|----------|----------|
| Cross-cutting challenges ($\alpha = 0.83$) | | |
| Students not communicating properly | 0.84 | 0.22 |
| Free-riding | 0.78 | 0.03 |
| Insufficient English language skills | 0.75 | 0.07 |
| Group conflicts | 0.70 | 0.09 |
| A low level of motivation | 0.66 | 0.20 |
| Culture-related challenges ($\alpha = 0.85$) | | |
| Culturally different styles of decision making and problem solving | 0.19 | 0.89 |
| Culturally different ways of interacting | 0.13 | 0.86 |
| Culturally different styles of complying with supervisor's guidelines | 0.12 | 0.72 |
| Culturally different styles of conflict management | 0.12 | 0.69 |
| Eigenvalue | 6.31 | 2.32 |
| % Variance explained | 33.21 | 12.22 |

Extraction method: principal component analysis; rotation method: Varimax with Kaiser normalization; rotation converged in 7 iterations.

The research studies of Gudykunst et al. (1996), Hall (1990) and Brett et al. (2006) gave an impetus to formulate three questions regarding communication challenges, including English proficiency. These authors suggested that differences in communication style across cultures may influence the interaction process due to a possible lack of shared understanding of discourse rules and norms, differences in expectations, and underestimation of the role of clarity.

Four questions related to problem solving and decision making processes in MCSG were prompted by the works of Martinsons (2001), Cox and Blake (1991), and Matveev and Milner (2004). These scholars argued that there are cross-cultural differences in problem solving and decision making processes.

Four questions that focused on conflict management in MCSG stemmed from the works of Doucet and Jehn (1997), Triandis (1994) and Jehn (1995). These researchers stated that conflict is a culturally defined phenomenon and culturally diverse group members can exhibit culturally distinctive styles of conflict management when problems/conflicts arise in group work.

Three questions addressed the issue of roles of group members (namely, free-riding, dominating group members and a low level of motivation). According to Earley (1989) and Hofstede (2001), there are differences between people from collectivistic and individualistic cultures with respect to leadership and free-riding behaviors in group work.

It is important to mention that respondents were provided with a brief definition of some items to facilitate interpretation. For example, dominating group member was defined as "one group member imposes his/her own visions and ideas on the other members" and free-riding was defined as "some persons in a group do not contribute to the group work to their full potential or undermine the group working process". Also, the questionnaire included a space for the respondents where they could indicate other issue(s) that are not mentioned in the list of challenges and give their comments.

2.4. Procedure

Participants of this study were involved in MCSG for about 8 weeks full-time. At the end of the finalizing stage of the ACT course participants completed a questionnaire. The questionnaire was available on a secure website and e-mails containing a link to this website were sent to each participant to minimize the time and effort involved in completing it. The questionnaire was anonymous. The information participants gave us was treated confidentially and no one was identified on any of the forms of the answers.

2.5. Analyses

An exploratory factor analysis (EFA) with principal component extraction was used to discern the factor structure of all measured variables related to challenges as defined in this research and to examine their internal reliability (Table 2). The internal reliability of the scales resulting from the EFA was verified by computing the Cronbach's alpha. According to Nunnally (1978), a minimum alpha of 0.7 suffices for an early stage of research. Cronbach's alpha reliability coefficients were computed for each of the scales with respect to challenges in MCSG and ranged from 0.83 for a "cross-cutting challenges in multicultural group work" scale to 0.85 for "culture-related challenges in multicultural group work" scale. Other scales extracted from the EFA reached only 0.66 and 0.58 levels, so they have been omitted because of their low reliability coefficients. To establish validity of the survey measures, the questionnaire was pilot tested with a small number of students and developed for readability and consistency of meaning. Peer feedback from ten teachers in the field of education with extended experience in multicultural student group work provided corrections with respect to wording and order of the survey.

As stated above, differences in the students' perceptions of the importance of group-level challenges were measured with a 19-item instrument which describes challenges that most often occur in MCSG in higher education. Descriptive statistics were used to determine what challenges are perceived to be the most important by students in MCSG.

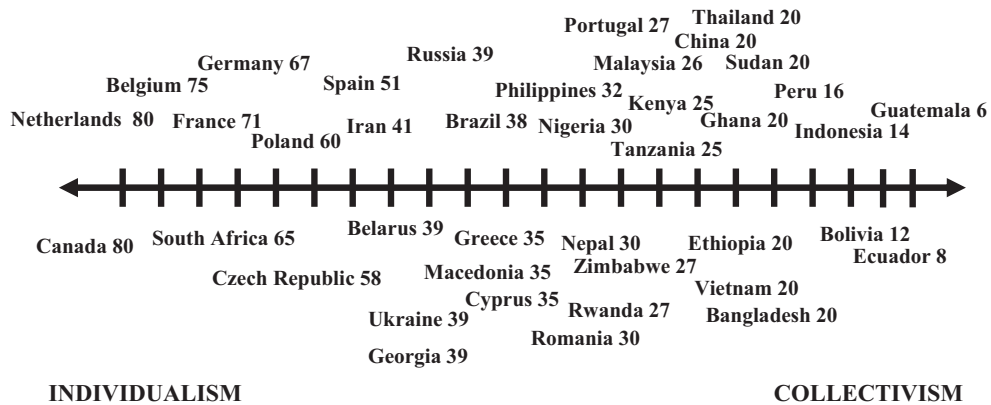


Fig. 1. Individualism values for countries in sample, using Hofstede's (2001, Exhibits A5.1, A5.2, and A5.3, 2009) individualism index (<http://www.geert-hofstede.com/>, downloaded September 25th, 2010).

In order to examine the extent to which culturally diverse students, based on Hofstede's individualist–collectivist cultural dimension, differed with respect to how they rated the importance of MCSG challenges, one-way analysis of variance (ANOVA) was conducted. Cultural background was determined by asking group members to indicate their countries of origin in the first section of the questionnaire, which focused on socio-demographic information. Countries of origin were coded according to Hofstede's individualist–collectivist dimension. Using Hofstede's (2001, Exhibits A5.1, A5.2, and A5.3; 2009) individualism index we positioned all countries that were relevant in our survey (Fig. 1). Although Hofstede's (1980, 2001) individualism index was identified in his study conducted among IBM employees and not based on student body statistics, this cultural orientation was an appropriate tool for examining cultural differences. As mentioned above, there are culture-related differences between individuals representing collectivist and individualistic cultures which are related to attitudes toward group work. Hofstede's individualism index was standardized and set into a range between 0 (most collectivistic) and 100 (most individualistic). Due to varying levels of accuracy of the individualism index, further analysis in this study was based on the responses of students from countries in two selected categories: low (with a score less or equal to 40) and high (with a score between 60 and 80). Students from countries that represent the middle category based on the individualism index (i.e., with a score between 41 and 59, in total 15 students representing 11 countries) were removed from the analysis of the second research question. For example, Gouveia, Clemente, and Espinosa (2003, p. 59) suggest that Spain (individualism index 51) is “half way between collectivism and individualism [. . .], that is, between Latin America and Europe”. Leaving out the middle group, so that cultural orientation can be used as a fixed factor, has been done previously in studies investigating possible effects of culture (e.g., Liu, 1998; Murray-Johnson et al., 2001). This allowed us to clearly demonstrate the cultural differences between two select groups with respect to how they rate the importance of challenges in MCSG.

3. Results

The exploratory factor analysis on the challenges in multicultural student group work resulted in two factors with satisfactory Cronbach's alpha-levels. Table 2 shows the final loading of items on each factor. The first scale is labelled “Cross-cutting challenges in multicultural group work” because all corresponding items within this scale are laid down in the group work process, which is binding for most multicultural student groups taking into account the additional level of complexity due to culture-related differences that members bring to a group. The second scale is labelled “Culture-related challenges in multicultural group work” and is determined by the challenges which are unique for culturally heterogeneous groups.

The first research question asked what, according to students, are the most important challenges in multicultural student group work. Descriptive statistics were used to determine what challenges are perceived to be the most important by students in MCSG (Table 3). All challenges were considered to be at least of some importance by the whole group of students. According to the students, free-riding ($M = 3.9, SD = 1.27$), insufficient English language skills ($M = 3.87, SD = 1.13$) and students not communicating properly ($M = 3.74, SD = 1.03$) were the most challenging aspects in MCSG. Dominating group members ($M = 3.17, SD = 1.13$) and the pressure to defend group decisions while not agreeing with them ($M = 2.97, SD = 1.08$) were among the challenges considered less important.

To answer our second research question, we examined the extent to which culturally diverse students – as classified according to Hofstede's cultural dimension – differed on the scales identified in the EFA and on the corresponding items. One-way analyses of variance (ANOVA) were conducted, and the results indicated that there were statistically significant differences based on students' cultural backgrounds with respect to two scales: cross-cutting challenges ($F = 5.10, p < 0.05$) and culture-related challenges in multicultural group work ($F = 7.57, p < 0.01$) (Table 4). The analysis showed that students from individualist cultures ($M = 3.94, SD = 0.73$) scored significantly higher than students from collectivist cultures ($M = 3.56, SD = 0.99$) with respect to cross-cutting challenges in MCSG. Also, the results of the analyses revealed that students from

Table 3
Means and standard deviations for the most important challenges.

| Challenges | Mean | SD |
|---|------|------|
| Free-riding | 3.90 | 1.27 |
| Insufficient English language skills | 3.87 | 1.13 |
| Students not communicating properly | 3.74 | 1.03 |
| A low level of motivation | 3.71 | 1.17 |
| Ineffective group management | 3.71 | 1.23 |
| Group conflicts | 3.66 | 1.14 |
| Diverse disciplinary backgrounds of members in one group | 3.59 | 1.14 |
| Attitudinal problems such as dislike, mistrust and lack of cohesion | 3.56 | 1.29 |
| Heterogeneous group composition | 3.49 | 1.29 |
| Difference in academic attitude | 3.47 | 1.18 |
| Differences in ambitions (e.g., aiming for a '6' or a '9') | 3.46 | 1.17 |
| Culturally different styles of decision making and problem solving | 3.44 | 1.16 |
| Different attitudes toward deadlines | 3.43 | 1.12 |
| Culturally different styles of conflict management | 3.43 | 0.98 |
| Culturally different ways of interacting | 3.42 | 1.11 |
| Difference in content knowledge | 3.39 | 1.05 |
| Culturally different styles of complying with supervisor's guidelines | 3.17 | 1.13 |
| Dominating group members | 3.17 | 1.13 |
| The pressure to defend group decisions while not agreeing with them | 2.97 | 1.08 |

Table 4
Means and standard deviations for group challenges and univariate tests of significance based on Hofstede's individualist–collectivist cultural dimension.

| Factor | Individualists | | Collectivists | | F | Sig. |
|---|----------------|------|---------------|------|--------|-------|
| | Mean | SD | Mean | SD | | |
| Cross-cutting challenges | 3.94 | 0.73 | 3.56 | 0.99 | 5.10* | 0.026 |
| Free-riding | 4.13 | 1.08 | 3.46 | 1.47 | 8.73** | 0.004 |
| Insufficient English language skills | 4.07 | 1.08 | 3.58 | 1.14 | 5.26* | 0.024 |
| A low level of motivation | 3.74 | 1.17 | 3.52 | 1.25 | 0.86 | 0.356 |
| Group conflicts | 3.68 | 1.07 | 3.55 | 1.25 | 0.36 | 0.551 |
| Students not communicating properly | 3.77 | 0.92 | 3.72 | 1.22 | 0.074 | 0.787 |
| Culture-related challenges | 3.16 | 0.92 | 3.64 | 0.73 | 7.57** | 0.007 |
| Culturally different ways of interacting | 3.17 | 1.16 | 3.81 | 0.86 | 9.39** | 0.003 |
| Culturally different styles of decision making and problem solving | 3.24 | 1.09 | 3.76 | 1.02 | 5.97* | 0.016 |
| Culturally different styles of complying with supervisor's guidelines | 3.04 | 1.19 | 3.43 | 0.96 | 2.96* | 0.089 |
| Culturally different styles of conflict management | 3.31 | 0.96 | 3.50 | 0.93 | 0.98 | 0.325 |

* Significant at $p < 0.05$.** Significant at $p < 0.01$.

collectivistic cultures ($M = 3.64$, $SD = 0.73$) scored significantly higher than students from individualist cultures ($M = 3.16$, $SD = 0.92$) regarding culture-related challenges in MCSG. Furthermore, the differences in the perceived importance of cross-cutting and culture-related challenges in a multicultural group are more pronounced for students from individualist cultures ($M = 3.94$, $SD = 0.73$, and $M = 3.16$, $SD = 0.92$, respectively) than students from collectivist cultures ($M = 3.56$, $SD = 0.99$, and $M = 3.64$, $SD = 0.73$, respectively).

4. Discussion

In an effort to better understand the influence of cultural diversity in MCSG in the context of higher education, this study explored challenges that students face in multicultural group work. Expanding on previous research, the present study showed that certain challenges in MCSG in higher education are perceived differently by students with diverse cultural backgrounds. When the survey data were analyzed, the following significant findings emerged. First, almost all challenges were considered to be at least of some importance by all respondents (scores higher than 3 within 5-point Likert-type scale). Second, free-riding, insufficient English language skills and students not communicating properly were perceived by all participants of this study to be the greatest challenges in MCSG. Third, the research results showed that students' cultural background (the individualist–collectivist dimension) affects their perceptions of the importance of challenges in MCSG. Students from individualist cultures perceived cross-cutting challenges in MCSG to be more important in comparison with students from collectivist cultures. Students with more collectivist values tend to emphasize culture-related challenges in MCSG more than students from individualist cultures. Also, the differences in the perceived importance of cross-cutting and culture-related challenges in a multicultural group are more prominent for students from individualist cultures than students from collectivist cultures. All of the main research findings will now be discussed in turn.

Addressing the first research question allowed us to reveal the most important challenges in multicultural student group work according to the students. The list of challenges in MCSG used for this study was derived from earlier research on group

work. The existence of these challenges was validated in this study, as almost all challenges derived from the literature were considered to be at least of some importance by all respondents.

According to the students, free-riding, insufficient English language skills and students not communicating properly are the most challenging aspects in MCSG. Previous research studies have confirmed that free riding is one of the most important challenges associated with group work (Brooks & Ammons, 2003; Weldon, Blair, & Huebsch, 2000). Indeed, when any group member does not contribute to the group work to his or her full potential, it negatively influences group climate, group participation and overall group performance. Free-riding violates the whole idea of group work and our study shows that students are aware of this fact. Also, the existence of free-riding in MCSG and students' perception of this challenge as being the most important are likely to be related to the other variables, such as communication problems and lack of English proficiency. This is consistent with the research studies of Johnson and Johnson (1999), Wong (2004) and Clark, Baker, and Li (2007), which showed that language difficulties may pose challenges for international students. The fact that English is a lingua franca, rather than the native language of all participants, may result in problems with comprehension between group members with different knowledge levels and great variation in accents. It is known from the literature that ability to communicate successfully across cultures is vitally important for intercultural cooperation (Schneider & Barsoux, 1997). Our research findings are consistent with Fox's work (1997) stating that the issue of intercultural communication intersects in many ways with group climate. According to her, "authentic discourse is not just a matter of using the correct words, or matching discourse norms, or even matching cultural backgrounds. [...] Meaning is mutually created, through trust, sincerity and a willingness to acknowledge differences of cultural background" (Fox, p. 93). The following quotations from the current study illustrate the attitudes of Dutch students toward students who do not communicate properly during teamwork:

"I prefer a Dutch group because many international students have difficulties expressing themselves, knowing what to do. In other words they are not used to group work." "The problem with Asian people's communication is They don't say much, which is a problem in teamwork!"

Thus, providing students with training on developing communication skills may help to coordinate and harmonize group members' culturally different methods of communication. If students know how to act and what to expect from their counterparts in particular situations, they can potentially benefit from "sharing culturally divergent knowledge". Particularly in relation to the English language, it is important to encourage all group members to actively listen to one another and promote the idea that a lack of English proficiency does not indicate a lack of competence in a subject matter.

The students themselves stressed the need for facilitation of communication skills in MCSG:

Dutch student: "...some people are too silent in group work, and facilitation skills are needed to allow those voices to be heard. So, as students, we need to be aware of those skills and be coached to use them".

Further analysis and investigation of the most challenging aspects in MCSG are required to determine if and how these challenges can be tackled. What strategies can be used by both teachers and students when facing these challenges in MCSG? Further elaboration on these challenges is necessary, paying specific attention to culture-related differences. Therefore, we suggest that follow up research address these questions by using various research methods (e.g., interviews, observations, self-reports) to improve our understanding of them.

The second research question addressed the influence of students' cultural backgrounds on how they rate the importance of challenges that may occur in MCSG in higher education. The results suggest that students from individualistic cultures found it more problematic to deal with cross-cutting challenges in multicultural group work (such as students not communicating properly, free-riding, insufficient English language skills, group conflicts, a low level of motivation) than students from collectivistic cultures. It may be that the perceived importance of cross-cutting challenges is related to the respondents' learning goals. Mutual understanding and finding common ground with respect to group goals play a key role in multicultural groups because of the different expectations, individual goals and backgrounds that members bring to the group. Individualists are geared specifically to the personal goals while collectivists tend to contribute substantially to group success and their behavioral motives are impelled by the common group identity, group cohesion and task interdependence (Hofstede, 1993). Challenges can be caused by misinterpretation of the ultimate group work goals and the levels of commitments.

Students from individualist cultures considered that free-riding results in more problems in group work, while students from collectivist cultures consider free-riding to be less important for group performance (Table 4). Earley's research (1989) based on cross-cultural studies comparing American managers (individualistic values) to Chinese managers (collectivistic values) suggested that free-riding is more likely to occur in individualistic cultures. People from individualist cultures are more likely to "loaf" because of their higher willingness to work individually compared to working in a group and a low level of involvement in a group (Earley, 1989). Earley's research was performed in two different cultural settings in the professional environment. But if we consider the free-riding phenomenon in the context of multicultural student groups in higher education it might be seen differently by all group members. Furthermore, Earley (1989) investigated the impact of differences arising from individualistic and collectivistic cultural orientations on the occurrence of free-riding rather than on perceptions of this phenomenon in two cultural contexts. The results of this study showed that students from collectivistic cultures were less likely than students from individualistic cultures to consider free-riding as an important challenge.

Also, it may be that reward structure imposed on the ACT groups influenced how students perceived free-riding in MCSG. Previous research studies provided some insight into the relationship between reward structure and cooperative learning. Scholars stated that students' performance and preference depends on group competitive (Chapman, 2001), individual criterion (Johnson, Maruyama, Johnson, Nelson, & Skon, 1981), or group criterion reward structures (Qin, Johnson, & Johnson, 1995). The reward structure applied in the ACT course included a combination of individual and group rewards. The contribution of each student during the MCSG process was individually assessed by both the group members and the ACT personal. The product grade was assigned by the ACT personal based on an average for the group. Thus, the effect of social loafing in this study can be partly explained by the relationship with the reward structure imposed on the groups. Probably some students did not feel that his or her contributions were rewarded individually for efforts and overall performance in comparison with other group mates. Or, rewarding the whole group's performance was not sufficient in a way that students did not feel that they worked toward a common goal. Further exploration of this challenge is needed, especially in the context of multicultural student groups in higher education with a focus on students' perceptions of free-riding.

According to Economides (2008), in individualistic cultures "group work is a place of confrontation in a search for solutions" (p. 250). People from individualistic cultures tend to value personal identity and different characteristics, knowledge and skills among group members, whereas people from collectivistic cultures prefer working with group members who have many commonalities and shared values (Earley & Gibson, 1998). Collectivists may see the ultimate goals and the main function of group work differently than individualists who were trained in other education systems and cultural conditions. This observation helps explain the fact that students with different cultural backgrounds view the same challenges, which may occur in multicultural group work, differently, more specifically in relation to differences in communication, free-riding and group conflicts. For this reason problems can arise with respect to the process of information circulation and credibility establishment (Sosik & Jung, 2002; Shamir, 1990; Triandis, 1994).

Our analyses also showed that the differences in the perceived importance of cross-cutting and culture-related challenges in a multicultural group are more prominent for students from individualist cultures in comparison with students from collectivist cultures. Individualists tend to emphasize the importance of cross-cutting challenges, whereas collectivists perceive cross-cutting and culture-related challenges in a multicultural group as nearly equal in importance. It may be that students with individualist values are more sensitive about challenges that hinder them in achieving their individual-oriented goals and they are less concerned about cultural diversity in a group.

The results of this study showed that students from collectivist cultures are likely to perceive cultural diversity among group members as more problematic than students from individualistic countries. More specifically, students from individualistic cultures consider different ways of interaction and dealing with problems in group work as culture-driven aspects that are of less importance. This finding is consistent with the research study of Sosik and Jung (2002) in terms of the different perceptions of group diversity between collectivists and individualists. Based on others' research (Earley & Gardner, 2005; Kirkman & Shapiro, 2005), we may note that "national and cultural diversity generates conflicts that may reduce the ability of a group to maintain itself over time and to provide satisfying experiences for its members" (Earley & Gardner, 2005, p. 18). In order to address these kinds of conflicts in multicultural groups in a constructive way or avoid them at best, group members should first acknowledge diverse cultural perspectives and then explicitly state the conditions of cooperation including organizational, communication and time management aspects (Smith & Mraz, 2001). Consequently, this highlights the need for the development of educational methods and techniques that specifically address these culture-related differences.

The student groups of the present study were not examined in terms of their cultural compositions at group level and the effects of group composition on the perceived challenges. Further research should carefully examine each group's composition. Some MCSG challenges may stem from group formation in terms of the cultural backgrounds of the group members. The following response reflects an opinion of one of the international students regarding this issue:

International student: "You should try to change the ACT course rules. You should divide the Dutch students or at least try to make some equal division within the teams of international and Dutch students. Working with only Dutch students is not very pleasant. Very often they speak in Dutch about our project and the international students cannot understand anything!"

Some students thus felt they were not as effective as they could have been due to group composition issues. This highlights the need for further exploration, specifically of how the cultural composition of a group may affect students' perceptions of MCSG challenges. Future research should examine the group composition variable with a variety in the number of culturally diverse members in one group.

The second research question intersects with the first research question in terms of items within the scale of cross-cutting challenges that correspond with those challenges that were perceived by all participants of this study to be the most important in MCSG (see Tables 3 and 4). It may be that the students in this study were mostly concerned with this set of challenges. Although, the findings of this study showed that perceived importance of these challenges differed between students with individualist and collectivist values. Further research studies would be useful to explore these challenges in more detail, paying specific attention to the reasons for this discrepancy in perception and possible ways to reconcile cultural differences between students working in groups.

Development of external scripts is one of the research trends that may be directly relevant for this topic. These scripts are intended to help collaborative learners by sequencing their learning activities and by organizing their interactional process

(Dillenbourg & Jermann, 2007; Kollar, Fischer, & Slotta, 2007; Noroozi, Biemans, Busstra, Mulder, & Chizari, 2011; Weinberger, Clark, Hakkinen, Tamura, & Fischer, 2007). A shared script can reconcile differences between learners and minimize the effort required to coordinate their learning activity. Quoting from Weinberger et al. (2007, p. 74), “collaborative students from different cultures may thus particularly benefit from following external script prescriptions”. If they know how to act and what to expect from their counterparts in particular situations, they can potentially benefit from “sharing culturally divergent knowledge” (Cox et al., 1991; Weinberger et al., 2007). The potential of external scripts in this regard should be examined in future research.

This study has a few limitations that need to be acknowledged and addressed. Although challenges that appear to affect MCSG were examined from different perspectives, effects of intervening variables were not included within the scope of our analysis, e.g., group size, group evaluation and group development over time. With respect to the group size variable, the size of all ACT groups in this study varied from 4 to 6 members per group. Examination of the effects of group size on students' perceptions in MCSG would require a wider variation in group size within the research survey sample. Concerning group evaluation, participants in this study completed the questionnaire before they received grades for the ACT course. With respect to group development over time, all ACT groups in this study had equal periods of time to work together. Further research should examine this variable by looking at a variety of different time spans for group work, paying specific attention to how the period of time allocated for MCSG affects students' perceptions of challenges faced in group work.

The second limitation concerns Hofstede's individualist–collectivist dimension, which was applied in this study to examine the differences between students from different cultural backgrounds in how they perceived the importance of challenges in MCSG. Despite the fact that an individual student, coming from collectivistic country, holds collectivistic values and norms, he/she may exhibit certain individualistic behavioral patterns due to his/her personal travel experiences. Thus, the cultural differences between the two groups might be not as big as suggested by Hofstede's dimensions. Apart from Hofstede's dimensions, other cultural values frameworks could be relevant (e.g., Hofstede/Triandis' combined index of individualism–collectivism, see Diener, Gohm, Suh, & Oishi, 2000). Therefore, to ensure reliability, future research should apply multiple cultural values frameworks and their dimensions to multicultural group work.

The third limitation is the extent to which the findings can be generalized. Again to ensure reliability, the number of countries represented in two cultural groups (individualists and collectivists) could be increased. This is especially important with respect to students from individualistic cultures, since more than half of the respondents in this study representing individualistic culture were from the Netherlands. Therefore, further empirical investigations are needed to replicate the findings in a more culturally diverse body of students.

5. Conclusion

To meet the challenges of the 21st century, university graduates should not only be professionally competent, but also experienced in working in culturally heterogeneous groups within professional domains, as international group work is becoming an increasingly important way of organizing work in professional and academic environments. This highlights the need for successful cross-cultural professional cooperation that implies the application of collaborative learning. The latter may facilitate the solving of problems arising in the process of joint work and may advance the success of groups in both university and professional settings.

This study aimed to achieve a better understanding of group dynamics in a multicultural setting in higher education through examining students' perceptions of challenges in MCSG. It was proposed that further research and educational programs should be developed to improve multicultural group work in higher education so that it will respond to the intercultural context, build-up components of collaborative learning and harness educational methods, techniques and assessment tools.

One of the main conclusions of this study is that perceptions of challenges in multicultural student group work differ across cultures. It therefore contributes to a better understanding of the importance of cultural differences in student group work. Culturally diverse group members may have completely different expectations with respect to learning in groups and the behavioral motives of others, which may result in misunderstandings and conflicts. If educators and instructional designers manage to take advantage of the positive intercultural experiences in multicultural group work while downplaying the negative aspects, multicultural groups can develop the ability to be more successful and productive as a result of the merger of cultures.

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