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Does the group matter? Effects of trust, cultural diversity, and group formation on engagement in group work in higher education

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ABSTRACT

Group work is a common active learning strategy in higher education when the goal is to enhance deep learning and develop teamwork skills. Culturally diverse learning groups are particularly valuable in preparing university students to participate in a globalized world. Student engagement in group work is critical in realizing these benefits. Therefore, more insight into what factors promote engagement is necessary. This study investigates the extent to which trust in the group, cultural diversity in the group, and group formation contribute to behavioral and cognitive engagement in group work. A questionnaire was filled out by 1025 bachelor's students from six universities in the Netherlands and Canada. Structural equation modeling analyses identified students' trust in the group as the strongest positive predictor of both behavioral and cognitive engagement. Greater perceived cultural diversity was found to promote behavioral and cognitive engagement, but compared with trust, the impacts were relatively small. Whether students could choose their group members did not affect behavioral or cognitive engagement significantly. Contrary to what was expected, trust did not act as a mediator. That is, cultural diversity and group formation did not indirectly affect engagement through trust. These findings prompt some suggestions for how to enhance student engagement in group work.

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1. Introduction

Higher education increasingly uses collaborative learning groups (Johnson et al., 2007), because working as a group on a common task or problem can be an effective way to equip students with teamwork skills, which are highly valued in the professional world. Compared with individual learning, collaborative approaches promote higher-quality learning, deeper understanding of course content, more creativity, greater retention of material, and greater student satisfaction (Gaudet et al., 2010; Johnson et al.,

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2014). Moreover, as higher education continues to internationalize, student populations grow more culturally diverse, and the likelihood of students participating in intercultural group work during their studies has increased as well. Adding the intercultural aspect to collaborative learning groups provides opportunities to develop valued skills and attitudes, such as intercultural competence, intercultural communication and collaboration skills, and a global mindset (De Hei et al., 2019; Poort et al., 2019).

2. Theoretical framework and previous research

2.1. Student engagement in group work

Sociocultural theory views learning as a social and cultural act (Kim, 2011). Knowledge does not develop in a vacuum but is constructed as a communal accomplishment within historical traditions of cultural practice (Martin, 2006). Group work is a teaching strategy that deliberately creates a social setting for learning to enhance deep learning, however a group assignment in itself does not guarantee knowledge co-construction; it is through communication, interaction and collaboration that knowledge is co-constructed (Oxford, 1997). Students need to truly engage with their group members, the assignment, and the different perspectives in the group to benefit from this social learning setting.

Besides its contribution to deep learning, student engagement is also linked to positive outcomes such as study success, persistence, high academic performance, self-esteem, psychological development, and student satisfaction (Korobova & Starobin, 2015; Kuh et al., 2008; Zhoc et al., 2019). Although the importance of the construct is widely accepted, definitions of student engagement and its sub-dimensions vary (Appleton et al., 2006; Zhoc et al., 2019). For this study, we define student engagement as ‘the quality of effort students themselves devote to educationally purposeful activities [i.e., the group work] that contribute directly to desired outcomes’ (Hu & Kuh, 2002, p. 555). Common sub-dimensions of engagement include (1) behavioral/academic engagement, which involves attendance, participation, persistence, and preparation for class; (2) cognitive engagement, which refers to the mental energy students apply to learning and self-regulation; and (3) emotional engagement, including interest and identification (Fredricks et al., 2004; Zhoc et al., 2019).

Because engagement is crucial for effective, productive, collaborative group interactions, it is important for educators to know which factors promote or hinder it. We consider three factors that appear specifically relevant to group work in an international learning environment: (1) cultural diversity in the group, (2) group formation, and (3) trust in the group. These factors have been investigated in relation to outcomes such as student satisfaction and performance, but their influence on student engagement remains under-explored. We focus on two forms of engagement: students’ behavioral engagement, required to achieve minimal learning, and cognitive engagement, essential to deeper learning in a group setting (Summers & Volet, 2010; Zhoc et al., 2019).

2.2. Cultural diversity in the group

Culturally diverse teams have the potential to be more creative and innovative, with more positive impacts on problem solving, than single-culture teams (Denson & Zhang, 2010).

Culturally diverse students bring a variety of perspectives and approaches to the group, which contributes to the quality of learning and decision making (Johnson et al., 1991; Watson et al., 1993). However, culturally diverse learning groups also face challenges, such as misunderstandings, different views on how the assignment should be undertaken, different expectations of the group work, and language barriers (Hennebry & Fordyce, 2018; Moore & Hampton, 2015; Popov et al., 2012; Volet & Ang, 2012). In terms of socio-cultural learning theory, these struggles can be viewed as the process of acquiring new psychological tools. According to Vygotsky (1986), learning through social interaction is mediated by tools such as language, signs, symbols, and gestures. Each culture has its own set of psychological tools, therefore a multicultural group can be viewed as a co-presence of different systems of psychological tools. For students to learn together through social interaction in an internationalized setting, they will have to acquire a new, shared system of psychological tools (Kozulin et al., 2003).

Cultural diversity thus could affect engagement positively or negatively. On the one hand, developing a shared system of psychological tools requires time, effort, and commitment, which results in higher behavioral engagement. On the other hand, cultural diversity might lead to group conflicts, which can cause students to withdraw from the group and decrease their behavioral engagement. Similarly, cultural diversity might enhance critical thinking through discussions and incorporation of different (cultural) perspectives, resulting in higher cognitive engagement. However, the lack of a shared system of psychological tools might decrease cognitive engagement, because students struggle conveying their thoughts and understanding their peers.

2.3. Group formation

Some research studies suggest that group formation through self-selection is preferable, because it has a positive effect on student attitudes and outcomes (e.g., Connerley & Mael, 2001; Mahenthiran & Rouse, 2000). Chapman et al. (2006) find that students who are free to choose their own group members assess the group process as more valuable and effective than students randomly assigned to groups. Other studies suggest that teacher selection is preferable though, because it ensures group heterogeneity, which contributes to the quality of learning (Feichtner & Davis, 1984; Muller, 1989). In heterogeneous groups, students with different skills, talents, achievement levels, and social and cultural backgrounds can complement one another (Johnson et al., 1991); homogeneous groups lack this synergistic diversity.

Whether students have a say in whom to collaborate with thus likely affects their level of engagement. When given a choice, students tend to choose to collaborate with friends, same-culture peers, and similar-achieving peers (Brouwer et al., 2018; Moore & Hampton, 2015). Entering into dialogue might be easier in this case than with students they do not know. At the same time, critical dialogue might diminish if group members think more alike or feel they cannot challenge their friends' views.

2.4. Trust in the group

Trust is essential in facilitating effective group work (Huff et al., 2002; Johnson et al., 1991). Trust represents 'one party's (the trustor) confident expectation that another

party (the trustee), on whom the trustor must rely, will help the trustor reach his or her goals in an environment of risk and uncertainty' (Huff et al., 2002, p. 25). In group work, students must rely on one another, and their learning, grades, and ability to reach their goals depend at least partly on the other group members. When trust among group members is high, they are more willing to share their thoughts, perspectives, opinions, and information; are more open to considering other points of view; and generate better solutions (Chang, 2009; Huff et al., 2002).

In the context of higher education group work, students are often expected to collaborate on a project for a relatively short time, which is not conducive to gradually building trust. Instead, trust may be based on easily observable characteristics, such as visible similarities (e.g., gender, physical attractiveness, ethnicity), effort put toward the group work, reliability, or communication (Ennen et al., 2015; Huff et al., 2002; Meyerson et al., 1996). The limited time puts multicultural groups at a disadvantage because communication can be difficult and students may be less likely to trust group members who have a different ethnic appearance or display behaviors that are deemed different. In addition to differing in the time needed to establish trust, cultures vary in how trust is developed and expressed. For example, people from cultures that prefer direct communication might interpret an indirect communication style as withholding information, which can appear dishonest or untrustworthy (Bird & Osland, 2005). Given limited time and cultural differences, trust building in multicultural groups will be more difficult than in single-culture groups.

Sharing personal perspectives, being critical of one's own ideas, and being willing to consider other views can be a vulnerable position. Therefore, greater trust in the group most likely results in greater cognitive engagement. Behavioral engagement also might increase as trust increases. When students have confidence in their group, they feel encouraged to invest in group work by attending meetings and completing assigned tasks.

3. Methodology

3.1. Conceptual model and research questions

In this study, we explore the effects of cultural diversity, group formation, and trust on behavioral and cognitive engagement in group work. Besides the direct effects of these variables on engagement, we also consider the possible role of trust as a mediator. A mediator variable explains the relationship between other variables. In the context of this study, this means we investigate the extent to which cultural diversity and group formation affect trust, which then, in turn, affects levels of engagement. Greater cultural diversity may lead, at least initially, to less trust which then would result in lower levels of engagement. Group formation also might affect trust levels. When students are free to choose their teammates, they tend to choose friends who have proved reliable in the past. This would lead to more trust in the group which then would result in higher levels of engagement. [Figure 1](#) illustrates the different hypothesized relationships as described above.

Based on this conceptual model we pose the following research questions:

- (1) To what extent do the cultural diversity in the group, group formation, and the individual's trust in the group affect behavioral and cognitive engagement in group work?

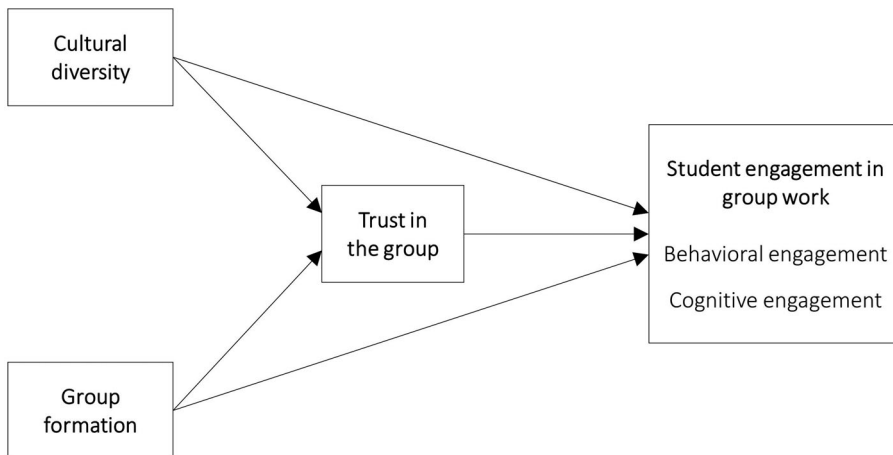


Figure 1. Conceptual model of relationships among cultural diversity, group formation, trust in the group, and engagement.

- (2) To what extent does trust in the group mediate the effect of cultural diversity in the group and group formation on behavioral and cognitive engagement?

3.2. Participants

In total, 1025 students of 70 nationalities, with male and female respondents approximately equally represented, participated in this study. Their ages ranged from 16 to 37 years, with a mean of 20.6 years ($SD = 2.18$). In this convenience sample, we purposely recruited students from a variety of learning environments to represent a broad spectrum of group work experiences. Students were enrolled in internationally oriented, English-taught bachelor's programs at six universities, four located in the Netherlands ($n = 895$) and two in Canada ($n = 130$). They represented a wide variety of disciplines (e.g., business, spatial sciences, arts, education). For most students (88.6%), English was not their native or most fluent language. The vast majority participated in groups with multiple nationalities. A single-nationality group does not mean all participants have the same cultural background. The average group size was 4.10 members ($SD = 1.05$), with a minimum of three and maximum of 11 students per group (see [Table 1](#)).

3.3. Procedure

In 2018–2019, students participating in group work as part of a course requirement were invited to fill out a questionnaire. We defined group work as a collaborative approach to learning in which three or more students work together on set tasks, within or outside the classroom, that is assessed as part of a course. Students were approached by teachers or coordinators of the programs they were enrolled in, through an online message board, or directly by the researchers. They were assured that participation was anonymous and voluntary and would have no consequences on their course grade. After giving informed consent, participants answered questions related to their background and the group work

Table 1. Demographic and study data.

	N	%
<i>N</i> Total	1025	100
<i>Gender</i>		
Male	510	49.8
Female	497	48.5
Other/rather not say/missing	18	1.7
<i>Nationality^a</i>		
European		
Western European (Dutch)	562	54.8
Western European (other)	96	9.4
Eastern European	61	5.9
Northern European	28	2.7
Southern European	21	2.0
Asian		
Eastern Asian	122	11.9
Southeastern Asian	46	4.5
Western Asian	11	1.1
Southern Asian	8	0.8
North American	46	4.5
African	12	1.2
Latin American and Caribbean	9	0.9
Oceanian	3	0.3
<i>Home or international students^b</i>		
Home students	598	58.3
International students	427	41.7
<i>Group composition for group work assignment</i>		
Multiple-nationality group	846	82.5
Single-nationality group	124	12.1
Missing	55	5.4

^aClassification of countries according to United Nations Statistic Division (2019).

^bStudents who hold a passport of the country in which the university is located are considered home students.

they were doing at that time. The questionnaire contained mainly multiple-choice items and rating scales. Depending on the situation, the questionnaire was completed on paper or online.

3.4. Measures

Two observed measures pertained to the perceived cultural diversity in the group and group formation. Three latent measures assessed trust in the group, behavioral engagement, and cognitive engagement in group work.

3.4.1. Observed measures

To indicate *perceived cultural diversity in the group*, students identified the extent to which they believed each group member's culture was similar to their own (1 = very similar, 2 = somewhat similar, 3 = somewhat different, 4 = very different). We calculated the mean score for perceived cultural diversity by dividing the sum of the scores assigned to the different group members by the number of group members listed. We chose to measure cultural diversity as experienced by the participants, rather than as nationalities, because various cultural backgrounds can be represented within one nationality. The mean score for *perceived cultural diversity* was 2.00 (SD = .81), with a minimum score

of 1 and a maximum of 4; on average, students rated the culture of their group members as somewhat similar to their own.

To establish *group formation*, students indicated whether they were free to choose teammates for the group work assignment (1 = free to choose, 2 = not free to choose). Fewer than half the participants (44.9%) indicated that they were free to choose collaborators, 53.4% indicated they were not free to choose, and 1.7% did not answer.

3.4.2. Latent measures

To measure *trust in the group*, students indicated the extent to which they agreed with five statements related to their trust in the group to collaborate on the assignment and produce a high-quality end product. Each statement was rated on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree), with a higher score indicating higher levels of trust.

To our knowledge, no existing scales measure *behavioral and cognitive engagement in group work*, so we developed items using existing instruments for different or more general contexts (Pintrich et al., 1991; Wang et al., 2016). We pilot-tested these items and adjusted them to clarify wording. Students indicated the extent to which they agreed with statements related to their engagement in the group work on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree), with a higher score indicating higher engagement.

3.5. Analysis approach

We used *Mplus* software (version 8.3) for structural equation modeling techniques to test the model as shown in Figure 1. Structural equation modeling allowed us to statistically test the entire system of observed and latent variables in a simultaneous analysis to determine the extent to which it is consistent with the data (Byrne, 2012). If goodness-of-fit of the model is adequate, it supports the plausibility of the hypothesized relations among the variables. To evaluate goodness-of-fit, we considered several fit indices: Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Standardized Root Mean Square Residual (SRMR). We did not consider Chi-square, because it can mistakenly reject good models with larger sample sizes. Model fit is good/acceptable if the RMSEA is less than .06/.08, CFI is greater than .95/.90, and SRMR is less than .08/.10 (Hu & Bentler, 1999; Schweizer, 2010).

Missing data ranged from 1.7% to 5.5% on the observed indicators and 0.8% to 3.7% on the indicators of the latent measures. The overall proportion of missing data is small, so we applied pairwise deletion. We clustered all analyses according to the course in which each student was enrolled to account for the variation across courses.

4. Analysis and results

4.1. Measurement model for latent measures

We followed Kline (2016) to establish the measurement models for each latent variable prior to examining their structural associations. We conducted exploratory (EFA) and confirmatory (CFA) factor analyses, each on a random half of the dataset, to determine the factor structure for trust in the group, behavioral engagement, and cognitive engagement. We modified these measures by reducing the number of items and allowing for

Table 2. Latent measures – items, scale, internal consistency, and fit indices.

Latent measure	Example items	Likert scale	N° of items	Cron. α	RMSEA	CFI	SRMR
Trust in the group	I am confident that the group will produce a good end product My group is a safe learning environment for me	1 (strongly disagree) 7 (strongly agree)	5	.82	.038	1.000	.009
Behavioral engagement in group work	I actively participate in group meetings I try hard to do well on the group work assignment	1 (strongly disagree) 7 (strongly agree)	5	.74	.065	.975	.012
Cognitive engagement in group work	I try to connect what I am learning to things I have learned before Ideas of group members contribute to the development of my own ideas	1 (strongly disagree) 7 (strongly agree)	6	.78	.063	.975	.015

correlated errors in cases of similar item wording. According to the criteria for fit indices listed above, CFA on the complete dataset achieved good model fit for the measurement models for trust, behavioral engagement, and cognitive engagement. Table 2 reports these latent measures, example items for each, rating scale used, number of items, internal consistency, and model fit indices based on the complete data set.

4.2. Structural model

We conducted CFA to test whether the data supported the relations among the variables as hypothesized in the conceptual model (Figure 1). Figure 2 shows the results. This model achieved good fit (RMSEA = .035; CFI = .971; SRMR = .038). We also ran an additional analysis with the country the university is located in brought into the structural model as a covariate to test whether the country had an impact on the results. This model achieved good fit (RMSEA = .034; CFI = .972; SRMR = .038), but the country the university is located in did not have a significant impact on trust ($p = .864$), behavioral engagement ($p = .759$), or cognitive engagement ($p = .155$). Therefore, we will continue describing the results of the model without considering the country. Table 3 specifies the direct, indirect, and total effects of cultural diversity and group formation on behavioral and cognitive engagement.

Of the factors considered herein, *trust in the group* is the strongest contributor to both behavioral and cognitive engagement. The more confidence students have in their group, the greater is their engagement.

Perceived cultural diversity has a significant, positive total effect on both behavioral and cognitive engagement. The more culturally diverse the group, the greater is students' engagement. These effects are mainly direct; the indirect effect through trust is minimal and non-significant. This means that trust does not mediate the effect of perceived cultural diversity on behavioral and cognitive engagement.

Group formation does not have a significant total effect on behavioral or cognitive engagement. The direct effect of group formation on cognitive engagement is positive and significant, so students who were free to choose their group members were less cognitively engaged in the group work than students who were assigned to one. The indirect

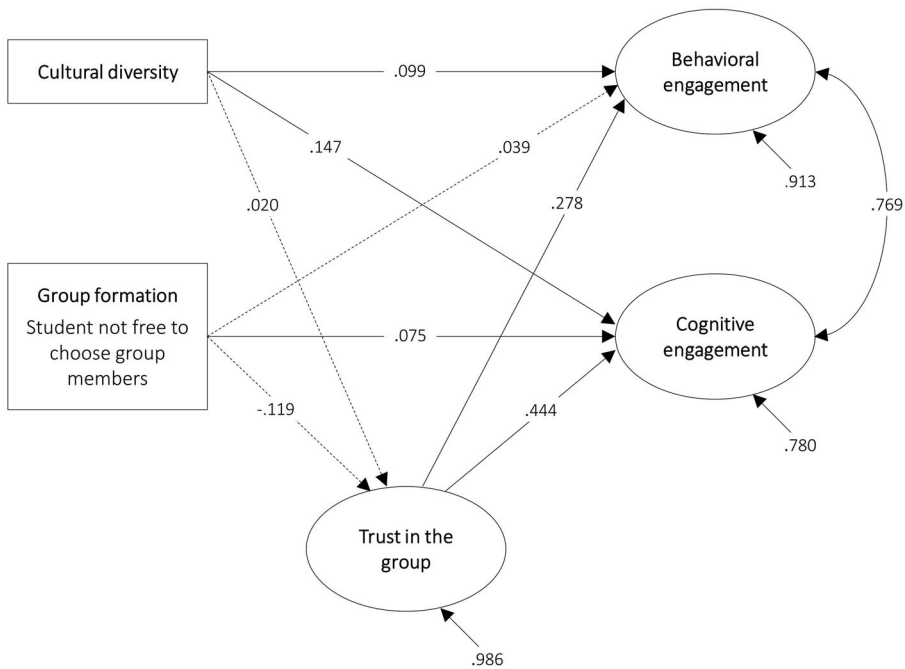


Figure 2. Structural model of relationships among cultural diversity, group formation, trust in the group, and engagement. Dashed lines signify non-significant paths ($p > .05$). All coefficients are standardized.

effect of group formation on behavioral and cognitive engagement is minimal and non-significant. This means that trust does not mediate the effect of group formation on behavioral and cognitive engagement.

In total, 8.7% of the variance in behavioral engagement and 22.0% of the variance in cognitive engagement can be explained by the predictor variables. Only 1.4% of the variance in trust in the group is explained by perceived cultural diversity and group formation. This model shows a fairly strong correlation between behavioral and cognitive engagement.

5. Discussion

The purpose of this study was to investigate the effects of trust in the group, perceived cultural diversity in the group, and group formation on behavioral and cognitive

Table 3. Direct, indirect, and total effects of cultural diversity and group formation on behavioral and cognitive engagement.

Effect	Direct		Indirect through trust		Total	
	β	SE	β	SE	β	SE
Cultural diversity to behavioral engagement	.099**	.028	.006	.008	.104**	.033
Cultural diversity to cognitive engagement	.147**	.039	.009	.013	.156**	.042
Group formation to behavioral engagement	.039	.040	-.033	.022	.006	.029
Group formation to cognitive engagement	.075*	.032	-.053	.032	.023	.041

* $p < .05$.
 ** $p < .01$.

engagement in group work. We also examined the extent to which trust in the group mediates the effect of perceived cultural diversity and group formation on engagement.

5.1. Trust in the group

In line with previous literature (Ennen et al., 2015; Huff et al., 2002), we find that trust among group members is crucial for the group to function and perform. Feeling safe in the group and trusting that the group will perform well, in both the collaboration process and the product, contributes to greater behavioral and cognitive engagement.

Students who express more trust in the group show higher behavioral engagement; they likely believe the time and effort they invest are worthwhile and willingly attend group meetings, actively contribute to the group work, and go the extra mile. When students do not trust the group, they might believe their contributions will be in vain, withdraw from group work, or exhibit minimal effort. Not feeling safe or encountering conflicts about the process might also cause members to withdraw to avoid these negative feelings.

Cognitive engagement involves exchanging, reflecting on, and integrating multiple perspectives. Sharing their own ideas, being open to different (cultural) perspectives, and being willing to critically evaluate their own (cultural) views put students in a vulnerable position. When they trust their group and experience it as a safe place to learn, it is easier to be vulnerable. When they believe their group is capable of creating a high-quality end product, they are more likely to engage in cognitive processes to achieve that end result. Our results show that trust has a greater impact on cognitive than behavioral engagement; the processes of deeper learning through collaboration appear especially sensitive to trust. This finding makes sense, because for cognitive engagement to occur, students must depend on other group members' contributions. For behavioral engagement, in principle, a student could engage without depending on other group members.

5.2. Cultural diversity in the group

In line with previous research (Johnson et al., 1991; Watson et al., 1993), we find that an increase of perceived cultural diversity also increases the exchange, evaluation, and integration of different ideas. Apparently, exposure to and sharing of multiple perspectives provides 'food' for discussion and promotes deeper cognitive learning processes. If a group is (culturally) homogeneous, the ideas and perspectives are likely similar, which will not help shape or change individual ideas. Previous research indicates that students face many challenges in culturally diverse groups, such as different communication styles, language problems, and feelings of anxiety (Moore & Hampton, 2015; Osmond & Roed, 2010; Popov et al., 2012; Volet & Ang, 2012), which could hinder cognitive engagement. This study does not rule out such effects, but it indicates that the overall effect of cultural diversity on cognitive engagement is positive.

The results show that cultural diversity in the group promotes not only cognitive but also behavioral engagement. We surmise several possible explanations. This finding might arise because the additional challenges in culturally diverse groups (e.g., lack of a shared system of psychological tools, establishing common values) require more

time and effort expended to complete the task. Students also might believe they must compensate for different-culture group members whom they perceive as unable to do the task (e.g., writing in proper academic English, putting presentations together; Moore & Hampton, 2015; Osmond & Roed, 2010). Another possibility is that the higher academic standard that students from certain cultures adopt inspires others to go the extra mile.

Previous research (Rockstuhl & Kok-Yee, 2008) suggests that increased perceived cultural diversity will lead to a decrease of trust in the group; however, we observe only a non-significant effect. Because most research on trust is set in a professional context, we speculate that the higher education setting is different when it comes to trust building and that in increasingly internationalized educational environments, students are more familiar with different cultures, which enables faster trust building. Another possible explanation is that the majority of participants had already worked in their groups for several weeks and, because they were in the same program, knew one another before the start of the group work, such that they had time and opportunity to establish trust.

5.3. Group formation

Results indicate that students who were not free to choose their group members have greater cognitive engagement. Self-selected groups' tendency to be more homogeneous resulting in less diversity of perspectives than teacher-selected groups could explain this finding. An additional explanation could be that in a group of friends, it is easier to get side-tracked by non-assignment-related conversation and activities (Chapman et al., 2006), thus lowering cognitive learning processes. The total effects of group formation on both behavioral and cognitive engagement are minimal and not significant.

Previous research showed that students in self-selected groups have more confidence in group members' abilities (Chapman et al., 2006). Although the results of this study point in the same direction, the positive contribution of self-selection to trust was not significant. A possible explanation for the minimal contribution of group formation is that due to the enrollment system, students who were in principle free to choose did not always have full control over whom to work with and were only partially free in their choice. This could have masked some of the effects of free choice on trust and engagement.

5.4. Overall model

All three factors – group diversity, group formation, and trust in the group – have a greater impact on cognitive engagement than on behavioral engagement. This finding suggests that group characteristics are especially important with regard to students being willing to share ideas, evaluate other points of view, critically reflect on their own ideas, and incorporate different perspectives.

Behavioral and cognitive engagement are strongly positively correlated. This could be explained by the student's level of motivation; a student who is motivated for the group work assignment will most likely invest at both the behavioral and cognitive levels. It could also reflect that these two forms of engagement go hand in hand: To cognitively engage, a student must also make an effort to actively participate in group meetings and work on assigned tasks (Zhoc et al., 2019).

Of the factors investigated in this study, trust in the group was the strongest contributor to engagement in group work. Group diversity had a small contribution in comparison, and group formation had no significant impact on engagement.

6. Implications

Trust in the group is critical for students to behaviorally and cognitively engage. Considering the short-term character of many group work settings in higher education, this trust is most likely established early on in the collaboration (Ennen et al., 2015). Therefore, facilitating trust-building activities at the beginning of group work, or even before it starts, is critical. Giving students time to become acquainted and collaborate with peers on smaller assignments without being graded allows them to build trust, encourages them to take the risk of engaging in intercultural interactions, helps them to develop a shared system of tools needed for these interactions, and enables them to perceive the strength of working in a multicultural group (Hou & McDowell, 2014).

The results suggest that cultural diversity in a group promotes cognitive engagement. However, culturally diverse groups often do not develop spontaneously (Moore & Hampton, 2015; Osmond & Roed, 2010; Strauss et al., 2011; Volet & Ang, 2012). Teachers can use several tactics to ensure and encourage the formation of culturally diverse groups. First, they can select group members. Although doing so could lead to less satisfaction among the students and less trust in the group, we find that the overall effect on cognitive engagement is still positive. Rienties et al. (2013) find that assigning students to mixed groups leads to long-term learning relationships that would not have formed if students were not 'forced' out of their comfort zone. However, it is important to note that several studies show that imposed diversity without proper conditions and guidance can lead to entrenched stereotypes, perpetuation of inequality, and increased divisiveness instead of collaboration (e.g., Reid & Garson, 2017). Therefore, careful preparation for the group work and guidance during the assignment are of great importance. A second tactic is to allow students to choose whom to collaborate with, but with certain guidelines about cultural diversity (or other requirements) in the group. Doing so could increase student satisfaction and trust in the group, as well as ensure a certain level of diversity. Third, after they had the opportunity to get to know their peers, students can be given total freedom to choose work groups. Regardless of how groups are formed, it is important that students have the opportunity to become acquainted and work together with peers outside their circle of friends before they select group members and start an actual group assignment to be assessed as part of their course grade. This will allow for trust building and will encourage students to select group members they normally would not have chosen to collaborate with (Strauss et al., 2011).

The results, in combination with previous research, do not allow for labeling a single method of group formation as right or wrong. We cautiously suggest that the most promising approach to promote student engagement in intercultural group work is to first give students time to become acquainted with possible group members and establish trust and then allow them to form their own groups based on certain cultural diversity requirements.

Time is necessary to promote student engagement – time for students to get acquainted, to build trust, to develop a shared system of psychological tools, and for

the process of sharing, evaluating, and incorporating the different perspectives. Time invested will contribute to more effective group work and deeper learning. In culturally diverse groups, these processes will take more time than in a single-culture group (Poort et al., 2019), but teachers often do not account for this time when designing assignments for intercultural group work. Therefore, it is important to remember that to leverage the benefits of group work, especially intercultural group work, students must have sufficient time and, when needed, support to make group work a meaningful process.

7. Limitations and future research recommendations

The cross-sectional nature of this study prevents us from definitively concluding whether trust leads to higher engagement or whether higher engagement also enhances trust in the group. If a student is willing to share ideas and perspectives, other students might respond by sharing theirs more openly as well, which then results in higher trust. A longitudinal approach would provide insight into the development of trust and engagement over time and how these factors affect each other.

We collected data using a self-report instrument. However, how students evaluate their own engagement could differ from their actual engagement. Additional observational data to measure engagement more objectively would be valuable to evaluate whether the effects of perceived cultural diversity, group formation, and trust in the group on engagement can be confirmed.

Engagement in group work is crucial for students to benefit from this learning strategy. This study provides insight into the role of certain group variables. Researching other factors such as student characteristics, language proficiency, preparation for and support during group work, and role of assessment would provide further insight and assist in developing strategies that promote student engagement in group work.

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