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Intercultural teamwork in a program for developing students' intercultural team competencies

Contribution to

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1 Motivation for designing and implementing a program for developing students' intercultural team competencies

In autumn 2009 a program for developing students' intercultural team competencies (ITC-Program) started at the Cologne University of Applied Sciences on Gummersbach Campus.¹ The program aims at:

- (1) improving the integration of foreign students;
- (2) stimulating intercultural learning and developing students' competencies in intercultural teamwork;
- (3) fostering quantity and quality of intercultural teamwork among the students.

The Cologne University of Applied Sciences has about 17.000 students. Approximately 2.700 students study at Gummersbach Campus (Faculty of Computer Science and Engineering). The percentage of foreign students at Gummersbach campus is 18.9% (winter semester 2009/10). Furthermore, there are many students with a migration background (e.g. parents are Turks or Italians); concerning this group we do not have precise statistical data. All in all, there is substantial cultural diversity at the campus which leads to some problems (e.g. integration of foreign students) but also is an important resource for intercultural learning at the campus.

Daily experiences and studies (Heublein 2009; Stumpf, Leenen u. Scheitza, 2008) suggest that the relations between students having different cultural background are neither marked by resentments or conflicts nor by intensive cooperation (inter-action) but by distance (co-action).

By a social psychological point of view a more intensive and better cooperation between students with different cultural background should facilitate the integration of foreign students and promote social skills acquisition of German and foreign students. Work groups or teams represent an adequate setting for cooperation processes. A "team" or "working group" can be seen as form of social organization where several people share the responsibility for a task and cooperate with each other to accomplish this task (Sundstrom, De Meuse & Futrell, 1990).

Intercultural teamwork on real tasks is an important component in the ITC-Program. The program combines training approaches, real intercultural teamwork and teambuilding interventions: students of different cultural background are sensitized and trained for working in intercultural teams and then have to work in small intercultural groups on real tasks. The processes in these teams are monitored and facilitated. Finally, team experiences are reflected.

The ITC-Program is a project of applied sciences: practical goals should be reached (e.g. better integration of foreign students) but it also has some research aspects referring to the evaluation of the program and the improvement of our understanding of processes and outcomes of intercultural teams.

In the following part 2 gives a short overview of research findings relevant for our topic. Part 3 describes the status quo of intercultural teamwork at the campus when we started the program and conducted an initial survey. In part 4 the ITC-Program is described in details. Some evaluation results concerning the students' acceptance of the program are shown in part 5. Results of an analysis of intercultural team processes are presented in part 6. The paper closes with some conclusions and an outlook.

¹ The project is financed for two years by the DAAD (German Academic Exchange Service) and is part of the DAAD-program "PROFIT" (Programme for Improving the Integration of Foreign Students).

2 Does teamwork facilitate social integration and social skill development?

Some research findings

Intercultural competence and social integration do not evolve just when people go abroad or people from different nations get together. Studies have shown that contact only under very specific conditions leads to positive relations between people belonging to different social groups (Allport, 1954; Pettigrew, 1998) and that contact alone does not make people per se intercultural competent (e.g. Pederson, 2009). Can intercultural teamwork lead to better intercultural competencies and to a better social integration of foreign students? Different fields of psychological research deliver pros and cons with regard to this question:

(1) *Research on acculturation* assumes that successful acculturation of an individual (e.g. visiting student, expatriate) is shown on two different levels (e.g. Ward, 1996): psychological and socio-cultural adaptation. The first refers to intrapersonal processes like the psychological well-being as the person is feeling confident and develops satisfaction in the new socio-cultural environment (emotional level). The second is referring to culture specific abilities like cultural knowledge and the ability to handle daily routines and situations (behavioral level). If contact to members of the host country is regular and intensive it is an important resource to gain cultural adequate knowledge and abilities. Intercultural teamwork offers the opportunity to get intensive contact to the other team members and if German and foreign students belong to one team that offers at least the opportunity for foreign students for socio-cultural learning. In addition the experience of belonging to an integrated work group should also have positive effects on the psychological well-being of the foreign students.

(2) According to *intergroup-contact theory* (Allport, 1954; Pettigrew, 1998) there exist five central conditions for generating positive results like reciprocal positive attitudes or reduction of prejudices among members of different social groups:

- The existence of a common goal;
- The need to interact to reach the common goal;
- Intensive intergroup contact and opportunities for forming friendships with people from the other group;
- Equality of status between the members of the different groups;
- Authorities who support the intergroup activities.

The common goal and a need for cooperation for achieving the goals are key factors in work group definitions (Stumpf & Thomas, 2003). Cooperation offers chances for close contact with the potential of friendship formation. The support from authorities, in our case professors and teaching staff, is not self-evident but could be producible. However, equality of status among German and foreign students only exists in a very formal sense meaning e.g. that foreign students have exactly the same rights as German students. But in other regards there may be differences in status or power: at a German University the working language mostly is German. So German students have an advantage e.g. for getting and utilizing information as well as to influence and participate in group discussions (e.g. Stumpf, Michel, Sokolowski u. Wenzl, 2004). Real equal status would require a reflected handling of the working language problem, especially by German students.

(3) *Research on group effectiveness* shows that groups often do not realize their potential productivity and that there is a substantial risk of process losses (e.g. Steiner, 1972). It is assumed

that intercultural groups compared to monocultural groups should have more potential productivity due to group member diversity (Adler, 1997; Maznevski; 1994). On the other hand, intercultural teams have higher risks for process losses due to communication problems, prejudices, discrimination and relational conflicts: "Diversity appears to be a double-edged sword, increasing the opportunity for creativity as well as the likelihood that group members will be dissatisfied and fail to identify with the group" (Miliken & Martins, 1996, p.403). Studies on intercultural team effectiveness show that intercultural groups compared to monocultural groups initially have lower process quality and perform worse. But under favorable conditions (e.g. feedback on process and performance, group reflection activities), in the long run they reach the level of monocultural groups or even are better in some aspects (Watson, Kumar & Michaelson, 1993). According to Earley and Mosakowski (2000) an intercultural team has to build up a "hybrid" team culture based on the different values and norms of the team members. This process needs time and is influenced by team composition: The creation of a viable team culture succeeds better in groups which differ a lot (e.g. four people are from four different cultures) than in groups which are composed moderately heterogeneous (e.g. balanced bicultural, four persons, two each come from the same culture). In the latter case, cultural subgroups are salient and this may lead to worse team communication and low levels of group identity.

(4) With regard to *research on intercultural competencies*, in a recent pre-post study Pederson (2010) outlined the importance of intercultural training and guided reflection for intercultural learning. Pederson compared the development of intercultural sensitivity of students who were sent abroad and received intercultural training and guided reflection with students who were only sent abroad. Intercultural sensitivity was measured with the Intercultural Development Inventory (Hammer, 2007). Only for students with intercultural training and guided reflection there was an enhancement in intercultural sensitivity. For developing intercultural team competencies it seems to be important that real intercultural team experiences exist but training and guided reflection should be added.

These findings suggest that intercultural teamwork is a promising approach to support social integration of foreign students as well as the development of intercultural team competencies. On the other hand, it is evident that it is not sufficient to install intercultural teams, but that it is also necessary to create productive conditions (e.g. training, feedback, guided reflection) in order to realize the potential of intercultural teamwork.

3 Teamwork among students: results of a survey

Before starting the ITC-Program, a survey was conducted concerning the quantity and quality of teamwork among students at Gummersbach Campus. For this purpose a questionnaire with approximately 50 closed and open questions has been developed.

The questionnaire was completed by 148 students who had studied at least one semester at the campus. The average age of the participants was 25 years, the average duration of study was six semesters. 86.5% had German nationality, 13.3% a foreign nationality.

Main results of the survey are:

- 47% of the respondents see teamwork as being important for reaching a degree at university.
- 40% want more teamwork at university, 57% say that the amount of teamwork should remain constant.

- On average a student workgroup has three to four members.
- The typical life span of a student workgroup is short and in most cases is often not more than three weeks.
- Typical group tasks are: Carrying out a (technical) test; carrying out a project; preparing and holding a presentation; learning for an exam.
- Students build teams with persons they see as likeable, diligent and who they already know.
- In most cases (42%) students have worked in 4 to 8 teams.
- Students are not completely satisfied with the performance of the teams in which they have been members (on a 5-point-scale with "satisfied" (1), "somewhat satisfied" (2), "neither satisfied nor unsatisfied" (3), "somewhat unsatisfied" (4) and "dissatisfied" (5) the mean is 2.1).
- Cultural demographic characteristics influence the establishment of friendships: German students without migration background primarily have German students as best friends, students with migration background have both German and foreign students as best friends and foreign students primarily have foreign students as best friends.
- Only 19% of the respondents agree completely with the statement: "I see intercultural teams as enriching and as a chance for learning". Most respondents (35%) have a neutral position with regard to this statement.
- 2/3 of the respondents do not agree with the statement: "If workgroups are formed, I try to join a group with people coming from other cultures/countries".
- German students see the effects of an intercultural team composition on group performance and team climate less positive than foreign students.

If the respondents had experiences in both monocultural and intercultural student teams they were asked to remember their last monocultural team and their last intercultural team. Then they had to assess the quality of team work of each team on 13 bipolar items. The results show that monocultural teams are seen more positive than intercultural teams on all items. For seven items these differences are statistically significant (see table 1).

These results suggest that there is not a favourable climate with regard to internationalization: students see intercultural teamwork less positive than monocultural teamwork. It seems that they experience more problems and process losses in intercultural teams compared to monocultural teams. This corresponds with research results suggesting that in intercultural teams compared to monocultural teams there is in the short run poorer process quality (more communication problems, more relational conflict, lower levels of team identity) and lower performance and that only in the long run and under favourable conditions (e.g. multicultural composition instead of bicultural composition; feedback and reflective group activities) intercultural teams reach the process and performance level of monocultural teams (Earley & Mosakowski, 2000; Watson, Kumar & Michalson, 1993). It is not surprising that particularly German students do not strive for joining an intercultural team. If the experiences in intercultural teams are not as positive as in monocultural teams why should students join such teams?

Table 1: Assessment of teamwork in last monocultural team and last intercultural team

Item	Means		P
	MCT	ICT	

Pleasant team climate vs. unpleasant team climate	1.93	2.21	<.01
Intensive cooperation vs. no cooperation	2.31	2.55	<.05
Clear team goals vs. no clear team goals	1.91	2.15	<.05
High agreement on team goals vs. no agreement on team goals	2.25	2.61	<.01
Very good outcomes vs. very bad outcomes	1.88	2.39	<.001
Professional enriching vs. not professional enriching	2.22	2.55	<.01
Personal enriching vs. not personal enriching	2.11	2.38	<.05

Notes: N=103 students with experiences in both monocultural teams (MCT) and intercultural teams (ICT). Means on a 5-point bipolar scale from 1 (= left pole, e.g. pleasant team climate) to 5 (= right pole, e.g. unpleasant team). P = Probability (t-test for dependent samples).

In order to establish more intercultural teamwork among students, the following activities should be helpful:

- (1) Sensitizing students to the fact that they can acquire important social skills when engaging in intercultural teamwork;
- (2) Improving the quality of intercultural teamwork by training and team facilitation;
- (3) Providing incentives for engaging in intercultural teamwork (e.g. credit points).

These activities are part of the ICT-Program which is described in the next section.

4 The ICT-Program: components and process

The program for developing students' intercultural team competencies combines training approaches, stimulation of intercultural teamwork on real task and team facilitation. Information based learning goes along with experiential learning (Kolb, 1984). Reflective activities are stimulated with regard to both individual reflection (e.g. Schön, 1983) and group reflexivity (West, 1996; Widmer, Schippers & West, 2009); reflection is regarded as an important activity for promoting intercultural learning, group processes and group performance: "Experience itself does not teach; people learn from reflecting on their experience". (Tjosvold 1991, p.189). Figure 1 gives an overview of the program.

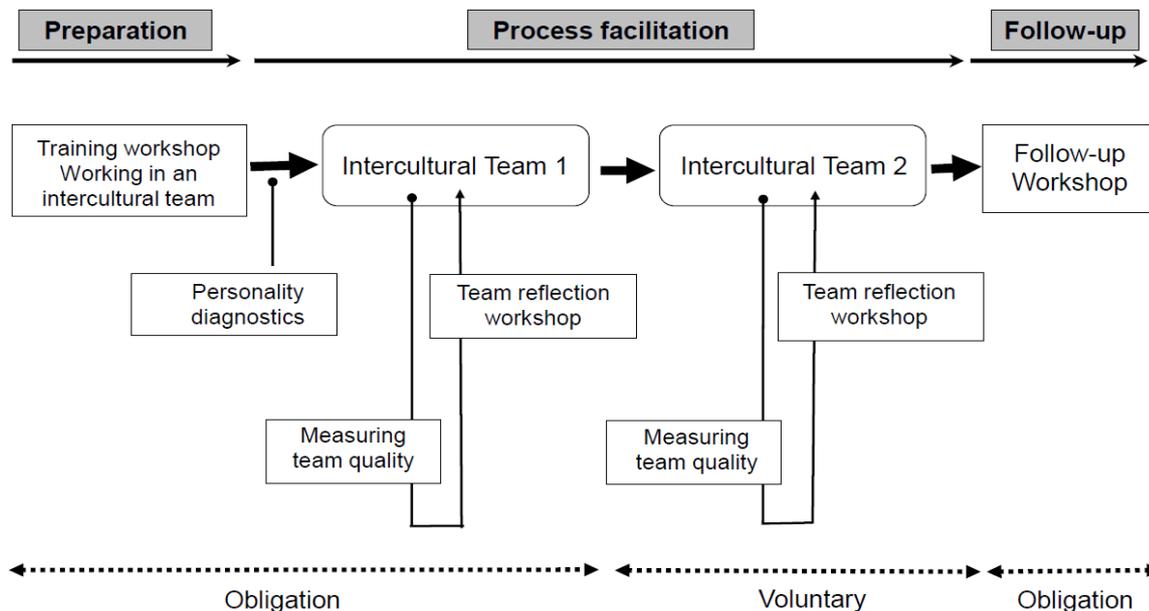


Figure 1: Program for developing students' intercultural team competencies (ITC-Program)

The program has five stages:

- (1) **Training module:** the program starts with a two day workshop on intercultural teamwork. During the first day, participating students get aware of intercultural issues and skills. They were taught what is meant by "culture", which kinds of cultural differences may exist (e.g. individualism vs. collectivism, low-context vs. high-context, German cultural standards) and which basic forms of handling cultural differences are possible. The second day refers to intercultural teamwork. Chances and risks of cultural diverse teams are discussed and a multi-level approach to team building proposed by Maznevski and DiStefano (2000) is presented. The training approach (cp. Gudykunst & Hammer, 1983) combines the presentation and the discussion of relevant information (theories, models, empirical findings) with practical exercises (simulations, team exercises, analyses of videos showing intercultural team problems). The composition of the participants should be culturally heterogeneous (1/3 German students; 2/3 students with migration background and foreign students) in order to stimulate intercultural experiences among the participants and to support the integration of foreign students.
- (2) **Personality diagnostics – measurement and feedback of individual dispositions for intercultural teamwork:** the participating students should gain insights into their individual dispositions relevant for intercultural teamwork. Two instruments are used for this purpose: first the NEO-FFI Personality Inventory (Borkenau and Ostendorf, 2008) with the BIG-five-traits "neuroticism (emotional stability)," "extraversion", "openness", "agreeableness" and "conscientiousness". Second the inventory of social skills (ISK, Kanning, 2009), a questionnaire measuring 17 social skills, which can be regarded as being important for intercultural interactions (cp. Kealey, 1996; Stahl, 1998), e.g. perspective taking, pluralism of values and flexibility, or for teamwork in general, e.g. assertiveness and willingness to compromise. The results of both instruments are discussed in detail with each participant in an individual feedback meeting.
- (3) **Practical experience in an intercultural team:** The participating students have to search for a group task and for students with various cultural backgrounds with whom they can work

together in an intercultural team in order to complete the task. Group tasks have to be part of the curriculum of the students (e.g. tasks in engineering or computer science: technical test, project work, preparing and giving a presentation ...). Therefore the group task is a real and serious challenge and not just a "playing field"; participants should test their abilities in intercultural teamwork under realistic conditions. The other group members can be ITC-participants or other students. The group should be composed as heterogeneous as possible (Earley & Mosakowski, 2000) and the group life span should ideally be one semester and at least has to be four weeks. The participants have to be members in at least one intercultural team; in addition, participation in several intercultural teams is possible (e.g. in the following semester).

- (4) **Team diagnosis and team reflection workshop:** the processes in the intercultural teams are monitored and for each team a reflection workshop takes place in order to optimize teamwork. According to Gersick's (e.g. 1989) model of group development, a work team is most inclined to changes in the middle of its life span. Therefore the team diagnosis and the reflection workshop should take place at this midpoint. Two instruments are applied for monitoring team processes: (a) The Team-Climate-Inventory (Brodbeck, Anderson & West, 2000), a 44-item-questionnaire measuring the four climate dimensions "vision", "task orientation", "participation safety" and "support for innovation". The instrument is based on West's (1990) four-factor model of work group innovation. (b) The SYMLOG-Adjective-Rating-Scale (Bales, Cohen & Williamson, 1982), a 26-item-questionnaire to measure how the team members perceive each other with regard to the dimensions "dominance/submissiveness", "friendliness/unfriendliness", and "task- and norm-orientation: accepting/opposing). Furthermore, a 32-item-questionnaire to measure group members' cultural orientations was applied (Triandis, 1992) in order to capture differences and similarities in the team members' basic cultural values with regard to vertical and horizontal individualism and collectivism. After team diagnosis, a reflection workshop takes place with each team: the results of the team diagnosis are presented and discussed with the group members. On this basis, team members reflect their teamwork and try to find ways to optimize teamwork. The team members come to agreements how to improve team processes (e.g. working style, behavior, climate) and these agreements should be implemented in the second half of group work.
- (5) **Follow-up workshop:** a one-day workshop at the end of the semester is the final component of the program. In the same composition as in the training module the participants meet again. They exchange and reflect their team experiences and draw conclusions from their experiences in the whole program.

The program is connected to numerous degree courses at the campus. Therefore, students can earn credit points for their courses by completing all components of the program and by passing an exam.

5 Evaluation results on students' acceptance of the ITC-Program

The following table shows the composition of the participants in the program.

Table 2: Composition of the participants in the ITC-Program (winter 2009/10 and summer 2010)

	All students	Students with German background	Students with migration background*	Students with foreign background
Training workshop	71	24	21	26
Personality diagnostics with feedback	74	29	26	19
Team diagnosis and reflection workshop	90	32	35	23
Follow-up workshop	62	23	18	21
Completion of the whole program	57	23	18	16

Notes: A student is regarded as having a migration background, if: a) the student is of German nationality but is born in another country; or b) the student is born in Germany but has another nationality; or c) the student has German nationality and is born in Germany, at least one parent has another nationality or was born in Germany with another nationality.

71 students participated in the training workshop. With a total of 26 foreign students, 21 students with migration background and 24 students with German background the intended 1/3:1/3:1/3 composition of the participants was achieved.

In the first year of the program 28 intercultural teams were established and facilitated in the development program. It was accepted that in the teams students cooperated who did not participate in the development program. For this reason a total of 90 persons took part in the team facilitation process. At the end of the two semesters 62 of the 71 students who took part in the training workshop got together in the follow-up workshops to exchange and reflect their experiences. It was intended that all students who are in the training workshop complete the whole program but that was not obligatory. All in all 103 different people got in touch with one or more parts of the program. The whole program was completed by 58 students.

These data are quite satisfying because students of computer science and engineering and a proportion of 14% female students can not be seen as the "typical" voluntary participants in intercultural trainings. According to Hiller (2010) the typical voluntary participant in intercultural training is female, studies Humanities and has several experiences in foreign countries.

After each workshop an evaluation took place and participants filled out questionnaires. After the follow-up workshop the questionnaire also included questions concerning the whole program. Table 3 shows evaluation results concerning the students' acceptance of the workshops.

Table 3: Students' acceptance of the workshops

Items	Means	
	Training workshop (N= 67)	Follow-up workshop (N= 59)
The lessons were clearly structured and comprehensible.	4.55	4.44
The facilitators realized the workshop very dedicated.	4.88	4.80
I felt comfortable with the climate in the workshop group.	4.52	4.41
I expect that the knowledge I gained during the workshop can be transferred in my job, in my studies, in everyday life etc.	4.34	4.15
I took advantage of the mixed composition of German and foreign students.	4.56	4.31
I would recommend the workshop to a friend.	4.52	4.22
The workshop strengthened my interest to get in contact with people from other cultures.	3.97	-
Because of the workshop I feel better prepared for cooperating with people from other cultures.	4.07	-

Notes: Assessments on a 5-point rating scale (1 = "strongly disagree" to 5 = "strongly agree"). In cells the means are listed. N = number of survey participants.

The students evaluate the workshops very positive, e.g. the climate in the workshops or the cultural heterogeneous composition of the participants. Furthermore they see a transferability of the workshop content to daily student or professional life. Besides, the participants highly agree that the workshop strengthened their interest to get in contact with people of different cultures and they feel better prepared to cooperate with them.

Considering all components of the program, the students stated that they appreciated most the personality diagnostics followed by the training workshop.

Table 4 shows that although the personality and team reflection got very positive results (4.36 and 4.11), the students were skeptical with regard to the effects of team reflection on team progress and their attempts to implement the results of team reflection (3.44 and 3.64). Many teams had a quite good team quality when team reflection started and there was not much need for changing things. But some students stated that there was a lack of time and motivation to implement the insights of team reflection. That highlights the often existing gap between newly acquired knowledge "what we could do better" and its concrete implementation. Changing things takes time and energy for all people involved. Another reason for low implementation activities may be that team reflection was an unusual and new activity which deviates from the usual learning approach of students. Finally it may be that a lot of student projects are constituted in such a way that intensive teamwork or the best involvement of all team members is not necessary for realizing good outcomes (e.g. Peeters, van Tuijl, Rutte and Reyman, 2006).

Table 4: Students' acceptance of the process facilitation

Items	Means	
	Personality diagnostics (N= 55)	Team diagnostic (N= 55)
I learned a lot in the personality reflection process.	4.36	-
I learned a lot in the team reflection process.	-	4.11
The team reflection put the whole team forward.	-	3.44
We tried to implement the results from the team reflection in the team work.	-	3.64

Notes: Assessments on a 5-point rating scale (1 = "strongly disagree" to 5 = "strongly agree "). In cells the means are listed. N = number of survey participants.

Table 4 shows that the complete program has been seen positive by students.

Table 5: Students' acceptance of the complete program

Items	Means
	Complete program (N=55)
All-in-all I am satisfied with the contents and components of the development program.	4.34
The components of the program are structured in a useful way.	4.38
I assume that I can apply the acquired knowledge in this program in practice (job, study, daily life etc.).	4.53
In my impression, the program is an useful extension to the regular courses.	4.45
I would recommend the whole development program "Intercultural team competence" to a friend.	4.44

Notes: Assessments on a 5-point rating scale (1 = "strongly disagree" to 5 = "strongly agree "). In cells the means are listed. N = number of survey participants.

For investigating if the cultural background of the participants had an influence on the acceptance of the program several items were combined to acceptance scales for the training workshop (all 13 items; cronbach alpha: .77), the follow-up workshop (all ten items; cronbach alpha: .82) and the complete program (five items out of six; cronbach alpha: .80). Table 6 shows the means of acceptance ratings for different cultural backgrounds and the results of an ANOVA.

Table 6: ANOVA: Acceptance ratings of participants with different cultural background

	Means			F	P
	Students with German background	Students with migration background	Students with foreign background		
Training workshop*	4.34 (N=10)	4.55 (N=12)	4.48 (N=9)	0.757	0.478
Follow-up workshop	4.32 (N=22)	4.35 (N=17)	4.34 (N=20)	0.023	0.977
Complete program	4.35 (N=22)	4.41 (N=18)	4.57 (N=15)	0.848	0.434

Notes: * In the first two training workshops no data on cultural background were collected. Therefore there is a smaller N.

There was no significant effect of the participants' cultural background (German/ Migration/ Foreign) on the acceptance ratings for the workshops and the complete program.

With regard to team reflection there were some tendencies in the data showing that foreign students evaluated the team reflection workshop more positive and useful, but these differences did not get statistically significant.

Furthermore in the final evaluation the item "next time when I have to do teamwork I will try to join an intercultural team" got more agreement by foreign students than by German students (3.93 vs. 2.95; $p < .05$). A reason for that may be that foreign students are more used to intercultural experiences and for them it is more normal to work in intercultural teams. Why German participants were not enthusiastic about joining an intercultural team next time after the program? Perhaps for most of them the ITC-Program was the first intensive intercultural experience and they became more aware of the risks and problems of intercultural teamwork. That may initially lead to reactions of uncertainty.

6 Process analysis of intercultural teamwork

Within the program, the processes of 28 intercultural teams were monitored and facilitated. 8 teams consisted of two persons, 8 teams of three persons, 5 teams of four persons, and 7 teams of five persons. 85 students participated in one team and five students participated in two teams. In total, 90 students participated in the teams.

73 of the team members were male (81%), 17 were female (19%). 57 team members were participants of the program for developing intercultural competencies (63%), 33 team members did not participate in the program (37%). The average age of team members was 25 years (SD: 2.7)

32 team members were categorized as having the cultural background "german" (35,5%), 35 team members as having the cultural background "migration" (38.9%) and 23 team members as having the cultural background "foreign" (25.6%). The 23 foreign team members came from countries in Eastern Europe (7 team members), Asia (6 team members), Africa (6 team members) and Latin America (4 team members). The following table shows the cultural composition of the teams:

Table 7: Cultural composition of teams

Cultural composition	Number
German-Migration-Team	10
German-Foreigner-Team	6
German-Migration-Foreigner-Team	5
Migration-Foreigner-Team	3
Foreigner-Team	2
Migration-Team	2
Sum	28

Notes: A German-Migration-Team consists of team members with cultural background "German" and team members with cultural background "migration"; A Foreigner-Team consists only of foreign team members etc.

6.1 Interpersonal perceptions in teams: the SYMLOG-results

It was analysed if the cultural background of a team member has an influence on how he is perceived by the other group members with regard to the SYMLOG-variables. The behaviour of each team member was rated with the 26-Item-SYMLOG-Adjective-Rating-Scale by each of his team-mates. The ratings of the team-mates were averaged and for each team member his position on the three SYMLOG-dimensions "dominance" (subscales: U – dominance; prototypical item dominant, active, talkative; D – submissiveness; prototypical item: silent, passive, uninvolved), "friendliness" (subscales: P – friendly; prototypical item: friendly, democratic; N – unfriendly; prototypical item: unfriendly, negative, self-protective) and "task- and norm-orientation" (F – accepting task- and norm-orientation; prototypical item: task-oriented, analytic, solution-oriented; B – opposing task- and normorientation; prototypical item: expresses emotions, spontaneous) was calculated.

The SYMLOG-results referring to 90 students were used in this analysis. For five students who participated in two teams and consequently obtained two SYMLOG-evaluations, only the SYMLOG-evaluations of one team were used in order to avoid a distortion of the results.

It was assumed that a team member`s cultural background had an influence on how he is perceived by his team-mates. In detail, we had the following hypotheses:

HI: German team members are seen as being more dominant than foreign team members. Team members with a migration background have dominance-scores which are located between the scores for the German and foreign team members.

HI is formulated due to the following reasons: (1) working language in most teams is German. Therefore for German team members it is easier to contribute to group discussions and to influence group decision making. Speaking German is a source of social power in teams where German is working language. (2) Studies on German cultural standards (e.g. Thomas, 1996; Schroll-Machl, 2005) suggest that direct communication (low-context-communication) and assertiveness are typical characteristics of German culture whereas cultures in Eastern Europe or Asia are marked by indirect communication (high-context-communication) and harmony seeking (cp. also Hofstede, e.g. 1997).

HII: German team members are seen as being more task- and norm-oriented than foreign team members. Team members with a migration background have scores for task- and norm-orientation which are located between the scores for the German and foreign team members.

HII is formulated due to the reason that studies on German cultural standards (e.g. Thomas, Schroll-Machl ...) suggest that task-orientation, conscientiousness and interpersonal distance differentiation characterize German behaviour more than relationship orientation and spontaneous expressions of feelings.

With regard to the dimension "friendliness" two alternative hypotheses HIII-A and HIII-B were formulated:

HIII-A: German team members are seen mostly as being most friendly by German team-mates, foreign team members are seen as being most friendly by foreign team members and team members with migration background are seen as being most friendly by team members with migration background.

HIII-A is suggested by applying the similarity-attraction-paradigm (e.g. Newcomb, 1961).

HIII-B: German team members are seen as less friendly than foreign team members. Team members with a migration background have friendliness-scores which are located between the scores for the German and foreign team members.

HIII-B is based, once again, on studies of German cultural standards which suggest that typical German cultural standards like assertiveness and direct communication should result in a less friendly behaviour. In contrast, foreign students, coming mostly from countries in Eastern Europe or Asia should behave in a more friendly way because their behaviour is guided by cultural standards like indirect communication and harmony seeking.

For each SYMLOG-dimension a one-way ANOVA was used to assess the influence of a group member's cultural background on his obtained SYMLOG-ratings. If there was a significant F-value, groups means were compared by linear contrasts.

The results (cp. table 8) show that HI and HII are confirmed: Team members with German background are perceived as being more dominant (e.g. active, assertive, talking much) and showing more task- and norm-orientation (e.g. task oriented, analytic, conscientious) and less emotion (e.g. being warm, spontaneous) than foreign team members. The means for team members with migration background are located between the means of the two other cultural groups, but not all differences are significant: team members with migration background are seen as being significantly more dominant and more task- and norm-oriented than team members with foreign background. The differences between team members with German background and team members with migration background are not statistically significant.

With regard to the friendliness-dimension, German group members are perceived as less friendly than foreign students. But this tendency being in line with HIII-B is not significant and therefore HIII-B cannot be regarded as being confirmed by the data.

Also HIII-A is not confirmed by the data: further inspection of the data showed that team members with migration background view team members with migration background as being most friendly and team members with foreign background view team members with foreign background as being most friendly, but team members with German background view team members with German background being the least friendly group.

Table 8: ANOVA on SYMLOG-perceptions

SYMLOG-Dimension	Means			F	P
	Team members with german background (N = 32)	Team members with migration background (N = 35)	Team members with foreign background (N = 23)		
Dominance	2.82 _{a**}	2.34 _{a**}	0.60 _b	6.093**	.003
Task- and norm-orientation	5.39 _{a**}	4.94 _{a*}	3.34 _b	4.204*	.018
Friendliness	6.30	7.35	7.39	1.904	.155

Notes: * $p < .05$; ** $p < .01$; differently subscripted means within rows are significantly different at $p < .05$ (*) or $p < .01$ (**). Scores on a dimension (e.g. dominance) are calculated by calculating the difference between the two subscales (e.g. U-D) and dividing the result by 2.

6.2 Perceptions of team climate: results of the Team-Climate-Inventory

Each team member completed the 44 items of the Team-Climate-Inventory (TCI). The TCI measures four factors which are assumed to be predictive of effective team performance: (1) Team Vision (clarity, perceived value, sharedness and attainability), (2) Participation Safety (influence, information sharing, interaction frequency and safety), (3) Task Orientation (commitment to excellence, reflection, synergy) and (4) Support for Innovation (articulated and enhanced support).

It was hypothesized that the cultural background of the team members influences the perception of team climate. Foreign team members should view the team climate less positive than German team members because they are dominated by the Germans they can not influence group processes as much as Germans do and suffer from the more direct communication style of Germans (cp. the SYMLOG-results). Team members with a migration background should have TCI-assessments which are located between the assessments of German and foreign team members

The TCI-data of 89 team members was used in this analysis. For five students who participated in two teams and consequently delivered two TCI-evaluations, only the TCI-data referring to one team were used in order to avoid a distortion of the results. Furthermore the TCI-data of one team member was lacking.

The following table shows the means of the TCI-dimensions for team members with different cultural background and the results of a one way MANOVA with the TCI-dimensions as dependent variables.

Table 9: Team climate perceptions of team members with various cultural backgrounds

TCI-Dimension	Means			F (Wilks-Lambda)	P
	Team members with German background (N = 31)	Team members with migration background (N = 35)	Team members with foreign background (N = 23)		
Team Vision	42.74	44.40	45.00	1.40 (0.878)	0.20
Participation Safety	45.48	47.54	49.04		
Task Orientation	26.35	26.37	26.43		
Support for Innovation	29.19	30.43	31.35		

Notes: Higher numbers signify a better team climate.

The results of the MANOVA show no significant effect of the cultural background of the team members on their perceptions of team climate. Therefore, the hypothesis was not confirmed. The cell means even show a non-significant tendency in the opposite direction of the hypothesis, i.e. that foreign team members make more positive assessments of team climate.

The TCI-assessments of the members of each group were aggregated to get the TCI-assessment of each team on the four TCI-dimensions. A comparison between the TCI-values for the 28 student teams and the TCI-norms (product- and software development teams) shows that many teams have reached a very positive team climate. High (above average: stanine 7, 8 and 9) in vision are 53.6% of the teams, in participation safety 50%, in support for innovation 46.4% and in task orientation 35.7%. In the comparison sample only 23% of the teams are high (above average) in these dimensions. But there exist also some teams which had a bad team climate: low (below average: stanine 1, 2 and 3) in vision are 17.9%, in participation safety 10.7%, in support for innovation 7.1% and in task orientation 21.4%. In the comparison sample 23% of the teams are low (below average) in these dimensions.

The TCI group values on the four dimensions correlated very strongly (from .49 to .85). In order to do some explorative analyses on the relation between team composition and team climate, the four TCI-dimensions were combined to one measure of team climate by adding up the scores for the four TCI-dimensions (cronbach alpha: .87). Table 10 shows the means of this team-climate-index for different cultural team compositions.

Table 10: Means and SD of overall team climate in teams with different cultural compositions

Means (SD)						
Migration-Teams (N = 2)	German-Migration-Teams (N = 10)	Migration-Foreigner-Teams (N = 3)	German-Foreigner-Teams (N = 6)	German-Foreigner-Migration-Teams (N = 5)	Foreigner-Teams (N = 2)	All Teams (N = 28)
161.9 (16.1)	153.2 (10.8)	147,6 (21.1)	148.1 (14.2)	143.69 (25,3)	153.3 (4.71)	147.9 (22.5)

Notes: Higher numbers signify a better team climate. A German-Migration-Team consists of team members with cultural background "German" and team members with cultural background "migration"; a Foreigner-Team consists only of foreign team members etc.

Due to the small sample sizes for the various team compositions and in order to investigate the effect of cultural heterogeneity on team climate, the 28 teams were grouped in one class with teams of low heterogeneity and in another class with teams of high heterogeneity. Migration-Teams and German-Migration-Teams were assigned to the low-heterogeneity-class because all team members should be familiar with German culture and consequently, forming a common group culture should be a minor problem. Teams with at least one foreign student were assigned to the high-heterogeneity-class because cultural diversity in these groups should be higher, and forming a "hybrid" group culture should be more difficult. Foreigner-Teams were also assigned to this class because in both Foreigner-Teams group members came from different countries. The following table shows a comparison of the means of the overall team-climate-index for teams with low and high cultural heterogeneity.

Table 11: Overall team-climate-index in teams with low and high cultural heterogeneity

Means (SD)			
Teams with low heterogeneity (N = 12)	Teams with high heterogeneity (N = 16)	T	P
154.7 (11.4)	147.3 (17.6)	1.27	.22

Notes: Higher numbers signify a better team climate. P for 2-sided t-test.

Team climate was more positive in teams with low heterogeneity than in teams with high heterogeneity but this difference was not statistically significant. Therefore no effect of cultural team composition on team climate was found.

7 Conclusions and outlook

The evaluation of the ITC-program shows that the acceptance of the program is high and that the participating students react positively to the program and its components. The cultural background of the participating student had no significant effect on the acceptance of the program. Evaluations show that according to the participants' experiences the team reflection process only to some extent led to concrete activities to improve team quality. Future developments should consider how the team reflection process could be optimized in order to generate more activities and motivation to optimize team quality. Until now evaluations only refer to the acceptance level. Future evaluations should consider pre-post-changes with regard to participants' attitudes towards intercultural teamwork, with regard to changes in social and intercultural skills, and also with regard to the social integration of foreign students. In order to arrive at clear conclusions, a control group design would be helpful.

The process analyses of intercultural teamwork show that interpersonal perceptions among team members with regard to SYMLOG-dimensions are influenced by cultural background: As hypothesized German team members are seen as being more dominant and task- and norm-oriented than foreign team members. One opinion team members often tell us during team reflection is: "In our team culture does not play any role". The SYMLOG-results show that this opinion clearly is wrong. In our interpretation, two factors explain the SYMLOG-results: (1) working language in the teams mostly is German and therefore Germans have more chances to influence team processes; (2) differences in cultural orientations between Germans and foreign students, the former being more assertive and task-oriented and the latter being more harmony-oriented and relationship-oriented. Further analyses should highlight the interplay between these factors. For example, data concerning German language skills of foreign team members could be collected and correlated with the SYMLOG-ratings on dominance and task- and norm-orientation referring to these persons. Furthermore in order to exclude the possibility that SYMLOG-perceptions do not only reproduce cultural stereotypes but are rooted in real team member behaviour, observational data on team processes could be gathered and analyzed.

The results on the Team-Climate-Inventory (TCI) show that team members' cultural background does not influence team climate perceptions. Obviously the difference in dominance between German and foreign group members does not lead to the fact that foreign team members are less satisfied with team processes and view team climate in a less favourable way. A comparison with the TCI-norms shows that most teams in our program reached good levels of team climate. With regard to cultural team composition, there is only a non-significant tendency that high-heterogeneous teams have a less positive team climate than low-heterogeneous-teams. It seems that cultural heterogeneity as a demographic characteristic can not explain variances in team climate. Future analyses to explain variances in team climate will consider existing data with regard to more psychological team composition concepts, i.e. homogeneity and heterogeneity in team members' personality traits, social skills and cultural orientations in vertical/horizontal individualism and collectivism.

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