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GROUP DEVELOPMENT, WHAT´S THE SPEED LIMIT? – TWO CASES OF STUDENT GROUPS

Christian Jacobsson and Olle Persson

Abstract

The aim of this paper was to describe two cases of student groups on a five week course in group development methods. The research questions were if the student groups develop as groups and how close to being "effective teams" they become during the five weeks. The members of the groups answered the Group Development Questionnaire, GDQ, twice. The first day and the last day of the course. Results showed that one of groups developed into stage IV (effective team) according to GDQ measures. The other group did not develop in a major way. Results are discussed and future research suggested.

Keywords: Group development, GDQ, interventions, goals.

Work groups and their development are important for working life with regard to coordinating individuals' efforts to perform well and to contribute to individuals' well-being. However, coordinating activities in groups seems to be a fundamental problem in working life. As Lencoini (2002) pointed out, work groups have to overcome obstacles in order to develop. Lencoini described five basic dysfunctions of groups as *absence of trust*, *fear of conflict*, *lack of commitment, avoidance of accountability*, and *inattention to results*.

This paper addresses the subject of group development towards higher levels of cooperation and the time it takes. The two cases presented here are student groups from the psychologist program at the University of Gothenburg, which to a large extent share the characteristics of project teams in organisations. Most of the members of the newly started groups know each other from the past, in this case since four and a half year back, but they have never before worked together in the constellation that constitute the actual group.

In order to study group development across time we have chosen the Integrative Model of Group Development, IMGD, as a frame of reference and Group Development Questionnaire (Wheelan, 1994), GDQ, as the way to measure group development according to IMGD. GDQ has been systematically reviewed and has gained a substantial body of supporting evidence with regard to its validity (Wheelan & Hochberger, 1996). Regarding criterion related validity, what teams accomplish, teams that has reached higher stages of development according to GDQ has for instance shown

- To have higher performing students in schools (Wheelan & Kesselring, 2005)
- To be more productive in the financial and service sector, i.e. earning more money and having more satisfied customers (Wheelan, 1994)
- To have more surviving patients in intensive care units (Wheelan, Burchill, & Tilin, 2003)

IMGD describes group development as a process with five stages where the last one, Termination, is excluded in GDQ. The model is basically an integration of earlier theories of group development, of which most influence came from Tuckman and Jensen (1977), Bion (1961), Bales (1965) and Bennis and Shepard (1956). The model is presented in figure 1.

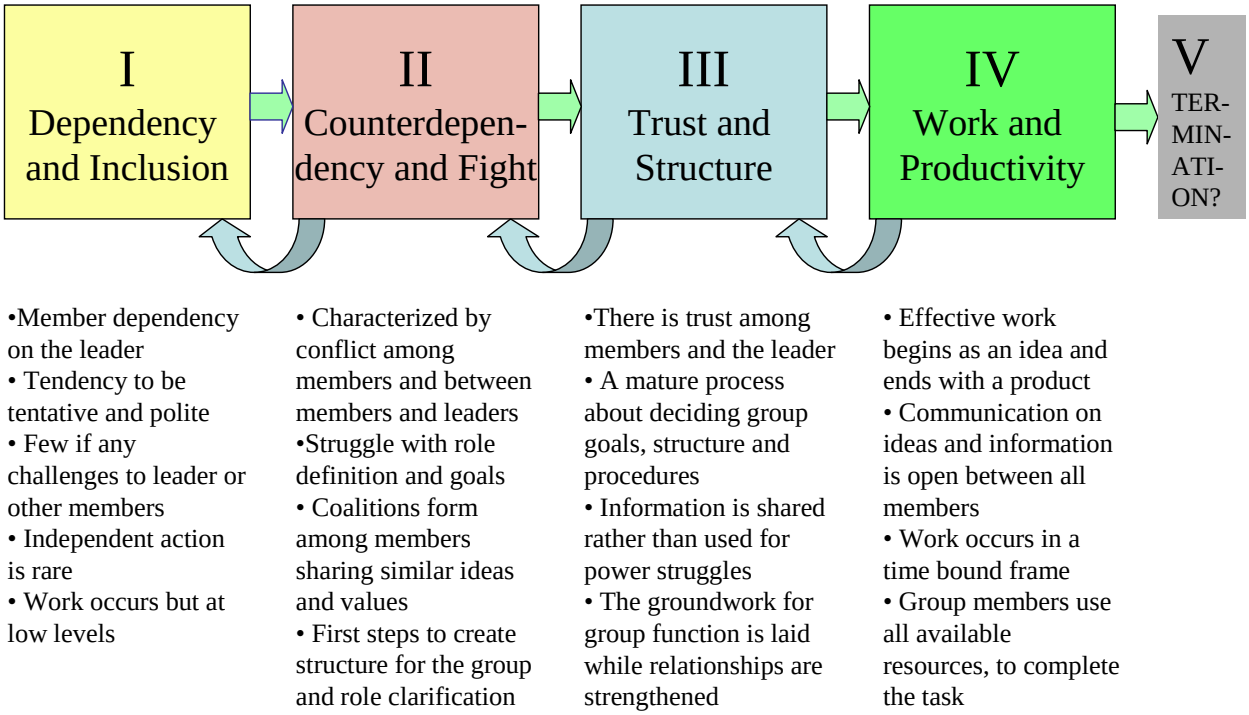

Figure 1 The Integrative Model of Group Development (Jacobsson & Wramsten Wilmar, 2009)

On average, groups have a natural tendency to develop towards more effective cooperation until they are about one year. After that the process slows down or goes backward and forward stage-wise (Wheelan, 2005) in a way that Bales describes in the equilibrium model (Bales, 1965). According to Wheelan and colleagues(Wheelan, 1994; Wheelan, Davidson, & Tilin, 2003), the mean age of newly started groups in different stages of group development are approximately:

- stage IV (effective teamwork) - 6 months
- stage III - 5 months
- stage II - 4 months

- stage I - 3 month

However, all groups don't reach stage four in their development. Existing data (Wheelan, 1994) suggests that, depending on the line of business, between 9 and 23% of the work groups in USA are in stage four.

Regarding Swedish groups, an earlier study on group development with 28 teacher teams in Swedish school (Jacobsson, 2009; Jacobsson & Wramsten Wilmar, 2009) showed in the baseline measure that 25.0% where stage I teams, 28,6% stage II, 35,7% stage III and 10,7% where stage IV teams. After group development interventions, that contained 18 hours of consultation distributed over approximately 8 months, a follow up measure with GDQ was made. The follow up showed that 0,0% where stage I teams, 25,0% stage II, 39,0% stage III and 36,0% where stage IV teams. Although no control groups where included in the study, it was assumed that the effect was caused by the intervention because all teacher teams where established since at least one year back in time.

Interventions in groups – what works?

Reviewing literature, there seem to be at least four prerequisites to successful group interventions (Jacobsson, 2009):

- Interventions should be related to the tasks and current priorities of the group. Group members are probably not helped by training things they never do in their ordinary work.
- Interventions should be related to an analysis of the group's needs of improvements.
- The leader of the group should participate as a part of the group during interventions. Having a good cooperation with the leader is part of being an effective group.
- It's important to have an outspoken direction with the interventions, be clear about it and document for instance agreements in the group during the process.

According to a meta-analysis made by Salas and colleagues (Klein, et al., 2009), concerning efficient group interventions, interventions focusing on goals, roles and problem-solving are likely to help groups become more effective.

The course in group interventions

The context of the present study was an optional course at the fifth year of the Psychologist program at the University of Gothenburg. The course was held on five weeks and the aim was that the students should learn more about group processes and on interventions in groups.

The course was designed as a joint venture between the authors of this paper, acting as teachers, and the students. The teachers made specific interventions on classical group topics such as goal clarification, roles, norms, conflict resolution and decision-making. The teachers met the group 8 times for 3 hours sessions during the course. The students did one intervention each, working in pairs. The interventions were free of choice, but they were intended to suit group needs at the current moment. The student interventions were evaluated by the group members each time, documented and reported to the teachers, who didn't participate when the students intervened.

The teachers had two focuses, one was to teach about group processes and typical interventions and the other was to do an intervention every time they met the students. The teachers made 8 interventions. A representative type of theme and intervention was having a short seminar on goals according to figure 1 and later doing an intervention in the group based on the model.

Table 1. Clarification of goals depending on time and space (Jacobsson, 2010)

Goal-taxonomi for work groups – Purpose, members, stakeholders and goals of the group
(Christian Jacobsson)

A. The purpose of the group is: …..

Space	**Time**	**Process goals** – Now/all the time	**Future results** – Later	**Visions** – Maybe later
B. Internal focus/ ourselves *Who are members & what role do they have?*		1. ***Clarified norms***	3. ***Developmental goals***	5. ***Guiding stars***
C. External focus/our stakeholders: *Who has an interest in our work/ for whom do we work?*		2. ***Standard of service***	4. ***Operative goals***	6. ***Vision***

The model in table 1 is based on an integration of research on goals and groups (Austin & Vancouver, 1996; Frese & Zapf, 1994; Hackman & Wageman, 2005). The model is a tool for helping groups clarifying different types of goals depending on time and space for evaluation. However, the first steps are to agree upon a purpose for the group and be clear about memberships/roles and stakeholders of the group. Regarding the time perspective it's possible to clarify goals connected to "now and all the time", "later" and an unspecified "maybe later". A vision could in this context be reality-tested regarding its function as a

direction giver in the way that if we think "maybe later" about the vision, it would probably work. If we think "probably never", it won't work. Regarding the place perspective there can be goals concerning the internal focus on ourselves as a group and an external focus on the stake-holders, e.g. the customers or clients. Clarifying critical others, for instance target groups, is important in the context. Working through the whole model includes that the group have six different types of goals that are elaborated and clarified. For instance, regarding developmental goals that concern the group itself and how they want to cooperate in the future, a goal could be "in six months we will reduce meeting time by one hour per week".

To summarise, the teachers shared their tools, like the one presented above, with the student and demonstrated them by doing interventions. The students did by large the same and the two groups in this study were subject of 12 (group A) to 15 (group B) attempts to help them cooperate more efficiently and develop as groups during the five week period. Each intervention meeting were 3 hours, so the spent between 36 and 45 hours on group development interventions.

Research questions

The present study is mainly descriptive and the purpose is to, by means of two cases, explore some essential aspects of group processes. The research questions are:

- Do student groups on a five week course in group development methods develop as groups?
- If so, how close to being an effective team, i.e. stage IV, do they come in five weeks?

The expected results are that the groups will develop in a measurable way, but far from reaching stage four according to IMGD.

Method

Procedure

The members of the groups answered the Group Development Questionnaire (Wheelan & Hochberger, 1996) two times, firstly on the first day of the course and secondly on the last day of the course.

Participants

The two groups in the study consisted of 7 members (Group A) and 14 members (Group B). Group A was the first group to participate in the course and had cooperated with the teachers for about 3 months on how to design the course. Group B participated in the course 6 months later, a course that at this moment

was designed and delivered once before. Thus, Group B had no prior cooperation as a group before the course started.

Instrument

In order to measure group developmental stages, GDQ (Wheelan & Hochberger, 1996) was used. On the basis of the IMGD, the 60-item GDQ contains four scales that correspond to the first four stages of group development. Each scale contains 15 items and each item has a Lickert type response scale from 1 to 5, were 1 is *never true of this group* and 5 is *always true of this group*. Therefore, the minimum score on each scale is 15 and the maximum score is 75. Table 2 contains sample items from each GDQ scale.

Table 2. Sample items for GDQ

GDQ scale	Sample items
GDQ I	Members tend to go along with whatever the leader suggests. There is very little conflict expressed in the group. We haven't discussed our goals very much.
GDQ II	People seem to have very different views about how things should be done in this group. Members challenge the leader's ideas. There is quite a bit of tension in the group at this time.
GDQ III	The group is spending its time planning how it will get its work done. We can rely on each other. We work as a team. The group is able to form subgroups, or subcommittees, to work on specific tasks
GDQ IV	The group gets, gives, and uses feedback about its effectiveness and productivity. The group acts on its decisions. This group encourages high performance and quality work.

This study was conducted with the Swedish translation of GDQ, GDQ SE3, which is the third revised version. Psychometrical properties (Cronbach´s alpha) for GDQ SE3 scale I is 0.77, for scale II, III and IV the values are 0.90, 0.81 and 0.87 respectively.

Norm data for GDQ SE3 is showed in Table 3. Norms are based on 357 groups that were fairly representative for Swedish working life.

Table 3. Norms for GDQ SE3 based on 357 Swedish groups

	Scale I	Scale II	Scale III	Scale IV
Max. value	51,8	61,7	68,8	69,3
84 percentile	43,1	43,5	59,7	61,6
Mean value	37,2	34,7	53,5	55,3
16 percentile	31,3	25,9	47,3	49,0
Min. value	21,5	18,7	30,0	30,0
Stand. dev.	5,7	8,6	6,1	6,2

A group's overall stage is determined by considering the mean scores of the four scales. During Stage 1 of group development, the mean score on GDQ Scale 1 is at its highest, and scores on the other three scales are relatively low. During Stage 2, the mean score of GDQ Scale 2 is at its highest, and scores on the other three scales remain relatively low. At Stage 3, mean scores on GDQ Scales 3 and 4 begin to increase, and mean scores on GDQ Scales 1 and 2 remain relatively low. Finally, at Stage 4, mean scores on GDQ Scales 3 and 4 continue to increase, whereas mean scores on GDQ Scales 1 and 2 remain relatively low (Wheelan, et al., 2003).

Based on Wheelan´s (1994) classification of cut off values for the four stages in IMGD, an adjustment according to the norm data for GDQ SE3 has been made. The cut off values is shown in table 4.

Table 4. Cut off values for scales in GDQ (SE3) in order to determine stage in IMGD, adapted from Wheelan (2009).

Scale Stage	GDQ 1	GDQ 2	GDQ 3	GDQ 4
IMGD I	>38	<40	<54	<55
IMGD II	<41	>40	<54	<55
IMGD III	<40	<39	>53	55-61
IMGD IV	<40	<39	>56	>61

Note: The groups mean values on the four scales should match the table values at least in three cases according to Wheelan (1994).

Data analysis

Data was analysed by comparing mean values on the four scales of GDQ measured on the first and the last day of the course. Data was also analysed with regard to group development stage described by IMGD, This assessment was made by use of comparing the mean values on GDQ scales with cut off values in table 4.

Results

Group A – the Pioneers

The 7 Psychologist students that were members of Group A were the first to study the course in group development methods. The students toke part in designing the course and were highly motivated and eager to learn more about group development in practice. On the first day, when GDQ pre-test was administered, they discussed their common goal. They decided it to be: *to help each other to deepen the knowledge on group development.* Results from GDQ pre-tests, presented in table 5, showed clearly that they were a stage III group. This seemed a bit surprising to the teachers, who expected them to be a newly started stage I group at day one of the course. The students explained that they had all but one member been a group for three months already, working on convincing the teacher to hold the course and also to cooperate on designing it.

Table 5. Group A, GDQ scores, pre-test

Scale	GDQ 1	GDQ 2	GDQ 3	GDQ 4
Mean value	39,3	26,3	56,4	57,0
Range	31 - 53	20 - 35	52 - 60	50 - 63
Range difference	22	15	8	13

After about two weeks the students were dissatisfied with their goal. The discussion concerned the fact that their group will reach termination stage in three weeks, and then what? They were also close to graduation, only one semester left of the five year program, and then what? The goal, concerning deepening their knowledge, didn't offer the clarity and direction that the members of the group asked for. After long discussions, the members could join around a new goal: *to start a company together*! The members were very pleased with the new goal and carried on with their studies. The last day, after five weeks a GDQ post-test was made. The result, presented in table 6, show that they had reach stage IV in IMGD: Work and Productivity.

Table 6. Group A, GDQ scores, post-test

Scale	GDQ I	GDQ 2	GDQ 3	GDQ 4
Mean value	25,0	24,0	62,0	63,0
Range	20-29	18-28	58-65	59-66
Range difference	9	10	7	7

Figure 2 summarises the GDQ scores for Group A, Pre- and Post-test in relation to Swedish norms for GDQ SE2. Note that the range has decreased on all four scales in post-test, meaning that the members' perceptions of group dynamics has become more homogenous.

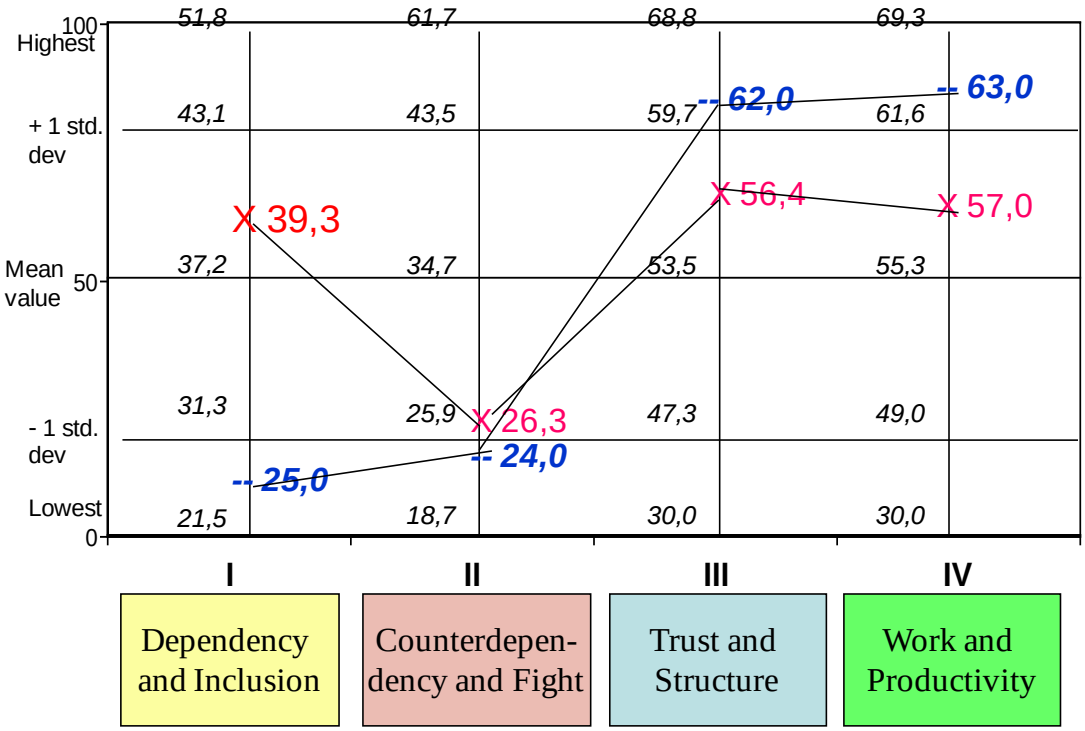

*Figure 2. STUDENT GROUP A, n = 7. Mean Values on GDQ Scales, Student group A Compared to Norm Data (GDQ SE3) for Swedish Teams (n = 357 teams) – Before (X) and **After** (--) Intervention (5 weeks)*

Group B - The Followers

The 14 Psychologist students that were members of Group B were the second to study the course in group development methods. The students did not take part in designing the course but was otherwise highly motivated to learn more about group development in practice. On the first day, when GDQ pre-test was administered, they discussed their common goal. They decided it to be: *to help each other to learn more about group development.* Results from GDQ pre-tests, presented in table 7, showed that they were a stage I group. This was in line with expectations from the teachers. Although they knew each others more or less, since most of them had been classmates for four and a half years, they had never before worked together as a group.

Table 7. Group B, GDQ scores, pre-test

Scale	GDQ I	GDQ 2	GDQ 3	GDQ 4
Mean value	51,8	38,9	47,8	45,9
Range	45 - 61	30 - 51	39 - 56	29 - 55
Range difference	16	21	17	26

After about two or three weeks many of the students expressed frustration, they were struggling with the goal for the group and on role issues such as leadership. Beside the teachers intervention on goal clarification, the students had two separate interventions on there own on the same issue. Leadership was a problem in the sense that some student felt it was awkward to take the role of being a consultant to their group when they were in line for doing an intervention. Giving and taking authority was a problem. As teachers we perceived the group to be in stage II, although we didn't measure the group with GDQ at this time. It was also obvious for the teachers that this was a much larger and heterogeneous group than Group A.

After three to four weeks, the group settled down and reached an agreement with regard to their clarified goal. They decided it to be: *To arrange a party and invite our teachers*. After this, relatively much of their work content was to organize this party. In what way could 14 persons cooperate on making a dinner? Should there be more than a dinner, what is a good party made up of? The interventions after this partly helped the members to structure the new group task. They decided on what food to make, it actually became seven dishes since the 14 members were sub grouping, working in pairs. And most important of all, although the group still was perceived as a quite heterogeneous group, it was a very good party! At the last day of the course GDQ post-test was made, shown in table 8, which indicate that the group still was a stage I group, even though the group met three of four criteria's for stage III, it met four criteria's for being a stage I group.

Table 8. Group B, GDQ scores, post-test

Scale	GDQ I	GDQ 2	GDQ 3	GDQ 4
Mean value	39,6	37,3	53,8	53,3
Range	31 - 56	27 - 50	40 - 62	46 - 62
Range difference	25	23	22	16

Figure 3 summarizes the GDQ scores for Group B, Pre- and Post-test in relation to Swedish norms for GDQ SE3.

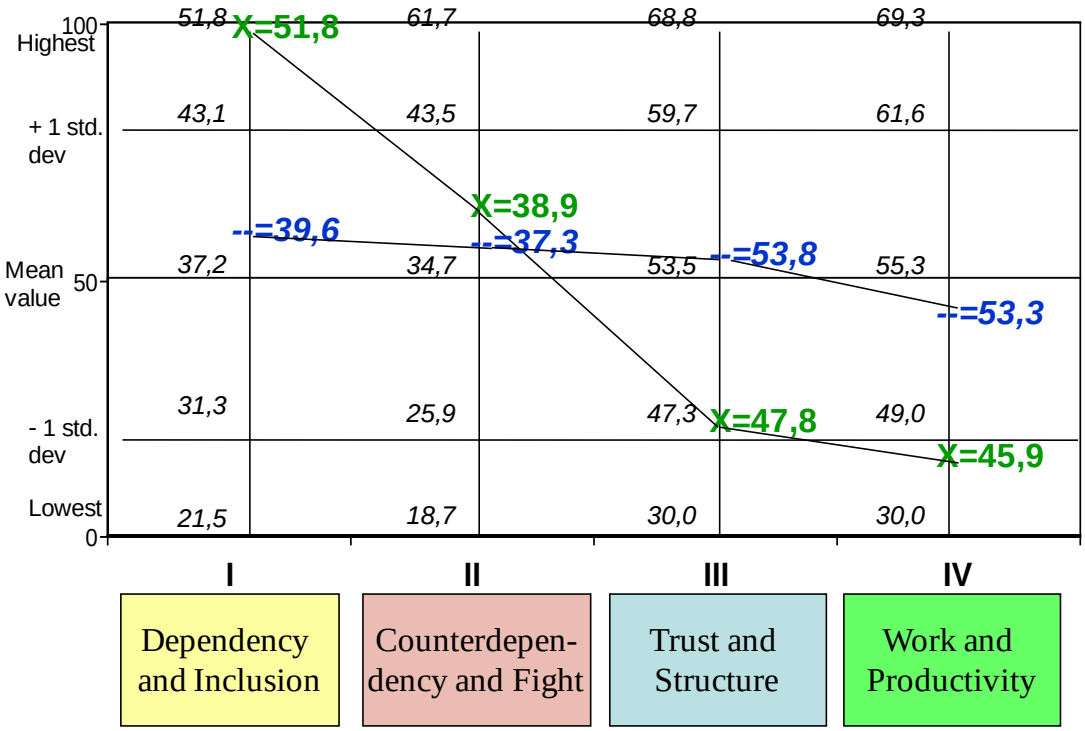

*Figure 3. STUDENT GROUP B, n = 14. Mean Values on GDQ Scales, Student group B Compared to Norm Data (GDQ SE3) for Swedish Teams (n = 357 teams) – Before and **After** Intervention (5 weeks)*

Discussion

The main results of this study are that both groups developed across the five week period according to figure 2 and 3. Group A also fitted the criteria's in table 3 of being an effective team (stage IV) at the end of the course, group B was still in stage I according to the same criteria's. Since group A was three months old when the course started, and in stage III, "the speed" was four months from the start to reach stage IV. Correspondingly, the speed for group B was zero, since the group still was in stage I after five weeks, even though the figures on scale 1 to 4 imply changes they don´t suggest a major change stage-wise.

Effects of interventions aiming at contributing to group development in young groups, less than one year old, is hard to separate from effects of other activities in the group since there is a natural tendency to develop as a group during the first year (Wheelan, 2005). As the results show, group A was in stage III without specific interventions, at the age of three months. Thus, it's hard to tell if and how the interventions within the course contributed to develop the group into stage IV.

One of the most important aspects of group development is sharing clear goals (Hackman & Wageman, 2005; Klein, et al., 2009; van Vijfeijken, Kleingeld, van Tuijl, Algera, & Thierry, 2002). Group A clarified the common goal during the course into "*start a company together*!". This common goal shares the characteristics of a vision or rather an internal "guiding star", according to the goal taxonomy in table 1. It gives a direction, on an overall level, into a future that probably is at least two years away. This kind of guiding star might also contribute to motivation to continue investing in the group and keep separation anxiety away. As a result of increased motivation to invest in the group, this particular goal might have energised them to become a stage IV group.

Correspondingly, group B clarified the common goal during the course into "*arrange a party and invite our teachers"*. This goal shares the characteristics of an operative goal in the goal taxonomy. It was well defined with regard to who they invited to the party and also where and when it should take place. After goal clarification the group spent much of the time planning and coordinating activities taking place at the party. The goal of group B also implies a clear termination for the group, since the party marked the end for the group, which might partly explain that group B stayed in stage I.

Group size has a strong connection to group effectiveness according to research (Salas, et al., 2008; Wheelan, 2009). Groups of 3 to 8 members, group A had 7 members, are more developed than groups with 9 or more members, group B had 14 members. This fact is obviously a possible contributor to the difference in group development between the two groups.

The time group A and B spend on the course was about the same, 5 weeks, and the intensity of meetings for interventions was between 36 (group A) and 45 (group B) hours. In other words, they met between 7 and 9 hours per week, which is intense by any standards for work groups. Considering that all the meeting time was used to understand group processes and practice interventions one is entitled to ask - was that all? Why didn't group B also develop into stage IV? The explanation is probably a combination of the large size of the group, the fact that it really started as a stage I group in full bloom and that clarified goals had no additional motivational effect on team member. They really dissolved as a group, but hopefully the members carried a lot of knowledge about group development with them through the exit door.

The present study was based on two cases of group development were interventions was made in a large quantity, It would be of great interest in the future to focus more on the quality of goal-related interventions. One way of doing this would be to clarify different goals in the goal taxonomy (table 1), for instance internal goals versus external goals, and evaluate it with regard to group

performance. Furthermore, 15 interventions, as in group B, might be frustrating and confusing. Another research question is; is there an optimum amount of interventions in order to contribute to group development?

References

Austin, J. T., & Vancouver, J. B. (1996). Goal Constructs in Psychology: Structure, Process, and Content. *Psychological Bulletin, 129*(3), 338-375.

Bales, R. F. (1965). The Equilibrium Problem in Small Groups. In A. P. Hare, E. F. Borgatta & R. F. Bales (Eds.), *Small Group: Studies in Social Interaction*. New York: Knopf.

Bennis, W. G., & Shepard, H. A. (1956). A theory of group development. *Human Relations, 9*(40), 415-437.

Bion, W. R. (1961). *Experiences in Groups*. London: Tavistock.

Frese, M., & Zapf, D. (1994). Action as the core of work psychology: A German approach. In H. C. Triandis, M. D. Dunette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology (2nd ed)* (Vol. 4, pp. 271-340). Palo Alto, CA: Consulting Psychologists Press.

Hackman, J. R., & Wageman, R. (2005). A Theory of Team Coaching. *Academy of Management Review, 30*(2), 269-287.

Jacobsson, C. (2009). Att coacha grupper. In M. R. Ricciardi (Ed.), *Coaching*. Stockholm: Bonnier Ledarskapshandböcker.

Jacobsson, C. (2010). A Goal Taxonomy for Work Groups. Department of Psychology, University of Gothenburg.

Jacobsson, C., & Wramsten Wilmar, M. (2009). *Increasing Teacher Team Effectiveness by Evidence Based Consulting*. Paper presented at the 14th European Congress of Work and Organizational Psychology (EAWOP).

Klein, C., DiazGranados, D., Salas, E., Le, H., Burke, C. S., Lyons, R., et al. (2009). Does Team Building Work? *Small Group Research, 40*, 181-222.

Lencioni, P. M. (2002). *The Five Dysfunctions of a Team: A Leadership Fable*. San Francisco: Jossey-Bass.

Salas, E., DiazGranados, D., Klein, C., Burke, S., Stagl, K. C., Goodwin, G. F., et al. (2008). Does Team Training Improve Team Performance? A Meta-Analysis. *Human Factors: The Journal of the Human Factors and Ergonomics, 50*(6), 903-933.

Tuckman, B. W., & Jensen, M. A. C. (1977). Stages in Small Group Development Revisited. *Group and Organizational Studies, 2*, 419-438.

van Vijfeijken, H., Kleingeld, A., van Tuijl, H., Algera, J. A., & Thierry, H. (2002). Task complexity and task, goal, and reward interdependence in group performance management: A prescriptive model. *European Journal of Work and Organizational Psychology, 11*(3), 363-383.

Wheelan, S. A. (1994). *The Group Development Questionnaire: A manual for professionals*. Provincetown, MA: GDQ Associates.

Wheelan, S. A. (2005). *Group processes: A developmental perspective (2nd ed.)*. Boston: Allyn & Bacon.

Wheelan, S. A. (2009). Group Size, Group Development, and Group Productivity. *Small Group Research, 40*(2), 247-262.

Wheelan, S. A., Davidson, B., & Tilin, F. (2003). Group Development Across Time: Reality or Illusion? *Small Group Research, 34*, 223-241.

Wheelan, S. A., & Hochberger, J. M. (1996). Validation Studies of the Group Development Questionnaire. *Small Group Research, 27*(1), 143-170.

Wheelan, S. A., & Kesselring, J. (2005). The Link Between Faculty Group Development and Elementary Student Performance on Standardized Tests. *The Journal of Educational Research, 98*(6), 223-230.

Wheelan, S. W., Burchill, C. N., & Tilin, F. (2003). The Link Between Teamwork and Patients' Outcomes in Intensive Care Units. *American Journal of Critical Care, 12*(6), 527-534.

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