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# GROUP COHESION AND LEARNING FRENCH AS FOREIGN LANGUAGE IN A VIDEOCONFERENCING ENVIRONMENT

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## Abstract

Group dynamics have been extensively studied in social psychology and group cohesion seems to be the most important factor affecting performance (Mullen and Copper, 1994; [1]; Forsyth, 2021 [2]). In the field of second language learning, Clément, Dörnyei, and Noels (1994) [3] reported the positive impact of group cohesion and uplifting social climate on motivation to learn English as a second language. Alikhani and Bagheridoust (2017) [4] were also able to establish a positive correlation between Group Dynamics Oriented Instruction and Willingness to Communicate. However, research is scarce regarding group cohesion and second language learning in an on-line environment.

The aim of our study was to understand the nature of group cohesion in the context of French as a foreign language classes delivered exclusively through videoconferencing. Several hypotheses were developed. First, task-based cohesion as opposed to social-based cohesion would develop more on video-conferencing environment (H1). Second, students using their webcam during French videoconferencing classes would value social cohesion more than task cohesion (H2). Finally, students using their webcam would be evaluated by their peers as more dominant, more friendly, and more emotional (H3).

We carried our research during a pre-semester integration session offered by a French Language Center in a French University. 65 students from around the world registered for a 2-week on-line course according to 5 different levels (A1 to C1 level). The aim of the class was to help new foreign students to improve their French before attending Fall semester in various faculties. We distributed an adapted version of the University Group Environment Questionnaire (Bosselut and al., 2018 [5]; Carron and al., 1985 [6]) to analyze task and social cohesion. We carried statistical analyses according to 3 modalities of participation (webcam, picture, black-out screen).

Our results (based on 20 questionnaires) show that videoconferencing develops task-oriented cohesion more than social cohesion (H1). Students relying on their webcam for class participation do not necessarily value social cohesion more than task cohesion. They can turn on their webcam only to show that they are serious (H2). However, students with their webcam turned on are perceived as more dominant, more task-centered and less passive; students behind black-out screens are seen in less positive terms (H3).

Keywords: Group dynamics, online class, second language teaching.

## 1 INTRODUCTION

Group dynamics has been a recurrent theme in second language teaching as it has been identified as an important element to improve general classroom atmosphere. Various contributions (Ehrman and Dörnyei (1998) [7]; Dörnyei and Malderez (1999) [8]; Dörnyei and Murphey (2003) [9]) have exhorted teachers to embrace principles grounded on group processes, but research remains scarce as to its impact on language learning.

Our study will focus on one aspect of group dynamics that is rarely studied, that is group cohesion. First, we will present this concept considering social psychology readings. We will then summarize research results in the field of second language learning and on-line environments. Next, our research hypotheses will be presented as well as our study design carried out in a video-conferencing context.

Finally, we will close with the results of our experimental study and its implication for second language teaching in a video-conferencing environment.

## 1.1 Group dynamics and group cohesion in social psychology

Kurt Lewin started to work on small groups shortly before the start of the second World War and he coined his new area of investigation "Group dynamics" in 1947 (Lewin, 1947) [10]. Following Aristotle ("The whole is something besides the parts") and Gestalt theory, he believed that groups were entities with their own mechanisms worth studying. He was also convinced that small groups could influence individual behaviors and its famous formula,  $B = f(P, E)$  where B stands for Behavior, P for Personality and E for Environment, was applied to numerous domains (business, sport, group therapy). Additionally, he carried a great deal of research to show how social science could trigger social changes with Action Research (Lewin, 1946) [11].

Several researchers followed his path and developed scientific investigations on various topics dealing with group dynamics. Tuckman (1965) [12] focused on the developmental stages of small groups - forming, storming, norming and performing. The latter step characterizes a mature group with a common goal and a high level of efficiency and cooperation. Nonetheless, not all groups are meant to develop over time and a typology of groups (primary groups, social groups, collective groups, and social categories) was conceptualized by Forsyth (2006) [13] to describe the bonds between members. Language classrooms would be identified as a social group focusing on a task (language learning) with members able to change groups in a relatively free manner as opposed to primary groups (ex: family) which are less likely to change over time. Leadership is another important research area in group dynamics as the impact of the group leader can prove to be positive or negative. The famous study of Lippit and White (1938) [14] with children, subsequently developed with the contribution of Lewin (1939) [15], showed that hostility was 30 times more frequent in autocratic groups (all policies were imposed by the leader) than in democratic groups where policies were discussed and decided by the group. Scapegoats also appeared in autocratic groups as aggression could not be directed towards the leader.

Group cohesion is a frequently mentioned topic in group dynamics research as it is thought to be linked to performance. Initially, Festinger et al. (1950) [16] defined cohesion as "The total field of forces which act on members to remain in the group". This model was supplemented with the concept of individual attractions to the group (Libo, 1953) [17]. More recently, Carron (1988) [18] developed a hierarchical model based on sports psychology. He defined group cohesion by including a group and an individual component (Group integration vs Individual attraction to the group). Each subscale is divided according to the type of behaviors promoted within the group (social or task-based): these last elements were derived from Bales (1950) [19] research on group interactions. Carron et al. (1985) [20] designed the Group Environment Questionnaire (18 items) to measure the four components of group cohesion as perceived by an individual, that is Attraction to the group for social and task-based activities (ATG-S/ATG-T) and Group Integration for social and task-based activities (GI-S/GI-T). The validity of this scale was tested on various college sports teams and more recently on university classrooms (Bosselut et al., 2018) [5]. Dion (2000) [21] summarizes further development around the construct of group cohesion: Bollen and Hoyle (1990) [22] introduced the dimensions of Belongingness and Morale which correlated with social outcomes and self-esteem. Greer (2012) [23] reports that Group Cohesion research has a new tendency to adapt its measuring instruments to the numerous types of groups that are being studied with special focus on certain dimensions prototypical to specific groups. More recently, individual level analysis for group cohesion (self-perception) has been criticized (see Forsyth, 2021) [2] as they do not reflect the construct of group unity but are more a mirror of the causes of cohesion (attraction bonds, group pride...). A Unitary cohesion index with a list of 10 adjectives and their antonyms has very recently been proposed (Forsyth, 2021) [2] to overcome previous limitations of the Group cohesion construct relying most often on individual measures.

Several meta-analyses have tried to establish a relationship between group cohesion and performance as intuitively it would seem reasonable to believe that a group with unity would perform better. Mullen, and Copper (1994) [1] relied on Group Cohesion as a construct encompassing three elements (Interpersonal attraction, Group pride and Commitment to task) to conclude in their meta-analysis of 49 studies, that "Overall, the cohesiveness-performance effect was highly significant, ...stronger in smaller group, ...stronger among real groups than among artificial groups, ...due primarily to commitment to task rather than interpersonal attraction or group pride" (p.210). Arguing that group types need to be considered to understand more precisely the correlation between group

cohesion and performance, the meta-analysis of Chiochio and Eissembre (2009) [24] identified that project teams outperform production teams, especially if its composition is heterogeneous: the correlation is close to 0.7. Other types of teams (production, academic) perform better if heterogeneity is reduced. Forsyth (2021) [2] indicates that research has also tried to identify mediating variables that could explain the consistent positive relationship between cohesion and performance: cohesion seems to enhance motivation affecting performance which in turn increases motivation and cohesion. High cohesive groups also prevent social loafing and ensures success for tasks relying on interdependency.

## **1.2 Group dynamics and group cohesion in second language teaching/acquisition**

Most of the research on group dynamics carried out in the field of second language teaching has relied on pedagogical proposals introduced by Hadfield (1992) [25] subsequently completed by other academics (Ehrman and Dornyei, 1998) [7]; Dornyei and Malderez, 1999 [8]; Dornyei and Murphey, 2003 [9]; Schmuck and Schmuck, 2001 [26]). Pedagogical implications from small group research carried in the field of Social Psychology are presented according to various themes: (1) group formation, (2) group development, (3) group characteristics -including group cohesion, (4) the physical environment of language teaching, and (5) the role of the teacher as the group leader.

Even though group dynamics is not often researched in the field of second language teaching or SLA (Fukada and al.) [27], a few attempts have yielded some important results. First of all, the language classroom can be defined as a Small Group according to the characteristics put forward by Carron et Brawley (2000) [28]: it is a social aggregate "...of two or more individuals who possess a common identity, have common goals and objectives, share a common fate, exhibit structured patterns of interactions and modes of communication, hold common perceptions about group structure, are personally and instrumentally independent, reciprocate interpersonal attraction, and consider themselves to be a group." (p.94). As such, language classrooms have an instrumental base and an affective dimension that can develop over time. Gałajda (2012) [29] reports on an experiment with two English classes focusing on improving general classroom atmosphere. In the first group, she introduced classroom activities to increase empathy, sense of belonging, listening to others to build cohesiveness as the group was maturing. In the second group, she emphasized closing activities to facilitate group dissolution as the language sessions were coming to an end. She concluded in the effectiveness of applying group developmental techniques for the language classroom as well as keeping a teacher log diary for reflexive feed-back.

Another area of research in group dynamics that has received some attention concerns the social factors (such as group cohesion) that could underlie motivation. Clément and al. (1994) [3] conducted a study with 301 Grade 11 students from the region of Budapest in order to identify through a questionnaire the relationship between social process (for example, classroom atmosphere) and other variables namely motivation, attitudes, self-confidence and anxiety. Perceived cohesion was measured thanks to eight items relying on the affective self-report of the individual towards the group ("I like/dislike my group"). Results showed that group cohesiveness was associated with a positive perception of the group environment that could in turn affect motivation and class achievement. However, cohesion was not correlated to self-confidence and anxiety, that were hypothesized to be related to classroom atmosphere. In an attempt to replicate the previous study, Colibaba (2009) [30] analyzed a questionnaire meant to shed light on a classroom model linking group cohesion with motivation, self-confidence, interaction, achievement and anxiety. 182 pupils studying English in Romania provided a picture close Clément and al. (1994) [3]: the teacher influences class cohesion; class cohesion produces a positive perception of the learning environment by the students, but self-confidence does not emanate from a cohesive group environment. Chang (2007) [31] also distributed a survey to 152 students studying English as their major in a Taiwanese university to link group processes with students' beliefs about autonomy and autonomous behavior. She concluded that there was a slight positive significant relationship (0.27) between group cohesion and autonomous behaviors. On the other hand, no significant relationship existed between group cohesion and autonomous beliefs. She had used the same questions for group cohesiveness as Clément and al. (1994) [3]. In a similar study, Chang (2010) [32] added that group cohesion significantly correlated at a higher level than previously expected with self-efficacy (0.43), an indicator for motivation. As such, group cohesion seems to be an important element to develop in the classroom to improve class atmosphere leading to increased motivation.

Another set of studies have been focussing on the relationship between group dynamics and linguistic performance. In her study, Hinger (2006) [33] hypothesized that group cohesion would be more important during intensive language sessions than during regular classes (few hours/week) as measured by the number of interactions among students. In fact, as she observed 9 groups of Grade 6 students in Spanish classes, she recorded that in the standard group, the teacher talks 90.4% of the time and in the intensive group, his talk was reduced to 52.3% of the time, implying that students were interacting more. Alikhani and Bagheridoust (2017) [4] conducted an experiment with two students' group learning English in Iran (n=108): one group followed regular language classes whereas the second group was registered in Group-Dynamics Oriented Instruction sessions. After 45 days of training, the researchers concluded that GDOI strategies and techniques such as role play, discussion, dialogue, journal etc., had significant positive effects on improving the willingness to communicate and speaking ability of students at intermediate language proficiency levels. More recently, Ben Maad, Mohamed Ridha and al. (2020) [34] investigated the impact on speaking development for English low achievers registered in a group with enhanced dynamics (n=8) compared to a control group (n=7). Fluency improved more for the control group, but complexity was a marker of the experimental group. Correlational analyses have also attempted to link group cohesion and Willingness to communicate. Matsubara (2007) [35] could not conclude as to a relationship between group cohesion (as measured by enjoyment with group) and WTC as she analysed questionnaire of 237 rural Japanese university students learning English. This result is similar to Dörnyei and Kormos (2000) [36] who had studied the relationship between group cohesion and task performance measured by the number of words and the number of turns produced by 46 Hungarian students (aged 16–17) studying English at an intermediate level in Budapest. However, the correlation turned to be negatively significant (-0.39) when the low motivated students were extracted from the data for the number of words produced. This confirms that cohesiveness can prevent social loafing.

### **1.3 Group dynamics and on-line environment for second language learning**

Research is inexistant when it comes to investigating the effect of group dynamics outside of the face-to-face second language classroom. Nonetheless, a few studies have tried to establish some links between group dynamics and on-line environment for other disciplines. Drawing on the Time, Interaction Performance theory (Mc Grath, 1991) [37], where time spent with the group is a precursor to group cohesion, Shin and Song (2011) [38] reported that “time spent in FTF communication significantly predicted group social cohesion, but time spent in CMC did not. In contrast, group task cohesion was predicted by time spent in CMC but not by time spent in FTF communication” (p.126). Their study was conducted with 301 undergraduate students from the Business Faculty who had to carry assignments FTF and with a CMC media (on-line club). Several explanations have been put forward to explain why on-line media do not favor social cohesion, such as the poor or lack of visual clues impeding rapid interpretation of non-verbal communication favoring social bonding (Culnan and al., 1987; Quinlisk, 2008) [39][40]. Galyon and al. (2016) [41] conducted a study on the impact of FTF and on-line teaching modality on general group cohesion. Self-reports by 68 undergraduates in Educational Psychology indicate that group cohesion was significantly higher for students who participated in live sessions than for students registered in hybrid classes. These students also obtained lower grades in the final exam.

### **1.4 Hypotheses**

Group cohesion seems to be an important factor affecting motivation and performance in the second language classroom. Nonetheless, conflicting positions about the construct in social psychology and in SLA research undermine significant conclusions. Studies about group cohesion in on-line learning environments seem to stress the importance of differentiating task-based cohesion and social cohesion. Furthermore, limited visual clues in on-line environment could lead to reduced social cohesion.

Our study focuses on the nature of group cohesion in a videoconferencing environment allowing second language students to interact either through a video-channel or through an audio channel with an image of themselves or with a black screen.

Our hypotheses are the following one:

- H1: Group cohesion developed in a videoconferencing environment for second language learning would be task-based more than social-based.

- H2: Students relying on the video channel to interact would value social cohesion more than task-based cohesion. They would also value more Group integration
- H3: Modalities of participation (video, audio, black screen) might impact group cohesion.

## **2 METHODOLOGY**

### **2.1 Participants**

We conducted our study in a French university offering an intensive two-week language program to foreign students coming for the first time to France. The aim of this national program is to help foreign students integrate faster the academic community by brushing up on their French and getting an understanding of cultural codes specific to French universities. Classes were taken on-line through Zoom from their home country, but some students also attended classes from their French university residence. Five teachers were assigned to a total of 65 students dispatched in 5 language levels -from A1 to C1.

### **2.2 Instruments**

To measure differences between task-based and social cohesion, we used Bosselut et al. (2018) [5] University Environment Questionnaire, an adapted version of Carron and al. (1985) [20]. Because this questionnaire was designed in French, we did not check for reliability as our modifications to fit a second language classroom environment were minors. Our questionnaire contained 16 questions – 4 questions for Attraction to the group with a social dimension; 4 questions for Attraction to the group with a task-based dimension; 4 questions for Group integration with a social dimension; 4 questions for Group integration with a task-based dimension. The scale ranged from -3 (I do not agree) to + 3 (I totally agree). We also relied on Bales et al. (1979) [42] set of adjective forms to characterize interactions in groups (SMYLOG). The three dimensions studied were Dominance (Upward-Downward), Friendliness (Positive – Negative) and Task-orientation (Forward-Backward). For each adjective, students had to choose if their peer behaved according to it Never, Seldom, Sometimes, Often, or Always.

### **2.3 Procedure**

Students were informed from the start of the class that a study was to take place and that they could participate if they wanted. Half-way through the second week, students who had signed a consent form received the adapted questionnaire for measuring Task/social group cohesion as well as the list of adjectives to characterize their peers. During the two weeks of sessions, we logged on Zoom every day and recorded which modality of interaction the students were using when they were on the learning system (video, image, black screen).

### **2.4 Data-coding and analysis**

We collected 20 questionnaires and calculated averages for each student regarding the Task-based/social dimension of group cohesion. We conducted t-test for the first hypothesis and an Anova test for the second hypothesis. The 20 questionnaires were used to rate a total of 49 students using the Adjectives Form. We conducted an Anova test to identify the impact of modality on the perception by the students of their peers.

## **3 RESULTS**

### **3.1 Group cohesion in a videoconferencing environment for language learning**

Our first hypothesis is verified: task-based cohesion is significantly more important in a videoconferencing environment for second language learning than social cohesion.

Table 1. Descriptive statistics.

	Task-based Cohesion	Social Cohesion
N	160	160
Mean	1.57	0.675
Median	3.00	0.00
Standard deviation	1.96	2.02

Table 2. Paired Samples T-Test.

	statistic	df	p
Student's t	4.79	159	<0.001

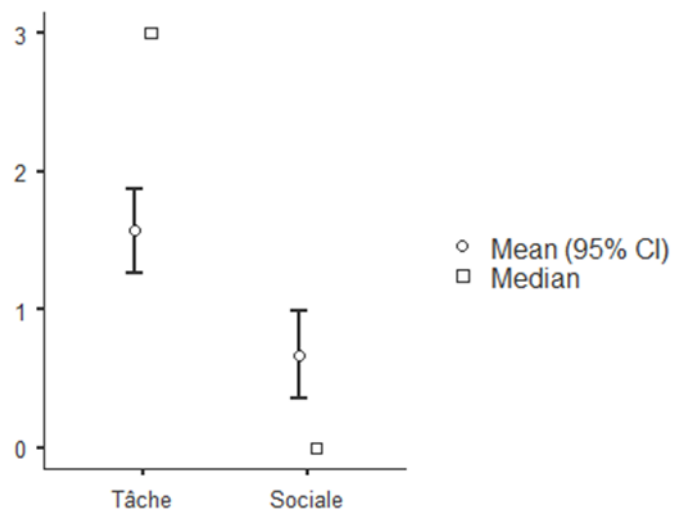


Figure 1. Distribution of ATG-S + GI-S vs ATG-T + GI-T .

### 3.2 Impact of modality on group cohesion

Given that only one student was using an image to interact with his peers, we relied on two categories (Audio/Video) to assess if the modality of interaction was correlated with any of the dimensions of group cohesion: Attraction to group/Group Integration or Task-based vs Social cohesion. We could not confirm our hypothesis.

Table 3. Descriptive statistics.

	Modality	N	Mean	SD	SE
ATG T	screen	40	2.225	1.14	0.181
	video	40	2.250	1.75	0.277
ATG S	screen	40	0.725	1.96	0.310
	video	40	1.050	1.71	0.270
GI T	screen	40	0.950	2.12	0.336
	video	40	0.850	2.23	0.352
GI S	screen	40	0.375	2.08	0.330
	video	40	0.550	2.31	0.365

Table 4. One-way ANOVA

	F	df1	df2	p
ATG T	0.00572	1	2.225	0.940
ATG S	0.62444	1	76.6	0.432
GI T	0.04228	1	77.8	0.838
GI S	0.12663	1	77.2	0.723

### 3.3 Modality as a threat to group cohesion

In this section, we attempted to identify factors that could threaten the development of group cohesion, more particularly the impact of modality (video, image, black screen) on perception by one's peers.

Table 5. Descriptive statistics

	Modality	N	Mean	SD	SE
U	screen	27	2.0341	0.988	0.1901
	image	6	2.6767	0.396	0.1616
	video	16	3.0444	0.841	0.2103
P	screen	27	2.9348	0.384	0.0739
	image	6	3.4267	0.256	0.1750
	video	16	3.2300	0.700	0.270
F	screen	27	2.6515	0.497	0.0956
	image	6	2.9067	0.266	0.1087
	video	16	3.1138	0.587	0.1468
N	screen	27	0.2489	0.350	0.0674
	image	6	0.0750	0.121	0.0495
	video	16	0.3019	0.406	0.1016
B	screen	27	1.3733	0.718	0.1381
	image	6	2.3567	0.543	0.2217
	video	16	2.0256	0.704	0.1761



D	screen	27	1.9522	0.978	0.1883
	image	6	1.1733	0.470	0.1917
	video	16	1.0837	0.819	0.2048

Table 6. One-way ANOVA

	F	df1	df2	p
U	6.54	2	22.3	0.006
P	7.36	2	16.9	0.005
F	3.73	2	19.2	0.043
N	3.23	2	24.9	0.057
B	8.32	2	15.5	0.003
D	5.97	2	19.8	0.009

The following statements are statistically significant:

- Foreign students relying on the video modality are perceived as more dominant (U), less passive (D) and more focused on tasks (F).
- Students relying on a personal image to interact with peers are perceived as more friendly (P) and they convey more emotions (B)

#### 4 CONCLUSIONS

Group cohesion has been studied extensively in social psychology as it has showed consistent positive correlation with performance. In the field of second language learning, group cohesion has been seen as a promising element that could improve classroom environment, motivation, and learner's performance. Nonetheless, fluctuation in the construct has limited the conclusions of the research carried out so far. Our study focusing on videoconferencing has depended on reliable measuring instruments from the field of social psychology to uncover the characteristics of group cohesion in an on-line environment. Results show that the task dimension is the most important in this learning context, implying that performance should follow. Nonetheless, interactions through a video screen are not neutral and group cohesion could be at risk if students continuously use audio with a black screen to communicate as they are seen in less positive terms that their fellows communicating through the video channel. It is preferable to rely on a static picture to convey at minima friendliness and emotions to avoid being "dropped out" by the rest of the group. Second language teachers should be careful to regularly prompt students with limited connections in videoconferencing environment.

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