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Peer Feedback in Learning a Foreign Language in Facebook

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Abstract

Feedback can have different forms and functions depending on its objectives as well as its provider: teacher feedback, student feedback, peer feedback, written feedback, oral feedback, etc. One of the most constructive forms of feedback may be peer feedback, since it involves group learning (Van Gennip, Segers and Tillema, 2010). According to Topping (1998, p. 250) peer feedback is ?an agreement in which individuals consider the amount, level, value, worth, quality, or success of the products or outcomes of learning of peers of similar status.? Cunningham (1992) argues that the interaction and communication that result fromthe production of feedback get more important in online instructional courses than in face to face courses, because, in his view, nothing can bring about learning more than the dialogue among the community members. Hewitt (2000) and Tuzi (2004) also emphasize the importance of peer feedback in online environments and point out that in such environments peer feedback can influence the students? outcomes more than in face-to-face environments because of the ease of communication as well as the absence of affective factors. Thus, researchers believe that deep learning can take place in online settings in which students give and receive feedback from one another in a calm, stress-free and individualized environment.What do we know about feedback from previous research?

***Index terms*—**

during lessons. The introduction of peer feedback may increase the amount of feedback students receive and may be better timed than teacher feedback.

Receipt of peer feedback may be beneficial for students for other reasons too, but the empirical evidence is limited. One reason for its possible effectiveness may be that students understand peer feedback better than teacher feedback (Falchikov, 2005). Feedback from multiple peers works better than feedback from one peer only (Cho & MacArthur, 2010). This multiple peer feedback may also sensitize students for multiple perspectives (Cho, Cho & Hacker, 2010), something a teacher cannot do easily. One interesting advantage of peer feedback may be that students get more opportunities to rework and resubmit their assignments which may be beneficial for learning **??**Nicol, Thomson & Breslin, 2013).The impact of received peer feedback in general does not have a high impact, however, so Hattie's (2012) reviews show. Perhaps, the peer feedback given is not good enough. Several researchers, therefore, tried with success to improve the peer feedback skills of students through instructions or training (i.e. **??**emirel This low effectiveness of received peer feedback may also be caused by the fact that in most research the focus is on peer feedback in the context of peer assessment (Topping, 1998;Tseng and Tsai, 2007). Liu and Carless (2006) showed in a large scale survey that students do not like to assess their peers. Therefore, they and especially Nicol, 2010Nicol, , 2011Nicol, , 2013; Nicol, Thomson & Breslina, 2014; Nicol, D. J., & Macfarlane-Dick, **??**2006) propose to shift towards peer feedback that is not taking place in the context of peer assessment, but in the context of formative assessment or improvement of products or other learning outcomes. In their work peer review became the new word for peer feedback.

One other reason for the ineffectiveness of peer feedback may be that teachers and researchers emphasized the effects of peer feedback on learning of the receivers of feedback, instead of looking for effects for the providers

of peer feedback. directly compared the effects of providing and receiving feedback. Giving comments improved students' writings more than receiving them. Cho & MacArthur (2011) showed that providing feedback improved students' own writing products. This implies that providing feedback to peers can be an important learning activity. But why would giving feedback be so beneficial for learning? Van Popta, Kral, Camp, Martens, & Simons (submitted) found in a recent review of the research literature that there may be many benefits for the provider of feedback. They found that giving feedback to peers can help students to improve their higher-level learning skills, and to evaluate, monitor, and regulate their own learning. Students may learn to reflect, become more critical, and may even improve their own product. Providing peer feedback can lead to more knowledge, it can help students to make better evaluative judgements and to develop their metacognitive skills. Students compare and question ideas; evaluate; suggest modifications, reflect, plan, and regulate their own thinking. They think critically, connect to new knowledge, explain, and take different perspectives.

Various empirical studies, without showing the effectiveness of peer feedback directly, bring indirect evidence for the importance of peer feedback (e.g., Bauer, de Benedette, Furstenberg, Levet, and Waryn (2006), Belz and Kinginger, 2003;Belz & Vyatkina, 2005;Lee, 2004). These studies indicate how information and communication technologies can improve students' foreign language learning through online interaction with peers in the target language. Liu and Hansen (2002) state that peer feedback creates a collaborative process and increases consciousness towards audience needs. Moreover, peer feedback may provide opportunities for practicing foreign languages in meaningful contexts (Han, 2002;Havranek;Swain, 1995). Therefore, online peer feedback may promote goal-oriented and constructive collaboration in meaningful, interactive contexts, based on peers' awareness of each other's needs. To summarize, we may conclude that there are good reasons to expect that giving feedback to peers may be good for learning of the student-feedbackgivers. There are, however, only a few empirical studies that support this. Moreover, research into the beneficial processes of feedback giving for one's own learning is also missing.

Apart from advantages, there may also be disadvantages of peer feedback. Students may misinform each other. They may give each other wrong advice. Giving good peer feedback may only be possible for the smarter students. Students may not like to become involved in peer feedback, for instance because they do not want "to give their know how away". Peer feedback may also be an inefficient way of learning, taking too much time. Many things may go wrong in the complicated processes of peer feedback. We just do not know enough about it yet.

1 a) Facebook and peer feedback

Despite the fact that there is much literature about social networks and their use in language learning, to our knowledge, there were only a few specific scientific studies on peer feedback within social networks in relation to language learning. Yet, there are two potential major benefits of social networks. First, they make it easier for language learners to practice language with native speakers of their target language. Secondly, learners are also able to provide and receive almost instant feedback (Brick, 2013). Students can give more often just in time feedback than teachers.

Facebook is one of the most popular social networking websites (Junco, Heiberger, & Loken, 2011). A brief look at Facebook reveals many foreign language teaching applications that can be used to teach and learn different languages through different methods. Through communication and interaction, learners can use this network to easily access native speakers, to interact and converse with them while actively engaging in learning and practicing the foreign language, to personalize their learning and to increase their autonomy by continuous access to the Internet. It is no surprise then that Kabilan, Almad, and Zainol (2010), found that Facebook was regarded by students as a viable online environment to be utilized to facilitate the learning of English.

Interaction via Facebook not only promotes language learning in meaningful, everyday contexts, it can also be a viable environment for peer feedback. Based on our experiences Akbari et al. (2015), peer feedback produced within networks as Facebook may have the following advantages: In the current study, these four kinds of peer feedback will be distinguished in order to find out how good the peer feedback is (quality of peer feedback). Based on Voerman et al. (2012) we assume that explained compliments and corrective feedback are of higher quality than compliments and criticisms that lack explanations.

Giving and receiving feedback to and from peers may be a new experience for learners. Perhaps they need time to get used to it, to learn how to give and receive feedback or to overcome shyness. Therefore, both the quality and quantity of peer feedback may vary over time. Some previous researchers studied how feedback can be improved (i.e. Demirel, & Enginarlar, 2007; Demirel, & Enginarlar, 2016; Gielen, Peeters, Dochy, Onghena, & Struyven, (2010).) through instructions and support from teachers. We did not find any studies, however, focusing on developmental patterns of given peer feedback over time.

2 c) Research questions

The current research aims to find information about the role of different kinds of peer feedback produced within interactions in the social network Facebook, in improving foreign language skills and competencies, compared with peer feedback in a face-to-face environment. Moreover, this study aims to find information about the development of peer feedback patterns over time and about the relations between quality of peer feedback and

learning outcomes. We wanted to know if giving high quality feedback would lead tot better learning outcomes. The general research question was: How is online peer feedback developing in Facebook and in face-to-face classrooms and how do kinds of peer feedback contribute to better learning outcomes?

First, we want to find out what kinds of peer feedback students produce in the two groups and how the peer feedback develops over time, taking the four kinds of peer feedback distinguished above as the starting point. We will use the term quality of peer feedback to refer to the four kinds of peer feedback. Then, we will look for relations between the kinds of peer feedback provided and learning outcomes. This leads to the following sub questions:

1. What differences in amount and quality of peer feedback occur in interactions via Facebook and interactions in a face-to-face group? 2. How does the amount and quality of peer feedback develop over time and to what extend is this development different in a Facebook group as compared to a face-to-face group? 3. What is the relationship between the kind of peer feedback produced and learning outcomes?

3 II. Method a) Design

This study is a field experiment with a pre-testpost-test-non-randomized-control group-design. This means that the students were not assigned randomly to the two groups. Instead country of living determined in what group students participated. Possible differences between the two groups were checked through several pretest and demographic measurements.

4 b) Participants and Sample

The sample consisted of nonimmigrant Iranian international PhD students having problems using the English language well enough to speak and write it at university level. There is a very well known and big virtual community (about 400 members) in the Schengen zone countries of which most of the Iranian PhD students are members. To announce the free language course to those who want to improve their English language proficiency, we sent an email to the existing group list and asked the Iranian PhD students to inform us about their willingness to participate. Two hundred students replied to the email that they were willing to participate in the course. We then emailed them to provide them with the course details and to inform them that the face-toface course was to be held in Utrecht University for students residing in the Netherlands and the virtual course was to be held through Skype (for the lectures) and Facebook (for peer feedback and other interactions). They were also informed that teachers were native speakers from the US. In total 83 students announced their readiness to participate. After the placement test (TOEFL test described below) and an interview, forty individuals, between the ages of 25-35, with an intermediate command of the English language were selected. The students living in the Netherlands participated in a face to face variant of the course, whereas the other students living in various European countries (including the Netherlands) participated in the virtual variant of the course.

The teachers of the two groups were different, but comparable: both were native speakers and experienced male teachers. They were the same age (**??**7) and had similar teaching experience.

The students were then divided into two groups of 20 based on the following criteria: the experimental group (which used Skype and Facebook for language learning) consisted of students living in different Schengen zone countries such as Germany, Denmark, Belgium, The Netherlands. The control group, (which attended face-to-face meetings for language learning) included Iranian students living in different Dutch cities.45 percent of students divided into the two groups were women while 55 percent were men. It is important to note that there was no random assignment to the two groups and the groups differed in the countries they lived in. Therefore, we checked whether the two groups were comparable by testing their language abilities, attitudes toward peer feedback and demographic variables, before the courses.

5 c) Intervention in the experimental group (Facebook group)

At the beginning of the course, a page was created in Facebook titled "Teaching English to Persian Students". The teacher and students were enrolled in the page in which they were required to perform the activities asked by the researchers. The purpose behind creating this page was the establishment of increased communication and interaction among students and between students and teacher, the performance of the assignments and especially the production of peer feedback by students. In fact, these students were encouraged to have interactions with their classmates and to give feedback to each other. Students were permitted to use any kind of support instruments and/or educational resources available to them on the wall of the group or in their peers' posts and feedback. These support instruments and resources mainly consisted of posts, likes, comments, pictures, videos, links, uploads, etc. Alongside these synchronous and asynchronous online interactions, students were permitted to pose questions that dealt with the activities assigned, to which other students and/or the teacher responded. Moreover, when appropriate, students shared with others what they considered to be interesting or useful about the material studied.

This experimental group received English lessons for one hour a day, during one month (except for the weekends) through in total twenty formal teaching sessions via Skype. Every day, the teacher called students via Skype at a specified time in the evening. The class began with conversations between the teacher and students. Then, the teacher started teaching and at the end of the class, the students were assigned some tasks to perform

in Facebook until the next day. It should be mentioned that these tasks included uploading the answers to the exercises, which were placed at the end of each book lesson. Every student had to write a short paragraph on a daily basis, on a specific subject, and then to post it on the group's wall. Moreover, students gave feedback to each other in the Facebook page.

6 d) Intervention in the Control Group(face-to-face group)

In this group, students participated in various activities via formal teaching of the English language in a traditional classroom in Utrecht University for one hour and forty minutes a day (about one hour for teaching and forty minutes for students to give feedback to each other). There were 20 of these lessons in total, lasting one month (everyday except for the weekends).These classes were also conducted by a (different) male native English speaking teacher. In this group, students were requested to write (typed and printed) daily short paragraphs on a specific subject; fellow students had then to give them feedback regarding their writing. Students had to perform the exercises which were placed at the end of each book lesson and to deliver it to the teacher. This was all the same as in the Facebook group. That is, the experimental group students were stimulated to give each other feedback through posts on the Facebook wall between the "teacher led meetings". However, in the control group students' assignments were studied and commented by peers during class time inside the classroom, which is why an extra forty minutes was added to each session in addition to the specified one hour of instruction and inclass interaction. In this group, in each class session, students were divided into groups of four to five, in which they exchanged assignments with classmates and gave/received feedback to/from one another for twenty minutes. During the next ten minutes, they discussed the feedback given/received, and the last ten minutes were spent on students asking the teacher questions regarding the feedback that they did not understand.

The teacher supervised all in-class activities and helped when needed, leaving the majority of the discussions in the hands of students. This group was told nothing about using or not using any kind of new technologies in the classroom and our observations revealed that nobody had used it. Of course students used their mobile phones and computers / tablets, but neither for feedback nor for language learning.

7 e) Teaching Method, Peer feedback and Class Management

In this English language course, all participants in both groups used a book to learn English entitled "Face 2 Face" (Redston & Cunningham 2006); the two teachers organized their lesson plans and/or activities according to this book, as much as possible in the same ways. Each lesson of the book included four sections (A, B, C, and D). Students were to study two pre-determined sections a day before participating in class activities and/or raising questions. The teacher explained ambiguous grammar points and clarified the necessary linguistic concepts when needed. The instructors also taught students one figure of speech per day. In general, the first part of each session was spent on conversations among students and the teacher concerning different issues. The second section of the class meeting was dedicated to answering students' questions, removing any remaining ambiguities and teaching important linguistic concepts. The last section was spent on speaking about students' assignments. In the control group students' assignments were studied and commented by peers during class time inside the classroom, whereas the students in the Facebook group gave feedback in their own time.

8 III. Data Collection a) Research Instruments i. Learning outcomes

Prior to beginning the course, as well as after the course's completion, all participants were administered a pre-test and a post-test. The official standard Test of English as a Foreign Language (TOEFL) was used in order to investigate students' learning levels in the beginning and also to measure the students' linguistic outcomes after the courses. The test measures the ability to use and understand English at university level. And it evaluates how well one combines one's listening, reading, speaking and writing skills to perform academic tasks. It consists of listening, grammar, reading and writing questions. These four sections have 120 multiple-choice questions in total. The total reliability was 0.94 (Educational Testing Services, 2011). Reliability coefficients for the parts of the test were 0.85 for Reading, 0.85 for Listening, 0.88 for Speaking and 0.74 for Writing. The scores were transformed to the levels 1-5 according to the standard procedures of TOEFL.

9 ii. Attitudes towards peer feedback

Before the courses, all participants completed a questionnaire designed by the researchers, with the following two subscales: The first subscale "Peer feedback and learning English" contained three items about the role of peer feedback in learning English. An example item is "The peer feedback activity improved my language skills." A reliability test on the three-item scale revealed an acceptable internal consistency (? = .88). The second subscale "peer feedback in general education" contained five items, for example: "I think the idea of peer feedback is a waste of time". A reliability test on the five -item revealed an acceptable internal consistency (? = .82). Since the two questionnaires were highly correlated, they were merged in one 8 item questionnaire (? = .84).

10 b) Data Analysis i. Coding scheme for Peer feedback

Facebook records and exposes all of the activities performed by participants. The recorded daily Facebook activities were then saved in PDF formats. To ensure that all students' activities on Facebook were recorded, researchers checked the relevant Facebook pages hourly and asked students not to delete their different feedback statements and activities.

All activities related to the face-to-face classroom were recorded through a video recorder, and the students delivered to the researchers their writings of the day before along with the feedback given to them by their peers. Therefore, the data gathered from this group are based on both peer feedback on the students' assignments and the direct observations of classroom activities and watching classroom videos by the researchers.

Four different codes were used to categorize students' peer feedback:

? Compliment ("It's excellent") ? Explained compliment (" everything is ok, since you used the correct rule") ? Criticism ("don't say I am agree") ? Corrective feedback ("You should say: I agreed") Six researchers familiar with peer feedback were involved in the coding of the peer feedback in participants' activities. First, they were divided in two groups and asked to select the four types of feedback mentioned above from among participants' activities during the first three days. Then, the resulting categorizations of the two groups were compared to find out the interrater-reliability. The average reliability (coefficient Kappa) was .79. The data were divided into four parts (weeks) to investigate the developmental process of peer feedback production in detail.

11 IV. Results

12 a) Check on pre-existing differences between the groups

In the pretest-posttest control group design, we needed to check whether the groups differed before the education took place or not. There were three kinds of data available: the TOEFL test, the feedback attitude questionnaire and demographic variables (such as age and gender). On the TOEFL test the means and standard deviations were M=2.25; SD=0.55 for the face-to-face group and M=2.08, SD =0.44 for the Facebook group. There was no significant difference (t (38) =1.11; p=.27), indicating that the groups were comparable in learning level. If there was a difference it was in favor of the control group. There were also no differences between the groups on the attitude towards peer feedback questionnaire. Thus, there were no attitude differences either. Furthermore, there were no differences in the number of men and female in the two groups: nine men and eleven women in the face-to-face group and eleven men and nine women in the Facebook group (Chi square = 1.76 ; n.s.). There was also no significant difference in age (Chi square = 0.40; n.s). We concluded that the two groups were comparable at pretest time in English learning level, attitudes toward peer feedback and demographic variables.

13 Research question 1: What differences in amount and quality of peer feedback occur in interactions via Facebook and interactions in a face-to-face group?

MANOVA was used to compare the various types of feedback produced in the two groups. There was a significant overall effect: F (4, 35) = 25.68 (p< .00). In the Facebook group students gave each other more often feedback than in the face-to-face group. The results presented in Table 1 indicate that there is a significant difference between the two groups in terms of three of the four types of feedback: compliments (F=16.84; p<.00), explained compliments (F=4.33=; p<.04), and corrective feedback (F=6.82; p. <.01). As can be seen in Table 1, in the Facebook condition, students produced significantly more compliments, more explained compliments, and more corrective feedback compared to students in the face-to-face group. The difference in the number of criticisms provided (more in the face to face group) was not significant (F=4.06; p=.051). In both groups the amount of corrective feedback is much larger than the amount of other categories of feedback (Table 1). The interviews showed that, in general, students were quite positive about the use of peer feedback. They, for instance, said: "Giving and receiving feedback were useful for me, but I think that giving feedback is more useful than receiving it." "It was surprising me how useful peer feedback was." "I'll use peer feedback in my teaching in the future". According to the informal observations and the activities recorded in Facebook, we saw that students voluntarily and enthusiastically asked their classmates to give feedback to their writing several days after the course. Sometimes, when students were discussing online, a student even gave feedback on his or her own writing. Thus the resources and facilities available in the online environment of online social networks increased students' opportunity to provide feedback, especially corrective feedback.

14 Research question 2: How does the amount and quality of peer feedback develop over time and in how far is this development different in a Facebook group as compared to a face-to-face group?

To compare the changes in different types of feedback between the two groups we used four repeated measures analyses with Time (Week 1, 2, 3 and 4; the course took four weeks) as a within-subject factor and Group (Facebook versus face-to-face) as a between-subject factor. The results of these analyses appear in Tables 2,3,4 and 5 and in Figures 1, 2, 3 and 4. As Table **??** and Figure 1 show, for compliments-given (category 1 in Table 1), significant effects of Time (F=8.27; p = .01), Group (F=18.55; p=.00) and the interaction Time* Group (F=17.44; p= .01) were found. This indicates that the average number of compliments differed for the four weeks and that the number of compliments also differed between the two groups. Closer inspection of Figure 1 shows that the number of compliments was higher in the Facebook group (already in the first week). Furthermore, the significant Time × Group interaction effect for compliments shows that the exchange of compliments developed differently over time for the two groups. In fact, in the Facebook group the number of compliments decreased from Week 1 to Week 3, rising again in Week 4. For the face-to-face group, the number of compliments was rather constant (and low) over the four weeks of the study. With respect to the explained compliments we only found a significant main effect of the betweensubject factor Group (F=4.33; p=.04; see Table 3 and Figure 2), indicating that students in the Facebook group used more explained compliments than students in the face-to-face group. The Time and Time*Group interaction effects were not significant. Regarding giving criticism, we did not find a significant difference between the Facebook and the face-to-face students (see Table 4). However, we did find a significant effect of the within-subject factor Time (F=4.67; p=.04), indicating that the number of criticisms formulated differed over the four weeks of the study. Inspection of Figure 3 shows that the number of criticisms formulated increased from Week 1 to Week 2, but dropped in Week 3. Finally, regarding corrective feedback we found a significant effect of the within-subject factor Time (F=4.69; p=.01), a significant effect of the betweensubject factor Group (F=6.78; p=.01), and a significant Time × Group interaction effect (F=4.92; p=.01; see Table 5). Inspection of Figure 4 shows that the number of corrective feedback messages exchanged increased in both groups from Week 1 to 3, but then dropped in Week 4. This Figure also shows that in general the number of corrective feedback messages exchanged was significantly higher in the Facebook group, than in the face-to-face group. averages and standard deviations were 2.08 (SD= 0.44) and 2.25 (SD = 0.55), respectively. This difference was not significant statistically. The scores on the TOEFL post-test were significantly higher for the Facebook group than for the face to face group (F(1,38)=6.90; p<.01). There was also a significant Group × Time interaction effect, indicating that students' learning outcomes developed differently from the TOEFL pre-test to post-test in the Facebook group compared to the face-to-face group (F(1, 38) = 5.00, p = .00): The Facebook students learned significantly more than the face-to-face students. Table 6 presents the correlations between type of feedback and learning outcomes separately for the two groups. For the face-to-face group there were no significant correlations. But, in the Facebook group, we can see two significant correlations: between Criticism (.51) and Corrective Feedback (.67) with learning outcomes (Table 6). The more criticism and corrective feedback students produced, the more they learned themselves. Within the Facebook group students learned more when they gave more criticisms and more corrective feedback. The number of compliments (with and without explanations) did not contribute to the learning outcomes.

15 Table 2: Repeated measurement analysis for compliments

In order to predict the learning outcomes based on students' feedback a regression analysis was used.

Posttest learning outcome was the dependent variable in this model, and group (dummy variable of Facebook versus face-to-face), as well as the four types of feedback were the predictors (Table 7). The Adjusted R Square of model is 0.66. See other model fitting results in Table 8: Group and Corrective Feedback were the two significant predictors of learning outcomes. Corrective peer feedback related the most to learning results (see Table 7 and 8).

16 V. Discussion

Our research questions can be answered as follows: Iranian PhD students gave each other much more often feedback in the Facebook group than in the face-to-face group. These were especially compliments in the beginning and explained compliments and corrective feedback later on in the course. Towards the end of the courses, explained compliments and corrective feedback were replaced by compliments without explanations. The students in the Facebook group learned more than the students in the face-to-face group. The amount of corrective feedback and the amount of criticism predicted learning outcomes within the Facebook group, but not within the face-to-face group. Only the amount of corrective feedback contributed to the differences in learning outcomes between the two groups.

A first issue to be discussed concerns the different types of peer feedback produced in the face-toface and the Facebook environments. The current research indicates that there were significant differences between the

number of times peer feedback was produced in face-to-face classrooms and in the Facebook environment, both in general and in terms of kinds of peer feedback. An explanation can be the difference in the conditions and facilities in the learning environment of the two groups. Facebook provides students with various facilities which are not accessible or are difficult to access in the face-to-face classrooms, such as different written, audio and visual facilities, which, while attractive to language learners, make it possible for students to present their feedback in a variety of formats, including audio, video, or written formats. Moreover, because there is no limitation in the time and place of using Facebook, there is more comfort and there are more possibilities for students to give feedback. In addition, besides having enough time, students' access to various online resources such as search engines, dictionaries, spell checkers and other syntactic/lexical or even sociolinguistic resources may empower them to offer more corrective feedback, with more comfort and confidence. Giving feedback, especially corrective feedback, may largely depend on students' ability and knowledge (especially in recognizing a mistake), but online resources allow them to give feedback even in situations where they may not completely know the correct form/content prior to searching for it online and then providing the corrective feedback. As a result, giving peer feedback in Facebook may not only motivate students to improve their own knowledge via online resources available to them, but it also gives them the possibility of giving more corrective feedback in a more correct form, and thus a more constructive way, as opposed to the resource-limited and time constrained environment of a face-to-face classroom. All of this may also help students to become more self-confident, daring to give corrective feedback.

The second research question in this study referred to how peer feedback developed in the two groups during the educational course. We were interested in discovering whether the process of peer feedback production remained the same during the course or increased or decreased over time. The results indicated that there was a significant difference between the two groups in the patterns of development of different types of peer feedback production throughout the course. In the beginning days of the course, the Facebook group gave considerably more compliment feedback than the face-to-face group. According to the observations made by the researchers, this is because in the first few days of the course, students were not yet accustomed to giving feedback, or were not confident enough to criticize one another or offer corrective feedback. Giving compliments was probably easier for them. Moreover, since the participants were in the virtual space, they first needed to establish a friendly, interactive communication with other students through positive compliments. In the middle weeks of the course, as students became more familiar with one another and with each other's linguistic competence, explained compliments and corrective feedback increased considerably in the Facebook group. To a much lesser extend the same trend appeared in the face-to-face group for corrective feedback only. Students in both groups learned, as the courses progressed, different ways of both giving to each other and receiving feedback from one another, which also contributed to the increased amount of feedback exchanged. In the last week, however, the situation was slightly different in that corrective feedback decreased in the Facebook group while the number of compliments increased. An explanation for these observations could be the degree of students' learning: the higher degree of learning in the Facebook group compared to the faceto-face group resulted in a lower number of mistakes, which in turn led to lower degrees of exchanging corrective feedback and higher degrees of compliment feedback.

A final research finding in this study addressed differences in learning outcomes as a result of the type of feedback exchanged. Results indicated that in the Facebook group a significant and positive relationship between the amount of corrective feedback and learning outcomes occurred. This question of the influence of feedback types on students' learning has been in contention among linguists for quite some time already. Ferris (1999), for example, asserts that many students, teachers and researchers agree that corrective teacher feedback has an important effect on students' learning outcomes. Lyster and Saito (2010) and Mackey and Goo (2007) also argued that many foreign language acquisition theories predict that corrective teacher feedback results in a faster development of foreign language acquisition. For linguists one of the most interesting topics is the influence of corrective teacher feedback on learning and how it occurs (Chandler, 2003;Ferris, 2006). In recent years, many studies (Ellis, 2010; Ferris, 2010; Sheen, 2010; Santos, López-Serrano, & Manchón, 2010; Rezaei, Mozaffari, Hatef, 2011) have investigated the effectiveness of corrective teacher feedback in learning a foreign language. The findings of all these studies on teachers' feedback resemble the results of the current study that corrective peer feedback influences the amount of learning in positive ways. Research conducted by Ellis and Sheen (2006), Lightbown (1998), Loewen (2004), Lyster (1998), and Sheen (2004) indicates that the degree of corrective teacher feedback can predict foreign language acquisition: the higher the amount of corrective teacher feedback given, the higher the degree of learning. In addition, Van Beuningen (2011) who also investigated the influence of corrective teacher feedback on foreign language writing, reports that corrective feedback is a reliable predictor of students' degree of learning.

Therefore, in general, it seems that corrective teacher feedback is of a significant importance in the promotion of foreign language learning. However, there is one exception: Truscott (1996) did not find this relation between the amount of corrective feedback given by the teacher and learning outcomes. Furthermore, the general research literature on teacher feedback in other domains than language learning, also questions the value of corrective teacher feedback (Hattie & Timperley, 2007). Our study made clear that giving corrective peer feedback in language learning fulfilled similar functions as receiving corrective teacher feedback in language learning, contributing to higher learning outcomes of the providers of peer feedback. We have to realize, however, that we only found correlations between corrective peer feedback and learning outcomes. This means that we cannot rule

out alternative explanations, such as that better students and / or better learning students give more corrective feedback than weaker students and / or slower learning students.

One important issue refers to the differences produced as a side effect of peer feedback conditions in the two groups. In the Facebook group students could (and sometimes did) use extra materials such as videos and websites. Moreover, students in the Facebook group spent more time in giving feedback than the students in the face-to-face group where feedback was given in the 40 minutes extra time per session. These differences may be responsible for a part the learning effects found. We tend to consider these side effects as "all in the game", however. This kind of feedback support and the spontaneous extra time investment are only possible in a social network environment and not in face-to-face environments.

One might wonder whether the differences found between the Facebook and the face-to-face group in peer feedback and results should not be attributed to other differences between the groups. We could rule out several alternative explanations. There were no differences between the groups in prior learning, attitude to social media, sex, or age. Two alternative explanations could not be ruled out completely, however. One alternative explanation could be that the teacher in the Facebook group was better than the one in the face-to-face group. We found no indications in the evaluations, the log files nor the observations, however, that this was the case. Finally, an alternative explanation could be that the composition of the groups made a difference. Although all participants came from Iran, the people in the Facebook group lived and studied in different countries of Europe, whereas the participants in the face to face group all lived and studied in the Netherlands. We could not think of any reason, however, why Iranian students living in different European countries would learn English better than Iranian students living in the Netherlands. Thus, we conclude that the differences found can be attributed to the differences between the two learning environments. In the Facebook condition students produced more feedback and especially more corrective feedback than in the face to face condition.

We should be cautious in generalizing our results to other subject matter areas or other kinds of learners. The research population was limited to peer feedback exchanged among a group of Iranian PhD students living in Schengen area countries. Their problems in learning English may be different from those of other students. In their case for instance, lack of confidence, lack of active language use and shyness may be more extreme than with other students. Generalizations should better be related to the role Facebook can have in overcoming lack of confidence in using a foreign language, overcoming shyness and helping students to use a foreign language more often. Furthermore, more widespread, larger-scale studies among students of different nationalities living in various parts of the world are needed. More studies should be performed with different designs such as using a faceto-face group with online feedback, using Skype without Facebook, giving feedback in Facebook without teaching. In addition, as this study only concerned students learning the English language, future studies should also investigate language learning in the environment of social networks for languages other than English. Further research is also needed into the value of the different kinds of peer feedback, especially explained feedback and corrective feedback. The conditions under which peer feedback tends to flourish, seem better in a social networks than in traditional classrooms. Further research should look into these conditions in more detail.

Our results are promising for educational practice: on-line social networks can become important vehicles for learning a foreign language, especially for facilitating kinds of corrective peer feedback that students like and help their learning processes in new ways.

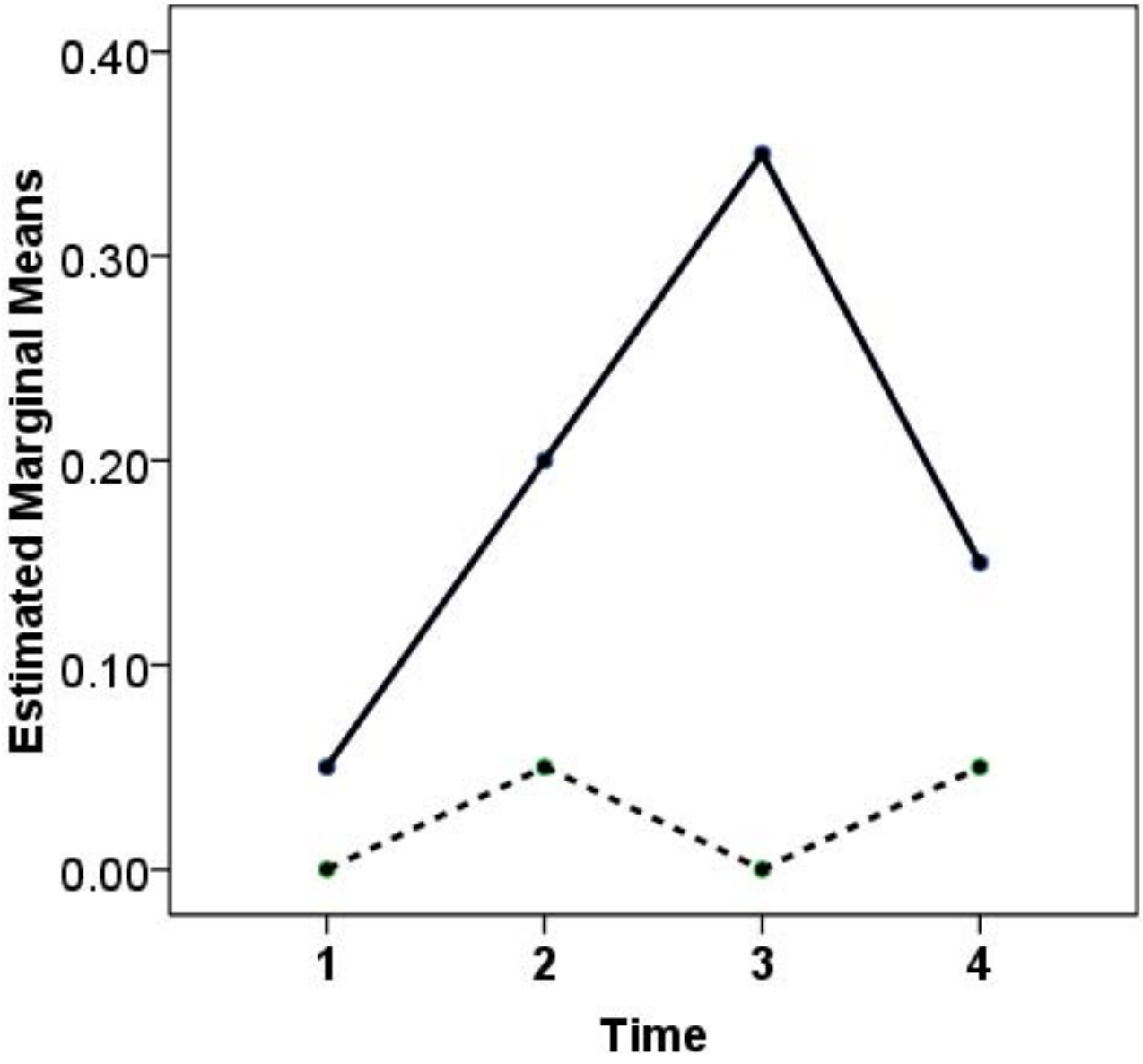

Figure 1:

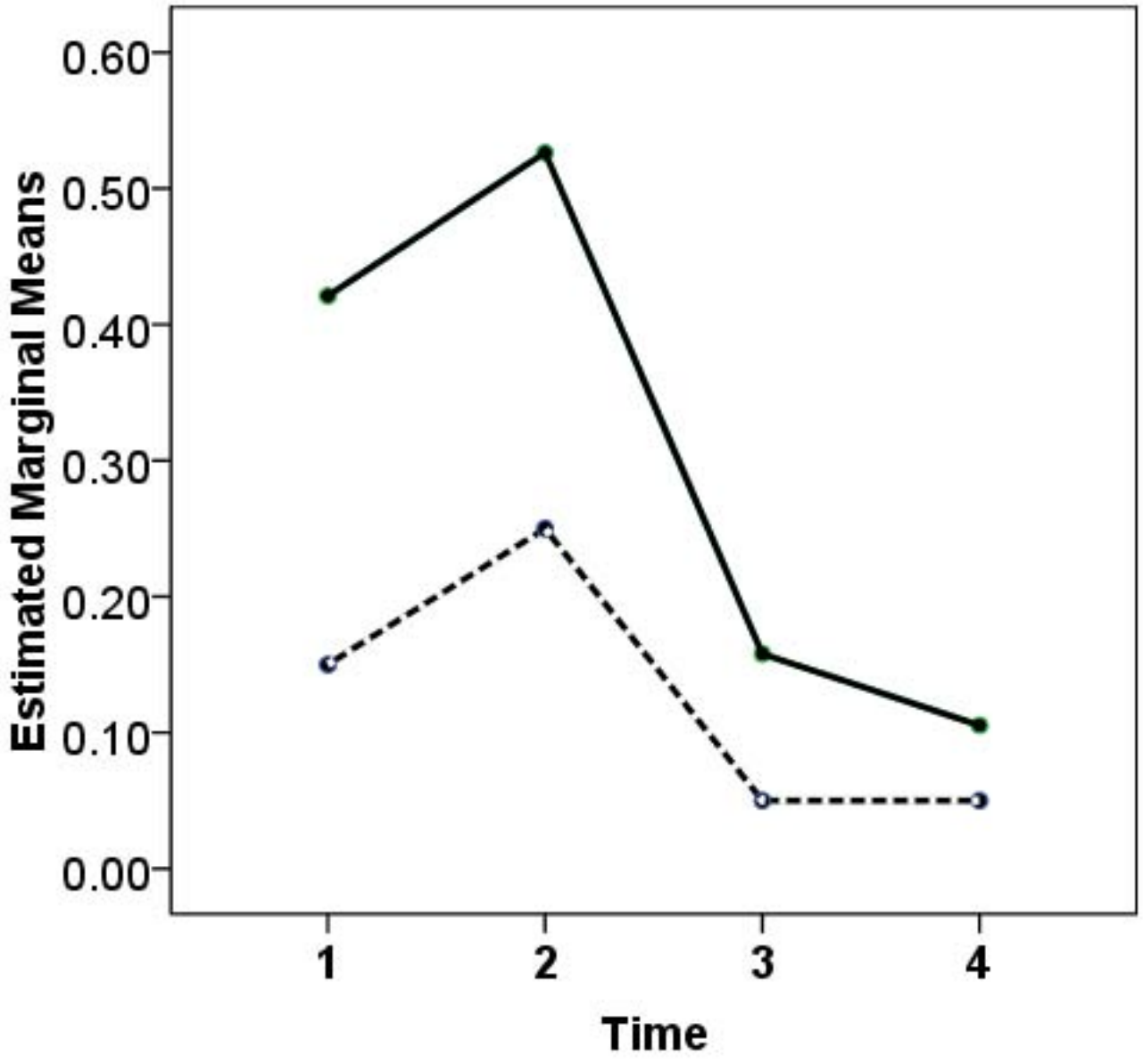

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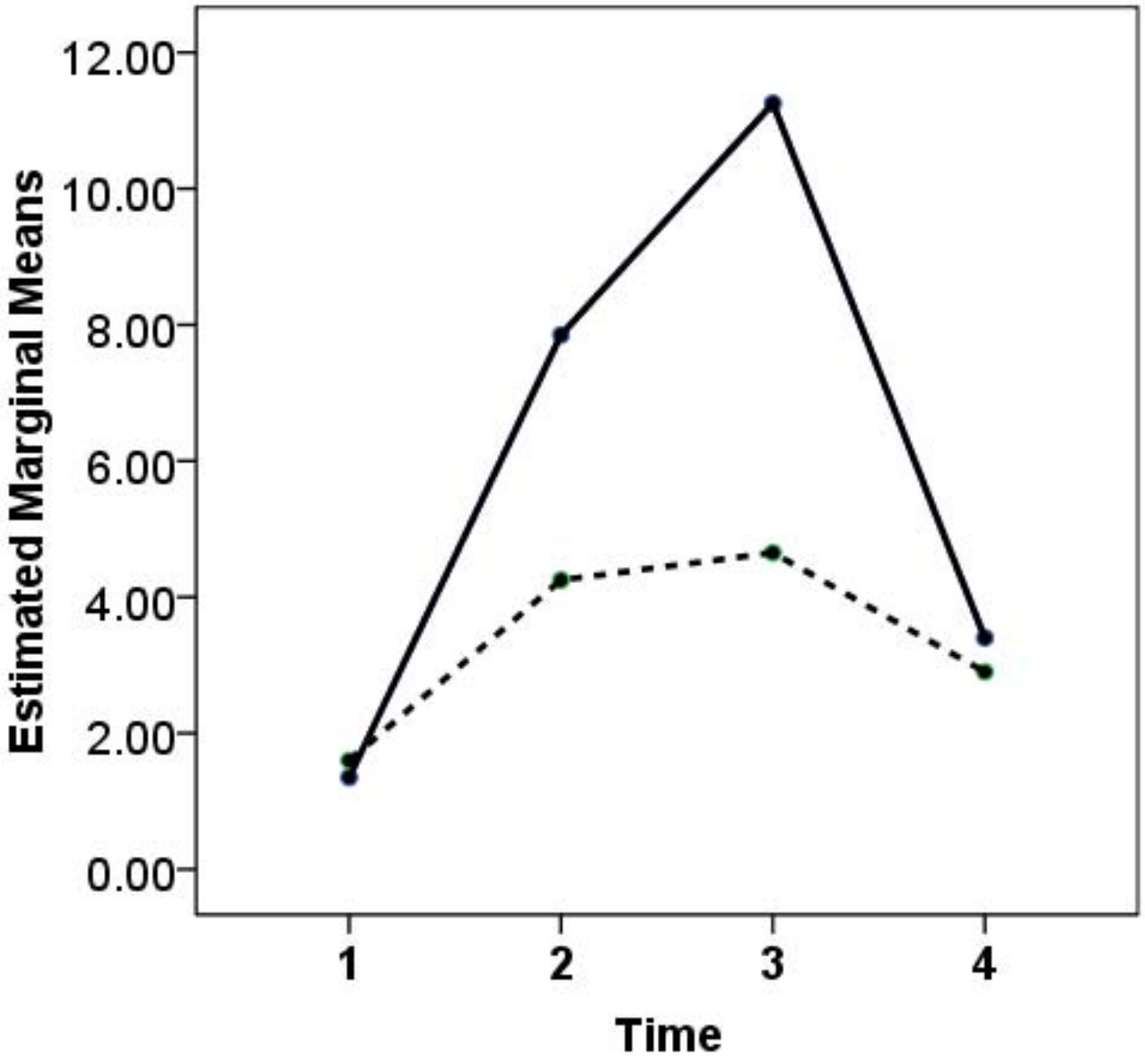
Figure 2: Figure 1 :



2

Figure 3: Figure 2 :

1

		Descriptive Statistics for groups		MANOVA results (Corrected Model		
Feedback Type	Group	Mean	SD	Sum of Square	df	Mean Square
Compliment	Facebook	6.05	6.29	336.40	1	336.40
	face-to-face	.25	.64			
Explained compliment	Facebook	.45	.10 .69	1.22	1	1.22
	face-to-face		.31			
Criticism	Facebook	.50	1.32	8.10	1	8.10
	face-to-face	1.40	1.50			
Corrective feedback	Facebook	23.85	16.95	1102.50	1	1102.50
	face-to-face	13.35	5.99			

Here are examples of the four kinds of feedback from the data:
1. Compliment: "your sentences are very good."
2. Explained compliment: "your sentences are very good and you used past tense in the right form."
3. Criticism: ("I found two mistakes in the section 1) going clubbing and meet with friends)."
4. Corrective feedback: "I think you should write: one of the famous streets instead of street."

Figure 4: Table 1 :

3

Between SS	Sum of Squares	DF	Mean Squares	F	Sig
Intercept	82.66	1	82.66	22.25	.00
Group	68.91	1	68.91	18.55	.00
Error	141.19	38	3.72		
Within SS					
Time	1.90	1	1.90	8.27	.01
Time*Group	1.71	1	1.71	7.44	.01
Error	18.43	38	.49		

Figure 5: Table 3 :

4

Between SS	Sum of Squares	DF	Mean Squares	F	Sig
Intercept	7.13	1	7.13	16.44	.00
Group	1.23	1	1.23	2.84	.10
Error	16.04	37	.43		
Within SS					
Time	.81	1	.81	4.67	.04
Time*Group	.04	1	.04	.24	.63
Error	12.36	37	.33		

Figure 6: Table 4 :

5

Between SS	Sum of Squares	DF	Mean Squares	F	Sig
Intercept	3468.91	1	3468.91	86.19	.00
Group	273.01	1	273.01	6.78	.01
Error	1529.34	38	40.25		
Within SS					
Time	32.40	1	32.40	4.69	.04
Time*Group	34.03	1	34.03	4.92	.03
Error	262.82	38	6.92		

Figure 7: Table 5 :

6

Variable	Coefficient (p-value) Facebook Group	face-to-face Group
Compliment	.37	.25
Explained compliment	.00	.15
Criticism	.51*	.06
Corrective feedback	.67**	.21
= p<.05; **=p<.01		

Figure 8: Table 6 :

7

Regression	9.76	5	1.95	15.93	.00
Residual	4.17	34	.12		
Total	13.93	39			

Figure 9: Table 7 :

8

	Unstandardized Coefficients B	Std. Error	Standardized Coefficient	t	Sig.
(Constant)	1.38	.11		12.48	.00
Compliment	.01	.01	.13	.94	.35
Explained compliment	-.00	.12	-.00	-.01	.98
Criticism	.01	.04	.03	.30	.76
Corrective feedback	.01	.00	.24	2.29	.02
Group	.74	.16	.62	4.46	.00

Figure 10: Table 8 :

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