

ULRR

The jury is still out: psychoemotional support in peer e-mentoring for transition to university

Item Type	Article
Authors	Rísquez, Angelica;Sanchez-Garcia, Maria Fe
Citation	The Internet and Higher Education;15 (3), pp. 213-221
Publisher	Elsevier
Download date	2026-04-17 21:08:06
Item License	https://creativecommons.org/licenses/by-nc-sa/1.0/
Link to Item	https://hdl.handle.net/10344/4748

The jury is still out: psychoemotional support in peer e-mentoring for transition to university

Angelica Risquez^a and Marife Sanchez-Garcia^b

Corresponding author:

^a Centre for Teaching and Learning
MC1-016 University of Limerick, Ireland
Tel: +(353)61202580
angelica.risquez@ul.ie

^b Department of Educational Guidance, Diagnostic and Psychopedagogical Intervention
Faculty of Education, National University of Distance Education (UNED)
Paseo Senda del Rey, 7, 221. Madrid, Spain
mfsanchez@edu.uned.es

Abstract

This study investigates how computer mediated communication (CMC) can sustain nourishing and emotionally enriching peer mentoring relations. A peer electronic mentoring program was implemented in an Irish university to facilitate freshmen's transition to college. A sample of 123 participants (42 mentors and 81 mentees) was evaluated with a combination of mixed methods including a pre-program adjustment scale, online participation records, content analysis of online interactions and end of program interviews. Results reveal that volunteer freshmen experienced greater psychoemotional needs than the general student population. Personal and emotional interactions often developed, especially if the mentoring pair met face-to-face first and the fresher did not have an alternative support network. However, mentors often expected to develop intimate and lasting support relationships while mentees did not always share this expectation. Perceptions of CMC were strongly determined by individual preferences. Implications for e-mentoring programs and Web 2.0 use are discussed.

Highlights

- Volunteer freshmen experienced greater psychoemotional needs than the general student population.
- Psychoemotional support developed when the mentoring pair met face-to-face first and the fresher did not have alternative support
- Mentors often expected to develop intimate and lasting support relationships while mentees did not always share this expectation.
- Perceptions of CMC were strongly determined by individual preferences.

The jury is still out: psychoemotional support in peer e-mentoring for transition to university

Abstract

This study investigates how computer mediated communication (CMC) can sustain nourishing and emotionally enriching peer mentoring relations. A peer electronic mentoring program was implemented in an Irish university to facilitate freshmen's transition to college. A sample of 123 participants (42 mentors and 81 mentees) was evaluated with a combination of mixed methods including a pre-program adjustment scale, online participation records, content analysis of online interactions and end of program interviews. Results reveal that volunteer freshmen experienced greater psychoemotional needs than the general student population. Personal and emotional interactions often developed, especially if the mentoring pair met face-to-face first and the fresher did not have an alternative support network. However, mentors often expected to develop intimate and lasting support relationships while mentees did not always share this expectation. Perceptions of CMC were strongly determined by individual preferences. Implications for e-mentoring programs and Web 2.0 use are discussed.

Keywords

Electronic mentoring; e-mentoring; computer mediated communication; Ireland; transition; adjustment

1. Introduction

1.1 Transition to higher education and student guidance

During their first weeks and months at university, freshmen face an array of academic, social and emotional challenges. Adjustment to university, especially in the academic and emotional domain, has been widely shown to impact on the students' performance in their first year and on their subsequent retention in college (Baker and Siryk, 1999). This is a crucial moment in students' life, when positive, supportive and nourishing interactions with faculty and peers are of utmost importance (Astin, 1984; Tinto, 1988).

Students who decide to abandon university often state their frustration, demotivation, academic difficulties, lack of previous information and upfront orientation, and very often, uncertainty about their own interests (Risque et al., 2007-2008). Student guidance at the point of entry is therefore central to institutional quality, especially when it emphasizes community development and participation (Sánchez et al., 2011, in press). At university, student guidance must strive to enhance students' self-concept and personal relationships (psychoemotional support); help to explore and plan their career and aid their educational development (vocational/instructive role). Ultimately, students are to develop technical-methodological competencies (related to instrumental and vocational aspects of academic adjustment) and participative-emotional ones (related to the emotional and psychosocial aspect of the transition process).

1.2 Mentoring and e-mentoring

One form of student guidance with a wide acceptance in higher education is mentoring. Mentoring consists of a relationship within a program that is established between a more senior individual or *mentor*, and a lesser skilled or experienced individual or *mentee*, and which is intended to develop and grow the skills, knowledge, confidence, and cultural understanding of the lesser skilled individual to help him or her to succeed

(Single and Single, 2005). Manifestations of mentoring are very diverse, and they are often associated and confused with other forms of guidance such as *coaching* and *tutoring*. While these tend to be quite structured and focused on performance, in mentoring the process is more spontaneous, holistic, and directed by the mentee's needs and interests. The mentee sets the pace of the relationship and thus, the relationship is more complex, reciprocal and oriented to emotions. Mentoring is consistently associated with the idea of a close and safe relationship underpinned by empathy and mutual trust, free of power relationships, where benefits are bidirectional and mutual. Thus, psychosocial and emotional support and mutual understanding are at the core of the mentoring relationship.

Electronic mentoring (or *e-mentoring*) refers to the use of computer mediated communication (CMC) to support a mentoring relationship. In the context of higher education, e-mentoring programs enjoy ever increasing popularity, whether working on their own or in combination with face-to-face provision. They are often presented as intrinsically linked to curriculum activities, with a professional or experienced student facilitating problem based learning, such in the classical *Electronic Emissary* program at the University of Texas (J. B. Harris and Figg, 2000). In other cases, professionals or college students mentor youths in second level education about their vocational preferences (Miller and Griffiths, 2005); or college students considered to be at disadvantage - for example, women in engineering and science-, as in *MentorNet* in USA and Canada (Single and Single, 2005). Some e-mentoring programs aim to facilitate freshmen transition to higher education aided by experienced peers, although very few of these have been subjected to systematic evaluation. In their program, Hixenbaugh et al. (2005) report higher levels of social integration and attachment to college for students

that were offered mentoring compared to a control group. Also, students that participated actively by interacting with their mentors obtained higher scores in academic confidence, self-esteem, self-efficacy and academic ambition. A recent study undertaken at the Open University of Spain (Sánchez et al., 2011, in press), has contributed some interesting evidence of the impact of e-mentoring relationships in the personal and emotional adjustment of students, as well as the academic dimensions. Still, peer e-mentoring for transition to university remains largely unexplored.

1.3 The psychosocial dimension of e-mentoring

E-mentoring is “qualitatively different” from its traditional version as CMC offers new possibilities that may not be replicated face-to-face (Bierema and Merriam, 2002). The jury is still out on the potential of e-mentoring for replicating the psychoemotional support that is essential to mentoring effectiveness. CMC affords geographical and time flexibility, but its lexical mode of interaction, which loses multiple cues and some degree of personalization, results in emotional leanness (Hian et al., 2004). On the other hand, asynchronous interaction means that status differences are attenuated and there is more space of reflection and careful editing of messages, making the appearance of *hyper-relationships*, where participants have a better impression of each other than if they met face-to-face, more likely (Ensher et al., 2003). It has also been argued that the electronic medium can slow the formation of mutual trust, and even when it develops; it tends to form around *weak ties*. Weak ties provide access to new sources of support which would have not been otherwise available, which holds considerable potential for socio-emotional and career development (Shpigelman et al., 2009; Single and Single, 2005). However, they also mean that relationships are formed and broken easily and tend to wither over time. In this vein, Miller and Griffiths (2005) claim that e-mentoring can effectively help

to raise awareness, generate knowledge and encourage motivation, but does not necessarily serve well deeper personal or emotional needs. Other authors are also skeptical that CMC provides the context for psychosocial support to happen (Bonnett et al., 2006; Hayward et al., 2001; Kennedy and Kennedy, 2002). While acknowledging that the electronic medium has the potential to be "evolutionary" in a developmental and psychoemotional sense, they denounce that, in practice, most e-mentoring relationships tend to be functional and focused on performance objectives. In contrast to these views, there is a substantial body of knowledge indicating that those individuals who are isolated, stigmatized, or lack of support in the real world may be especially motivated to participate and can derive higher returns on interventions offering help via CMC (Shpigelman et al., 2009). However, given the unique characteristics of CMC, e-mentoring may be less effective for those with a strong preference for extroverted social contact or a need for connectedness (Harrington and Loffredo, 2010; Nemetz et al., 2011).

In the context of this debate, Harris and Figg (2000) constructively argue that the crucial question is not if e-mentoring is better or worse than its face-to-face counterpart, but how e-mentoring can facilitate lasting, productive and mutually beneficial relationships when this can not happen face-to-face. However, the scarcity of published academic studies that investigate the feasibility and effectiveness of cyberspace as an appropriate context for mentoring is striking. Furthermore, the gaps highlighted by Crisp and Cruz (2009) in research in mentoring in higher education are even more acute for electronic mentoring, as research is mostly based on self-reports rather than content analysis of interactions, and impact is only measured attending to satisfaction. However, there is a need for systematic evaluation of e-mentoring programs in specific contexts,

especially as the temptation to escalate programs with no quality assurance is common (Single and Single, 2005). Making the most of the affordances of CMC for evaluation, the objective of this study is to address this gap by studying if the electronic medium can work as a safe environment for nourishing and emotionally enriching peer mentoring relations.

2. Methods

2.1. Program background and characteristics

The institution that the main author is ascribed to (University of Limerick, UL) is an Irish institution of higher education offering a wide range of undergraduate and postgraduate programmes. It has a student population of approximately 13,000 with 1,500 staff and faculty. Students typically originate from local and neighboring areas, new entrants mostly fall in the 17-19 year old age bracket enrolling directly from secondary education. As in many other Irish public universities, the guidance counselor/student ratio is low, meaning that guidance services have traditionally been focused only on final year students (NGF, 2007). At the time of this study, the institution has some mechanisms to guide new students, namely an induction day and an assigned advising professor. However, several quality reviews have found that most students felt indifferent or dissatisfied with the later because they never meet their advisor or they do it sporadically. Therefore, the context where the intervention took place presented many opportunities for increased attention to early guidance. However, new student support mechanisms compete with multiple demands over college students, including over-loaded class and study schedules, family responsibilities, socializing and extra-curricular

activities. Special emphasis is placed on the potential offered by information and communication technology (ICT) to support the guidance process. Even in a campus-based university, online-based programs have much to contribute to compensate for these practical problems if targeted to populations of *digital natives* and can help to enable the scalability of guidance initiatives. In this line, a report by the OECD (2002) praised the favorable climate for innovation in the Irish context with regards to student guidance, but recommended further use of information and communication technologies.

With the aim of facilitating the process of freshmen's transition to college, a peer e-mentoring program was first piloted (year 1) and then implemented for a second time (year 2), including some modifications. Each implementation lasted formally 12 weeks, from start of the academic year to the end of the first semester, although participants were encouraged to continue contact for the rest of first year. By means of this program, experienced students (mentors) offered guidance to new students (mentees), thus recognizing the central role of peer interaction in newcomer socialization, and complementing and reinforcing the work of already existent services. Participation was voluntary at all times and open to students from any faculty or discipline. It was envisaged that the program would rely primarily on electronic interaction, in order to capitalize on the geographical and time flexibility that CMC offers, thus making peer support accessible for students with schedules already overloaded with curricular and extra-curricular activities. After recruitment, all volunteer freshmen were individually interviewed by the author, who coordinated the program, in order to explore their motivation and expectations to participate, and signed a participation agreement. They also completed a pre-program measure of early adjustment (Student Adjustment to College Questionnaire, SACQ. Baker and Siryk, 1999) which was previously validated in

the institution (Morley et al., 2006). Volunteer mentors attended intensive training, with the support of the counseling service at the university. Subsequently, each mentor was assigned a maximum of 6 mentees according to their degree of study. Year 2 also involved an initial meeting between each mentor and mentee early in the semester. The coordinator remained in contact with participants throughout the academic year but in no case intervened directly in e-mentoring interactions. All participants were also trained in the use of the online communication environment, based on a private asynchronous discussion forum for each mentoring pair in the open source learning management system Moodle, which was integrated with their student email. The choice of this platform as a means of communication came supported by a number of practical reasons: providing a safe and restricted space for each pair, automatic archive of interaction for monitoring and evaluation purposes, being reasonably manageable by a single coordinator, and being economically viable. When the programme was designed in 2005, the choice of asynchronous communication was coherent with practice in most e-mentoring programs, which were usually based on email or specialized mentoring software (D. K. O'Neill et al., 2005).

2.2. Methodological framework and research question

This study is an example of programme evaluation, within the wider framework of evaluative research. To enhance the validity of evaluative research, we take a mixed methodological approach based on data triangulation of qualitative and quantitative data. The emphasis of evaluation research to obtain useful information for judging decision alternatives clearly divides it from traditional “pure” investigation. By including evaluation at all stages of the intervention we forfeit theory building, and the effect of contaminating variables make it impossible to accept hypothesis unequivocally. Faced

with the difficult task of studying a complex and uncontrollable reality, multiple measures are required to seek multiple causation and generate plausible explanations from a systematic, but also open and interpretive viewpoint (Cronbach, 1980). Weiss (1972) reminded us of the challenges that evaluation poses for investigation, as the program usually changes while it is being observed, program evaluators often are also coordinators, and the program is integrated into an organizational system which has an impact on the final results. However, evaluation research enables professionals in their efforts to systematically plan and implement programs that meet educational needs.

The programme evaluation used takes a decision-oriented approach based on the model proposed by Stufflebeam et al. (1971), which refers to four main stages: context, input, process and product. Context evaluation includes the analysis of the national and institutional context in the Irish university where the study took place; and the collection of baseline data in adjustment scores. Input evaluation includes a description of the operational objectives, structure, components and temporary planning as already exposed. Process evaluation explores the mentoring relationships by analyzing the electronic records of participation and interaction in the virtual learning environment. Student participation is measured considering access data and number of posted messages; while interactions are analyzed according to content. Finally, product evaluation assesses the efficacy of the programme considering the complexity and multidimensionality of the programmatic objective through qualitative data collected at interviews at the end of each implementation.

From this exploratory and interpretive stance, this study examines the process underpinning the development for e-mentoring relationships, in order to find to what extent the proposed peer e-mentoring program can positively influence the academic and

emotional adaptation of the first year students to university. This relational hypothesis is dependent on two pre-conditions: (a) that participants become actively involved in the program; and (b) that such participation involves positive and constructive psychoemotional support, as well as instrumental guidance. Both active and meaningful participation are therefore included in the relational model hypothesized between peer e-mentoring and psycho-emotional adjustment of participating freshmen to college.

2.3. Participants, data collection and analysis

The investigation included a total sample of 123 program participants (42 mentors and 81 mentees), with 51 mentoring pairs in the first year, and 30 in the second. Around 74% of the mentors (volunteer students from third or fourth year undergraduate programmes and a small amount of postgraduate students, coming from all ranges of disciplines) were female, and all were below 25 years of age. Mentees were also volunteers from disciplines across the institution, females represented 79% of the total and were mostly between 18 and 20 years of age, with the exception of five cases there were mature students over 23 years old (two of them with family responsibilities). The instrument used, SACQ (Baker and Siryk, 1999), is composed by a 67 item Likert type scale which determines how well a student is handling the demands of college. SACQ assesses overall adjustment to college, as well as adjustment in four specific areas: academic, personal-emotional adjustment, social adjustment and attachment to the institution. The academic adjustment subscale measures a student's success at coping with the various educational demands characteristic of the college experience, taking into account motivation, application, performance and academic environment. The social adjustment subscale contains items relevant to the interpersonal-societal demands of college, including

relations with others, nostalgia and social environment. The personal-emotional subscale is designed to examine how a student is feeling psychologically and physically. The attachment subscale focuses on a student's satisfaction with the college experience in general and with the college he or she is attending in particular.

The results of the pre-program administration of the SACQ with the mentee group (n=81) are compared with available baseline data obtained the previous year with an incidental sample of 172 students from the general student population, which did not participate in any similar program (Morley et al., 2006). Since the data does not strictly follow normality assumptions, non parametric Mann-Whitney test for independent groups is conducted to test the null hypothesis that both groups (participating and non participating freshmen) represent two populations with similar distributions. This comparison offers an initial insight into the level of adjustment in the academic, social, personal-emotional and attachment dimensions of the transition process.

Merging quantitative and qualitative data through data triangulation, evaluation addresses the development of the mentoring process by analyzing the electronic records of participation and interaction in the online learning environment - subject to participant consent. Student participation is measured considering access data and number of posted messages; while interactions are analyzed through classical content analysis (Leech and Onwuegbuzie, 2007) within the framework of speech act theory (G. Brown and Yule, 1983). A speech act is constituted by one or more discursive units that can be grouped or separated from others, according to their function inherent in the discourse, taking into account the context where it occurs. A deductive content analysis framework was designed by which every speech act was coded according to three main criteria:

1. Content: emerging speech acts were classified in accordance with the differentiation between technical-methodological issues and participative-emotional ones. This categorization corresponds to the classical distinction of the theory of Process Interaction Analysis (Bales, 1950, in Bonnett et al., 2006), commonly used in research in CMC, between task-oriented and socio-emotional behaviors.
2. Direction: in order to study the dynamics of initiation and maintenance of interactions, units were categorized as mentor-to-mentee, or mentee-to-mentor.
3. Function: as proposed by Harris and Jones (1999), the purpose of each speech act is encoded as (a) provide information, (b) request information, and (c) other. Provision and requests for information can include procedural or personal information, ideas, opinions and emotions. The category "other" includes greetings, plans, thanks, complaints and apologies.

Each speech act was coded and compared with previously coded units of meaning, thus guaranteeing internal conceptual validity. The evaluation strategy aims to minimize reactivity to assessment measures that have been detected in other e-mentoring programs (Carlsen et al., 1999), capitalizing in indirect observation of the e-mentoring interaction and avoiding duplication of questionnaires and surveys. Analysis of electronic records is a simple, convenient and up to 50% more reliable than secondary sources (Huff and Rosenberg, 1989). On the other hand, the rigor and trustworthiness of the findings is strengthened via methodological triangulation with the collection of participants' perceptions through end of program interviews.

The emotional richness of mentoring relationships was further evaluated considering the complexity and multidimensionality of the programmatic objective. A

total of 28 interviews (corresponding to 22.7% of the participants), were conducted at the end of each of the two implementations of the program. Interviewees were randomly selected from their respective groups, and represented a balanced sample of mentors and mentees, and degree of active participation in the program. Following the hierarchical structure interview model proposed by Tomlinson (1989), interview methodology was intended to minimize interviewer bias, starting with general and open prompts for discussion (usefulness of the program, recruitment and training, online environment for communication, and coordination), then redirecting the discussion to specific topics. Interviews were recorded prior consent and transcribed for subsequent content analysis.

3. Results

3.1. Early adjustment levels

The Mann-Whitney test for independent samples (Table 1) showed significant differences, thus rejecting the null hypothesis that both groups (participating and non-participating freshmen) represent two populations with similar distributions.

Insert Table 1 about here

Freshmen from the general baseline sample which did not participate in the program obtained higher median scores in the Social Adjustment scale, the Personal-Emotional Adjustment scale, and the Attachment scale. In other words, students who volunteered to participate in the program were less adapted socially and emotionally during their first weeks in college, and felt less attachment to their new environment than students who chose not to participate in the program.

3.2. Participation in the e-mentoring process

Responding to the question of *how* the program worked, the participation of students was analyzed through access and activity records in the online learning environment. A total of 1204 unique visits were recorded, with an average of around 10 visits per participant. However, both implementations recorded very different levels of participation among the mentoring pairs and a similar longitudinal evolution: an initial period of fairly active participation during the first three months of the program (corresponding to its timeframe of official duration), followed by a gradual decrease throughout the rest of the academic year. Nonetheless, a very significant increase in the number of active participants was recorded in the second implementation: 70% of the mentoring pairs in the second implementation exchanged at least three messages, compared to 45% in the first application. The average number of messages per pair also increased from 6 messages in the first implementation to 13 in the second one. In both cases, mentors were more active than mentees; although the imbalance was least pronounced in year 2, when mentee activity increased quite significantly. Also, it is interesting to note that there was a high level of interactivity as defined by Henri (1992), since more explicit and implicit responses were sent (a total of 404) than independent declarations (172 with no response and 125 with response).

3.3. Quality of the e-mentoring relationship

After excluding those messages which didn't get a response (since they do not constitute an interactivity); the remaining 529 (209 from the first pilot year and 320 from the second implementation) were divided into 1,811 speech acts. Despite constituting a smaller group compared to mentees, mentors contributed 65% of the total of speech acts coded, and the amount of coded information changed considerably between mentoring pairs. The number of coded units of meaning increased in the second implementation for

both mentors and mentees (from 24.1 to 31.2 units per mentor and from 5.6 to 11.8 units per mentee), pointing to a larger amount of participation across the board. The results of the content analysis are presented in table 2.

Insert Table 2 about here

In the first year, it was observed that interactivity was predominantly related to academic issues, as 35.3% of the speech acts were coded in this category compared to 22% in the personal-emotional dimension. In contrast, the distribution changed in year 2, when the number of units of meaning in which personal-emotional information was shared increased (38.7% of all units of content, versus 32.2% related to academic issues). Moreover, the amount of requests for information by mentors (often trying to initiate or restart the relationship when participation is low) diminished in the second implementation, and the ratio of units of meaning that do not meet a mentoring function also decreased, thus indicating an improvement in the quality of the psychoemotional dimension of communication in the second year.

With regards to academic issues, mentors often describe their present or past experiences from the perspective of a peer student. There are many contributions related to projects, exams, materials, teachers, academic resources, learning priorities for the first year of study at university, important classes, and time management. To a lesser extent, mentors share information on work placements, common academic interests, professional options, and postgraduate study. Moreover, mentors refer new students to the adviser system or other services, and provide moral support on academic problems.

Within the personal-emotional category (at the focus of this study), speech acts include demonstrations of enthusiasm, empathy, jokes and good wishes are common.

Mentors frequently share information about their own social and personal life; reflecting back on their past experiences at college:

When I first started I only knew one girl here, and I must admit I was pretty nervous. I was away from home and friends and took time until I began to adapt (mentor 19, year 2)

Sometimes, the mentor reassures and reinforces the new student regarding problematic issues of adjustment as in these excerpts:

(Responding to her mature mentee's concerns about family responsibilities) I am sure your children are happy that you are doing something for yourself, and if they do not, they will not have to get used soon, right? (mentor 9, year 2)

First year can be a little bit daunting, especially at a university as large as this, but do not worry, you will soon learn to handle yourself around (mentor 16, year 2)

The large majority of mentors showed a positive and open availability to maintain frequent and friendly contact with their mentees, and expressed their motivation and expectation of being able to help with participative-emotional issues:

I have signed up as a mentor because I remember how lost and confused I was in first year, and I would have loved the opportunity that someone had told me things that only you know when you have been here for a long time. (mentor 17, year 1)

I look forward to participating in this program because we were there once, and in college you get in as much as you invest. So the more you give, the more you get. I know that college can be scary but more than likely it will be the best four years of your life and you will not get enough of it!. (mentor 15, year 2)

First year students also shared information about their characteristics and personal circumstances in their new environment, social and family life, and sometimes refer to their personal adaptation to the new environment. Two of the mentees referred to their early feelings of isolation and being torn between the new environment and what is left behind:

I'm not shy ... and I think I have good sense of humor ... but here I find it difficult.

My flatmates are nice ... but I cannot be myself with them. Not that I am a prisoner, I am always willing to go out and although I do not drink I always stay until the end, but here I spend a lot of time in my room listening to music. (mentee 14a, year 1)

I still live at home, and am an only child so I think my parents would have a heart attack if I say that I want to move out. But I would love to live near the university, would be more comfortable and could be more with my friends. I think I'm missing something, you know what I mean? But on the other side would miss my parents very much. I do not know what to do (mentee 9b, year 1)

In addition, participants exchanged a great deal of information about their personal lives, hobbies, events, etc., in an amicable informal style, which is necessary to build mutual trust. However surprisingly, mentees were quite reluctant to request concrete information and ask questions both of academic or personal nature. It was also observed that mentees often expected their mentor to be an additional helping resource rather than someone with whom one would develop a more meaningful and lasting relationship.

I'm not sure why I applied for a mentor, but I think it's comforting to know someone who has gone through the system before me and knows what to expect, and that will be there if I need to ask or find out something. (mentee 10b, year 2)

The results from the interviews shed further light into the quality of the mentoring relationships. Most interviewees pointed out the flexibility and convenience that CMC affords to the mentoring process:

In fact, (CMC) worked better than I expected because it does not take you a long time. (...) I think everything that can be done electronically, is probably the best way to do it (...) I have no preference over it, just that this year there is not much time (mentor 8, year 2)

Almost all of the interviewees also agreed on the usefulness of peer e-mentoring as a tool to facilitate the process of transition for the new college student and as a point of reference and support for other available services. This is especially the case for those new students who do not have a support social network in their new environment, as in these examples:

I needed to know if I was the only one who had adjustment problems, and (the program) helped me to realize that others also have problems and just dont talk about it (...) I think it was more useful from the social side, it was reassuring. It is a large university, and it seems that there are other people who already have 40 or 50 friends. Last semester was emotionally difficult, so having somebody to just talk, helped. (mentee 17a, year 1)

I have no brothers or sisters who could to tell me about university, so I did not know what to expect. And I knew no one at the beginning (...) so in that sense to have a mentor was helpful. (mentee 14a, year 1)

The interviewees also referred to the importance of developing personal affinity, relying on the mentor's capacity to be friendly, available and non judgmental, which is especially challenging to achieve through written interaction. In the examples below, the participants developed emotionally meaningful and trusting mentoring relationships by befriending first and focusing on positive aspects rather than problems:

I learned a little about him, what he does, what interests him, what kind of music he likes, that was one part of the contact. And then there was a second part where he asked me questions, commented on what was happening, so it was not just about problems he had, or what he needed (mentor 14, year 1)

I think it has to be relaxed, not like, "What is wrong with you?", "Do you have a problem?" But "Hey, how are you?". And once you develop some trust, other things are raised (mentor 17, year 1)

The initial meeting organized at the beginning of the program in the second application helped to build confidence, but still, expectations frequently mismatched. First year students often counted on their mentor just as a helping resource (especially for academic issues):

I was happy with the degree of contact. Knew I could contact my mentor or (coordinator) whenever I wanted (mentee 15a, year 1)

I did not want to stay in touch for the sake of it (...) but that was what I expected because I just wanted to know that someone was there if you wanted to talk to that person, so I was satisfied in that regard (mentee 11b, year 1)

I knew if I had a problem could go to someone and it was reassuring to have that possibility, but I did not really needed it (m1a, year 2)

However, mentors tended to expect to build a deeper, constant and significant relationship, as shown in these comments:

I expected to develop a friendship, perhaps not a very, very close one, but at least that we would feel comfortable with each other and we could talk about interests or whatever and know each other, and I think that happened, it was good, I was happy in this sense. If my student had not wanted to continue this semester I probably would have wondered why, you know, I would have been disappointed, so I'm glad he did (mentor 14, year 1)

Obviously, building this sort of personal and emotionally meaningful relationships is challenging given the emotional leanness of written communication, but it is not impossible. For some students, especially introverted mentees, CMC provided an emotional safe communication environment:

Sometimes mentees ask no questions at all (they) just say what they think in a message ... just perhaps acting out some emotion in a message, and let someone know how they feel about something that has happened, and are not looking for a reaction, simply recognition that it is what they feel. (mentor 14, year 1)

There may be a lot more confidence, (the mentor) does not know your face, which is an advantage to talking face to face. I'm not very open, I have to become familiar with someone before I talk for real, and the computer made it much easier, at least for me anyway. (mentee 14a, year 1)

I feel more comfortable writing than speaking, I actually found it useful because you are not in a face to face situation where you try to say how you feel. (mentee 9b, year 1)

I liked (CMC) and I think it was a first year student I would have liked too. For young student, and for people who do not have a lot of maturity, having a conversation may be one of the hardest things, and can be stressful in itself and I think that would have discouraged people like me in the first year from entering the program. (mentor 1, year 2)

As in CMC first impressions play a lesser role than in face-to-face interaction, in occasions an *hyper-relationship* (Ensher et al., 2003) developed, this is, a better personal and emotional dynamic than could have happened face to face:

I think that the success of a meeting face to face would depend on the mentor's reaction, the first impression I got. If he or she was a cold person, instead of someone warm, it would become more difficult. (mentee 14a, year 1)

Interestingly, the mentor in this hyper-relationship felt that the communication channel decreased in importance as trust in the relationship was built. On the contrary, some of the participants perceived the CMC as an alien, arid and even potentially misleading environment for communication:

The fact that I did not meet the mentor face to face made it difficult. Although I am shy, I think it would be better that we meet at the beginning of the program (...) On the other hand, I'm not used to talking to someone on the computer. I'm getting used to e-mail now but I had not used it in high school. (mentee 6b, year 1)

In the Internet, showing how you are and creating an atmosphere of trust is challenging because you are not face-to-face and have no gestures, smiles or anything and is a little harder reveal your personality to make sure they feel good

with you. But I think when you send a "smiley" is also good, is a different form of communication. (mentor 8, year 2)

Furthermore, the emotional leanness that characterizes online communication can make it difficult to deal with sensitive issues:

It is very difficult to refer someone (to the counseling service) especially in writing, with all the negative connotations that going to counseling entails (mentor 14, year 1)

For some interviewees, the electronic medium is appropriate to exchange technical-methodological information, but does not always facilitate the empathy and confidence which is essential in a mentoring relationship.

I guess than when face-to-face, it is easier to know what body language tells you, how the situation is affecting that person. It's hard to tell if someone is really stressed just reading. But I guess in this case the main objective was to help in situations like "I can not find the photocopy room." (mentor 8, year 1)

The only reason I volunteered was to discuss my studies. I did not see it as something you could use to talk about personal issues (mentee 6b, year 1)

In this sense, a few of the participants suggested a mixed model of e-mentoring that integrates a greater level of face-to-face contact in the relationship. Also, some participants suggested introducing elements from social networking sites in order to add dynamism and social presence to the e-mentoring environment.

Maybe make the online environment could be more interactive, like (a social networking site). And it would be more fun! (...) To make it feel real, not just a virtual thing (mentor 15, year 2)

There are some people in my class so quiet, painfully quiet and then they have the funniest (social networking) sites, they are quite extroverted when they start to write ... it is a bubble (...) that's why (CMC) helps. (mentor 15, year 2)

4. Discussion

Results from the experience suggest that the initiative was strongly determined by voluntary participation, an intrinsic element in most mentoring programs. The program attracted a group of students who showed an early need for psychoemotional support. Participation was high and positive for a number of volunteers (especially in the second application), and there were high levels of interaction. In year 2, a large amount of personal and emotional information was shared, which hints to the essential mutual trust that sustains e-mentoring relationships. Mentees in satisfactory mentoring pairs became involved by responding to guidance provided by the mentor, explaining its usefulness and impact, which in turn reinforces a positive feedback loop in mentors' motivation. However, we found that, even among active pairs, the frequency of communication decreases progressively throughout the program, as also found in other published accounts of peer e-mentoring programs for transition to higher education (Hixenbaugh et al., 2005; Sánchez et al., 2011, in press). This progressively slowing pattern of participation is expected as mentees seek support when they consider appropriate, and set the pace of the helping process. Thus, the frequency of communication can decrease as the freshmen gain independence. A significant proportion of mentees chose to remain inactive or abandoned the program, also coinciding with previous aforementioned studies. Even in e-mentoring programs which are strongly facilitated and integrated into the curriculum as described by Harris and Figg (2000), there is a high rate of failed

relationships. Indeed, gathering the expertise of a broad group of experts in e-mentoring, Miller and Griffiths (2005) suggest that 40% of mentoring pairs in any given program can be expected to be inactive.

The information collected from interviewees paints a rich and complex picture of the psychoemotional dynamics that underpinned the e-mentoring relationships. The program was especially useful to those freshmen who did not have a personal support network when entering university. Some disparities were observed in the expectations of mentors and mentees. Freshmen often counted on their mentor as a resource to go to in case of need, while mentors often hoped to build a deeper, lasting and meaningful relationship at a personal level.

As observed in other e-mentoring experiences in higher education (Bonnett et al., 2006; J. Harris and Jones, 1999); mentees in electronic programs can adopt a rather passive attitude, as CMC impacts the informational and psychoemotional dynamics underpinning the mentoring relationship. The pattern of interactions analyzed in our research has confirmed the expectation by Ensher (2003) that the electronic medium can slow the formation of mutual trust, and that it tends to develop around weak ties. Participants can sabotage the interaction (intentionally or not) simply by not responding to messages or delaying their response, or sending abrupt, defensive or uninformative messages (Hayward et al., 2001). Although we found no instances of openly aggressive behavior, the fact that one quarter of all messages went unanswered is an indirect and passive manifestation of this communicative stress. It has been argued that traditional mentoring deposits more responsibility on the mentor, who may quickly infer mentee's needs through face contact and proactively manage the relationship (Hamilton and Scandura, 2003). In e-mentoring, it is essential for mentees to assume a larger share of

responsibility, taking the lead and expressing their expectations clearly, while mentors facilitate the process by creating a friendly and non-threatening environment. The “honeymoon” period that new students undergo when entering university (Risquez et al., 2007-2008), and the young age profile of mentees in this study may have further challenged their autonomous engagement in the e-mentoring process.

Results have also shown that how CMC is perceived in the context of peer mentoring is strongly linked to individual preferences: while several respondents highlighted their benefits (subjective safety, less impact of first impressions, temporal flexibility and convenience), others experienced it as a foreign, difficult, or potentially misleading environment. While examples of *hyper-relationships* were observed, other mentees felt that the environment was appropriate for exchanges on academic issues, but was not conducive to personal disclosure. However it is interesting to note that, according to the results of content analysis, the ratio of academic issues versus personal-emotional issues shifted between both implementations of the program towards a more trusting and intimate type of interaction. This change is attributed mainly to the element of face-to-face contact introduced in year 2, which eased the initiation phase of e-mentoring relationships.

The implications for e-mentoring programs for transition to higher education are multiple. Firstly, some attention needs to be paid to voluntary participation in this kind of programs, as initiatives that offer the opportunity to develop personal relationships in the context of curricular activities, ideally through a transition course, can be more easily accepted by the majority of students (Miller and Griffiths, 2005). There is great potential to adapt e-mentoring as a pedagogical strategy for the purpose of academic and psychoemotional transition to university, following well established models in other

contexts such as the Electronic Emissary (K. O'Neill, 2004). Through e-mentoring, guidance can be immersed in the teaching and learning process in the curriculum. O'Regan (2006) argues for going beyond "good practices" to an "authentic practice" in which mentoring is part of the learning process. The integration of e-mentoring as a strategy to facilitate learning processes emphasizes the proactive involvement of students, personalized and continuous attention to student, the importance of experiential learning and knowledge transfer into practice.

A second design implication arising from the findings in this study pertains to the adoption of hybrid models that, where possible, combine face and online contact. This would involve a shift from "CMC primary" towards "CMC supplementary" (Ensher et al., 2003). The importance of initial meetings has been advocated in other e-mentoring contexts (Headlam-Wells et al., 2005; Milne, 2005; Purcell, 2004), yet future investigations need to ascertain what combination of face-to-face and electronic contact means a better return of investment in terms of psychoemotional and instrumental support, administrative workload, and program flexibility.

From the findings aforementioned, suggestions for future programs and research emerge relating to the design of online learning environments that maximize networked learning and social presence. Augustsson (2010) reminds educators to pay special attention to the way in which the e-learning environment is designed when students are expected to consider the thoughts, feelings, and actions of others. The quality of the personal and emotional exchange, and not the medium, is what holds the transforming potential of mentoring. Yet, to compensate for the loss of relational information which is implicit in CMC, mentors must be able to create a sense of "social presence" through the use of emotions, humor, pictures, etc. As Hamilton y Scandura (2003) warn:

Conveying feeling and emotion via a medium that is lean will necessitate development of unique techniques to create relational attachment. Thus, it is not just computer literacy that influences e-mentoring, but also the ability to personalize and emotionalize the media that will establish electronic chemistry (p.397).

It is important to compensate the loss of social presence in e-mentoring with alternatives that are close to synchronous communication, since the poverty of the medium impacts especially on the participation of the mentee (Shpigelman et al., 2009). Students that prefer face-to-face interaction are more likely to benefit from auditory components and communication platforms that allow emotions to be conveyed (Harrington and Loffredo, 2010). This can be facilitated with tools for video conferencing or chat or through the use of mobile technology (Harley et al., 2007). As e-mentoring preferences are strongly subjected to individual preferences, great scope exists for future research that explores the possibilities of synchronous and multimedia technologies for creating mutually rich e-mentoring relationships.

A number of participants also suggested introducing elements of Internet social networks in the online e-mentoring environment. The use of social media, where the university population already has a massive representation, is a natural evolution for e-mentoring programs to be able to generate a level of social presence that is conducive to active engagement. Web 2.0 provides support for students' reflections on their own thoughts and emotions, and enhances identification and collaboration between students (Augustsson, 2010; S. A. Brown, in press; Top, in press). As Web 2.0 technologies emphasize the group dimension of communication, they offer great possibilities for peer support. Roblyer et al. (2010) claim that exchanges through social networking sites "can

be both a valid form of highly interactive instructional communication and an opportunity for pedagogical mentoring” (p. 137). There is great potential for research into the use of Web 2.0 in mentoring programs because, as indicated by Headlam-Wells et al. (2005) there is very little empirical research on the potential of CMC for mentoring programs beyond email, especially as regards the development of online communities from the perspective of sociability (human-human interaction). The use of Internet social networks in the context of e-mentoring programs can emphasize peer communication within a first year community of belonging, encouraging new students’ autonomous participation instead of dependency from a mentor. Contact between first year students can be promoted following models of vicarious learning, combining the dyadic mentoring model with more flexible and complex ones such as group, multiple or network mentoring (Packard, 2003).

5. Limitations

Evaluation research is irreversibly impacted by its practical orientation, which unavoidably has implications for the internal and external validity of the findings. The emphasis placed on voluntary participation and exploratory, qualitative evaluation means that the influence of variables such as discipline, institutional context, socio-economic background or gender is not controlled for. The educational relevance of the program is limited to its participants and generalization is limited to other volunteer mentees in the same context, given the unique profile of early adjustment shown by participants in this study. Also, content analysis and interviews were conducted by the coordinator and electronic interactions were monitored, so potential for *Rosenthal* and *Hawthorne* effects can not be completely discarded.

Despite these limitations, the fact is that guidance and education practice does not reproduce the aseptic requirements of experimental research. In a negotiation of this dialectical tension, the point is not whether to do research or evaluation, but that guidance interventions can be better evaluated than investigated. Within this open approach, Weiss and Rein (1969) recommended not to obsess about the achievement of objectives in exploratory programs such as the investigation presented here. Instead, researchers can learn more “thorough analysis of relational issues and why and how programs change” (p. 95), by understanding its social complexities, with the ultimate goal of designing more effective and realistic interventions, and contributing to the formation of communities of practice.

6. Conclusions

E-mentoring is considered "qualitatively different" because the online environment provides a context that may not be replicable face-to-face. Maybe the relational constraints imposed by CMC should be played down and we must focus instead on what it can actually contribute. This study has made evident that, given the right circumstances; it is possible for emotionally significant support relationships to occur within e-mentoring. It has also been found that even relationships that do not generate a deep and frequent exchange may be beneficial at some level, but more importantly, that the program reached a few vulnerable students that could have otherwise fallen through the cracks.

Although e-mentoring is often chosen for practical reasons, it is essential that these are not used to justify ineffective or inefficient programs. However, it is surprising to find that too often the benefits of e-mentoring have been assumed rather than

demonstrated, and its acclaimed results are largely based on speculation and anecdotal experience, despite the potential that CMC offers for monitoring and evaluation. The lack of baseline studies on e-mentoring programs for transition into college is obvious, yet this is an area where communities of practice will continue to proliferate rapidly in response to the demands placed in higher education around the world. The research presented in this work contributes to the area by offering some insights into the psychoemotional support that a peer e-mentoring program can provide in a particular context. Future research needs now to address the potential of the social networking revolution to leverage the academic and emotional support of our new students.

References

- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel, 25*, 297-808.
- Augustsson, G. (2010). Web 2.0, pedagogical support for reflexive and emotional social interaction among Swedish students. *The Internet and Higher Education, 13*(4), 197-205.
- Baker, R. W., & Siryk, B. (1999). *SACQ Student Adaptation to College Questionnaire Manual*. Los Angeles: Western Psychological Services.
- Bierema, L., & Merriam, S. (2002). E-mentoring: Using Computer Mediated Communication to Enhance the Mentoring Process. *Innovative Higher Education, 26*(3), 211-227.
- Bonnett, C., Wildemuth, B., & Sonnenwald, D. (2006). Interactivity between proteges and scientists in an electronic mentoring program. *Instructional Science, 34*(1), 21-61.
- Brown, G., & Yule, G. (1983). *Discourse Analysis*. Cambridge: Cambridge University Press.
- Brown, S. A. (in press). Seeing Web 2.0 in context: A study of academic perceptions. *The Internet and Higher Education, In Press, Accepted Manuscript*.
- Carlsen, W., Cunningham, C., & Berger, C. (1999). *MentorNet 1998-99 Evaluation Report*. San Jose: MentorNet.
- Crisp, G., & Cruz, I. (2009). Mentoring college students: a critical review of the literature between 1990 and 2007. *Research in Higher Education, 50*(525-545).
- Cronbach, L. J. (1980). *Toward reform of program evaluation*. San Francisco: Jossey Bass.
- Ensher, E., Heun, C., & Blanchard, A. (2003). Online mentoring and computer-mediated communication: new directions in research. *Journal of Vocational Behaviour, 63*, 264 - 288.

- Hamilton, B., & Scandura, T. (2003). E-mentoring: Implications for organizational learning and development in a wired world. *Organizational Dynamics*, 31(4), 388-402.
- Harley, D., Winn, S., Pemberton, S., & Wilcox, P. (2007). Using texting to support students' transition to university. *Innovations in Education and Teaching International*, 44(3), 229-241.
- Harrington, R., & Loffredo, D. A. (2010). MBTI personality type and other factors that relate to preference for online versus face-to-face instruction. *The Internet and Higher Education*, 13(1-2), 89-95.
- Harris, J., & Jones, G. (1999). A descriptive study of telementoring among students, subject matter experts, and teachers: Message flow and function patterns. *Journal of Research on Computing in Education*, 32(1), 36-44.
- Harris, J. B., & Figg, C. (2000). Participating from the sidelines online: Facilitating telementoring projects. *ACM Journal of Computer Documentation*, 24(4), 227-236.
- Hayward, L., DiMarco, R., Blackmer, B., Canali, A., Wong, K., & O'Brien, M. (2001). Curriculum-based electronic peer mentoring: an instructional strategy for integrative learning. *Journal of Physical Therapy Education*, 15(4), 14-25.
- Headlam-Wells, J., Gosland, J., & Craig, J. (2005). "There's magic in the web": e-mentoring for women's career development. *Career Development International*, 10(6-7), 444-459.
- Henri, F. (1992). Computer conferencing and content analysis. In A. R. Kaye (Ed.), *Collaborative learning through computer conferencing: the Najaden Papers* (pp. 115-136). New York: Springer.
- Hian, L. B., Chuan, S. L., Trevor, T. M. K., & Detenber, B. H. (2004). Getting to Know You: Exploring the Development of Relational Intimacy in Computer-mediated Communication. *Journal of Computer-Mediated Communication*, 9(3), 00-00.
- Hixenbaugh, P., Dewart, H., Thorn, L., & Drees, D. (2005). Peer e-mentoring: enhancement of the first year experience. *Psychology Learning and Teaching*, 5(1), 8-14.
- Huff, C. W., & Rosenberg, J. (1989). The on-line voyeur: promises and pitfalls of observing electronic interaction. *Behavior Research Methods, Instruments and Computers*, 21(166-172).
- Kennedy, M., & Kennedy, P. (2002). Telementoring at CQU. *Journal of the Australian and New Zealand Student Services Association*, 54-69.
- Leech, N. L., & Onwuegbuzie, A. J. (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School Psychology Quarterly*, 22(4), 557-584.
- Miller, H., & Griffiths, M. (2005). E-mentoring. In D. L. DuBois & M. J. Karcher (Eds.), *Handbook of youth mentoring* (pp. 300-313). London & New Delhi: Sage.
- Milne, J. (2005). Personal computing: how can mentoring or coaching by e-mail help learners get more out of e-learning? *IT Training*(January), 48-52.
- Morley, M., Moore, S., & Riskey, A. (2006). Correlates of personal, emotional and academic transitional adjustment among early undergraduates and the relation with academic performance. In S. Moore (Ed.), *Keeping Students at University. The Retention Debate at Third Level*. Dublin: Interresource Group Publishing.
- Nemetz, P., Aiken, K. D., Cooney, V., & Pascal, V. (2011). Student separateness-connectedness as a determinant of acceptable faculty involvement in students' social networks. *The Internet and Higher Education*, in press.

- NGF. (2007). *Guidance in Ireland. Background scoping report*. Dublin: National Guidance Forum.
- O'Neill, D. K., Weiler, M., & Li, S. (2005). Software support for online mentoring programs: a research-inspired design. *Mentoring and Tutoring*, 13(1), 109-131.
- O'Neill, K. (2004). Building Social Capital in a Knowledge-Building Community: Telementoring as a Catalyst. *Interactive Learning Environments*, 12(3), 179 - 208.
- O'Regan. (2006). *MOLIE: Mentoring Online in Europe*. Salford: University of Salford.
- OECD. (2002). *OECD review of career guidance policies. Ireland*: Organisation for Economic Cooperation and Development.
- Packard, B. W.-L. (2003). Web-based Mentoring: challenging traditional models to increase women's access. *Mentoring and Tutoring*, 11(1), 53.
- Purcell, K. (2004). Making e-mentoring more effective. *American Journal of Health-System Pharmacy*, 61(3), 284-286.
- Risquez, A., Moore, S., & Morley, M. (2007-2008). Welcome to college?... Developing a richer understanding of the transition process for mature first year students using reflective written journals. *Journal of College Student Retention: Research, Theory & Practice*, 9(2).
- Roblyer, M. D., McDaniel, M., Webb, M., Herman, J., & Witty, J. V. (2010). Findings on Facebook in higher education: A comparison of college faculty and student uses and perceptions of social networking sites. *Internet and Higher Education*, 13(3), 134-140.
- Sánchez, M., Manzano, N., Risquez, A., & Suarez, M. (2011, in press). Evaluación de un modelo de orientación tutorial y mentoría en la educación superior a distancia. Evaluation of a tutoring and mentoring model in distance higher education. *Revista de Educación*, 356(Sept-Dic).
- Shpigelman, C. N., Weiss, P. L., & Reiter, S. (2009). E-Mentoring for All. *Computers in Human Behavior*, 25(4), 919-928.
- Single, P. B., & Single, R. M. (2005). Mentoring and the technology revolution: How face-to-face mentoring sets the stage for e-mentoring. In F. K. Kochan & J. T. Pascarella (Eds.), *Creating successful telementoring programs* (pp. 7-27). Greenwich: Information Age Press.
- Tinto, V. (1988). Stages of Student Departure: Reflection on the Longitudinal Character of Student Leaving. *Journal of Higher Education*, 59(4), 438-455.
- Tomlinson, P. (1989). Having it both ways: hierarchical focusing as research interview method. *British Educational Research Journal*, 15(2), 155 - 176.
- Top, E. (in press). Blogging as a social medium in undergraduate courses: Sense of community best predictor of perceived learning. *The Internet and Higher Education, In Press, Accepted Manuscript*.
- Weiss, C. H. (1972). *Evaluation research. Methods of assessing program effectiveness*. London: Prentice-Hall.
- Weiss, R. S., & Rein, M. (1969). The evaluation of broad-aim programs: a cautionary case and a moral. *Annals of the American Academy of Political and Social Science*, 385, 118-132.

Table 1. Results of the Mann-Whitney test for independent groups for early adjustment scores of mentees versus a sample of the general student population (not participation baseline data)

Adjustment Dimension	Median		Z	Sig. (2 tails .05)
	Mentees	General		
Academic	137	132	-1.477	0.140
Social	109	134	-2.973	0.003
Personal-Emotional	76	95	-3.102	0.002
Attachment	97	114	-2.557	0.011

Table 2. Results of content analysis of e-mentoring interactions

		DIRECTION					
		mentor→mentee		mentee→mentor			
		CONTENT					
		Academic	Participative -Emotional	Academic	Participative -Emotional	Total	
FUNCTION	Provides information	Year 1	140 17.1%	99 12.1%	63 7.7%	39 4.7%	341 41.5%
		Year 2	186 18.8%	204 20.6%	72 7.3%	84 8.5%	546 55.1%
	Requests information	Year 1	57 7 %	36 4.4%	30 3.6%	6 .7%	129 15.7%
		Year 2	32 3.2%	26 2.6%	29 2.9%	22 2.2%	109 10.9%
TOTAL ^a	Year 1	197 24%	135 16.5%	93 11.3%	45 5.5%	820	
	Year 2	218 22%	230 28%	101 10.2%	106 10.7%	991	

^aThe category "other" (including greetings, plans, thanks, complaints and apologies), accounted for 42.7% of speech acts in year 1 and 29.1% in year 2.