Social Networking Services in E-Learning

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Abstract: This paper is a report on the findings of a study conducted on the use of the social networking service NING in a cross-location e-learning setting named "Net Economy". We describe how we implemented NING as a fundamental part of the setting through a special phase concept and team building approach. With the help of user statistics, we examine the value of the implemented social networking service with regard to the need for a social presence, as emphasized by the Community of Inquiry framework. Findings indicate that NING led to a well-meshed network of relationships among the students from the participating locations and that the development of these relationships was fundamentally influenced by the chosen phase concept and team building approach. Further, we show that with the help of social networking services, interconnections between students in virtual teams become more transparent and can be influenced systematically.

1. Introduction

The Community of Inquiry Framework (CoI) with its collaborative-constructivist perspective on learning presents a holistic perspective on the process of creating and delivering e-learning experiences (Garrison, 2011). It focuses on the opportunities of technology enabled learning but is at the same time based on the premise "that a community of learners is an essential, core element of an educational experience when higher-order learning is the desired learning outcome" (Garrison, 2011, p. 19). E-learning is considered as a means of facilitating interactivity and creating a quality learning experience, as it is in the Net Economy class, which will be discussed with regard to the use of a social networking service in this paper.

The CoI-framework identifies three interdependent elements as the constituent parts of successful (e-) learning experiences: (1) social presence, (2) cognitive presence, and (3) teaching presence. Social presence is defined as "the ability of participants to identify with a group, communicate purposefully in a trusting environment, and develop personal and affective relationships progressively by way of projecting their individual personalities" (Garrison, 2011, p. 23). Cognitive presence in contrast is understood as "the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry" (Garrison, Anderson, & Archer, 2001, p. 11). Finally, teaching presence is "the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes" (Anderson, Rourke, Garrison, & Archer, 2001). It is this teaching presence that combines and balances the elements of a community of inquiry in the overall setting to guarantee worthwhile e-learning.

In this paper we will focus on the possible role that social networking services (SNSs) can play with regard to the need for social presence. In order to make them a supporter of social presence, teaching presence is necessary, since the use of the SNS during the learning experience needs to be designed and steered carefully. As corresponding elements of teaching presence, we developed a phase concept and a team building approach that are both meant to guarantee an intensive and meaningful use of the SNS in our course.

The practical background of our study is a class named Net Economy, which we offered as a cross-location Virtual Collaborative Learning (VCL) setting in 2011 and in which we implemented NING as an easy-to-use social networking service. This implementation of a SNS derived from a rich background of conference discussions during the last few years (Gabriel, Gersch, Weber, Le, & Lehr, 2009; Gersch, Lehr, & Weber, 2011). In this paper we will

describe and discuss our social networking approach with regard to the following guiding questions:

1) How did the students use and value the SNS as the central coordination platform for the Net Economy class?
2) Did the phase concept and the team building approach verifiably influence the use of the SNS in a positive way?

To do so, in Chapter 2 we introduce the Net Economy class with its phase concept and team building approach. In Chapter 3, we review literature on social networks and social networking services in educational settings and describe our approach of implementing NING in the Net Economy class. In Chapter 4, we outline a set of hypotheses with regard to the above guiding questions, which we will then analyze and discuss with the help of data from the Net Economy class. The paper closes with a brief conclusion and outlook in Chapter 5.

2. The Net Economy Class

In the framework of an international learning network we have been offering cross-location e-learning courses entitled "Net Economy" for more than four years. The setting targets participants with heterogeneous educational backgrounds in the fields of business and economics, business informatics, and educational sciences, and with different cultural backgrounds from Germany (Bochum, Berlin, Dresden, Soest), Turkey (Istanbul), China (Shanghai), Lithuania (Kaunas), Latvia (Riga), and Indonesia (Jakarta). It aims at virtual collaborative learning.

Every Net Economy class is divided into the three phases 'preparation phase, production phase' and 'case study phase.' Throughout the course, project work is conducted in small teams of 4-6 students and across locations, both in terms of team composition as well as presentation and discussion of findings through video conferencing. By separating these phases, learning and working processes are structured as a project with the use of predefined milestones. The students are asked to present and discuss their findings at steering committees and within phase-specific final presentations. These steering committees and final presentations are held at each location and are merged together through video conferencing.

During the preparation phase the teams are set up and the students can acquire the information and skills (e.g., media skills) necessary to accomplish the tasks during the production and case study phases. Whereas in the prior Net Economy classes the teams were established by the course instructors, in our new approach the task of defining the teams was delegated to the students during the preparation phase. The students had to create a personal profile on a class specific social networking site, which then served as their application to become a team member. The questions concerning the profile prompted a critical reflection of their individual strengths, weaknesses and previous experiences relating to both the topics of the class and virtual collaboration (e.g., use of media). Based on the profiles that the students developed, the instructors appointed the team leaders who then recruited their teammates. The composition of the teams was thereby restricted with regard to group size and the number of team members from each participating location: A maximum of six students per team and a maximum of two students per location and per team were allowed. Shortly prior to the start of the production phase, conflicts were resolved by the instructors, if necessary. By delegating the task of group definition we intended to strengthen the students' self-reliance and their identification with their teams – thus social presence.

During the second phase of the setting (production phase) the participants experience a "learning through teaching approach" (Biswas, Leelawong, Schwartz, & Vye, 2005). Under their instructors' guidance they develop multimedia learning materials, such as web-based training systems or Google sites on methods of strategic management or current IT-topics. This way they gain new scholarly insights and prepare themselves for the final case study phase.

The case study phase as the third part of the learning scenario provides the students with a case study, for example on electronic marketplaces (2008/2009), grocery home delivery (2010/2011), or the use of Web 2.0 applications within and between companies (2011/2012). While working on these case studies, the students can apply their newly acquired knowledge to concrete business challenges. The second and third phases are thus linked together in a way that the learning material created in the production phase provides a substantive knowledge base for the tasks within this case study phase. In addition, all three phases are meant to provide opportunities for the participants to foster international contacts and to gain experience in cross-cultural technology-based learning and work.

Figure 2 summarizes the learning scenario Net Economy with regard to its global context, the use of information and communication technology (especially Web 2.0 applications), its three phases, the student teams, and its blended learning character.
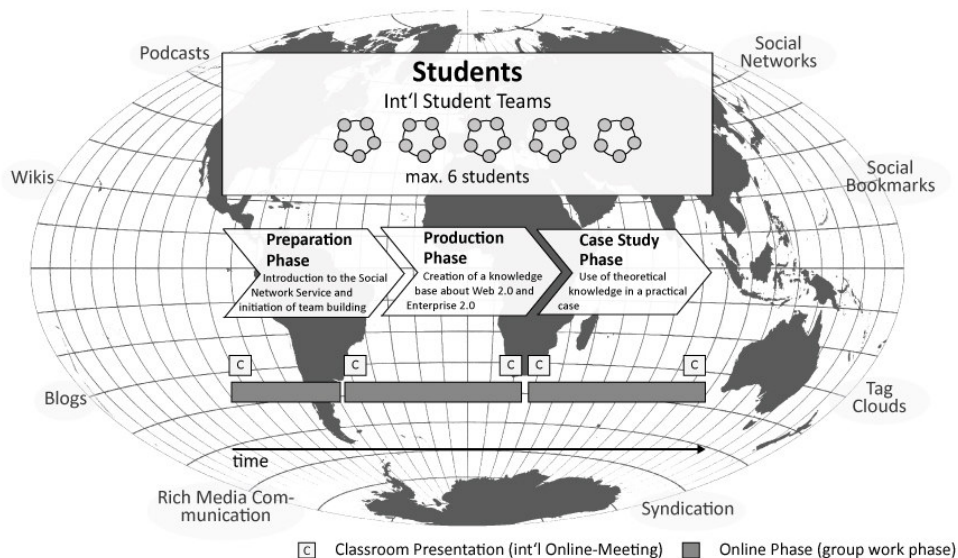
Figure 1: The Net Economy Learning Scenario

In summary, the Net Economy class is not only associated with cognitive but also affective and psychomotor learning goals. These learning goals relate to content, use of media, e-learning, cooperative working and learning as well as the presentation of work results. In addition to the impartment of new knowledge, attention is paid to fostering and deepening vocational abilities such as virtual collaboration, use of Web 2.0 applications, and life-long learning (Safran, Helic, & Gütl, 2007).

3. Social Networking Services in E-Learning and as Part of the Net Economy Setting

During the last few years, the terms and concepts of "social networks, social networking services, social networking sites" and "social media" gained a strong position in e-learning research (Liccardi et al., 2007; Liu, Kalk, Kinney, & Orr, 2012). While all these terms refer to some sort of social context, they still address different things and need to be differentiated. According to Liccardi et al. (2007), social networks are "a social structure of nodes that represent individuals (or organizations) and the relationships between them within a certain domain" (Liccardi et al., 2007, p. 225). Social networks are thus technologically neutral and have existed long before the rise of today's famous Web 2.0 social networks, like Facebook, LinkedIn, etc. These in contrast are examples of social networking sites or social networking services, websites referred to as SNSs, which are used to build online networks (Boyd & Ellison, 2007; Dalsgaard, 2008). SNS allow for the creation of personal profiles and relationships with friends, in order to share activities, media (photos, documents, links, etc.) and thoughts. They foster interaction and help people stay up-to-date regarding news and activities within their network of friends and support them in enhancing their network (Boyd & Ellison, 2007; Garrison, 2011). SNSs are one occurrence of the Web 2.0 with its many well-known applications (like blogs and wikis) and its characteristic fundamental shift regarding the role of web users as participants in content creation (O'Reilly, 2005).

As with other Web 2.0 applications, because of the great success and widespread popularity of SNSs like Facebook, educators are exploring the possibilities and challenges of using them for educational purposes (Liu et al., 2012). Many researchers contend that the integration of SNSs into teaching and learning is expected by the students (as the 'net generation' Oblinger & Oblinger, 2005), both as a means of teaching and learning and as a subject matter with regard to the workplace of the future (Hamat, Embi, & Hassan, 2012). Others emphasize the opportunities deriving from the SNS-functionality, such as interactivity and collaboration, which allow for the co-construction of knowledge as pursued in collaborative-constructivist approaches (Hamat et al., 2012). Also, SNSs are advocated as indirect support of educational settings, in which they can serve as 'social glue' and help the students persist and be more successful by making them feel well connected and part of a community (Garrison, 2011; Hamat et al., 2012).

On the other hand, skeptics point out that SNSs are far from being successfully established as a means of education and e-learning. Roblyer et al. (2010) for example argue that students understand SNSs as social and not as educational and that this makes a big difference (Roblyer, McDaniel, Webb, Herman, & Witty, 2010). Garrison (2011) points at the high degree of spontaneity and superficiality usually connected to SNS usage, which contradicts

the educational paradigm (Garrison, 2011). Thus, despite the promising arguments mentioned above, the question whether students and instructors will adopt SNSs and whether their use will be educationally worthwhile remains crucial and needs explicit consideration (Garrison, 2011; Hartshorne & Ajjan, 2009).

When evaluating these arguments with regard to a potential use of SNSs in an educational setting, the many different options and objectives for implementing SNS need to be considered. While some authors discuss the use of public SNS, like Facebook, for direct or indirect instructional purposes (Mendoza, 2009; O'Donoghue & Warman, 2009; Roblyer et al., 2010), others intend to facilitate the features of SNS through a dedicated and closed social networking site or within established learning management systems (Colazzo, Magagnino, Molinari, & Villa, 2008; Gersch et al., 2011).

In our case, we chose NING to create a dedicated SNS for the Net Economy course, in order to connect the students from the participating locations and help them feel being part of the community in the e-learning setting. We intended to provide the 'social glue' for the group of participants as a whole and for the teams in particular. The students should see and feel the cross-location and international character of the class at any time and we wanted them to feel motivated to use the SNS also for social exchange with the other students. NING allowed us to create a custom social network with typical features like profile pages, relationships, latest activity streams, status updates, photos, videos, blogs, groups, forums, announcements, etc. (www.ning.com). Using the NING Plus membership, we also gained access to real-time analytics providing additional transparency. For example, we could gather insights on how the SNS was used during the course, what relationships were established by the students, and who were the most and the least active members. In addition, we integrated the SNSs with Google services, so that students were able to log on with their Google accounts, which they needed for developing documents and websites collaboratively. In summary, the SNS served as the main coordination instrument and was the starting point for all activities related to the class. It also provided us instructors with comprehensive data on the social activities of the participants.

In the following Chapter we will provide and analyze data on SNS usage during the Net Economy class to discuss the guiding questions from Chapter 1. By answering these questions, we intend to support others who consider whether to use SNSs in e-learning by providing an example of SNS-implementation and by delivering first evidence for the controllability of the adoption of SNS through teaching presence measures.

4. Hypothesis and Empirical Study

Our efforts of developing a SNS-concept for the Net Economy class with the described phase concept and team-building approach as means of teaching presence were based on the following hypothesis:

1) How will the students use and value the SNS as the central coordination platform for the class?
H1a)   *The SNS will be used continuously and intensely throughout the complete course.*
       Since the SNS was established as the one and only official coordination platform for the class and since it was intended to serve as the major instrument for students to project themselves and to correspond with each other, we expected a constant and significant use in all phases of the setting.
H1b)   *The SNS usage will reach a level that indicates a purely social application in addition to the activities related to the tasks of the class.*
       Due to of the cross-location and international background of the class and because of the students' high familiarity with SNS usage for private purposes, we expected them to use the functionalities of the SNS, like friendships, photo and video sharing, 'I Like' ratings, etc. also outside the course setting, thus leading to a higher network density. By promoting this we wanted them to feel being part of the community.

2) Will the phase concept and the team building approach verifiably influence the use of the SNS in a positive way?
H2a)   *The self-responsible team building approach as part of the preparation phase will lead to a higher degree of connection building during preparation phase compared to the production phase or case study phase.*
       Among other reasons, we developed the team building approach in order to facilitate an intensive use of the SNS. By turning the students' profiles into their applications for team membership, we intended to put the SNS of the class on a firm footing right from the beginning.
H2b)   *The team building approach with its emphasis on the role of the team managers will make the team managers central agents of the SNS as a whole.*
       By choosing only the team managers and making them responsible for the acquisition of the other team members, we intended to position central hubs within the network who at the same time feel responsible for the activities of their groups. We therefore expected the centrality of the team managers – on average – to be higher than the centrality of the other students.

Data

The dataset collected in this research was obtained from the described Net Economy course 2011/2012. The overall sample consists of 166 students who joined the class specific SNS, which we developed using NING. Fifty-two of these students came from an Indonesian university, while the other 114 students came from four German universities. All network specific data was gathered with the help of a javascript, written to analyze user profiles automatically for interconnections between students. A meaningful interconnection was assumed and counted every time students formed a virtual 'friendship'. Additional information about the usage of the SNS was obtained from GoogleAnalytics as a client-side web analysis tool.

Methodology and Variables

Our first hypothesis (H1a) will be tested using visiting data for the SNS during all three phases of the class. The other hypotheses deal with interconnection-data of the students. We test H1b by interpreting summarized data about the use of certain SNS-features (e.g., photo sharing) and students' relationships with each other as indicators of a social use of the SNS. To derive whether the described team building approach lead to a significant amount of connections during the preparation phase (H2a), we will present connection building data on a time scale. Finally, we compare the team manager role with students who were not primarily responsible for the team building process by using discriminant analysis (H2b). Therefore, we defined the following dependent, independent and control variables for illustrative purposes and for the discriminant analysis:

Dependent Variable

For our first hypothesis UNIQUE_VISITORS of the SNS as well as TIME_SPENT_ON_PAGE were measured by GoogleAnalytics data. All RELATIONS between the students as considered in the following hypotheses were gathered by counting the friendships between students as active relationships. This seems reasonable since students had to form friendships in the forefront of further virtual interaction on the SNS. In any event, no additional means of measuring the intensity and quality of interactions between students were included at this point. As a result, the overall connections could only be aggregated nominally, leading to an unweighted and undirected representation of the network. Finally, TEAMLEADERS are operationalized by a nominally coded dummy variable, which classifies students according to their role during the class.

Independent Variables

Based on the interconnections between students, CLOSENESS_CENTRALITY was measured and normalized to an interval of [0;1]. CLOSENESS_CENTRALITY describes the mean distance between a student and every other student in the network based on the shortest possible path between each pair (Borgatti & Everett, 2006; Freeman, 1979). Centrality thus rises with an increasing amount of direct friendships between a student and the other students on the SNS.

Control Variables

Since for all participating students the Net Economy course was part of a broader class schedule, possible interference with other classes needs to be considered. For example, it turned out that students from one university had exams during the semester, drawing their attention for a certain time period. Therefore, we control on UNIVERSITIES as dummy variables for each participating institution. Regression will thereby consist of only four instead of five dummies (we had five participating universities), since the number of universities is constrained and a fifth institution will be derived from non-classification to one of the other four universities.

The LOCAL_CLUSTERING_COEFFICIENT serves as a second control variable. It estimates the amount of possible interconnections between the direct neighbors of one node in the network and relates them to the actual sum of connections (Boccaletti, Latora, Moreno, Chavez, & Hwang, 2006, p. 183; Watts & Strogatz, 1998, p. 441). The coefficient thus reflects the extent of friends who are also befriended.

Results

H1a)   The SNS will be used continuously and intensely throughout the complete course.

Our first point of interest has been, whether the SNS was used intensely and continuously throughout all phases of the class. Figure 2 summarizes data gathered through GoogleAnalytics. Participation in terms of numbers of UNIQUE_VISITORS and TIME_SPENT_ON_PAGE has been highest during the last week of the preparation phase with 129 to 255 unique visitors per day who spent an average of approximately 20 minutes on the SNS. Thereby, every log-in from a different location or device is considered a UNIQUE_VISITOR, so that the 255 visitors also include students who logged-in more than once a day from different places or with different devices.

Over the whole course, an average of 109 unique visitors spent 10:34 minutes per day on the SNS. From these findings, we can derive the fact that not every one of the 166 students logged onto the page daily.
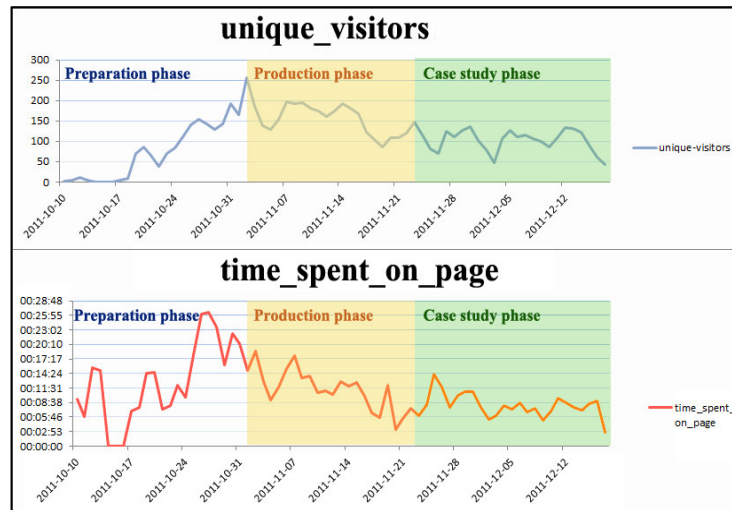

Figure 2: Usage of SNS during phases of virtual class room setting

During the preparation phase, the students created their individual profiles, browsed the profiles of their colleagues to get to know each other, and the team managers started setting up their teams. A peak in usage could thus be expected. There are two simple possible explanations for the lower overall averages of UNIQUE_VISITORS and TIME_SPENT_ON_PAGE in the subsequent phases of the class: One is that some students showed specific dedication and kept logging on to the SNS (possibly several times) every day, while others interacted on a less regular basis after the end of the preparation phase. The other explanation would be that (almost) all students reduced their SNS activity after the preparation phase and logged on to the SNS only every two or three days. In any case, since the SNS mainly offered communication tools like comments, blogs, discussion boards and instant messaging, the average 10 minutes must have been primarily spent on communication and interaction with other students. In addition, also the gradually declining average of UNIQUE_VISITORS can be interpreted as an argument for the approval of hypothesis H1a, in which we assumed an intense and continuous use of the SNS throughout all three phases of the setting.

H1b)   The SNS usage will reach a level that indicates a purely social application besides the activities related to the tasks of the class.

The engagement of the students led to a total of 381 pictures which were shared through the SNS. In addition, 37 virtual discussion groups were formed voluntarily to debate team internals and the tasks of the class. Every student was engaged in an average of 11.78 friendships, with 0 friendships of one student indicating a drop out and 86 friendships marking the highest value. Since each team only consisted of six to seven members these numbers show that students formed far more relationships than implied by the instructional setting. This argument in favor of H1b is supported by the GoogleAnalytics data summarized in Figure 2. Especially during the production and case study phase, there was hardly any need to use the SNS for class specific reasons on a daily basis. In these phases, the students instead had to use GoogleServices to develop GoogleDocs and GoogleSites collaboratively. In conclusion, there are strong indicators for a purely social use of the SNSs, as assumed in H1b.
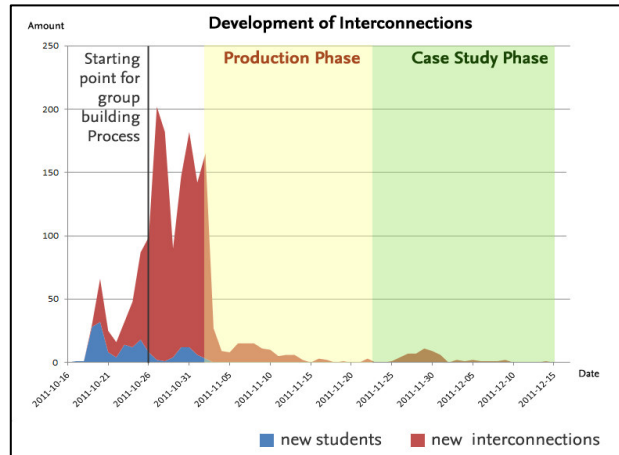
Figure 3: Development of interconnection during phases of virtual classroom setting

H2a)   *The self-responsible team building approach as part of the preparation phase will lead to a higher degree of connection building during preparation phase compared to the production phase or case study phase.*

Data for testing H2a is illustrated in Figure 3. Due to the team building approach described above, every student entered the SNS during the preparation phase. Consequently, 87.4% of all relationships between students were established during the preparation phase. Of the overall relationships, 64.74% therefore occurred after the nomination of the team managers. This nomination marked the beginning of the self-regulated team-building process. One possible explanation for the slowing down of the connection building activities would be a declining number of not yet established relationships. This means that if in the course of the setting almost all possible connections would have been established, network-density, defined as $L/(N(N-1)/2)$ with L representing the actual number of relationships and N the overall network size, would have tended to 1 (Scott, 1988, p. 114). Since the SNS in fact developed a density of 0.113, many additional relationships between students could have been added, so that this explanation has to be refused. The approval of H1a invalidates a significant decline of the SNS usage in general as a second possible explanation for the reduction in connection building. Thus, there are strong indicators for approval of H2a, in which we assumed that the development of the SNS usage in terms of interconnections was controlled by the self-regulated team building approach as part of the phase concept.

H2b)   *The team building approach with its emphasis on the role of the team managers will make the team managers central agents of the SNS as a whole.*
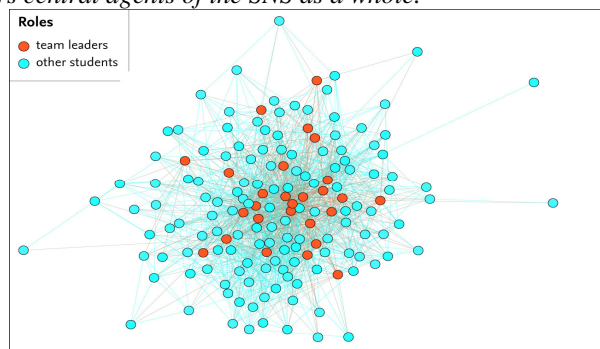

Figure 4: Distribution of team leaders in the overall network

Finally, we examined the relationship between the assignment of some students as team managers and their interconnection building activities. We therefore conducted a discriminant analysis to compare the team managers with the other students, who were not given primary responsibility for team creation. In total, 27 teams were built with each of them containing one team manager and five to six regular members from at least two different universities. The distribution of the team managers within the overall network is presented in Figure 4, which was created by using the network analysis software Gephi (Bastian, Heymann, & Jacomy). The arrangement of the nodes within the illustrated network has been accomplished via the Yifan Hu multilevel algorithm (Hu, 2005).

Although the illustration shows many team managers in the center of the network, we need to prove that our model is able to discriminate between team managers and all regular students by declining a null hypothesis by inferential statistics. The results of the according wilks' lambda test are presented in Table 1 (Decker, Rašković, & Brunsiek, 2010). As can be seen, our model significantly discriminates between team managers and other students. To depict which factors influenced discrimination most, Table 2 shows discrimination results in a structure matrix. The absolute characteristic of each factor indicates its specific influence on the proposed model. Only discriminators with a characteristic of more than +/- 0.4 can be interpreted as substantial (Carmines & Zeller, 1979, p. 60). Accordingly, no university influenced the discrimination substantially, which allows us to conclude that none of the universities were over-represented.

Our results show that only the proposed factors of network position (closeness_centrality) and local structure (local_clustering_coefficient) turned out to be substantial discriminators. The high influence of CLOSENESS_CENTRALITY thereby confirms H2b, in which team managers were assumed to be central hubs within the overall network. The strong negative influence of the LOCAL_CLUSTERING_COEFFICIENT in contrast shows that team leaders are locally less clustered than other students. To explain these occasions we need to look at the type of self-regulated team building process we carried out.

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.815	32.293	6	.000

Table 3: Wilks' Lambda

Teamleader		Predicted Group Membership		Total
		0	1	
Count	0	104	32	136
	1	4	23	27
%	0	76.5	23.5	100.0
	1	14.8	85.2	100.0

Notes: 77.9% of original grouped cases correctly classified.

Table 1: Classification Results

	Function 1
closeness_centrality	.728
local_clustering_coefficient	-.727
university4	-.195
university3	.169
university2	.108
university1	.019

Notes: Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions.
Variables ordered by absolute size of correlation within function.

Table 2: Structure Matrix

During the preparation phase all team managers were asked to search for new team members and invite them into their group. As a result, some team managers formed a number of friendships with fellow students, with which they did not intensely collaborate afterwards. Local clustering between these 'neighbors' is conclusively lower.

Robustness of the discriminant analysis results could be assessed by matching proposed classification by discriminant model with actual groups. Table 3 presents the results of classification using a-priori-probability of 0.5 and depicts that 77.9% of the students were grouped correctly. Since there may be other factors which discriminate between the groups of (non-)team leaders, we find these results acceptable.

5. Conclusion

This paper exemplified and discussed the implementation of a SNS as the major coordination platform for an international cross-location e-learning setting. Due to the outstanding success of public SNS like Facebook and LinkedIn, SNSs are gaining growing attention also as educational means. By using a SNS, instead of a traditional learning management system, we intended to facilitate social presence, which can be considered a major factor of worthwhile e-learning experiences. We used NING as a course specific SNS which was mainly meant to emphasize the international character of the class and to support the 166 participating students from the 5 participating universities to feel being part of a valuable community. Social presence in general and thus also the described implementation of the SNS as part of our e-learning setting in particular need teaching presence in the sense of a careful design and control, in order to make an impact. We therefore established a phase concept and a team building approach, which both aimed at a successful adoption of the SNS by the students. With regard to these objectives of strong social presence due to the SNS and successful adoption of the SNS due the phase concept and team building approach, we discussed the following four hypotheses:

H1a)   *The SNS will be used continuously and intensely throughout the complete course.*

H1b)   *The SNS usage will reach a level that indicates a purely social application in addition to the activities related to the tasks of the class.*

H2a)   *The self-responsible team building approach as part of the preparation phase will lead to a higher degree of connection building during preparation phase compared to the production phase or case study phase.*

H2b)   *The team building approach with its emphasis on the role of the team managers will make the team managers central agents of the SNS as a whole.*

While H1a and H1b are related to the question whether the students would use and value the SNS as the central coordination platform of the class, H2a and H2b focused on the effects of the phase concept and the team building approach as means of teaching presence and as instruments that influence social presence. Our findings indicate that the SNS led to a well-meshed network of relationships among the students from the participating locations and that the development of these relations was fundamentally influenced by the chosen phase concept and team building approach. Also, the SNS was used intensely and continuously throughout all three phases of the setting: preparation phase, production phase and case study phase. Also, as intended, the team managers of the 27 international teams stood out due to their high centrality within the network.

Based on these findings, our future work will now focus on the apparent limitations and gaps of the presented analysis, which we consider to be only a first step:

- Thus far, we did not look at the quality of the connections and interactions between the students. On what issues and in what ways did they communicate and collaborate with the help of the SNS? In addition to a better understanding of the adoption of the SNS, such analysis would also allow us to gain further insights into the social presence that was actually established through the SNS.

- As means of teaching presence we not only developed the described phase concept and team building approach, but also a comprehensive role concept. While we addressed the effects of the assignment of the team manager role in this paper, we did not cover the additional roles of 'editor, blogger & presenter' and 'reviewer' thus far.

- Finally, instructional settings in general and thus also e-learning settings like the Net Economy class require cognitive objectives. We therefore also need to elaborate on the cognitive effects and effectiveness of the described setting in general and the discussed means of teaching presence in particular. This again will require a semantic analysis of the SNS usage.

While being aware of these fundamental additional research needs, we consider both the implementation of the SNS as a social coordination platform and the phase concept with its team building approach to be successful. Besides the value of these results for our own and similar e-learning settings, we see our paper as a contribution that provides evidence for the controllability of SNS as a means of social presence in instructional settings. The paper thus fits into the Community of Inquiry framework that we referred to as the theoretical foundation of our conceptual efforts which demands that social presence needs to be controlled and managed by a teaching presence.

We agree with Garrison (2011) who states that it is unclear at this point whether social media will have a significant role to play in mainstream higher education, but at the same time we feel highly motivated to continue our path of integrating a SNS as a major component of our international cross-location e-learning setting Net Economy. In conclusion, we see good chances for social media to be incorporated in e-learning successfully, if carried out carefully.

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