

# Digital Social Networks Dedicated to Learning

Brika Ammar

National Higher School of computer science (ESI),  
Algiers, Algeria

Nader Fahima

National Higher School of computer science (ESI)  
Algiers, Algeria

*Abstract— In this paper we analysis the Numerical Social Networks (NSN) devoted to remote teaching which will be devoted to remote teaching We consider only concepts attached to social networking sites, such as the notions of "profile", "friends list" and "groups" can be regarded as positive factors in distance education. We then present an analysis of a sample of these sites and try to highlight different aspects that will support a collaborative, adaptable and scalable training..*

*Keywords: Social network sites;e-learning;training design,.*

## I. INTRODUCTION

The devices of remote formation and with the Information Techniques and of the Communication (ITC), introduced great changes in terms of pedagogy. The ITC, initially known from an exclusively technical point of view, largely exceeded the stage "of instrument of communication" [1] for finally upsetting the teaching practices and opening the way towards a "collective construction of knowledge" [11]

The work tools collaboratif gathered under the term of "Web2.0", such as forum, wiki, blog, etc... supported this emergence of a collective of learning "actor" [16]. However and in spite of the generalization of these tools, of many studies undertaken on the remote formations still the weaknesses of these devices [18] show, in which the poverty of human dimension and emotional is source of abandonment and failure.

In such a device of training remotely instrumented by the ITC, learning it feels insulated, "abandoned", which can be noted it is that this same person feels on the contrary surrounded by a "network of friends", within a device of "virtual social regrouping", always instrumented by the ITC! These new spaces of meeting, regrouping, exchange, from debates, called "Social Network Sites" (NSN), currently profit from a massive passion, mainly near the young people. In addition to an improvement of the "human" aspect, we pose the assumption that the concepts inherent in the RSN, such as the concepts of "profile", "list of friends" and "groups", can also support a certain flexibility of the formation and roles of the actors of the device.

This study falls under a global project aiming at considering novel modes of training, integrating the specific concepts of the SNS, in an objective of improvement of the

socio-emotional and adaptive aspects of the devices of e-Learning.

If a form of division of knowledge exists in the majority of the sites of social networks, a minority of these SNS is specifically dedicated to teaching [14].

After having worked out a typology of the SNS dedicated to the training, we will present an analysis of a sample of these sites and will try to highlight the innovative aspects, favorable to a collaboratif, adaptable and evolutionary training.

## II. SOCIAL NETWORK NUMERAL

A Social network is a "entity made up of a whole of individuals and relations which they maintain the ones with the others, directly or indirectly by the means of chains of relations" [5]. Yannick Fondeur defines in a more strict way one numerical social network as a "social network formalized via a device based on communication and information technologies and specifically dedicated to the constitution or the reconstitution of social connections, their management and/or their mobilization at personal or professional ends".

### A. History of the NSN

The sites of social networks appeared in the Nineties, with the rise of the Internet "large-public". The first to integrate truly the possibilities of creation, management and interconnection of the lists "of friends" was the site SixDegrees.com (1997 to 2001), whose name refers to the experiment of the "Small world" [7]. This site made it possible moreover any user to know his degree of separation with the members of the site and to communicate with any member apart 3 degrees of separation at the maximum.

From 2002, appear the sites "headlights" of "personal sociability" [5] built on the model of SixDegrees.com packed of the current tools of communication and division of multimedia contents: Friendster (2002), MySpace (2003), Facebook (reserved at the beginning of 2004 with the former students of Harvard, then generalized into 2005 at the universities and finally with the whole world since 2006), Bebo (2005), etc. An excellent history is given by Danah [3].

Parallel to these sites of meeting and "friendly" comparisons, other sites were constituted around the industrial relationships, such as LinkedIn (2003), OpenBC (famous Xing in 2006), Viaduc (French site of 2004 renamed Viadeo in 2006), etc...

Concurrently to these spaces Web with dimension planet gears (More than 200 million members on Facebook in April 2009, versions of MySpace in more than 30 countries and different languages, etc...) a multitude of Community sites spread in an increasing way. The Ning platform, kind of "mother of all networks" making it possible to conceive a RSN quickly, counts 500000 sites today create.

### B. Basic structure of the SNS

These Community sites all are characterized by an identical basic structure, made up of two essential functionalities:

- Profile
- The list of friends

The "profile" constitutes the "numerical portrait" of the member [2]. This true card of identity can be made up of text, of images, videos, sounds, decorated bonds and questionnaires; all these elements aiming at defining the particular profile of the member.

The concept of "list of friends" is the key component of the SNS. With the first degree, this list is consisted of the members with whom a person is in direct relationship. This list goes however beyond from an inventory of simple strong bonds [2] and can quickly be packed new individuals by several skews:

- By direct bringing together with other members having close profiles (division from point of view, leitures, subjects of discussion, profession, etc...)
- by setting relation of higher degree of separation (the friend of the friend of the friend...).

The network is constituted thus by interconnection of lists of friends, thus generating a wide chart of "weak bonds" (relations of degree 2 or more). However, work of [6] highlights the importance of these weak bonds: "the individuals with whom one is slightly dependant are likely more to evolve/move in different circles and thus have access to information different from those which one receives"

A third significant functionality of the Community sites is the "public review" ("comments", "wall of posting", "testimony"... ) allowing the members to deposit a comment on the accounts of the people with whom they are in relation.

We add to this list another key component: the group. This well-known function of the platforms of groupware makes it possible to gather individuals around a given subject. The members of the same group can thus communicate, exchange, divide contents, on the subject given.

Within the SNS, any member can create and animate groups. This concept is superimposed on that of "list of friends" and thus reinforces the chart of the woven bonds. Indeed, any member can thus "post" publicly a subject around of which it wishes to exchange ideas, to communicate and divide contents [4].

The SNS of course integrate the panel of the current and division communication functions of contents of Web2.0: synchronous and asynchronous communications tools, blogs,

wikis, flow RSS, tools of division of photographs, videos, musics, etc...

### III. WITCH CONTRIBUTIONS FOR THE FORMATION?

It is not question of considering here a psychosocial study of these Community sites but force is to note the extraordinary attraction which they cause, particularly near the young people.

The majority of the formations at distances have the fact in common that learning them are physically moved away, meet only seldom and meet only seldom their teachers and tutors. However the SNS, equipped with their functionalities for relational and social vocation, plunge the user in a space which clean, which resembles to him, is surrounded to him by his/her friends, convivial, facilitating a form of spontaneous communication, more or less "humanized" by the multimedia contents (images, videos, sounds, bonds...).

On these criteria of user-friendliness, sociability and "comfort", the majority of the platforms of e-learning do not hold the comparison.

From another point of view, these sites profit from a great dynamics from the profusion of the activities of communication, exchange, division, etc... A kind of "life" emanates from these networks in perpetual movements. There still, these criteria of dynamics and dense and ceaseless activity are only found very slightly within the majority of the "traditional" platforms of teaching remotely.

And yet, particular context of the remote formation, such as:

- physical distance of learning
- Inexistence or the restricted number of meetings between learning and/or with the pedagogical team,
- the diversity of learning, the social point of view, the situation of life, the age,...

This context thus requires more bonds between the actors of the device, more emotional comfort, more comparison, of knowledge of the others, that in any other formation "in présentiel".

#### A. An socio-emotional dimension

Many studies and analyzes show today the importance of the communication mediatized by data processing, from a social and emotional point of view. Certain investigations show indeed that this type of communication has characteristics close to the communication in face-to-face discussion [9] and makes it possible to the users to find a "support emotional or social through gestures of empathy and division that their interlocutors express to them" [12]. It appears thus that this type of communication of group, mediatized by the TIC, constitutes a "social environment and symbolic system in which the participants can develop a feeling of membership with the group and build there a collective identity, which it is Community or social." [13].

The current public of the young people tends to support a communication "peer-to-peer", synchronous, spontaneous.

This type of communication takes the form of a dialog or a discussion of group, often “humanized” by the means of an emotional symbolic system (emoticons, police force and size of the characters employed...) or of videos means (webcam).

These forms of communication are not reserved for the SNS but are amplified, facilitated by the environment of these Community sites. This social environment supports at the same time the desire for exchanging, for communicating, for dividing, but also the communication itself. It will be always a member of the network connected to the same moment, ready to start a discussion, to comment on an event or to answer a question.

From another point of view, the membership of a network, a group or a community in general also brings a support of its “pars”, a mutual aid or simply a moral comfort which go beyond the simple answer to a question that one can find in a forum.

The constitution of bonds can be done not only on criteria connected to the formation (identical level of knowledge, similar work environment.), but also on criteria of a private nature (common tastes, leisures), ideological, cultural, etc... [17]. These bonds create a small community on which can be based the self-confidence and the support (technical, formative, moral, emotional).

This aspect is often neglected within the platforms of e-learning which however propose the panel of the traditional communications tools (chat and forum, at least). It is then noted frequently that learning them, users of these platforms, end up “finding themselves” within a SNS (Facebook for example) parallel to their space of remote formation!

“What makes bond between the members of the collective on line can be the division of common values, shared interests, ideological beliefs, cultural practices, a direction of solidarity or identification to the same identity constellation” [12]. This bond is social and emotional cement favorable to the integration of learning within a remote formation, favorable to the perpetuation of their implication perhaps making it possible to attenuate the feeling of insulation, of intellectual distress in a difficult phase of training.

### B. Various access modes to information

Danah Boyd, in a presentation concerning the access modes to information within the numerical networks, shows how much the informational environment mediatized by the TIC and circulating on these numerical networks can amplify or modify the 3 access modes to information, which are:

- Passive mode, by which the receiver is in waiting of information, transmitted by a transmitter. It is the traditional form of teaching, where the teacher (transmitting) exemption a knowledge with learning, itself on standby (with more or less of good will) of this knowledge, subjected to the rules and the forms imposed by the education system.

- The active mode, by which it is the receiver which defines here the rules and the access modes to information. The individual-receiver goes actively to the information retrieval; the transmitter being generally completely anonymous. It is the form which any search for information takes.
- Neutral mode, by which the receiver, almost in spite of him, absorbs, by osmosis, information present (and redundant) in its environment. This mode does not require any will not rule on behalf of the system transmitter-receiver. Here, it is the transmission channel which plays a big role, as much as the redundancy of information.

The credit modes is facilitated, even amplified by the TIC in general and within the Community sites in particular. Indeed, any kind of information, on any subject, is omnipresent and recurring (news, comments, information of the groups of membership, etc.) that is to say ease of access (search engines interns with the RSN on a subject, a group, etc...).

### C. Flexibility of the roles

Within a NSN, the relation between the members is always levelling, of type “peer to peer”. In this direction, any member is at the same time transmitting or producer of information, a knowledge and receiver (according to one or the other of the modes presented above).

Within the framework of the remote formation, this type of relation of equal footing is a factor favorable to certain aspects, such as:

- the mutual aid, the support enters them learning, each one being able to become transmitting of a knowledge for the others, or simply being able to answer a question and to resolve a situation of intellectual distress.
- Self-confidence. Indeed, the possibility “of binding” with others learning in the same way “level”, attenuates, even removes, a feeling of insulation or setting to the variation (by oneself), by fear of the criticism and the judgment of its pars.
- Emulation, feeling which can be moved by the requests of the “friends” (“where you are TP, I block on the last question! ”), or of the members of the group.
- The catch in hand of its own training. The feeling of freedom often tested by the members of these networks, finally tends to instigate the will to take in hand its training, to become actor of its formation [8].

It should be noted that within the framework of SNS dedicated to the training, the members are also the teachers, guides and tutors of the formation. Our study does not aim here the possible changes of roles or at least of activities of the pedagogical team. It is nevertheless an aspect very important to take into account, the proximity of the “teachers” in the “private sphere” [2] of one learning, within a SNS can generate a change of attitude on behalf of learning, a modification of the relations learn-teachers [2],

even a blocking of the positive aspects which we try to show here.

#### D. Flexibility and adaptability of the training

The tools of division of contents and groupware, whose wiki is very a good example, support a Co-construction of knowledge [17]; [10]. Such tools allow an at the same time collaborative, dynamic and controlled construction of any information. This type of practice can then be put at the service of the flexibility and the continuous evolutionarity of the formation: indeed, by the interactions of learning, their own knowledge enriches and modifies the objects of training (particularly when those relate to the ITC, which are in perpetual evolution).

This need for evolutionarity and flexibility is double:

- Adaptability of the formation: Learning can control their own training; adapt it to their level, their availability, their capacity of comprehension and acquisition of the subject, etc...
- Evolutionarity of the formation: the contents of formation grow rich by the joint contribution by new knowledge by the actors by the device. This evolution can be induced by a will of enrichment and opening of the covered subject or by the need for following the "natural" evolution of the covered subject (case of the ITC).

A study led to the university of Montpellier-3 shows that learning them "wished an increased flexibility within their course and a need for support and encouragement for a collaborative approach of the training in order to develop a feeling of membership at a community" [8].

### IV. STUDY OF SNS DEDICATED TO THE TRAINING

The goal of this work is to consider a device of remote formation on the model of these Community sites. Our ground of experimentation initially relates to a whole of university formations dedicated to the training of the computer tools, office automation and Internet. The first part of this research-action, currently in hand, consists in establishing a typology of the SNS dedicated to the training, then to study of it a sample chosen on a whole of criteria which we will define later on.

#### A. Typology of the SNS of training

There exists a multitude of sites dedicated to the formation, around a given discipline, of a level of study, or teaching practices. Among these sites, a great number can be described as "Community". We restricted our research with the sites implementing not only the functionalities of communication and expensive division of contents at Web2.0, but also and especially the concepts specific to the SNS, namely: "profile", "lists of friends", groups (nonexclusive with the SNS, certainly), and "public reviews".

Many educational SNS were conceived starting from existing platform or of scripts, making it possible to conceive

with a relative facility networks social. These "tools of design of the most popular RSN" are: Ning, kind of "mother of all networks" and eLGG: open script source allowing the design of social networks.

We could establish a typology of the SNS of training, which we subdivide in 3 categories, according to whether they are addressed only to the teachers and to trainer, or with the students, in a spirit of formation (main object of our study), or with any public.

#### 1) Sites dedicated to the teachers

The sites dedicated to the teachers and to trainers train the large majority of these SNS! Those are divided into 3 categories:

- Sites dedicated to the teaching practices within the framework of the e-learning, or to the use of the TIC in the educational practices (apprendre2.0 for example)
- Sites dedicated to the teachers and to trainers of a precise geographical place (country, area, university)
- Sites dedicated to the educational practices around a given discipline.

#### 2) Sites of formation

These SNS are dedicated to the students and to the teachers, in an objective of formation or ones complement a formation given. There too, 3 categories appear:

- Sites dedicated to an education level: a school level or an university.
- Sites directed towards a discipline (example: FFL); some are specific to a level or a given establishment.
- Sites conceived by a teacher for his pupils [17]

It should be noted that many of these sites are with private access. The others enabled us to observe some practical, in particular the wire of discussion, the groups created and the tackled subjects. It is mainly about support dedicated to the formation, in the form of division of contents (documents multimedia), of comments, discussion forums and tickets of blogs.

#### 3) Sites open to any public

Those propose meetings, debates, discussions, explanations at a community gathering generally teaching, learning (student, pupils) and parents, on the topics related to the formation: methods, contents, forms of training, support, etc...

There still, these sites relate to either a given discipline, or a school or a level of study, or finally the educational processes in general.

#### B. Observations

Our wish would have been to be able to study one or more SNS of training answering the whole of the following criteria:

- Dedicated to the students, from a point of view of formation or additional training,
- Of university level,
- Dedicated to the training of the ITC,
- In French language.

No site answered the whole of these criteria, our choice thus went on a sample of sites answering at least the first 2 criteria (dedicated to the students of university level). Some were rejected on other criteria, not envisaged initially, such as the frequentation of the site (many members, to exchanges on the forums, go back from the last posted tickets, current events, etc...). Finally the majority of these social networks associated with a university (mainly American) are with private access.

It should be noted that more and more of American universities and colleges use the existing social networks such as MySpace and Facebook, by the creation and the animation of groups, the advertisement of events, etc...

Our study was thus centred on 3 sites of formation to the languages:

- Educational social network for the teachers and the students of French, Foreign language (FFL)
- Social network of French training, as a foreign language, for the foreign students of Lille (university of Lille 1),
- Total of training and practical network of foreign languages ("italki"),

Like 3 American sites, on scientific and educational disciplines:

- Social network for the students and former science students of the education of the university of North Carolina (College of Education - NC State University)
- Social network dedicated to the students in zoology of Benton High School
- Network of educational resources for the study of water

We observed practice developed on these sites, mainly concerning:

- The dynamics of the site (activity of the members on the site, frequency of the exchanges, current events, events,...)
- Educational aspects (standard of contents, exchanges on forum, blogs, resources suggested, flow RSS, "teaching" practices suggested,...)
- Relations of mutual aid and support between the student members.

Our observations it are limited to these aspects, not being able to evaluate the contents, to take part in the well-sure whole of the groups and the discussions and to enter in relation to the whole of the members!

The results of these observations highlight that the sites relating to the training of the languages show a great activity through the frequency of the posted tickets, the discussions, etc., these are networks of significant size (between 200 and more than 500 members, between 250 and more than 500 tickets, a great multi-media number of resources and bonds), for which the social aspect and relational is strongly requested. This is found through the forums and the tickets, whose subjects exceed the framework of the training of a foreign language. The site "italki" proposes as for him to connect the novel member with a teacher, like with the other

members in an objective of practice of the selected foreign language.

On the whole of the sites observed, we noted that little information enriches the profiles, especially concerning the member-students.

Another report, general on the whole of the sites observed, relates to the facility of communication and exchange around a subject, between the student and teaching members. The "distance" between students and teachers, who can be perceived like "hierarchical" in a traditional formation, is extremely attenuated, even removed here: each one expresses its opinion, its questions and shares its resources without apparent inhibition. This report lets appear a kind of "levelling of the roles" and not of the changes as considered initially.

## V. CONCLUSION

This first study highlights the youth of these NSN dedicated to the training; the sites (open and answering our criteria) showing a certain maturity and an experiment are mainly those dedicated to the training of the languages. The relations are woven either on the basis of close objective of training (native tongue, language of training, level of knowledge), or around a subject of shared interest.

In the majority of these sites (except perhaps "italki"), one notices a great activity around the questions of educational practices, pedagogy, contribution of the ITC in these teaching practices, etc... These discussions and exchanges take place between the teaching or formative members of course.

We currently remain on our initial questioning as for the contribution of these concepts of "networking" in an objective of flexibility and adaptation of the formation, mainly within the framework of the training of a "object" in perpetual evolution, such as the ITC. A second phase of this project should enable us to foresee brief replies.

We remain however convinced of the interest of these "numerical" social environments, within the framework of the remote formation, like factor allowing to mitigate the effects of insulation and communication difficulty. "They are not the networks in themselves which are new, it is the part which they play which for all more important than it forever is today been in the past. And if we see a technological revolution there, it is simply because in fact new technologies allowed their setting the great day [2].

## REFERENCES

- [1] Akrich, M. (1993), "Les formes de la médiation technique", Réseaux, n°60, Juillet-Août 1993, p.90.
- [2] Boyd, D. (2007). "Social Network Sites: Public, Private, or What?", Knowledge Tree 13, May.
- [3] Boyd, D., Ellison, N. (2007), « Social Network Sites: Definition, History, and Scholarship », Journal of Computer-Mediated Communication 13, n°1.
- [4] Ellison, N., Lampe, C., Steinfeld, C. (2009), "Social Network Sites and Society : Current Trends and Future Possibilities", Interactions, January-February 2009.

- [5] Fondeur, Y., Lhermitte, F. (2006), « Réseaux sociaux numériques et marché du travail », Revue de l'IRES, n°52, 2006-3, pp-102-131.
- [6] Granovetter, M. (1973), "The Strength of Weak Ties", American Journal of Sociology, vol.78, n°6, pp1360-1380.
- [7] Panckhurst, R., March, D. (2008), "REEL : réseaux d'échanges pédagogiques en eLearning. Améliorer la qualité de l'apprentissage en favorisant l'autonomie des apprenants », Actes du 25e Congrès de l'AIPU, « Le défi de la qualité dans l'enseignement supérieur : vers un changement de paradigme », Montpellier, Mai 2008.
- [8] Papadakis, M. (2003), People can create a sense of community in Cyberspace, SRI International, Arlington, VA (USA), disponible en ligne : [www.sri.com/policy/csted/reports/sandt/it/Papadakis\\_IT\\_virtual\\_communities\\_issue\\_brief.pdf](http://www.sri.com/policy/csted/reports/sandt/it/Papadakis_IT_virtual_communities_issue_brief.pdf)
- [9] Parker, K., Chao, J. (2007), " Wiki as a Teaching Tool", Interdisciplinary Journal of Knowledge and Learning Objects Volume 3, 2007.
- [10] Peyrelong, M-F., Follet, M. (2006), "Des souris et des groupes : évaluer le travail collaboratif à l'aune de l'utilisation de l'outil?", Colloque Tice Méditerranée 2006 : L'humain dans la formation à distance : la problématique de l'évaluation. Gênes, ISDM.
- [11] Proulx, S. (2004), « Les communautés virtuelles construisent-elles du lien social ? », communication, Colloque international «L'organisation média. Dispositifs médiatiques, sémiotiques et de médiations de l'organisation », Université Jean-Moulin, Lyon, 19-20 novembre 2004.
- [12] Proulx, S. Sénécal, M., Poissant, L. (2007), Communautés virtuelles: penser et agir en réseau. Presses Université Laval, 2007.
- [13] Ryberg, T., Christiansen, E. (2008). « Community and social network sites as Technology Enhanced Learning Environments », Technology, Pedagogy and Education, Volume 17, Issue 3, October 2008 , pp. 207 – 219.
- [14] Sidir, M. (2008), « E-learning face aux collectifs d'apprenants : de la dévolution didactique à la régulation du dispositif ? », Journal of e-learning and Knowledge society, Vol-4, n°2, june 2008, pp.206-216).
- [15] Stutzman, F. (2006), « An evaluation of identity-sharing behavior in social network communities », Journal of the International Digital Media and Arts Association, 3 (1), pp.10-18.
- [16] Tourné, S., Agostinelli, S. (2007) "Usages des wikis et enjeux de la co-construction collective des connaissances via les TIC", in: Meimaris Michael and Gouscos Dimitris (Ed.), Challenges and Uses of Information and Communication Technologies, Gutenberg, vol. 1, pp. 179-186, 2007.
- [17] Vieira, L., Rouissi, S., Piède-Wojciechowski, N. (2007), « Vers une mise en réseau des connaissances dans un contexte de e-learning. Exemple d'un projet Minerva », Skhôle, hors série 2, 33-40.