



*Review*

# Let us teach them the way they learn: A vision on using social networking and mobiles in teaching and learning

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Abstract

Today's students grow up with developing technology, access to internet anytime and anywhere being available. In fact, they are citizens of the 21st century who read, communicate, collaborate, socialize, work, explore, and learn with personal technologies. They are addicts of social networking sites, follow streams of information from web page to web page, and use technology in almost every aspect of their lives. Marc Prensky coined the term "Digital Natives" describing 21st century learners. They are the native speakers of the digital age and developing technology. They are fluent in using computers, internet, mobile phones, messaging and console gaming. However, schools are failing to capitalize on the talents and interests of this collaborative, resourceful, and innovative generation of thinkers by bringing them the tools that they are already familiar with and use them for their academic achievement. The purpose of this paper is to a) provide an argument on the importance of using technology and social networking tools in teaching and learning, (b) suggesting means for using such tools, and (c) highlighting a success story from Lebanon.

**Keywords:** ICT, teaching and learning, social networking, 21<sup>st</sup> century schools.

## INTRODUCTION

In the year 2001, Marc Prensky made a point that is deeply felt these days: Our students have changed radically. Today's students are no longer the people our educational system was designed to teach.

In fact, today's students have been brought up in an interactive world, in fact typical teenagers are likely to study with five or more software programs open on their laptop computer, while they listen to their digital personal music player, with a television providing a background to their activities. The current trend to globalization and the growing influence of technology on our lives entail that today's students need to acquire different and evolving skill sets to cope and thrive in this changing society. Technology is growing very fast, in importance, in every aspect of society; however, schools are not getting able to cope with this augmentation. Students today are much more likely to parallel process and multitask, to use instant messaging and work in networks, to expect to receive information very quickly, and to prefer instant gratification and constant praise. They think and process

information fundamentally differently from their predecessors (Prensky, 2001). On the other hand, their teachers are more likely to have achieved in their lives through logical step-by-step approaches to learning, in which all members of their group were taught at the same pace. Schools are still places where every student knows the same things, prepared for remembering and regurgitating that information for one-off examinations, only to forget it later on as soon as they leave the room.

Thus, there is a disconnection between schools and student needs. In fact, students need to enjoy a personalized approach to learning and how to learn as opposed to the acquisition of parcels of knowledge (Hargreaves, 2004). In our digital world, our young people increasingly have the opportunity to be engaged. They are able to select and edit their personal world of music, converse with peers around the world, view multiple television channels and access billions of pages of information from their bedrooms. This change in communication access and blurring of boundaries requires newer approaches to individualized learning. A uniform way of teaching and testing cannot work anymore as people are getting more and more different (Gardner, 1993). Dewey (1916) makes it bluntly by

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saying that if we teach today as we taught yesterday, then we would be robbing our students of tomorrow. Toffler (1970) made his famous prediction concerning teaching and learning in the year 2000 and beyond where he explained that “the illiterate of the year 2000 will not be the individual who cannot read and write, but the one who cannot learn, unlearn and relearn” (p.19). Hence new approaches to the acquisition of learning are needed in schools and patently these approaches should integrate the tools mostly used, liked and understood by students: technology.

### **Social Networking and e-Learning Designs**

Web 2.0, Facebook, Second Life - have taken the world into a totally new dimension. Blogs, wikis, RSS feeds, del.icio.us, LinkedIn, Flickr, Library Thing, Ning, My Space, Twitter and Jaiku constitute the basic literacy of young learners. It is a tsunami-like flood of innovation tools and services that foster new methods of collaboration and exchange. The importance of all social networking tools has been attributed by McLeod (2007) not to “search” but rather to “share”. By sharing, individuals often build communities in which they meet each other, make friends, share information, interests, and activities.

Kaplan and Haenlein (2010) define social media as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of user-generated content.” Web 2.0 technologies are being used to present new opportunities for developing and supporting diverse online learning environments and enhancing interactivity, participation, and feedback between students, student peer groups, and teachers (Harrison and Thomas, 2009).

Reynard (2009) stated that instructors can engage students to construct knowledge within social networking environment if they do the following:

- “Maintain a constant presence
- Use a variety of supporting tools to process information such as blogs, wikis, etc.
- Actively synthesize broadly scoped ideas into workable focus areas
- Continue to engage students” (Reynard, 2009)

Koohang et al., (2009) presented a learner-centered model for e-learning design based on constructivism learning theory. The model encourages learners to actively construct new knowledge. This model includes two categories - the learning design elements and the learning assessment elements. The learning design elements consist of fundamental design elements and collaborative design element. The fundamental design elements are essential for designing learning activities. The collaborative design elements are essential for collaboration and constructing new knowledge. The model encourages learners to actively construct new

knowledge. This is accomplished in three stages (figure 1):

As can be seen from Koohang et al.’s model, constructing new knowledge is a systemic approach that requires a controlled environment with careful activity/assignment design that includes the fundamental design of constructivism and the design of collaboration with on-going self, team, and instructor assessments.

### **Benefits of Social Learning**

To consider the reasons social learning is beneficial to formal learning, it is useful to review what learning is. In fact, goals of learning are twofold: retention and transfer. Learners should retain information from a learning experience until the time they have to perform. Learners should then be able to transfer that information to all appropriate situations as need be.

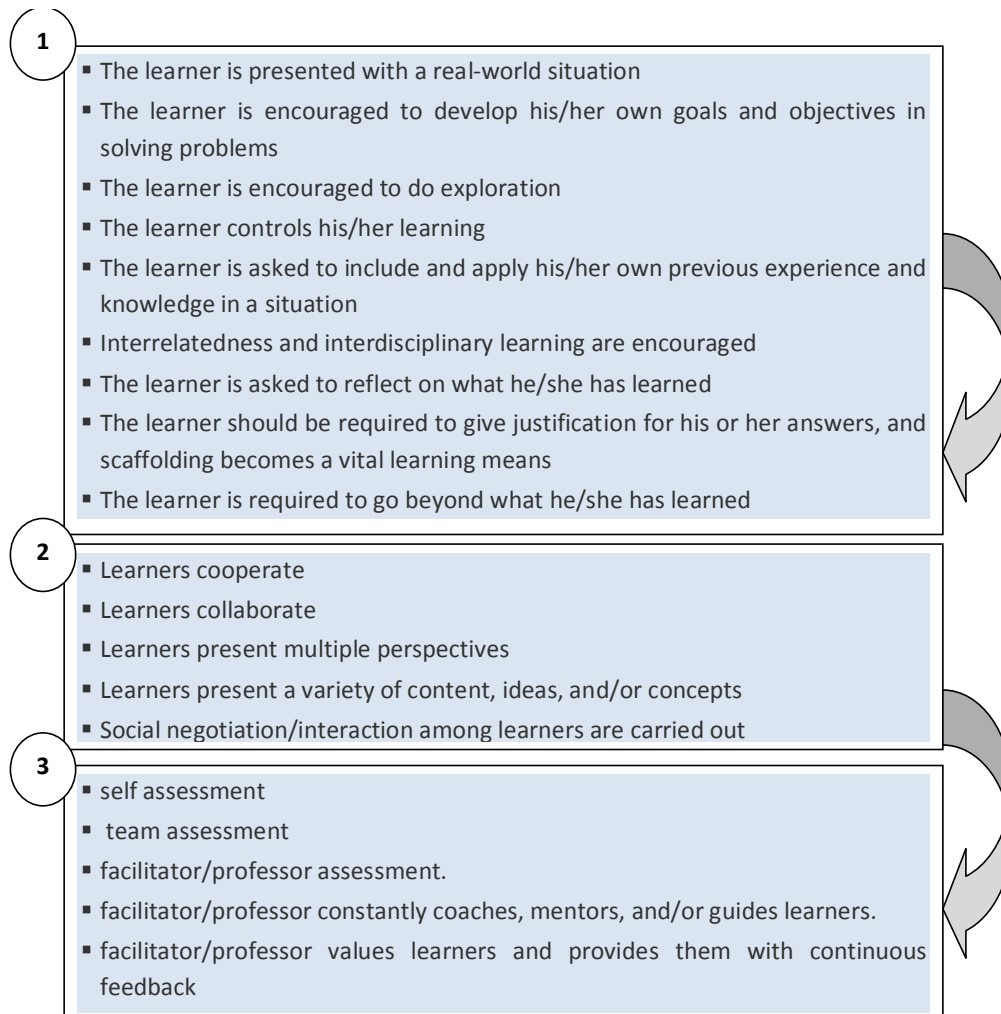
Given the ways our brains work, tools to hand include reactivation of the relevant material, elaboration of the learning, and application to particular situations. When the brain faces a problem, the context triggers other relevant associations. The more associations to information that’s relevant, the more likely the brain brings useful frameworks to bear. Consequently, there is a need to make associations between understanding, knowledge, and contexts. Moreover, it is a rule of thumb that social interaction facilitates learning. That’s why schools have been founded. In fact, working together helps unearth different views of what’s happening, and allows negotiation of shared understanding. It’s about dealing with misconceptions, ambiguity, and learning together. When done well, learners work together to share their understandings, and to develop their ability to apply it to meaningful problems.

Several meaningful goals accelerate learning, including connecting conceptual knowledge to personal experience, elaborating conceptual knowledge to other ideas, and applying that knowledge to solve problems. Available social learning tools do just that. Table (1) illustrates this point.

The following section presents an example on how one technological tool (mobile/cell phones) may be used to enhance learning, yet is not being utilized in schools.

### **Mobiles and Learning**

One and a half billion people, all over the world, are walking around with powerful computers in their pockets and purses. The fact is they often do not realize it, because they call them something else: cell phones or mobiles. There are many different kinds of learning and many processes that people use to learn, but among the most frequent, time-tested, and effective of these are listening, observing, imitating, questioning, reflecting,



**Figure 1.** Koohang et al. (2009) a learner-centered model for e-learning design

**Table 1.** Benefits of the Adoption of Social Networking into Curricula

| <b>Adoption of Social Networking into Curricula</b>  |
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| <p><b>1. Offers a less restrictive emulation of the traditional training experience.</b> Social networks reflect the relationships traditionally shared in a learning situation, between student and trainer/educators, between one another, between the students and the material itself. This is much more conducive to social exchange and interaction than email or remote learning systems have been in the past.</p>   |
| <p><b>2. Provides a familiar platform for many learners to operate within.</b> As Social Networks like Facebook and MySpace grow in popularity, that paradigm is familiar to users and becomes less daunting when applied to a learning situation. Similar to the way many early iterations of software used the conventions standardized by Microsoft in its Windows operating system for their interfaces. Users were familiar with their function and could understand their meaning transferred.</p> |
| <p><b>3. Supplies a support structure independent of authority.</b> The “real world” relationships reflect into the online social network and allow users to support each other with or without the input from trainers/educators. Those individuals who would hesitate to approach an instructor for help, may find that the social network provides the kind of support they need, whether from peers or resources tailored to specific learning styles (i.e. video, audio, illustrations).</p>        |
| <p><b>4. Allows for exchange of media to accommodate all learner types.</b> While this is true for most digital learning support systems, it is especially true when presented in a social network that includes a wide range of learners. The freedom to use the medium most appropriate for each user’s learning style will enhance the success of the curriculum.</p>   |

trying, estimating, predicting, speculating, and practicing. All of these learning processes can be supported through cell phones.

Cell phones or mobiles are hotbeds of feature innovation—the major features being voice, short messaging service (SMS), graphics, user-controlled operating systems, downloadable, browsers, camera functions (still and video), and geopositioning, with new features such as fingerprint readers, sensors, and voice recognition being added every day. In addition, optional hardware and software accessories are available as both input mechanisms (e.g., thumb keyboards and styli) and optional output systems (e.g., plug-in screens and headphones).

In Japan, you can dial a number on your cell for short English lessons from ALC Press's Pocket Eijiro (McNicol 2004) or Japanese lessons from Enfour's Tango Town. In China, the British Broadcasting Corporation (BBC) and others are providing cell phone English-language training (BBC Press Office 2005). One company, MIG China Ltd. (working with First International Digital), is even subtitled pop songs with their lyrics, highlighting each word as it is sung (First International Digital 2004). Companies such as Ectaco provide language games via mobile phone "flash cards," as well as dictionary and phrase book software to aid in foreign language proficiency. And the Canadian corporation Go Test Go has developed English vocabulary testing software. Other types of voice-only learning applications exist and are growing in popularity. In Concord, Massachusetts, you can use a cell phone for guided tours of Minute Man National Historical Park, where the "shot heard 'round the world" was fired. As part of Ultralab's eVIVA project, Anglia Polytechnic University (in the United Kingdom) has experimented successfully with using cell phones for exams, with the students' voice prints authenticating that they are the ones being tested (BBC News 2003; McGuire, Roberts, and Moss 2004).

As to short text messaging (SMS), in schools, it can be used to conduct pop quizzes or spelling or math tests, to poll students' opinions, to make learners aware of current events for class discussion (e.g., with messages from Cable News Network's Breaking News), and even to tutor students. Outside of school, test preparation companies such as The Princeton Review, Kaplan, and Go Test Go are already offering cell-phone-delivered test-preparation questions (for the Scholastic Achievement Test and others) at specific user-preferred times. Educators easily could use SMS technology to provide cell phone learners, individually and in competitive or collaborative groups, with data and clues in real time for analysis, diagnosis, and response, whether in a historical, literary, political, scientific, medical, or machine-maintenance context.

On the other hand, the use of graphics makes mobiles extremely supporting to learning and teaching. In fact, with mobiles supporting graphics, text can be accompanied by pictures and animation (and, of course, sound—it is a phone). Many schools across the globe are

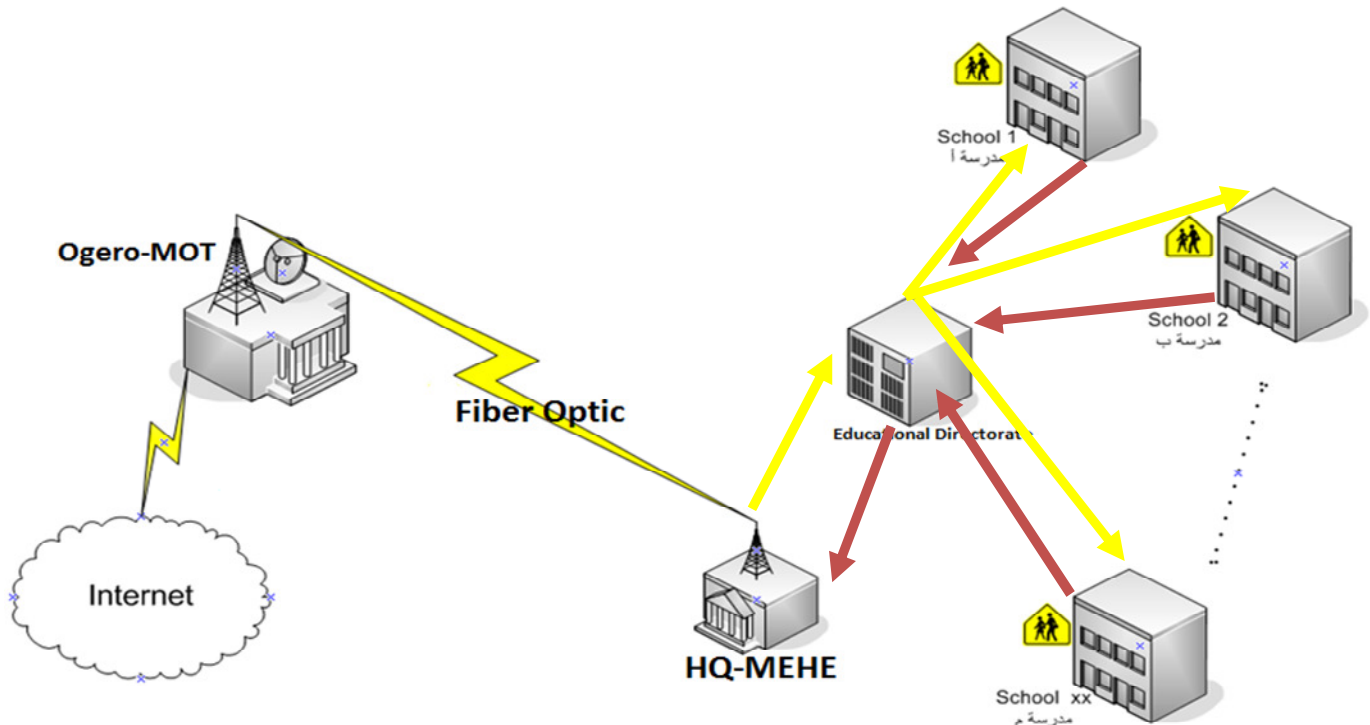
currently using computers and handheld devices for animations in subjects such as anatomy and forensics. Cell phones can replace these handheld devices, especially given that many of the animations are in Flash, which currently runs on many cell phones and eventually will run on all of them. Macromedia already offers what it calls "Flash Lite" applications, including one for learning sign language. The Chemical Abstracts Service serves a database of molecule images that can be accessed via cell phone.

Now that cell phones have memories (or memory card slots) that accept downloaded programs and content, entire new learning worlds have opened up. Cell phone users can access versions of the same kinds of tools and teaching programs available on personal computers, and, given that the phones are communications devices, use the tools for collaboration in new and interesting ways. All manner of applications combining elements of voice, text, graphics, and even specially designed spreadsheets and word processors can be downloaded to phones, with additional content added as needed. Other tools currently available for download include browsers, fax senders, programming languages, and even an application that gives access to desktop computers.

Furthermore, Internet browsers are now being built into a growing number of cell phones, especially those that use the faster third-generation protocol (3G). Sites and options designed specifically for Web-enabled cell phones are becoming more and more numerous. Having a browser in the cell phone puts a dictionary, thesaurus, and encyclopedia into the hands of every student. It gives them instant access to Google and other text search engines, turning their cell phones into research tools. For example, students studying nature, architecture, art, or design can search for images on the Web that match what they find in life in order to understand their properties, style, and form.

Other uses of mobile phones include the use of cameras, especially that new phones are being equipped with high resolution cameras. These provide possible tools for scientific data collection, documentation, and visual journalism, allowing students to gather evidence, collect and classify images, and follow progressions over time. Creative cell phone photos can inspire students' creative writing via caption or story contests. Phones can be placed in various places and operated remotely, allowing observations that would be impossible in person. Students can literally see what is going on around the world, including, potentially, learning activities in the classrooms of other countries.

The case of mobile phones has been illustrated above to display what is being missed in classrooms when the most available technologies for students are not being used. There many other tools that can contribute to students' learning very efficiently and are being overlooked by educators. It is worth thinking of making use of what students have, like and understand in order



**Figure 2.** Schematic Representation of the Lebanese National Network (LebNEN)

to make them learn better and ensure that they become life-long learners. The following section presents a success story where social networking has been used among 50 public schools in Lebanon.

### **A Model Incorporating Social Networking: Lebanese National Education Network (LebNEN)**

Lebanese National Education Network (LebNEN-represented in figure 2), an initiative of the Lebanese Ministry of Education and Higher Education (MEHE) and financed by the Hariri Foundation for Sustainable Human Development (HFSHD) and Cisco Systems Inc., offers a unique case of using technology within public schooling. The primary goal of LebNEN is the improvement of the quality of education by rising to the level of the challenges of the 21<sup>st</sup> century.

At its first stage, LebNEN connected 50 public high schools across Lebanon. These schools were equipped with the latest technologies tools of IT such as switches, routers, access points and Tele presence machines to allow the school, on one hand, to communicate easily with the central administration at MEHE. On the other hand, it fosters communication between schools and thus share expertise and benefit from each other.

The benefits of the LebNEN resides in the opportunities that it gives to public schools so as to download and upload data from the Data center at the MEHE furthering

schools to perform better and hence offer quality education. The central administration at MEHE which has been linked to the internet via Fiber Optics Technology provides free internet bandwidth to each of the LebNEN schools. It also links them to the different educational directorates existing in different regions of the Lebanese territory and thus supporting the use of different ICT tools inside classrooms.

Consequently, through LebNEN schools have been supported in their daily management tasks by facilitating contacts between schools and various departments of the central administration at MEHE. This makes the flow of data easier such as the dissemination of general decrees, enquiries of school principals etc... From another perspective, the use of different technologies of LebNEN centralizes data and empowers MEHE to govern and filter the content that might be spread amongst schools via the network. This also make it easier for MEHE to fine tune the different initiatives of educational technology existing within it, provide chances to formulate unified e-curricula, boost teachers to use different ICT tools to disseminate this content and encourage students to use it.

At the micro-level, students use regular cameras, mobile cameras or Cisco Flip-cameras in order to capture photos and movies. Lots and lots of science video clips have been prepared by students in Biology, Physics or Chemistry classes. These movies are being shared via LebNEN between students and teachers as well. In

languages, students videoconference and often conduct competitions among each other. Podcasts have been allowed between schools and there are lots of chances for them to catch up with concepts they would need to learn more about.

## CONCLUSION

Technology as a tool can enable and facilitate learning. Technology does not drive learning. The use of technology in the process of learning is based on the goals and objectives that support learning. Social media technology can lend themselves as tools to improve learning, but not all social media are suitable enough to be used as tools to aid learning. Social networking technology is still relatively new in education and is challenging existing thinking and metaphors. There is not a mountain of evidence that social media has a robust impact on student learning and more importantly on their achievement. Yet, anecdotally, there are success stories slowly being uncovered everyday informing that the effective integration of social networking into curricula could be of great use. There are lots of learning opportunities made available through the use of these tools. Social media tools such as wikis, blogs, podcasting; video sharing, image sharing, voice conferencing, and video conferencing are powerful tools that can lend them to learning. Each of these tools must serve a particular need in the learning process. They should not be used if they don't have a purpose in the learning process. The use of these tools to facilitate learning must be in a distributed, controlled, and managed learning environment such as a content management system. Instead of wasting energy fighting students' preferred delivery system, it is worth working to

ensure that students extract maximum understanding and benefit from the vast amounts of technology-based learning of which they will, no doubt, soon take advantage.

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