

# All I need to know about Twitter in Education I learned in Kindergarten<sup>1</sup>

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## Abstract.

*Share everything.*

*Play fair.*

*Don't hit people.*

*Put things back where you found them.*

*Clean up your own mess.*

*Don't take things that aren't yours.*

*Say you're sorry when you hurt somebody.*

*Wash your hands before you eat.*

*Flush.*

*Warm cookies and cold milk are good for you.*

*Live a balanced life – learn some and think some and draw and paint and sing  
and dance and play and work every day some.*

*Take a nap every afternoon.*

*When you go out into the world, watch out for traffic, hold hands and stick  
together.*

*Be aware of wonder.*

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## 1 Introduction

The way microblogging has changed how people are communicating, cooperating and learning online is comparable to the introduction of phones and e-mail. As McGinoney points out, Twitter<sup>2</sup> is the most commonly used service for microblogging and the “fastest growing site in [the] Member Communities category” [1]. In 2009

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<sup>1</sup> This paper is based on Robert Fulghum's 1988 book *All I Really Need to Know I Learned in Kindergarten*

<sup>2</sup> <http://twitter.com>

Twitter grew by nearly 2000% in terms of visitors according to a report by Nielsen<sup>3</sup>. These statistics indicate that microblogging in general and Twitter in particular not only added a new service to the online communication portfolio, they reshaped communication as a whole.

Templeton [2] characterizes microblogging as *a small-scale form of blogging, generally made up of short, succinct messages, used by both consumers and businesses to share news, post status updates and carry on conversations* and Owyang [3] describes the difference between blogs and microblogs as follows: [...] *long form blog posts like this seem so much slower and plodding compared to how quickly information can come and go in Twitter. [...] Information within Microblogging communities [...] encourage[s] rapid word of mouth – of both positive and negative content.*

In Twitter you share messages – so-called Tweets – of at most 140 characters with a group of people. Twitter allows for the sending of public and private messages that can be directed to one or more persons (identified by the @ sign). Everyone interested in your messages can start to follow your stream of tweets and you can decide to follow them in return. Twitter users are accomplishing a great variety of tasks on the service including sharing news, ideas and resources, asking questions and helping others, collaborating on tasks and conceiving new ways of making the service more useful for them. Through such processes, the Twitter community invented the use of the # sign for tagging their content and thus making Tweets easier to find and aggregate.

Courtesy of the open Twitter API there are countless numbers of Twitter clients that make sending and receiving tweets from any location a delight. Features such as geo-location, real-time streaming of tweets and lists of Tweeples<sup>4</sup> in specific domains make Twitter a serious component of today's learning and teaching landscape. In the following section we introduce successful examples of how Twitter has been applied to some diverse learning scenarios.

## **2 Twitter in Education: A success story**

Twitter dominates the news with steady new features, marketing success stories and spreading news at the speed of light. In recent years open-minded teachers in primary, secondary and tertiary education have employed Twitter in their classes and found meaningful applications for the tool. The following sections describe selected use cases and their specific application of Twitter.

### **2.1 Twitter for language learning**

Ullrich et al. [4] describe one of the first uses of microblogging for language learning performed at the distance University of Shanghai Jiao Tong University. The main research question of the experiment was *“how to increase the active participation of*

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<sup>3</sup> <http://www.nielsen.com>

<sup>4</sup> One possible name for people who use Twitter.

*the students in oral communication courses for English as a second language*" ([4], p.710). In the eastern educational system teaching typically means the transmission of knowledge from the teacher to the students rather than the active construction of own knowledge through active participation [5]. Thus, the active practicing of learned tenors outside the classes often did not take place. During the lectures the students often were to shy or faced the lack of vocabulary as they were talking to their teachers.

The authors introduced Twitter to the classes and prompted the students to create their own accounts and to follow each other. With this setup each student received all the tweets from their fellow students. The students were told to post at least seven tweets per week and to read the tweets from the other students. The students did not find the time to practice English before the experiment, but they had the free choice of time for doing so with Twitter. Here they also could prepare their messages and replies sending out. The authors observed the communication of the community and ran a final questionnaire with the participants showing that the introduction of web 2.0 services indeed stimulated the active participation of students. 94% of the students stated that they had the impression their English had improved with the help of Twitter. The students encouraged each other to participate in the online activities and they even had English conversations with each other. Half of the students even felt comfortable enough to connect and converse with external Twitter users (e.g. native speakers).

## **2.2 Motivate students for in-class discussions**

In large classes the variety of teaching options is often limited to some kind of lecturing, which is not the optimum teaching method. Smith and Rankin describe an experiment with Twitter in a basic history course at the U.T. Dallas [6,7]. Thinking about ways to "*incorporate more student-centered learning techniques [... and ...] a more inte- grated classroom*" the professor came across Twitter and integrated it into the class activities so that the students would have more opportunities to participate. Two of the three weekly meetings remained as regular lectures covering basic terms and concepts of the class. The third meeting was declared as "Twitter experiment".

There was a Twitter account for the class itself and the professor asked all students to create an account themselves and to follow each other. Prior to the Twitter meeting students were required to complete a reading assignment, given some reading suggestions and questions. During the Twitter meeting the students were given an open-note quiz based on the readings and prior questions. After this they commenced their discussions using Twitter. The professor gave some defined hashtags to the students (e.g. one different hashtag per week) that the students should use and what it made easier to aggregate the weekly tweets.

The discussions on the readings were very constructive and the professor used Tweetdeck<sup>5</sup> to project the discussion onto a large screen. In Tweetdeck she created different columns for the different hashtags and thus made it easy to follow the

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<sup>5</sup> <http://www.tweetdeck.com/> is a Twitter client that allows creating columns for specific views on your Twitter channel.

ongoing discussions. During the Twitter experiment she tried various discussion strategies and came up with the finding that small group discussion was the most fruitful way to stimulate constructive discussions and to generate the most interesting ideas. During the last 5 to 10 minutes of each Twitter meeting the class came back together and worked up the discussions. During this phase the class had verbal discussions and could explain some of their ideas in more detail. The professor even marked single tweets as favourites to indicate tweets to the students, which had the potential to be helpful to them in their exams.

The Twitter experiment at the U.T. Dallas clearly demonstrates how Twitter could be used as an enhancement to traditional discussion formats and to boost student participation in otherwise pure lecture- style classes. Moreover, David Parry has highlighted some interesting points with regard to Twitter in the classroom: *“It was the single thing that changed the classroom dynamics more than anything I’ve ever done teaching”* [8,9].

### **2.3 Facilitate process-oriented learning**

A further research study by Ebner et al. pointed out that microblogging can also be used to enhance process-oriented learning [10]. Students of the University of Applied Sciences are required to use the open-source tool Laconica<sup>6</sup> to report their activities over a defined time period. The students should share, collect and discuss the given lecture tasks and provide their thoughts directly online. Instead of weekly activities reports, Microblogging affords the ability to display the learning results and outcomes just in time.

The study pointed out that students used the application very high frequently. On an average of about 4,5 posts per student every day Microblogging were used. It was shown that the tool was used mainly for communication purposes, but in new and very exciting ways. Learners wrote not only about course-related topics, but also about their feelings, thoughts and interests. As a result of the research work it is amazing that if such a tool is given completely to students for their own use within the very short lifetime of microblogging. On Twitter students talked about just about anything in addition to course related topics.

In other words, the obviously large information stream leads to a new way of managing information, a new method of communication and a new way to self-document students’ learning behaviours.

Given these success stories we will next review some Twitter principles in the context of Fulghum’s poem.

#### **Share everything.**

Although the question tweets should answer used to be “What are you doing?” and besides the recent change of that question to “What’s happening”, Twitter is all about

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<sup>6</sup> StatusNet (formerly known as Laconica) is an open source microblogging server aiming to be an alternative to Twitter. See <http://status.net> for more detailed information about StatusNet.

sharing. Java et al. [11] did an analysis of Twitter users and the content they send and identified four main types of Twitter users: networker, chatter, reporter and sharer. People are sharing all kinds of data on Twitter including local or global news, links to interesting websites, new blog posts, readings, films or places they go to. Another part of the community uploads videos, pictures or audio recordings and shares them with the public. There are even Twitter clients like blURL<sup>7</sup> that helps users to separate tweets containing links from the rest of the data stream.

### **Play fair.**

Don't plagiarise other people's ideas or resources. Do acknowledge your sources when you want to reuse (in the case of Twitter retweet) useful, funny or valuable tweets. See the section *Put things back where you found them* for more information on the retweet issue.

### **Don't hit people.**

Twitter is at the speed of light. Whatever you post will be visible to all members of your community so take care what you say. There are some golden rules that prevent committing a faux pas (cf. Gordon [12]).

Whenever you receive a direct message from someone, keep the conversation private. If you want to re-tweet that message ask for permission to do so. Twitter is no instant messaging between two people, so don't post such chatter publicly and rather use the private mode. Breaching this rule is similar to including other recipients as 'copied in' to a private e-mail your respond to.

Only tweet things you would speak out loud if there would not been a Twitter channel. That means especially to be nice during presentations of others and to not abuse someone. If you have personal remarks use the private mode or displace that conversation to face-to-face.

If you rename your account name for any reason, leave a farewell note and state your new account name. Even if you take all your tweets, followers and followings with you, people can get confused if they no longer reach you in direct messages or if replies to the old account name don't reach you.

In many educational settings students will be asked to post a certain number of tweets every day/week. Tell your students to no send messages just for the sake of sending out a message. Every tweet should be relevant to the topic of the class or to tighten the class community.

### **Put things back where you found them.**

Besides sharing links, addressing users directly with the usage of the @ sign and the tagging messages with the # sign, retweeting is another common practice on Twitter.

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<sup>7</sup> <http://blurl.me>

A retweet (or RT) can be compared to the forward of an e-mail where parts of the message can be changed, exchanged or annotated. Users are using the retweet mechanism to share tweets from other users with their followers and often to add a personal note on the topic. In either case people are promoting the retweeted user to their network, often resulting in new followers for the retweeted one and thus a larger informal network. Unlike the @ mentions and the tagging, retweeting has no common convention of how to do it. Boyd, Golder, and Lotan [2] found the following syntax is used to mark Retweets: 'RT: @', 'retweeting @', 'retweet @', '(via @)', 'RT (via @)', 'thx @', 'HT @', 'r @', and '👍@'. The different syntax used shows the complexity of the retweeting task. Boyd et al. [13] even found that there exist different retweeter roles. Twitter itself incorporated a highly discussed retweet-feature to the service in late 2009.

### **Clean up your own mess.**

Hashtags are an invention of the Twitter community. As early as August 2007 Chris Messina recommended the use of the # sign for identifying groups or communities, brands and topics on Twitter [14]. Shortly after their introduction hashtags were an essential part of the Twitter world. Hashtags can order the enormous amount of data going through the channel if you use them consistently. Try to define a hashtag before the courses start and tell your students about it. The consistent use of hashtags allows various aggregation and filter methods for all communication going on in the Twitter channel.

### **Don't take things too seriously.**

Microblogging is a tool, which can be used by anyone. There is simply no guarantee who is behind an account; furthermore also robots are providing messages automatically on Twitter. With other words it must thought about how can I trust written tweets. Are tweets from an account of an avatar from anywhere of this world worth to be trusted? Is an account simply that what it stands for? Are provided information or links simply false? Especially, because of the high amount of information which is overcoming every Twitter user it becomes harder and harder to prove them, to check by using different resources.

In general this leads to the assumption that the e-literacy of the society must be improved by pointing out that every tweet can be as false as it can be true. Social networks seem to be dangerous if we begin to trust followers and friends without any doubt and without knowing them personally.

### **Say you're sorry when you hurt somebody.**

As Twitter is an open forum, your words carry weight. Generally, in the heat of the moment it is easy to react to someone else's tweets emotionally. However, we must all be aware that the reduced social cues in solely text-based communication may lead

to misunderstandings. The use of emoticons, or other forms of enhanced text can often reduce this misunderstanding. If – for any reason – you have offended someone, be quick to apologise, or retract your comments with good humour. This goes a long way to mending the fences. Ultimately however, if you offend someone, it is more likely they will simply ‘unfollow’ you rather than confront you.

### **Wash your hands of scepticism before you start.**

People new to Twitter normally are very sceptical towards the tool. Furthermore, young people know very little about Twitter before they use it during formalised education. This is no doubt due to their habituation in the use of other more closed social networking services such as Bebo<sup>8</sup>, Myspace<sup>9</sup> and Facebook<sup>10</sup>, where message exchanges are enclosed within discrete groups of ‘friends’. On Twitter, the architecture is more open, and tweets are searchable using a number of popular search engines. Privacy is therefore less assured, which may be off-putting to some students, who report feeling ‘a little exposed’. We reiterate here that any user wishing to engage with others on Twitter must be aware of the e-safety hazards that include privacy and identity issues.

### **Flush.**

One challenge of Twitter is to stow as much information as possible in a message of only 140 characters. Obviously everything that you come up with is faultless or comprehensible to your followers. Whilst there is the possibility of deleting single tweets (or even all your tweets with services like Suicidemachine<sup>11</sup>) your tweets are often already been consumed by other services and visible to others. The deletion of a tweet basically makes no sense other than it wont be found by non-followers later on. If you made a mistake during a tweet (e.g. posting a wrong link or forgetting to use the agreed hashtag) just repost the tweet and everything is just fine.

### **Warm cookies and cold milk are good for you.**

There is a sense that Twitter, if used appropriately can create new friend connections, where previously there may have been no possibility to connect. The authors of this paper all enjoy conversations and friendships with colleagues from around the world. The sharing of the minutiae of life may appear to be trivial and vacuous to outsiders, but occasional humour, comedic interactions and the sharing of life’s little twists and quirks often forges stronger friendships due to the effect of self-disclosure. Self-disclosure depends on people revealing some of their thoughts, feelings and emotions, which are then generally reciprocated.

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<sup>8</sup> <http://www.bebo.com>

<sup>9</sup> <http://www.myspace.com>

<sup>10</sup> <http://www.facebook.com>

<sup>11</sup> <http://suicidemachine.org>

**Live a balanced life – learn some and think some and draw and paint and sing and dance and play and work every day some.**

Twitter should not be seen as the only ultimate goal in life, although for some users, it can become obsessive. Teachers are advised to continue to use alternative media in the classroom and users should continue to pursue a balanced lifestyle that includes real-life interaction with friends and family. There are also means through which several social software tools can work together in concert to amplify content, combine audiences and widen the reach of the social network. These include incorporating Twitter streams into blog pages, or mashing up content using aggregation tools. Melding other content including video, audio and photographic content, through the use of Youtube<sup>12</sup>, Audacity<sup>13</sup> or Flickr<sup>14</sup> for example, offers one's social network a rich tapestry of alternative media, which can be expressive and informative. Using Twitter to draw one's social network to visit new posts is an obvious amplification method.

**Take a nap every afternoon.**

You can't tweet 24/7 - usually people go offline while they need to concentrate on other important things like writing a report or paper or reading a book. Doing this the users signalise that they won't follow what's going on and won't answer to questions. Twitter has – like many of the other social media tools – a high potential of distracting people from work and should therefore be switched of during phases of relevant and creative work where you need sereneness.

**When you go out into the world, watch out for traffic, hold hands and stick together.**

For many Twitter users their network is an invaluable part of their personal learning network as they create new ideas and get insight in the work of other like-minded people. Ebner [15] reports how Tweeples “*have enriched my life and truly helped my professional growth*”. A scenario that is often described and seems to happen to each Twitter user is to ask a specific question to the Twitter without expecting too many responses. Often it happens that active followers start to propose links and other Twitter users, or user lists that might help solving the question. The weak social ties between the different Twitter start to become stronger through helping each other, linking to relevant data sources and chatting off-topic.

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<sup>12</sup> <http://www.youtube.com>

<sup>13</sup> <http://audacity.sourceforge.net>

<sup>14</sup> <http://flickr.com>

### **Be aware of wonder.**

Twitter is potentially a very powerful social networking tool, so approaching it with a sense of expectation is common. Users discover the serendipity of the service when they come across unexpected but extremely useful content that has been sent or retweeted by other users in their network. Students will often be challenged by the quality of the content they discover, and quickly learn to favourite (bookmark) tweets that they find useful. They also discover how to follow hashtagged streams that relate closely to the formal course content they are studying. This mix of formal and informal content has its nexus on Twitter, and further, the greater number of productive contributors the user follows, the greater will be the possibility that new and unexpected useful content will come their way.

## **3 Teaching with Twitter**

Regarding personal communication devices (like laptops or cell phones) as a distraction is an error. Successful teachers actively try to embed them in their classes, as a means of enhancing learning opportunities. Banning such tools will not enhance a class but students may continue to use them, often surreptitiously. The same applies to a number of social networking tools, and Twitter is no exception.

There are numerous ways Twitter can be integrated into the fabric of both face to face and distance courses. For example, students in foreign language learning can be asked to translate short phrases or sentences sent to them. They may find benefit from participating in exercises where they converse in a foreign language with their tutor, or other language expert using Twitter. This kind of language tandem has been shown to be useful as a route to engaging more deeply with course content.

Twitter can be used as an instant feedback tool, as a means of quickly disseminating important announcements to an entire class, or as a simple medium for discussion during and beyond the hours of classroom learning.

Another useful application for Twitter is as a medium to promote the study of current affairs, politics or culture, through following a celebrity, politician or musician. By doing so, students will receive all tweets from that individual and can build up a dossier of thoughts and actions which over a period of time may create an informative picture of them. On a similar tack, tutors can create an account representing a figure from history or a character from literature, and tweet in the style of that person. Students following the character can enter into dialogue with them, to gain some insight into life, culture and experiences of that time period. More ideas on using Twitter in teaching and learning contexts, both formal and informal can be found on Steve Wheeler's *Learning with 'E's* blog [16].

Microblogging can bring new potential to interact and communicate with tutors and peers. If we take closer look at classroom some interesting scenarios emerge:

- In a first research study by Ebner and Schiefner, microblogging was used to connect experts over a wide distance [17]. Within a given time period the

application Jaiku<sup>15</sup> was used to share thoughts, ideas, interests and daily work routines. Especially the exchange of hyperlinks and the possibility to read and write from a mobile device was stated as a big advantage of microblogging.

- Ebner and Maurer [18] tried to investigate if microblogs can enhance traditional essay writing as well as blogging. They introduced a so called microblogging group which have to support other groups by searching the Internet for interesting content and discuss daily opinions. These small information chunks were very useful to such groups who wrote essays about a topic and the evaluation showed that microblogging brought an exciting possibility to their learning behaviour
- A small modification was used at the Graz University of Technology to enhance mass-education [19]. When there are large numbers of students, interaction in the classroom often reduces. Teaching a group of 200 or more students constrains meaningful interactions between teacher and students. Students can feel threatened by large audiences of peers and may be anxious about making errors or being ridiculed. Lecturers often deliver their content with little or no questioning from their learners. Ebner [19] reports a first attempt to enable anonymous questioning through the use of a mobile device and a 140-character entry field. Students were encouraged to interact with the lecturer by using the sending microblogs to a specific API. It was shown that the number of questions increased, but more research on this kind of didactic scenario is required.
- A further investigation using Twitter for educational purposes was to enhance single presentation. Ebner [15] reports that a Twitterwall<sup>16</sup> was placed beside a usual keynote or lecture presentation. This allowed those in the auditorium to discuss, share links, thoughts, pictures and similar throughout the talk. The entire Twitter stream can be saved and subsequently offered to anyone as additional information. Clearly protracted discussions occur because whilst tweeting during presentations leads to distraction and can cause disturbance, we also need to acknowledge that additional materials, comments and questions brought by tweeting, can enhance the presented material. Also Reinhardt et al. [20] report how conference attendees use Twitter for personal sharing, discussions and learning.
- As we pointed out in section 2.3 microblogging can also be used to allow process-oriented learning as introduced by Ebner et al. [10]. Students' daily activity reports are simply replaced by a fast just-in-time feature to send 140 characters to the Internet. The evaluation and the statistical analyses lead to the assumption that students are more engaged by the tool and this effect can lead to an increasing informal learning process.

## 4 Summary and Outlook

Anecdotal and empirical evidence shows that Twitter is a powerful tool that can be used in various educational settings. In this paper we have introduced some success stories where Twitter has been applied to educational contexts and surpassed the

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<sup>15</sup> <http://jaiku.com>

<sup>16</sup> A Twitterwall is a display where all tweets for a given hashtag are aggregated automatically.

expectations of the users. Use of Twitter resulted in more active students who connected themselves with their fellow students and experts outside their own community. Twitter was also used in process-oriented learning scenarios as a motivating tool for both students and staff.

With minor adaptations, the basic principles of Fulghum's poem "*All I really need to know I learned in Kindergarten*" [21] are transferable to Twitter as a prominent part of the Social Semantic Web. If you intend to apply Twitter to your course or educational project keep those principles in mind and take into consideration that Twitter is no panacea for education. You will need to pique your student's curiosity and passion for the topic and support them with good material and a conducive learning environment to support their individual needs.

We are just beginning to explore and understand the possible fields of application of Twitter in educational settings and to develop learning scenarios that make more use of microblogging technologies. With the progression of Twitter's functionalities and the inclusion of geolocation and RFID technologies in the service, Twitter will become even more interesting for learning and teaching scenarios as real location-based learning will be possible. (Personal) Learning Environments will stronger than before need to mash up data and services of different types in order to sustainably support the individual and organisational learning.

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