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Using the Tool Adoption and Alignment Model to Assess Pedagogical Fit of Social Communication Tools
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Abstract

While the range of social communication technologies available to educators is vast, so is the pressure to stay up to date and understand which tool has the best potential for use in a specific learning situation. The Tool Adoption and Alignment Model (TAAM) presented here is a process that may help educators make informed decisions about the potential of a tool efficiently and effectively. The model draws from Activity Theory and Genre Ecology Modeling to suggest a method to understand not only the communication and learning potential that is intended by the designers of a tool, but also the ways that users leverage the tool’s mechanics to create novel and useful alternative applications.

Too Many Choices

Today’s educator is surrounded by freely accessible consumer communication tools along with enterprise-provided systems. The sheer number of options and potential applications is enough to make even the most techno-savvy instructor wary. There is a broad collection of literature proving that there are genuine educational affordances in many of these social communication tools (SCT), which range from Twitter to World of Warcraft, but without the time to experience and evaluate them all it’s tempting to run back to the chalk and blackboard for good.

Educators are left wondering:

• How do I choose the right SCT for this learning need?
• How do I ensure that I’m using any given SCT in the best way that I can?
• How can I keep up with all of the available SCTs to ensure I’m using the right ones?
• If I use a SCT with my students and it fails, how do I figure out why it failed?

As an instructor, I’ve run into these obstacles as well. Years ago I began experimenting with social media, virtual worlds, and video games in my classroom with the naivety that all young instructors have. Later, after the cuts and scrapes of rough experiences with my students and technology, I set about systematically creating a process that would help others find the right SCTs to support learning goals in courses without having to experience the issues that result from an ad hoc approach.

A System to Make SCT Evaluation Easier

Genre Ecology Modeling (GEM) provided a framework that I could build on. In its simplest form GEM is intended to explain the ways that workers improvise new ways of accomplishing
tasks when the systems provided don’t work as well as they should. Chiefly developed by Spunuzzi, Hart-Davidson, and Zachry, GEM gives us a way to see how users bypass the intended communication paths provided to them by an employer (or other authority figure) to accomplish a goal more efficiently or easily (see references for the many publications about GEM). Applying this thinking to SCTs helped illustrate the difference between the intended use of those SCTs (as provided by the developers) and the ways that actual users augment or undermine those mechanics to accomplish their own communication needs (Spinuzzi 2002). For example, hashtags were not an original feature of Twitter. Users began putting #s in front of terms to make them easier to search for and Twitter’s developers adopted the mechanic as part of their STC to support what users were already doing. These user-created mechanics should be of interest to use because, after all, most consumer-based SCTs aren’t intended for educational use. We have to repurpose them for our needs if we want to use them in a course.

However, understanding how the typical user engages through one of these communication channels uncovers the culture of the tool and another potential complication. If our intended activity in the SCT conflicts with how the average user engages in the SCT we can encounter obstacles. For example, if you take a group of students into World of Warcraft to have a collaborative team meeting in the middle of a battle field it’s likely that the actual players will begin to interfere with your group simply because your group is interfering with their gameplay.

So, we have three elements to consider: how the SCT is intended to be used, the way the typical casual users engage in the tool, and how we would like to make use of the tool for an educational purpose. If these conflict with one another in any way, even the most mechanically suited tool may prove to be a poor fit for our needs. With this in mind, I set about trying to turn this information into a system (Smith-Robbins 2011) which became the Tool Alignment and Adoption Model (TAAM). It’s a five step process intended to tease out these potential issues to allow educators to efficiently assess whether a SCT is a good fit to support a learning goal.

Putting TAAM to Work

In the following sections I will describe each of the steps along with a common example, evaluating whether Twitter is a good fit for supporting large scale discussion in a lecture course.

Step 1: Acquire basic tool literacy - Learn to recognize the designer-provided and user-created communication patterns within the SCT.

Even if you’re familiar with the SCT, if you’ve never been through the developer-provided tutorial you should give it a look. Developers create tutorials to describe how they intend the SCT to be used. This will introduce the communication channels that they’ve created and therefore the culture that they intended to create.

To explore the user-created communication channels you should think like a sociologist. Observe any public communication that you can. Watch for patterns of typical content and interactions among users. Look for the most popular or active users and observe their use of the SCT.
Like a researcher in a new culture, studying the “natives” will provide valuable insights.

Example

A common communication need in university courses is a “backchannel” or opportunity for informal communication among students in a large lecture. If we’re considering whether Twitter is a good fit for this activity we need to start by describing the kind of communication necessary. Students should be able to communicate with one another as well as with the faculty member and teaching assistants. To be most successful, we’d like the students to share their responses to concepts in the lecture and to serve as peer mentors by answering one another’s questions.

By studying the communication mechanics offered by Twitter we can see that user-to-user communication is easily accomplished using @ messages. These messages can therefore be seen by the public (i.e., the rest of the class).

Observing common user behavior also demonstrates the use of hashtags (terms beginning with an #), a mechanic that posters on Twitter utilize to follow conversations among a large group of people.

Step 2: Begin experimenting - Explore the ways that the mechanics can be manipulated or repurposed.

Now that we know the mechanics of the system fit our need it’s time to see if the SCT is flexible enough to accommodate specific learning activities. You should take this opportunity to use the tool yourself for a casual purpose. Poke at it. Be playful. As you become more and more familiar with the mechanics you may find ways to creatively implement the communication mechanics to support your learning goal.

Remember, if the service is public you can always create a “dummy” account not associated with you in any way. Make your mistakes with this account and create an “official” account when you feel comfortable.

Example

One of Twitter’s advantages is the asymmetrical network connections it allows. Following an account doesn’t require that user to follow you back. Therefore, there’s no risk in following accounts to learn more about how the SCT is used. Investigate whether the author or your textbook has an account. See if leaders in the field related to your course tweet and follow them. Even blogs, newspapers, and academic journals often have Twitter accounts that could serve as useful resources for you and your students.

Look at the list of hashtags that are trending related to conferences and other events. Follow one to see how users create conversations around topics related to the event and think about how the conversation among your students could be similar or different.

Step 3: Understand student goals and perceptions - Investigate the existing SCT use among your student demographic.

Because we’re investigating public SCTs, students may already be using the tool being investigated. It’s important to remember that they may have an opinion of the SCT already, for better or for worse. Their opinions and experience of the
tool (or similar tools) can shape how they approach using it for educational use. For example, most students will likely have a Facebook account that they use to interact with their peers. Using that same space for class may be seen as awkward (like inviting their teacher to a friend’s party).

Some quick research online may reveal the typical user demographics of the SCT you’re investigating. Or, if you’re willing, simply ask your students if they use it and, if so, how.

Example

When I began using hashtags to support conversations among my students on Twitter very few of them had existing accounts. They had no previous knowledge of the tool which meant that they weren’t biased against it. However, it also meant that they didn’t know how to use it. Luckily Twitter is a fairly simple system. Now, a few years later, more of my students begin my class with an existing account. Most are willing to use that account to post messages for class but a few will resist and create an account just for class that they’ll delete afterwards.

Step 4: Check for Alignment – Evaluate whether the goals and common uses within the SCT, the students, or the educational purpose conflict with one another.

Once we know that the basic mechanics of a SCT are capable of supporting the communication needs for a learning activity and we’ve considered any learner predispositions against the tool (or this specific use of it) there are other conflicts to look for that may interfere with successful use. A common conflict arises from the motivations of the SCT owner, the company providing the service. Their motivations are often disparate from our goals as educators. In an effort to create revenue, the developers of may make changes that are good for them but detrimental to our educational use. Any Facebook user is familiar with the seemingly constant changes on the platform that not only confuse users but often make a familiar communication channel function in a foreign way. Educators who once relied on virtual spaces in Second Life have endless stories about that platform’s developers making changes regarding adult content, the hardware necessary to run the software, as well as pricing issues that interfered with their use of the SCT for education. As mere educators we can’t change how a company does business but we can examine their motivations and the culture they’re attempting to create within the system to forecast what they may change in their system that will undermine our use. Examining the Terms of Service (TOS) can often reveal much about how the SCT’s owners see their users and the content that they create.

Example

Twitter provides three examples of conflicting motivations that educators must consider. First, the developers have chosen to keep hashtags freely usable by any account holder. This means that we can establish any tag we want to organize our course’s conversation but it also means that other users could choose the same tag for their own conversation and there is nothing in the system to prevent it. For example, I’ve been using the tag #m432 for my undergraduate marketing course for the past several years. However, when I checked its use prior to this semester’s class I found that a course at another university had coopted the tag and was using it actively. If I wanted to keep my
student’s conversation distinct from the conversation in this other course I would have to change by tag.

Second, in an effort to monetize their service, Twitter introduced promoted tweets which allow marketers to pay for their messages to be placed in the streams of users whose content relates to the content of the ad. For the most part these promoted messages are harmless and easy to ignore. However, should Twitter decide that the promoted tweets can contain mature content my students may decide that they’d prefer not to use the service.

Finally, as with most social communication channels, the developers provide an Application Program Interface (API) which allows other services to exchange data with their system. For example, a “Tweet this” button on a blog utilizes part of the API. Another common use is the ability to aggregate or save specific content from a SCT system. Researchers and educators who want to download their course’s posts to examine later need the API to allow this archiving. However, Twitter changed their API’s functionality in the last year and it now prohibits this form of archiving. If our use of the SCT relied on this ability to save the conversations for later analysis this change might make it unusable.

**Step 5: Resolve Conflicts – If possible, accommodate/prevent conflicts among goals and uses.**

Though some conflicts between the SCT’s mechanics, student perceptions, and educational goals can mean that the tool is a poor choice, it may be possible to mediate other conflicts. For example, if students rebel against the use of Facebook in the classroom because they don’t want their class posts to appear on their personal timeline the instructor may choose to create a group on the site to contain the discussion. Facebook groups can be made private and thus a student’s friends would never see the activity of the class. These kinds of compromises and “work arounds” can prevent conflicts from interfering with educational activities. However, as previously mentioned, not all conflicts can be negotiated in this way and it’s important to recognize when this occurs and simply admit that the SCT isn’t a good choice for our needs.

**Example**

Fortunately, in the case of Twitter, the conflicts are fairly easy to resolve. Researching a hashtag’s use before using it for a course prevents any potential confusion in the conversation. However, it’s always possible that a random user could interfere and begin using the course’s tag. Acknowledging this possibility and being transparent about it with students will prevent any damage that such an incursion could create. The same open approach about promoted tweets can help students understand where these posts come from and that they can be ignored.

The change in Twitter’s API is an example of a conflict that cannot be resolved. There’s simply no automated workaround if we need to archive the content. In such a situation we’re faced with making a decision. Does the inability to archive the posts undermine the educational activity enough to make the SCT not a viable option for this specific use? In this case, since we’re not conducting research on this collected data and the university policy doesn’t
require that we archive all student interactions for a
course, the API change doesn’t create an
insurmountable conflict. If it did we’d simply have
to start the process over again and evaluate another
tool to support the learning activity.

Conclusion

No approach to evaluating SCTs for use in
the classroom will be perfect and even carefully
made choices can be undone by changes in a tool’s
mechanics. However, a methodical approach to
assessing a tool’s potential can help us avoid some
missteps and even uncover unexpected or novel
uses of well-known tools. Applying GEM theory to
communication needs in learning activities exposes
creative ways to implement SCTs while avoiding
potential pitfalls that may result. TAAM provides a
step-by-step approach to efficient evaluation of
unfamiliar SCTs to make finding the right one
simpler.

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