6. Constructionist Culture

6.1 A Felicitous Type of Community

In the previous chapter, I reviewed many ways in which community supports construction activities. Less obvious and equally significant is the fact that the converse is also true: construction activities enhance community.

A community is a group of people brought together for a purpose. The nature of the community is affected by the nature of that purpose, the space (physical or virtual) in which the people interact, and the type of people involved. A particularly felicitous type of community often emerges when people are brought together to construct things. Samba schools in Brazil are an excellent example. Creating a presentation for Carnival brings together a group of people who might not otherwise meet. Creative activity is the motivation for forming the community, and a force which gives shape to the community's activities. In this environment, everyone is constantly learning and helping one another to learn. This is a very different sort of community than, for example, a college fraternity—an organization which often seems designed to prevent people from learning. While this is certainly not true of all fraternities, a substantial number value maximizing alcohol consumption and devalue studying and scholarship. This is a rough caricature, but the underlying point is clear: not all communities have a positive impact on their members.

This chapter argues that communities in which people are making things often take on a special quality. Such communities have what I will call a *constructionist culture*. The chapter reviews a number of issues (for example, allocation of scarce shared resources) which take on particular importance in such communities.

6.2 "Television Fans and Participatory Culture"

It's helpful to begin with an example of a kind of community that has little to do with computers: communities of television fans. Many people consider themselves to be fans of television shows; I'm referring in particular to those people who regularly attend conventions and other social gatherings related to these shows. Communities of television fans are a rather surprising example of the positive power of a contructionist culture. When most people think of television fans, they conjure up stereotypes of unattractive and socially inept young men who slavishly memorize obscure facts about *Star Trek* episodes—people who need to "get a life." In *Textual Poachers, Television Fans and Participatory Culture*, Henry Jenkins does a participant-observer ethnography of fan culture, and determines that fans already have a life (Jenkins 1992). Jenkins focuses in particular on fans' creative endeavors. Fans of *Star Trek* and other television shows make videos, publish 'zines, write poetry, and compose folks songs about television shows. Much of the activity at conventions centers on sharing these creative productions.

Underlying Jenkins' research is an exploration of how people make meaning from texts. The fans' creations often make meanings clearly in opposition to the producers' intentions. For example, one genre of fan video implies homosexual relationships between characters like Kirk and Spock: a shot of Kirk looking longingly to his left is followed by a shot of Spock looking longingly to his right, and the sequence is set to the music of a seventies love song. Fans are clearly making their own meanings from the text! Jenkins collects a rich variety of evidence to show that fans are not passive recipients of meanings produced by media conglomerates, but active constructors of personal meanings using popular culture as a source of raw materials. Fundamentally, Jenkins is arguing for a constructivist theory of meaning .

Jenkins uses evidence from fan culture to make the broader point that no viewer is a passive dupe of corporate interests; all viewers make personal meanings from texts. While I believe that this is largely correct, I think it's important not to underestimate the significance of making things. It is through their creative productions that fans are most easily able to construct oppositional readings. While the readers of romance novels studied by Janice Radway (Radway 1984) were clearly able to make their own meanings from the texts (and from the act of reading), they seem to have fewer and less richly nuanced oppositional readings than Jenkins' fans. Reappropriating texts provides rich opportunities for constructing personal meanings.

Much of the richness Jenkins found in fan culture I believe stems from its constructionist nature. Fans not only buy things, they make them. They talk not only about the text, but about their varied re-interpretations of the text, and the processes of their production. These acts of creation restructure not only individuals' relationships to the text, but their relationships to one another. Construction is a community-building activity.

6.3 Objects of Construction

The nature of the things being constructed is of course a central factor in the flavor of a constructionist culture. In *The Virtual Community*, Howard Rheingold movingly describes the warm, supportive community that exists in the parenting conference on The Well(Rheingold 1993).[1] The sincerity of the participants' interest in the subject matter is part of what gives the

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[1]Building a shared understanding through written or oral conversation is an act of construction in many important senses. This is particularly clear in the case of bulletin board systems like The WELL where the permanent archive of the conversation is clearly something being co-constructed by its participants. However, I do believe that constructing something more substantial than a conversation tends to lead to a more constructionist culture.

conference its special quality. The Grateful Dead conference on The Well is also unusually successful, for the same reason. These topics are personally meaningful to the participants. They are of course not personally meaningful to everyone—not everyone has children, and not everyone likes the Grateful Dead. It's of central importance that participation in those forums is voluntary. The members are a self-selected group of people with a sincere interest in the topic.

Another central factor behind the success of the parenting conference is the fact that the participants have a basic level of shared values and shared understanding about the nature of parenting. There is nothing excessively controversial discussed there. The mood might be quite different if, for example, a vocal minority of the participants insisted on fundamentalist religious approaches to parenting. The USENET newsgroup talk.politics.abortion forms a useful contrast. While the participants in that group certainly care about their subject matter as sincerely and passionately as members of the parenting conference care about the welfare of their children, the controversial nature of the subject matter means that group is far from warm or supportive. In fact, it is dominated by inflammatory rhetoric and *ad hominem* attacks. A minimum level of shared understanding of the nature of the thing being constructed is necessary to create a positive constructionist environment (Bruckman 1996). To draw an analogy to theater, a production company working to prepare a show will have a more positive experience if everyone agrees on the basic form it will take; chaos and conflict are likely to ensue if some members are aiming for a postmodern, highly-stylized Robert Wilson production and others want something more like traditional Gilbert and Sullivan!

While participants must have some degree of shared understanding of the nature of the things being made, the limits must be neither too specific nor too broad. If the objects of construction are too limited, many will fail to be able to express their individuality and find something personally significant within those limits. If the limits are too broad, then members of the community will have too little to say to one another. The design process itself is also more difficult when underconstrained—expert designers know to start with imposing constraints and working within them (Schon 1987).

Any object of construction is of course part of a broader cultural context. In the case of Brazilian samba schools, the joyous nature of Carnival helps make preparing a Carnival performance a community-building act. Any kind of object of construction has connotations which it gets from its role in the broader culture. A Carnival performance has quite different associations than a school assignment. Those associations fundamental shape the learning experience of someone participating in the act of construction.

Research on constructionist learning has long aimed for picking objects of construction which have a low threshold and no ceiling—new learners can become involved with limited effort, but as they progress to become experts, they will still be challenged.

	MORE SUCCESSFUL	LESS SUCCESSFUL
Personally meaningful	Sanding a just-finished wood project	Sanding an old wood surface to prevent splinters
Voluntarily selected	A garden	School assignment about plant biology
Not too controversial	The WELL's parenting conference	USENET's talk.politics.abortion
Appropriate scope	A LEGO ship	A LEGO pirate ship made from a pirate-ship kit
Cultural associations	Brazil's Carnival	School assembly
Low threshold	Logo	Assembly language
High ceiling	Logo	Hypercard
Low risk	Video	Film
High reward	Film making	Lanyard weaving

Table 6.1: More and Less Successful Objects of Construction

Finally, it is also desirable for the act of construction to have low risks and high potential rewards. It was more difficult to learn to make moving images when each attempt required spending large amounts of money on expensive film stock. Relatively inexpensive and reusable video tapes make moving images a more fertile medium for construction. Lowering expense lowers one kind of risk. Another sort of risk is emotional. Freedom from being judged and evaluated lowers an individual's emotional risk in participating. Formal evaluation does supply one potential source of positive reward. However, the sincere appreciation of a community of one's peers also supplies a strong positive reward with a generally lessened negative risk (unless one's peers are inclined to be scornful).

In summary, objects of construction should ideally be/have:

- personally meaningful,
- voluntarily selected,
- not too controversial,
- neither too limited nor too broad in scope,
- positive cultural associations,
- low threshold,
- high ceiling,
- low risk, and

- high reward.

These factors affect both the experiences of individuals and the patterns of group interaction. Table 6.1 gives examples of a variety of objects of construction which typically meet and fail each of these criteria.

In designing MOOSE Crossing, I tried to meet each of these criteria. Reviewing each in order:

Participation in MOOSE Crossing is generally voluntary (with the exception of some classroom use). Once on MOOSE Crossing, members are free to construct things or not as they wish. When one teacher gave his class assignments of things to do on MOOSE Crossing, a conversation arose on the moose-teachers mailing list. The teachers discussed the educational philosophy of MOOSE Crossing, and concluded that such assignments are not a good idea. To date, every member who has participated for more than a few minutes has chosen to construct new objects—they see others making objects and enjoying making them, and want to make something of their own.

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CODE OF CONDUCT
To be a member of MOOSE Crossing, you are expected to be a good
citizen.  Most of the rules are just like rules for how to behave
in the real world:

* Don't do anything you wouldn't do at recess at school.
* Do unto others as you would have them do unto you.
* Help others whenever you can.

If you think maybe you shouldn't do something, you probably
shouldn't.  Be nice to other kids.  And help them out.  There's
lots of stuff to learn on MOOSE Crossing.  People will help you
get started, and then you can help the next new person.

These rules you might not have heard before.  They're important:

* Don't tell anyone your home address or phone number.
* Don't meet anyone face to face.

Most people are nice, but there are some people out there who want
to hurt kids.  No matter how nice someone seems or how old they
are, don't tell them your home address or phone number or agree to
meet with them in person.  If you really really want to meet
someone, ask your parents to help you set up a safe meeting in a
public place, and have your parents come with you.

I PLEDGE:
I won't do anything I wouldn't do at recess at school.
I'll treat others the way I want them to treat me.
I will help others whenever I can.
I won't tell anyone my home address or phone number.
I won't meet anyone face to face.
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Table 6.2: The MOOSE Crossing Code of Conduct (Kid Version)

MOOSE Crossing's code of conduct helps to keep the objects of construction not too controversial. All members agree to a code of conduct when they join. Table 6.2 shows the code of conduct agreed to by kids, and Table 6.3 shows the additional things that rangers (participants 14 and older) agree to. Based on this code of conduct, kids were able to judge for themselves that making guns and bombs would not be appropriate, but making nerf guns and fireworks is fine. These restrictions are perceived as fair because they are a prior condition of participation. The code of conduct helps to maintain harmony within the community.

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This code of conduct applies even more strongly to adults.  It's
important that you set a positive example for the kids.

RANGER DUTIES
*  Be a positive role model.
*  Be patient and helpful to all kids.
*  Help kids to solve their own social problems by:
   -- Listening to everyone's side of the story,
   -- Asking kids to evaluate their own behavior,
   -- Asking kids to see things from other people's point of view,
   -- Reminding kids of the MOOSE Crossing Code of Conduct, and
   -- Leading a thoughtful discussion.
*  Help kids to solve their own technical problems by:
   -- Explaining general principles,
   -- Pointing out good examples and relevant documentation,
   -- Giving direct answers where appropriate, but
   -- Making sure not to do the work for them.
*  Read the mailing lists *news, *social-issues, and *Rangers
regularly.

RANGER AGREEMENT
I will set a positive example at all times.  I will abide by the
MOOSE Crossing Code of Conduct.  My conduct needs to be better
than acceptable--it needs to be exemplary.  I am a role model for
the members.

I will be patient and helpful.  I will help kids to solve their
own social and technical problems, not solve them for them.

I understand the importance of kids not giving out their home
address or phone number, or arranging to meet people face to face.
To set a good example, I will not give out my home phone number or
address either.  I will not arrange to meet kids I meet on MOOSE
Crossing face to face.  If I see a child violating these rules, I
will explain to them why they should not do so, and notify the
MOOSE Crossing janitors.

I will read *news, *social, and *Rangers on MOOSE Crossing
regularly.
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Table 6.3: Ranger Addition to the Code of Conduct

The scope of projects possible for MOOSE Crossing is somewhat limited by the code of conduct, but primarily by the affordances of the technology developed. Most unusual about that scope is its limitation to text. Children trying MOOSE Crossing for the first time are usually initially surprised to find no pictures. In a video interview, Mouse (girl, age 9) comments:

> Amy: How is this different from other things you did on the computer before you came here?
> Mouse: Well, there are no pictures.
> Amy: Is that bad?
> Mouse: No, it's good.
> Amy: Why is that?
> Mouse: Because then you can imagine things. It's better to imagine things than see them on the screen. What if you don't like the picture that they made. And then you write them a letter *(raising her voice and one arm)* "I hate that picture cause I don't see it that way." And so you can see it your own way.

Not everyone finds text an appealing medium. However, for those who do, creating worlds out of text and communicating with people in text opens up new imaginative possibilities, and helps create a meaningful context to develop creative writing skills. The scope of projects possible in this environment is broad enough that people can find a personally meaningful topic, and narrow enough that participants can have a meaningful dialog about their creations.

The cultural associations of MOOSE Crossing are particularly positive: kids associate it with the world of games and free play. Although they are engaging in serious intellectual activity, it is perceived as more play than work. Children's appropriations of elements of popular culture in their creations also bring to the environment the positive associations of those elements.

The threshold for participation in MOOSE Crossing is quite low. I originally expected the activity to appeal primarily to kids 10 and older, and to exceptional nine-year-olds. In practice, several kids as young as seven have been able to participate in a meaningful fashion. Children just learning to read have found MOOSE Crossing to be a fun way to practice reading. The activity also has a relatively high ceiling. Two thirteen-year-olds participating (one boy and one girl) have become accomplished programmers, making elaborate creations enjoyed by the community as a whole, and mastering advanced concepts.

The risks of participation in MOOSE Crossing are low. For Cindy (girl, age 11), it's important that it's not being graded:

Amy:	How is writing here different from writing in school?
Cindy:	Usually in school you have to do a certain thing. Here you can write whatever you want. And also this computer language or whatever you call it, here it's like "context" and "announce_all_but", and, well, it's like... "fork"...
Amy:	How is writing a description different from writing in school?
Cindy:	You can make it be whatever you want. It's describing whatever you want. And it's not being graded, which is good!

Cindy is not confident about her school abilities, but she enjoys trying new things and challenging herself on MOOSE Crossing because she feels safe there. There is little risk of failure. Everyone has questions and seeks help from others on their projects when they need it. Social support and freedom from evaluation reduce the risk of trying something new.

Finally, significant rewards follow the completion of even the simplest project. On finishing a new object, children almost always immediately show their creation off to others. The first creations of new members are received with particular enthusiasm, even if they are extremely simple. More elaborate creations become a basis for others' social activity, providing ongoing positive feedback to the designer. The large amount of positive feedback typically received by children is one of MOOSE Crossing's strongest features.

6.4 Worlds Made by Their Inhabitants

Not all MUDs are constructionist learning cultures. Far from it. The first MUDs (starting in 1979) were violent hack-n-slash games where participants compete to see who can kill the most monsters and amass the most treasure. Those who win the game become wizards, and only then (if ever), after hundreds of hours of playing time, are they granted the privilege to build a small portion of the world. At the time of this writing, the majority of MUDs still take this form.

The strongest sense of community is adventure-game MUDs is often among the wizards. Once one has won the game and built a castle, there's not much left to do. However, by this time, the participant has invested huge amounts of time in reaching wizard status and in the process has made friends and gained status within the community. Wizards hang around and talk with one another. One veteran MUDder interviewed by Sherry Turkle and myself over the summer of 1992 reported that his desire to talk to the wizards and join that community was his central motivation for trying to win the game (Turkle 1995).

In 1989, a graduate student at Carnegie Mellon University named James Aspnes created a new kind of MUD with no monster or magic swords. He called it “TinyMUD” because the set of available commands was much smaller than the complex variety of combat-oriented commands in other MUDs. Instead, he built in a programming language to allow users to extend the virtual world. People’s main activity went from trying to conquer the virtual world to trying to construct it collaboratively. This led to a much more egalitarian society. In an electronic mail conversation in 1992, I asked Aspnes if that had been part of his goal in creating TinyMUD. He replied:

> You raise an interesting question about the ideals of the TinyMUD community coming from the few founding members. Most adventure-style games and earlier MUDs had some sort of scoring system which translated into rank and often special privileges; I didn't want such a system not because of any strong egalitarian ideals (although I think that there are good egalitarian arguments against it) but because I wanted the game to be open-ended, and any scoring system would have the problem that eventually each player would hit the maximum rank or level of advancement and have to either abandon the game as finished or come up with new reasons to play it. This approach attracted people who liked everybody being equal and drove away people who didn't like a game where you didn't score points and beat out other players (I did put in a "score" command early on since almost everybody tried it, but most players soon realized that it was a joke). I think that this effect created a kind of natural selection which eventually led to the current egalitarian ideals. I like the egalitarianism, but it wasn't my original goal (Aspnes 1992; Bruckman 1992).

One of Aspnes’ primary motivations was to fight “bored wizard syndrome,” the problem of people who have invested so much time in a community later finding themselves with nothing to do because they had “won.” The increased egalitarianism of the new type of MUD was a somewhat unexpected bonus. Permitting and encouraging construction activities created a new kind of community.

There are hundreds of communities descended from TinyMUD where making things (rather than killing them) is the chief activity. Collectively, they are often referred to as “social MUDs.” It’s a remarkable fact that at any given moment there are thousands of people doing creative writing and computer programming in their spare time for fun in these environments. This is what initially interested me in exploring the educational potential of MUDs.

Allowing users to build the world of course has its risks. A world designed by its inhabitants will inevitably have less coherence and more uneven quality than one designed by a single experienced designer. Someone once called MediaMOO "a multicultural mess"—I was never so flattered! While it's true that the parts of the virtual world don't form a complete whole, they reflect the rich diversity of the community's members. A team of Peter Anders' architecture students at New Jersey Institute of Technology (NJIT) studying the structure of existing virtual worlds immediately assumed that MediaMOO's more structured Curtis Common area must have been designed first, and loosening control led to disorganization as the space grew. In fact, the opposite is true. MediaMOO was designed to maximize opportunities for individual construction. Much later, a group of regular members desiring more coherence collaborated to add the more structured Curtis Common complex.

There are clearly some situations in which greater coherence is desired, and others in which diversity can be cultivated and enjoyed. Division of the world into public space (with higher coherence and minimum standards) and private space (with greater diversity and opportunity for personalization) makes it possible to resolve this dilemma.

Encouraging users to build the virtual world also helps a community to adapt over time to the changing needs of its members. Themes and patterns emerge and evolve as the user community grows and changes. Users also have a greater sense of ownership in a community which they have helped build. These factors help to create a stronger community.

6.5 Sharing Scarce Resources

TinyMUD didn't stay tiny very long. People built too much. Undergraduates made detailed replicas of their universities. A replica of MIT included much of The Media Lab. In the lab's cube auditorium was a replica of the set of a play being performed there at that time. A negative review of the play was posted on the wall. Replicas of other universities were equally detailed—room after room went on without end. Eventually, the database got too big for the computer it was running on, and TinyMUD was shut down. Virtual worlds are limited not by availability of land, but by the disk space and processor power of the computers they run on.

Deciding how to allocate scarce shared resources is a key issue that both solidifies and fragments communities, both virtual and real. In any situation in which resources must be shared, some social or political process must evolve to manage those resources. The necessity of sharing resources—whether they be land, fresh air, disk space, or attention of the group's members—is a hallmark of what makes a community.

My parents live on a street called The Circle, right in the center of a medium-sized town. A few years ago the town wanted to add more parking to increase business for merchants on Main Street. A plan was put forward to seize a number of houses on The Circle by eminent domain to make way for the parking lot. The new lot would increase traffic on all of The Circle and make the neighborhood less attractive. Residents of The Circle formed The Circle Association to protest the plan. They had emergency meetings at people's homes, and recruited local politicians and eminent members of the community to oppose the plan. They wrote letters and spoke with reporters from the local paper. They appealed to other members of the town to consider what kind of a town they really want anyway—is bigger necessarily better? The campaign was ultimately successful—plans for the parking lot were abandoned. In the process, my parents got to know their neighbors in a way they never had before. Years later, members of The Circle Association still meet not only to keep up on the affairs of the town, but also to socialize with one another. A crisis concerning the allocation of scarce resources (land, parking spaces), sparked reflection on the nature of the community (what kind of a town do we want anyway?) and the formation of a strong sub-community.

In the original TinyMUD, anyone could build as much as they liked. This led to overly rapid growth and waste, so a money system was added to control it: people wandering around the world find pennies at random intervals, and a certain number of cents was charged for each thing built. This system too proved unwieldy. Next they added a "builder bit": to be allowed to build, you needed to be granted that permission by the MUD's administrators. This still failed to provide adequate control and explosive growth continued. Many communities descended from TinyMUD switched from pennies to a quota system: each individual gets an initial quota for the number of objects he or she can build. When you have used up your quota, you must request more from the system administrators. While pennies could be accumulated by shear persistence, quota required permission of an administrator. Quota-based systems reintroduced an element of centralized control.

Communities need mechanisms to determine not only how much individuals can build, but where they may build. Most MUDs divide the world into public and private space. In certain special places, sometimes called "residence halls," anyone may build a private home. Off of your private home you may build anything (within the limits of your building quota). To build something in a public place requires permission of the centralized authority.

As communities grow very large, requiring the administrators to judge each request for quota or building in public space can become time consuming and also divisive. To counter these problems, LambdaMOO formed a committee of members called the Architecture Review Board (ARB) to make such decisions. Members of the ARB were initially appointed by the administrators but now are elected.

Conflicts and debates over resource allocation are inevitable in any community with shared resources. They are obviously not always either community-building experiences or learning opportunities for community members—but they can be. How such resource management problems are handled has a strong impact on the flavor of a constructionist culture.

An emerging technical shift promises to change these social dynamics substantially. All early MUD software operated on a centralized, single-server model. All data about the world is stored on one computer, and the controller of that computer ultimately must make resource allocation decisions. An alternative model is to have many interconnected servers. Centralized servers often out grow the memory and processing power of the computer they run on. Much of the current interest in distributed servers is rooted in concern about scalability. A community can grow many orders of magnitude bigger if it can be served off of multiple computers. Whenever the community needs room to grow, another computer can be added. An interesting side effect of this technical change is that it could potentially democratize the management of resource allocation (and many other features of communities as well.) If my part of the world runs on my computer and yours on your computer, then the scope of what I can construct is limited by my financial resources (how big a computer I can buy), rather than by the whim of the administrator of a centralized server. In the future, it may be possible for everyone to control his or her own little corner of cyberspace.

6.6 Believing in Users

Many MUDs design spaces for users, rather than letting users build spaces for themselves. In July 1996 I met with researchers from SRI designing an online teacher professional development center in a MUD called Tapped In (Schlager and Schank 1996b). They were neatly organizing virtual offices and meeting rooms. A tremendous amount of effort was being put into anticipating teachers' needs.

I believe Tapped In will be a great resource for teachers. As I argued in Chapter 2, I believe the education community needs to put more effort into supporting teachers rather than replacing them or working around them. Projects like Tapped In are exactly what is needed. However, to my design sensibility, something seemed to be missing from their preliminary design: opportunities for the teachers to extend the virtual world. Instead of trying to anticipate and cater to all of teachers' needs, why not work to give them opportunities to design spaces to meet their own needs?

SRI researcher Mark Schlager replied that he didn't believe that teachers had either the time or the technical expertise to do so. It's clear that for some teachers this is true; for others, it is not. Exactly what proportion have either the time or the confidence necessary I don't know, but I do know that an environment could be designed to accommodate both sorts of people. Teachers with more time could design spaces to meet the needs of those with less time. This is exactly what has happened with MediaMOO's Tuesday Café.

When I founded MediaMOO, I was largely unfamiliar with the field of teacher professional development. MediaMOO members Tari Fanderclai and Greg Siering built a place they called the Netoric (from "network rhetoric") Center. Inside the Netoric Center they built The Tuesday Café (Fanderclai 1996). Every Tuesday night at 8 PM ET they organize a discussion of some aspect of how to use computers to teach writing. Fifteen to sixty teachers usually attend. This appreciative message was posted by a regular Tuesday Café attendee:

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From:     MikeS
To:       *Anything (#9008)
Subject:  PhD program announcement

MikeS (michael j. salvo IRL) will be attending Texas Tech University
in the fall as a PhD candidate in the English Department's Technical
Communication and Rhetoric concentration.

MediaMOO was my first exposure to the technorhetorical community and
continues to be the most  dynamic and committed group of teachers,
pedagogues, and net-rats i know.  thank you for welcoming me almost
two years ago (!!).  thanks to greg and tari for keeping the tuesday
cafe going, and thanks especially to all the regulars who tolerated
me as a clueless newbie and who have given me hope for the future of
critical educational reform and technorhetoric.  without you all, i
would have left academia -- which *i* consider your greatest gift
(others may not feel the same;-).  i thank you, and i hope our
community lasts a long long time.  thanks, Amy, for keeping this
community going.

mike[2]
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Notice that Mike refers to "*our* community." It's critical that The Tuesday Café was built by teachers for teachers. It gives them a greater sense of ownership over the space. It also means teachers are taking responsibility for their own professional development, rather than simply following a researcher-designed program for credit. The philosophy of education of The Tuesday Café models the sort of progressive learning environment I would hope that teachers will learn to use with their students.

Also missing from the Tapped In preliminary model is adequate opportunity for social activity. Many regular Tuesday Café attendees return during the rest of the week to play scrabble, order virtual drinks, and just generally spend time with their fellow teachers. Conversations often make an elegant

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[2]Posting quoted with permission from the author.

transition from purely social topics to those more clearly work-related, as Rémy Evard noted in his study of The InfoPark, the MUD he used to coordinate activity among his system administrators (Evard 1993). Social activity among peers increases time of participation and reinforces professional development.

Schlager notes that The Tuesday Café is primarily for college and community college writing instructors; elementary school teachers like his targeted Tapped In users have heavier demands on their time and often suffer from greater technophobia. These observations are undoubtedly significant. However, I still believe that Tapped In's users would benefit from greater opportunity and encouragement to build spaces for themselves and their peers.

At the Tenth Computers and Writing Conference, a teacher approached me and proudly told me about a project he was working on. Over the summer he had his graduate students preparing a model of the Pequod in a MUD for his freshman composition students (who would be reading *Moby Dick*) to explore. Won't this be a wonderful educational experience, he asked? Yes, I replied—for the graduate students making the model. Making the model is a much more powerful learning experience than walking through it.

Unfortunately, only a small fraction of MUDs actively encourage users to extend the virtual world, creating new places and objects. Collaborative construction is one of the most interesting and educationally valuable features of these environments. I hope in the future more community founders will trust in their users, encouraging them to make worlds for themselves.

6.7 Construction and Community

Diversity is an asset: there are many kind of communities, filling different needs for different sorts of people at different stages of their lives. While I currently regard violent hack-n-slash MUDs somewhat disparagingly, I understand that they serve an important social and recreational (and to a limited extent educational) function for a large number of people. In fact, if I had had access to MUDs when I was 13 or 14, I'm certain I would have loved that sort of environment—I was an avid Dungeons and Dragons player at that age. Different communities serve different needs.

Does this, however, mean that we can make no value judgments among them? I don't believe so—multiculturalism and subjectivity have their limits. Even though as a young teenager I might have enjoyed a violent adventure game environment, I believe that a more constructionist environment would have been better for my social, intellectual, and creative development (and just as much fun). I believe this to be true not just for me at that age but for most people at most ages. This is most certainly a value judgment. The key things I value in a constructionist learning culture are:

- the positive value placed on creative and intellectual activity,
- the ready availability of social support for such activity, and
- a model of learning that is:
  - self-directed,
  - self-motivated,
  - peer-supported, and
  - life-long.

A constructionist culture can bring these benefits to its members.