Meeting #1

Psychology of Serendip?
- define learning
- GIST
>Gender & Sexuality Studies- Anne
>What is information? facts? - math?
>Physics- Liz
>Technology- CompSci
- Write e-mail
- How do you prove learning?
> Web-paper v. paper-paper
-Traditional English v. this English class
-Serendip moves with us
>schooling not on same level
>post stuff outside of class
>encourages discussion
>enables all kinds of students to participate in their own way
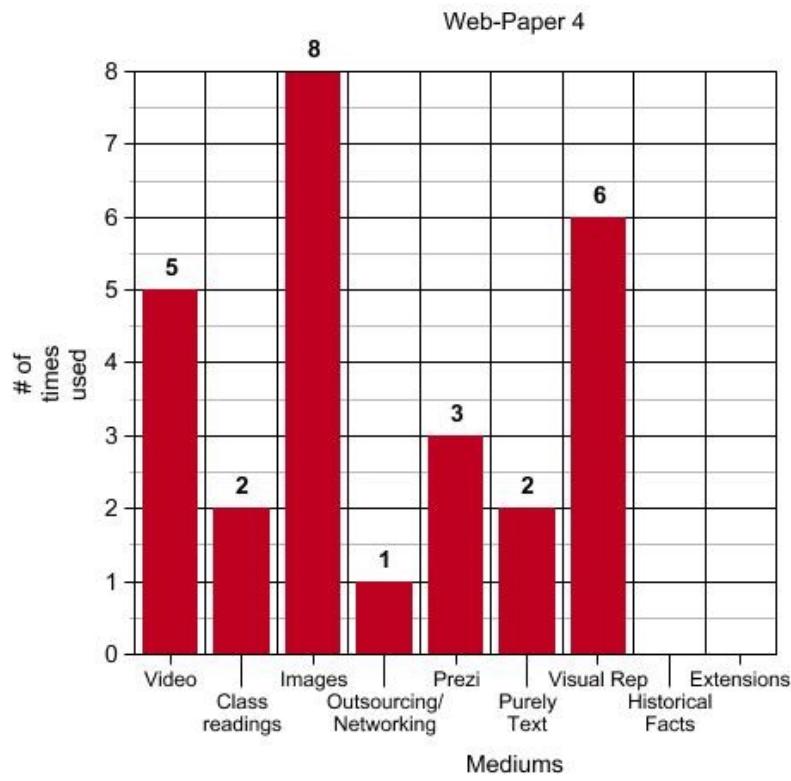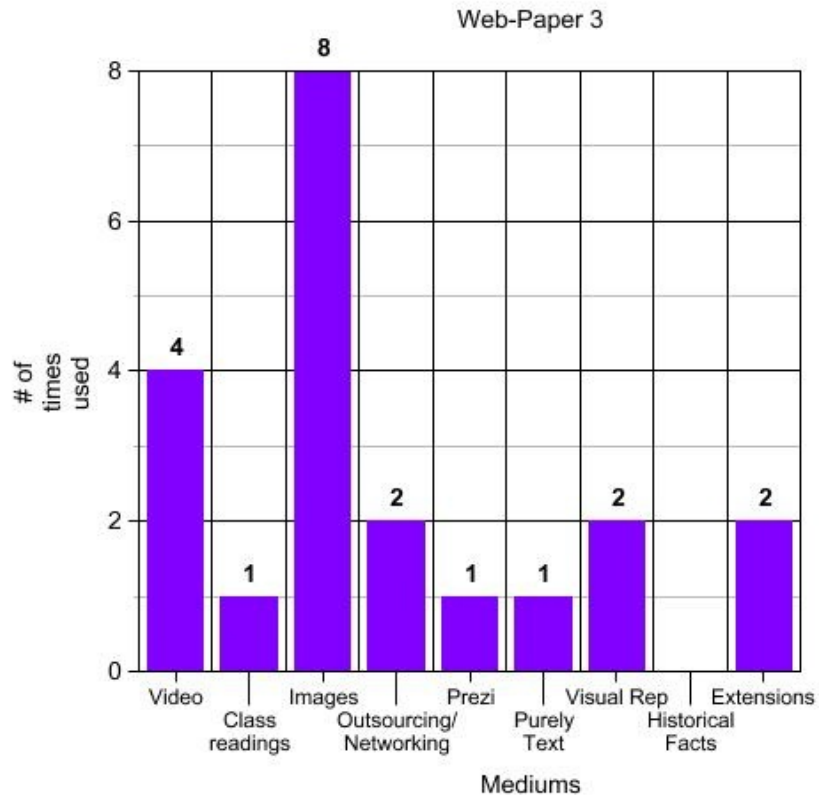>decreasing binaries?
*shy/quiet v. outgoing/loud

Kate & Aybala learning brainstorm:

Learning: exposing yourself to something new and then being able to compose that information into a point.

Meeting #2

Analyzing the web-papers

Web-Paper 1

Web-Paper 2

Web-Paper 3

Web-Paper 4
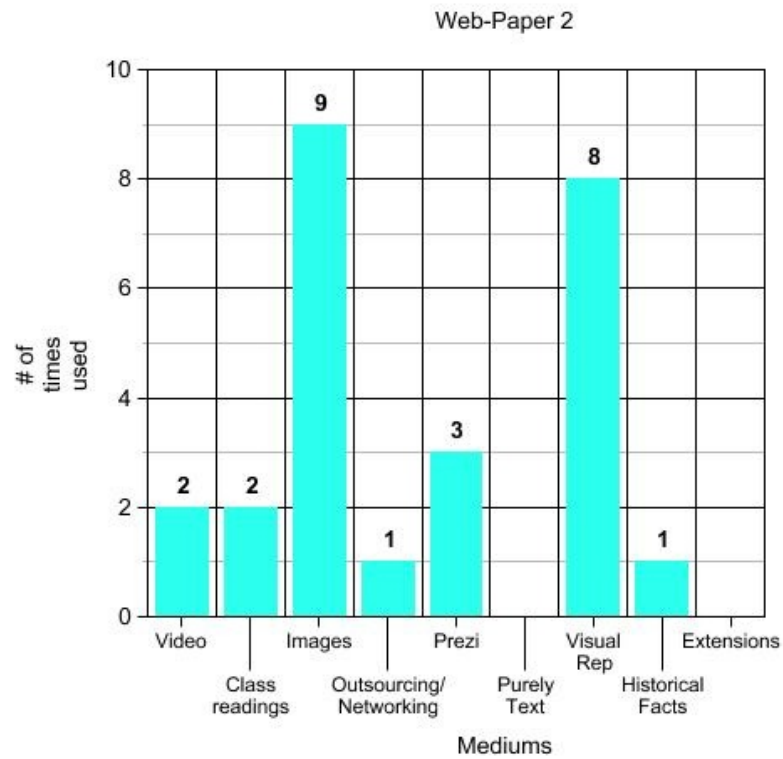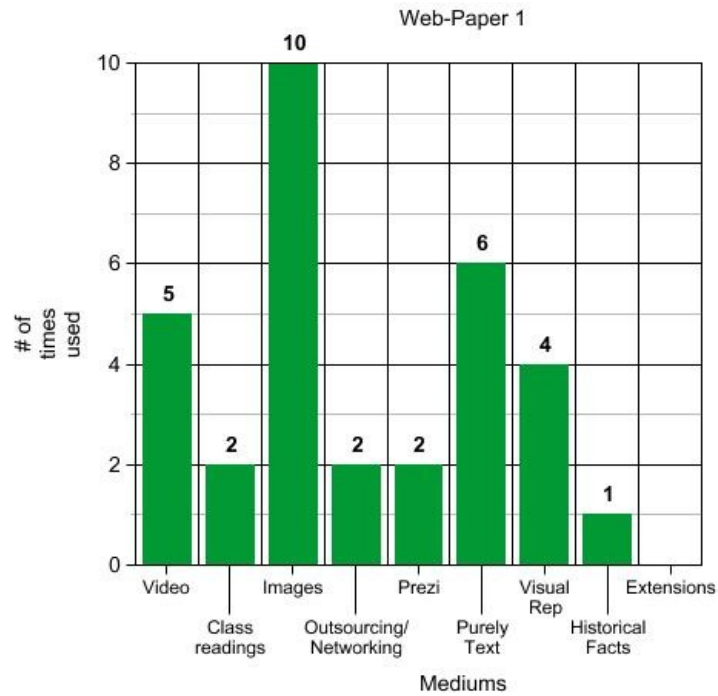
Meeting #3

Constructivism: Constructivism as a paradigm or worldview posits that learning is an active, constructive process. The learner is an information constructor. People actively construct or create their own subjective representations of objective reality. New information is linked to prior knowledge, thus mental representations are subjective.

Lev Vygotsy's Social Development Theory: Key Points
1. Social interaction plays a fundamental role in the process of cognitive development. In contrast to Jean Piaget's understanding of child development (in which development necessarily precedes learning), Vygotsky felt social learning precedes development. He states: "Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological)." (Vygotsky, 1978).

2. The More Knowledgeable Other (MKO). The MKO refers to anyone who has a better understanding or a higher ability level than the learner, with respect to a particular task, process, or concept. The MKO is normally thought of as being a teacher, coach, or older adult, but the MKO could also be peers, a younger person, or even computers.

3. The Zone of Proximal Development (ZPD). The ZPD is the distance between a student's ability to perform a task under adult guidance and/or with peer collaboration and the student's ability solving the problem independently. According to Vygotsky, learning occurred in this zone.

Humanism: Humanism is a paradigm/philosophy/pedagogical approach that believes learning is viewed as a personal act to fulfil one's potential.

David Kolb's Experiential Learning: Key Points

Kolb's four-stage learning cycle shows how experience is translated through reflection into concepts, which in turn are used as guides for active experimentation and the choice of new experiences. The first stage, concrete experience (CE), is where the learner actively experiences an activity such as a lab session or field work. The second stage, reflective observation (RO), is when the learner consciously reflects back on that experience. The third stage, abstract conceptualization (AC), is where the learner attempts to conceptualize a theory or model of what is observed. The fourth stage, active experimentation (AE), is where the learner is trying to plan how to test a model or theory or plan for a forthcoming experience.

We're sitting in the campus center, asking people as they pass by.... "What is Learning?"

1: The method/process in which someone absorbs information

2: The process by which you absorb information and are able to regurgitate the same information

3: The acquisition of knowledge

4: Getting knowledge that you can then apply to other disciplines that you didn't learn it in, that you can apply to your life or other disciplines.

5: Acquiring something you didn't know before...

6: The acquiescence and understanding of new information or skills

7: Acquiring new skill sets or frameworks for understanding the world around you

8: Learning is the acquiring of knowledge

9: Incorporating new information into your lifestyle, or making a mistake and then doing it differently the next time

10: Something you think through yourself and then you have it forever

11: Learning is fucking up and then realizing what you did wrong and then you dont repeat it

12: being able to take in information or like lessons or anything and then kind of like applying it to your life

13: Acquisition of knowledge

14: I've never used that website you were talking about (Serendip). What's learning? It's the comprehension of new material.

15: Learning stuff. It's unfair.

16: Wrinkles on your brain.

17: The attainment of new knowledge in any capacity.

18: It's being given information, interpreting and understanding and adding to the knowledge that you already have...you're building on what you already know, so you can make neural connections within in your brain that can make you move from one step to the next, right? You have to have a good foundation in order to learn more.

19: Filling up your brain with things that you have the potential to do but don't know that yet.

20: Mental progression.

21: Accruement of knowledge.

22: The studying and gaining knowledge in order to be able to act and effect change.

Then, we sent out a mass email to our friends, and here are some responses:

"Learning - acquiring a new skill set or knowledge base that helps to progress personal growth in either ideas or abilities."

"I think I define learning as a form of personal growth. Learning does not only involve absorbing information but also allowing that newly discovered information to help in your personal growth."

"Learning might be.. the ability to add comprehensive information to your preexisting knowledge..."

"Learning is a process that is co-constructed with teaching "

"Simply, I would define learning as personal change. I looked up the definition of learning on dictionary.com which offered three definitions:
1. knowledge acquired by systematic study in any field of scholarly application.
2. the act or process of acquiring knowledge or skill.
3. the modification of behavior through practice, training, or experience.

(Clearly going over my sentence limit. . .) Keeping this in mind, I would argue that learning is a modification of behavior, more so than an act in which we, as learners,

accumulate knowledge. **Learning is change or a modification of behavior in the sense that once you have truly processed an educative experience you will carry knowledge based on your experience that will then influence your future educative and learning experiences, your knowledge will forever be changed.**

'Learning' in which you simply pass a test by memorization is not truly learning unless you can carry and take that knowledge with you, allowing the memorization of monotonous information to influence your future experiences. Learning can be a process, however, it is important to note that this process is different for every student and can occur in numerous settings beyond the classroom. That being the case, and given this topic of discussion, I think it might also be relevant and interesting to question; what and/or who is a learner? I would claim that everyone is a learner but how do we all become learners? How do we maintain our constant desire to acquire more knowledge or educative experiences. "

"I think learning is a collection of experiences that are important for our survival.. we learn to survive. "

"To me there are two types of learning (at least). One is acquiring a new piece of information or a new skill, the other is starting to think in a new way."

A Professorial Perspective

E-mail sent out to several professors:

Dear _____,

Hello! Our names are Kate Elliott '13 and Aybala Ozturk '12 and we are currently working on a final project for our Gender & Technology class, taught by Professors Anne Dalke and Liz McCormack. For this project, we are looking to define "learning" in regard to our online forum/teaching tool, the website Serendip. Our class was separated into four units: Gender, Information, Science, & Technology. We are developing a grading scale based on these four topics by analyzing and categorizing students' posts online. As we have never created a grading scale before, we would appreciate it if you could either tell us how you grade work in your department or if you could send us a copy of a scale that you use in your classes. Lastly, we would like to ask you to define learning.

We realize this is last minute, but we would really appreciate a response by Wednesday morning.

Thank you for your time!

Kate & Aybala

Responses:

Anne Dalke:
----- Original Message -----
Sent: Tuesday, May 10, 2011 7:00:23 AM
Subject: Re: Please Read

Kate & Aybala
i try to measure **movement**. i don't say where students have to go (listing skills or knowledge acquired), but i do look for evidence that they have moved some distance in some direction (any one of the 360 degrees available!). **engagement and investment in others' learning, not just one's own, is also very important to me.** my rule of thumb is

3.0 meets requirements (as listed in the checklist:
http://serendip.brynmawr.edu/exchange/courses/GIST/s11/checklist
3.3 meets requirements, plus....?
3.7 exceeds requirements
4.0 surprises me: teaches me something new

i guess that's also the closest i have to a definition of "learning":
surprise. acquiring something new, unexpected.

i'm eager to see what you guys generate/come up w/.
see also merlin's attempt @ an e-portfolio for her learning:
http://merlingist.tumblr.com/

Douglas Blank:
----- Original Message -----
Sent: Tuesday, May 10, 2011 7:28:04 AM
Subject: Re: Please Read

Kate and Aybala (and CCing Profs Dalke and McCormack),

I almost didn't see your email... any email that starts with "Please Read" is almost certainly spam. But I was pleasantly surprised to find that it wasn't.

The manner of assigning grades and the idea of a grading scale are fascinating topics, and not unrelated to learning systems in general. Perhaps you did not know that my expertise is in learning systems, both natural and simulated? All of my research, and many of my advanced courses, are on these topics.

As a scientist, a would have fears about constructing any kind of measuring scheme after you have examined the data. As one being graded, I would have fears about my teacher constructing the grading rubric after I had submitted my materials. But perhaps you aren't really grading, but just going through the exercise of creating a rubric?

Define learning? That is a great question for which I could write a book---in fact I have written a dissertation on it. I'd be glad to discuss this at length. I'd be glad to set up an appointment with you to discuss.

-dsb

Deepak Kumar:
----- Forwarded Message -----
Sent: Tuesday, May 10, 2011 9:44:12 AM
Subject: Re: Please Read

This sounds interesting, but I'm afraid I do not have any free time in the next few weeks. Good luck with your assignment.

Deepak.

Alice Lesnick:
----- Original Message -----
Sent: Tuesday, May 10, 2011 10:40:39 PM
Subject: Re: We need your help!

Hi!

Your project is exciting.

Today I define learning as a process of **change within an individual or group by which new relationships (in the brain and outside of it) and new possibilities are uncovered, imagined, or created.**

Good luck!
Alice

Anne Dalke, in response to Prof. Blank:
----- Forwarded Message -----
Sent: Tuesday, May 10, 2011 10:19:24 PM
Subject: Re: Please Read

I've been mulling over this conversation today, and think that Doug's flagged a really interesting question for you guys to tackle: does it make more sense (or a very different kind of sense) to "construct a measuring scheme AFTER you have examined the data," rather than to devise a system ahead of time, against which you will measure the materials the students submit? The latter is the conventional method--laying out learning goals ahead of time, then seeing if students measure up. The alternative you all seem to be considering--reviewing what students have shown about what they are thinking about, and then figuring out from that some way to "measure" what they have learned--seems to me very exciting.

Can't wait to see how this plays out!
A.

Jody Cohen:
----- Original Message -----
I think learning is happening all the time--as people encounter our environments in different ways. **When those encounters (between people and environments, including of course other people) happen to intersect with someone's desires, needs, curiosities...then I think learning is most intense and most visible as learning.**

<u>A Parental (+ Professorial!) Perspective:</u>

Dory Slane (Aybala's Mom):
Aybala's mom is an online professor at 3 universities that teach online classes--
Columbia College, University of Maryland (Europe), American Military University. Most of her students are soldiers that are taking classes at the same time as being stationed around the world.

----- Original Message -----
Sent: Tuesday, May 10, 2011 10:03:33 PM
Subject: Re: Important!

OK, preliminary reactions:

Defining learning is going to be extremely difficult because the meaning is so flexible. It depends on the the field, the course, the instructor and the student. Perhaps especially the student. Every student who comes in to one of my classes has had a different learning experience and has different background knowledge. My job is to determine how to help each student individually.

Thoughts on grading midterm essays tomorrow for a junior-level history class at a university with no entrance requirements--

One student might have grammar problems. If the student somehow gets his/her ideas to come through the poor grammar, how do I grade that? I can't give full credit for something that is poorly written. I can, however, explain to the student in my feedback why points were lost and explain that the ideas were good. And do you know what? Most often the student already seems to know that. (Occasionally, I suggest that the student spend some time reading. Even love stories would do because the grammar is normally correct. Repetition, repetition, repetition.) Did learning take place? I don't really have any way to know.

One student might fail to connect facts. If there are four or five facts that lead to a conclusion, the student needs to get them in the right order and with the right emphasis. That's a skill that can be learned. So I hope that someone else in another course has pointed this out and that the student learns from it. But I have no guarantee of that. Did learning take place? I don't really have any way to know.

One might get the grammar and the order of the argument but also decide that putting in every single fact (even if unrelated) is somehow good. That needs to be pointed out. I've done that with juniors, seniors and graduate students. Learning something new is awfully seductive. One might think that something newly learned is important even if

it isn't for a particular assignment. Needs to be pointed out. Did learning take place? I don't really have any way to know.

You know, I could go on and on and on about the different scenarios. I imagine that tomorrow when I grade midterm exams that I'll encounter all of those and more. That's probably why I'm going on at such length. But I go through this sort of thing in my head every time that I grade a batch of papers or exams. I imagine that all teachers do.

My question is: How do I put all this into a rubric? Rubrics don't work, in my opinion, unless backed up by detailed feedback that is in my words. So that's why I do that.

Teaching online means that I have to get all of this across by typing it. I don't talk to students; I type to them. And they don't talk to me (sadly); they type to me. And they are not always as good at getting their point across as I hope I am. Not good if a student cannot express his or her confusion in interpreting my comments on an assignment. But for many people, online classes work as well or better than face-to-face classes. For one thing (very important), the student has a chance to muse about what s/he wants to say, to fiddle with the comment. Students who care do that.

Did learning take place? I don't really have any way to know. But I sure hope so! :)

P.S. If you want to see my rubrics, here you go. The ones for exams and papers, I use for one university. One university doesn't make me use them. Another has rubrics so complicated that I haven't learned, so how can the students? I don't think that I can reproduce them here, but you can check them at www.ccis.edu , Online Campus, Courses, HIST 101K. I am required by the department to use them.

For American Military University --
Exams: Grammar and spelling, 10%; completeness of answer, 90%.
Papers: Completeness of research, 10%, mastery of topic, 70%, format for notes and bibliography, 10%, grammar and spelling, 10%.

Sorry go be so wordy. This is something that I care about and think about a lot. :)

Good luck with the project!

P.P.S. Aybala, to be absolutely grammatically correct, you should have done "Thanks, Mom" rather than "Thanks Mom." Did you learn from that single suggestion? D

Me

David Elliott (Kate's Dad):
Kate's dad is a part-time professor of lighting design at UC Berkeley, and does freelance work for various theaters and companies as well. Or, in his words, "'i'm a lecturer of stage lighting design and a professional LD...'wouldn't say 'career' but don't know what else to call it..."

----- Original Message -----
Sent: Tuesday, May 10, 2011 9:58:03 PM
Subject: Re: Gender & Technology Project

Hi Kate.

I teach three classes. One of them is structured in such a way as to allow me to grade on a scale based on accumulated points and relies less on my subjective impressions. So, if they get a certain number of answers right on the mid term and then on the final and they don't miss more than one or two classes and they turn in various projects and complete enough lab hours, I can tally up a total score and grade on a scale:

48.6%	F
52.0%	D-
57.0%	D
61.0%	D+
65.0%	C-
70.0%	C
74.3%	C+
78.5%	B-
82.5%	B
87.0%	B+
91.0%	A-
95.5%	A

100.0%	A+

My other two classes are not as "neatly" organized and can be tougher to grade. To use a scale like this, you need a set of benchmarks.

Learning? To me, to learn something is to grasp the structure and relationships of data and information in a way that allows you to incorporate and utilize new data. It is certainly not the rote memorization and regurgitation of "facts" without any understanding of their significance or function.

So, for example, to simply memorize that a particular lighting fixture has a beam spread of X° is fairly useless without knowing why you need to know that and how to use the information in designing lighting. Once you know why you need to know that (among other things, knowing the beam spread of a lighting instrument allows you to determine how many lights you need and where they need to hang to light the performance), once you understand how to do that, the particular data of a specific light is something you can look up. In many cases, data is accessible to all but it's the process that counts.

The data's out there. You've learned something when you know why you need to know that.

Does that help??

love,

Dad

Meeting #4
How does this all relate to Serendip? How do we define learning?

Serendip encompasses all learning styles and all students.

Analyze the graphs:

Look at all the different mediums used in the web-papers. Our classmates are exemplifying the [multiple intelligence theory.](#)

According to Howard Gardner, multiple Intelligences are seven different ways to

demonstrate intellectual ability.

Visual/Spatial
Verbal/Linguistic
Logical/Mathematical
Bodily/Kinesthetic
Musical/Rhythmic
Interpersonal
Intrapersonal

Following photographs are the: intelligences-accelerated-learning-mind-map

What are the types of Multiple Intelligence?

🔵 Visual/Spatial Intelligence: *ability to perceive the visual*. These learners tend to think in pictures and need to create vivid mental images to retain information. They enjoy looking at maps, charts, pictures, videos, and movies.
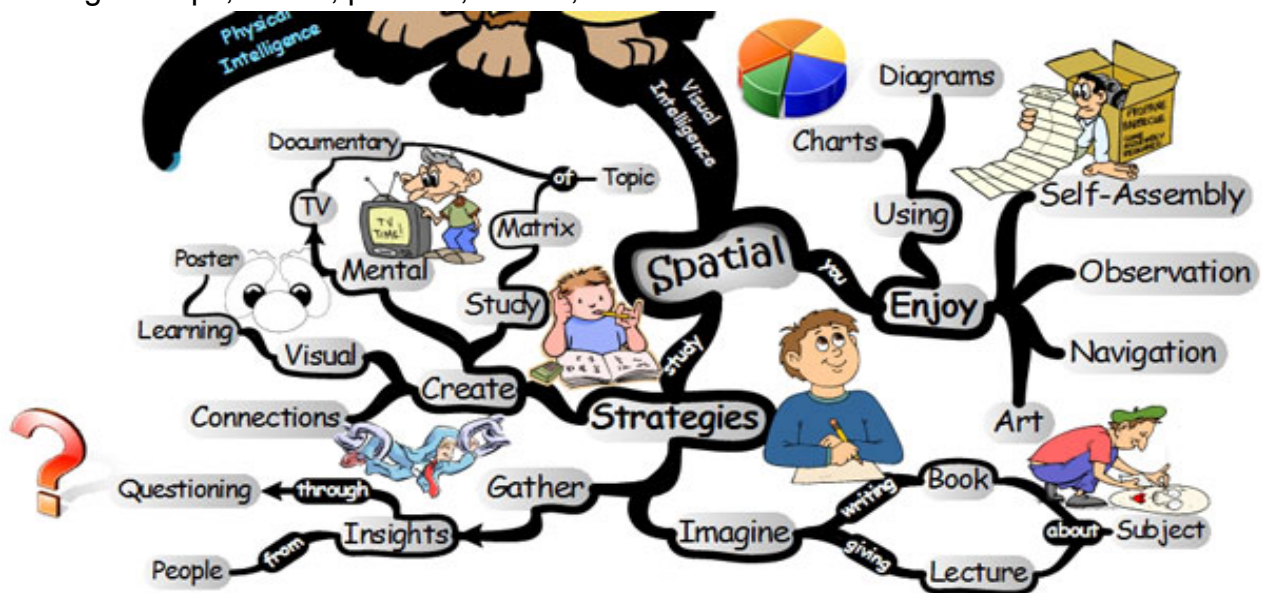
🔵 Verbal/Linguistic Intelligence: *ability to use words and language.* These learners have highly developed auditory skills and are generally elegant speakers. They think in words rather than pictures.

● Logical/Mathematical Intelligence: *ability to use reason, logic and numbers.* These learners think conceptually in logical and numerical patterns making connections between pieces of information. Always curious about the world around them, these learner ask lots of questions and like to do experiments.

● Bodily/Kinesthetic Intelligence: *ability to control body movements and handle objects skillfully.* These learners express themselves through movement. They have a good sense of balance and eye-hand co-ordination. (e.g. ball play, balancing beams). Through interacting with the space around them, they are able to remember and process information.

🔵 Musical/Rhythmic Intelligence: *ability to produce and appreciate music.* These musically inclined learners think in sounds, rhythms and patterns. They immediately respond to music either appreciating or criticizing what they hear. Many of these learners are extremely sensitive to environmental sounds (e.g. crickets, bells, dripping taps).
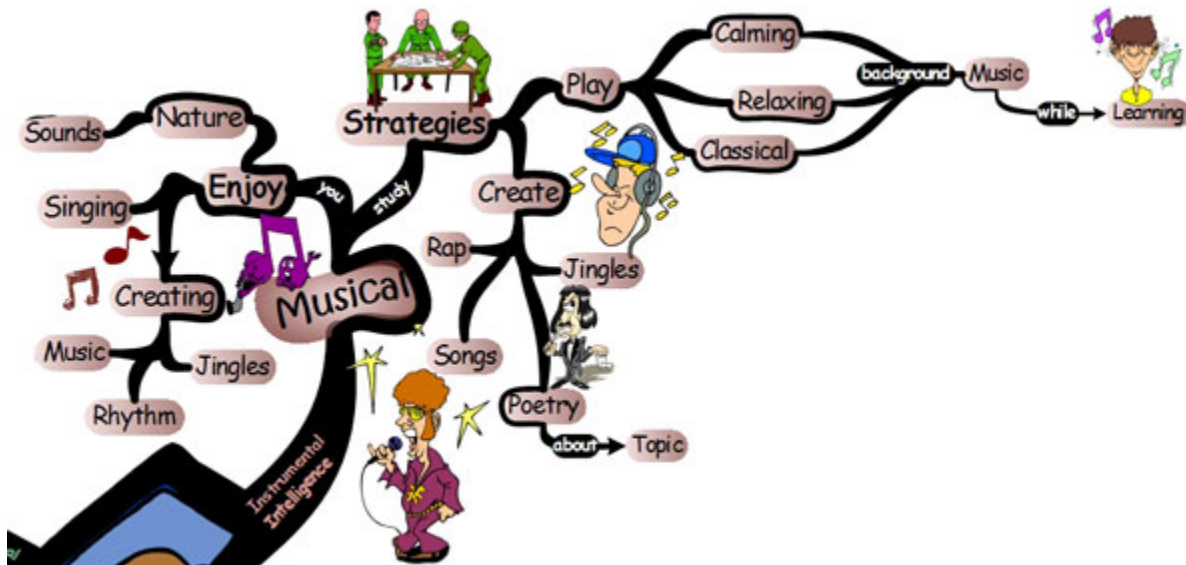

🔵 Interpersonal Intelligence: *ability to relate and understand others*. These learners try to see things from other people's point of view in order to understand how they think and feel. They often have an uncanny ability to sense feelings, intentions and motivations. They are great organizers, although they sometimes resort to manipulation. Generally they try to maintain peace in group settings and encourage co-operation.They use both

verbal (e.g. speaking) and non-verbal language (e.g. eye contact, body language) to open communication channels with others.

● Intrapersonal Intelligence: *ability to self-reflect and be aware of one's inner state of being.* These learners try to understand their inner feelings, dreams, relationships with others, and strengths and weaknesses.
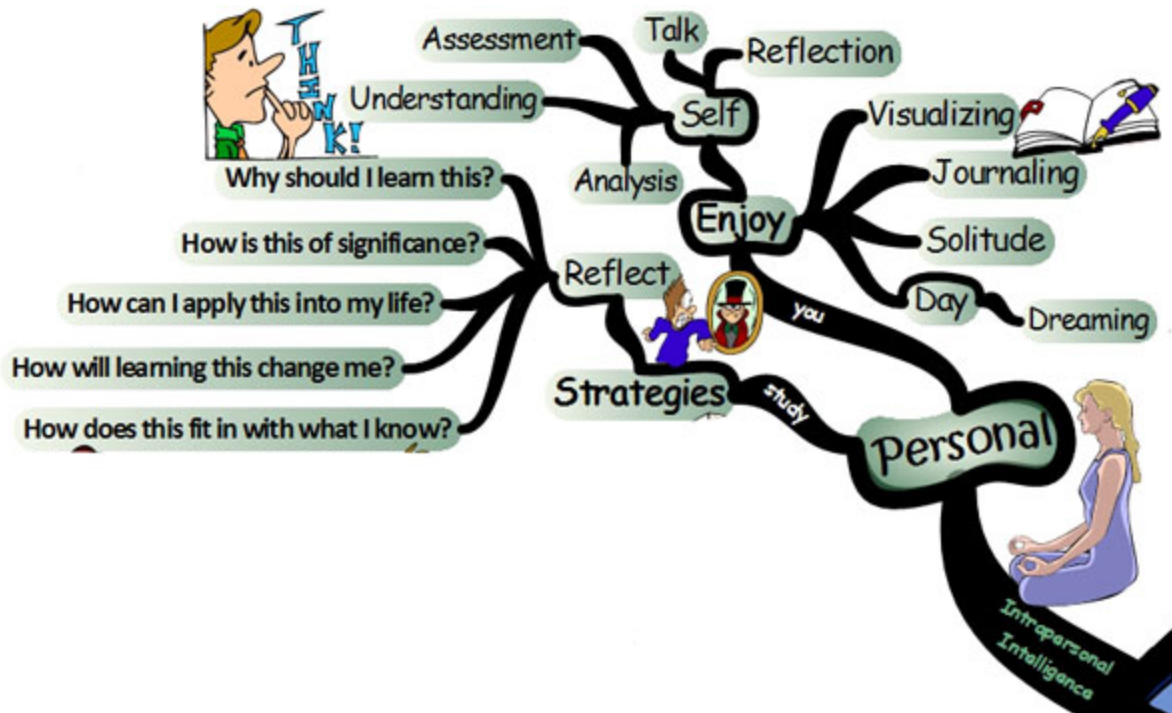
Aybala's Reflection

After working on defining learning for several days, compiling definitions from a variety of sources and a variety of brains, I have yet to come up with a definition of learning. I do, however, have a clearer 'idea' of what learning entails, that is, I have developed my opinion of it. Kate and I decided to do this last part of our exploration separately, which I believe will only show one of the points I will make in regards to the individualization of the learning process.

Kate and I have been collecting data and looking at the same information. We have combined the powers of our brains and in conclusion, I imagine we will still not have identical results. I would like to start off by saying that this has been an engaging, fun, yet challenging exploration. Amongst the many definitions we have received, I still don't see the one that is right for me and this, I believe, is what I am learning from this exploration.
Learning depends on many different factors. I am talking about the people (teachers, parents, students, the world), the setting (outside, inside, meat-space, cyber world), the brain (how am I wired?), the experiences (how did I come to this point?) and many other factors I have yet to learn about.

Where am I right now? I'd like to think that this journey for me was *learning.* To me, though I may not be able to define it, learning encompasses many different factors. First and foremost, I would like to discuss *movement*. In my educational experience, I have been *subjected* to standardized tests, quizzes, exams, essays, pop-quizzes, some of those fill in the blank maps and graphs, and even some make me a large poster of the periodic table type stuff, yet I haven't felt a movement…I haven't been allowed to explore what I've wanted to explore. Hence, first and possibly only conclusion: I *need* MOVEMENT! Honestly, it doesn't even matter what kind of movement. The reason I have taken most of the classes I have taken at Bryn Mawr College, isn't because I was interested in them, it's actually because I felt that I didn't know anything about the area in general. Including my major and minor departments, I have taken a class in 10 departments off the top of my head and I'm adding more to it next year. Personally, I need to feel this movement; otherwise I don't feel that I've learned.
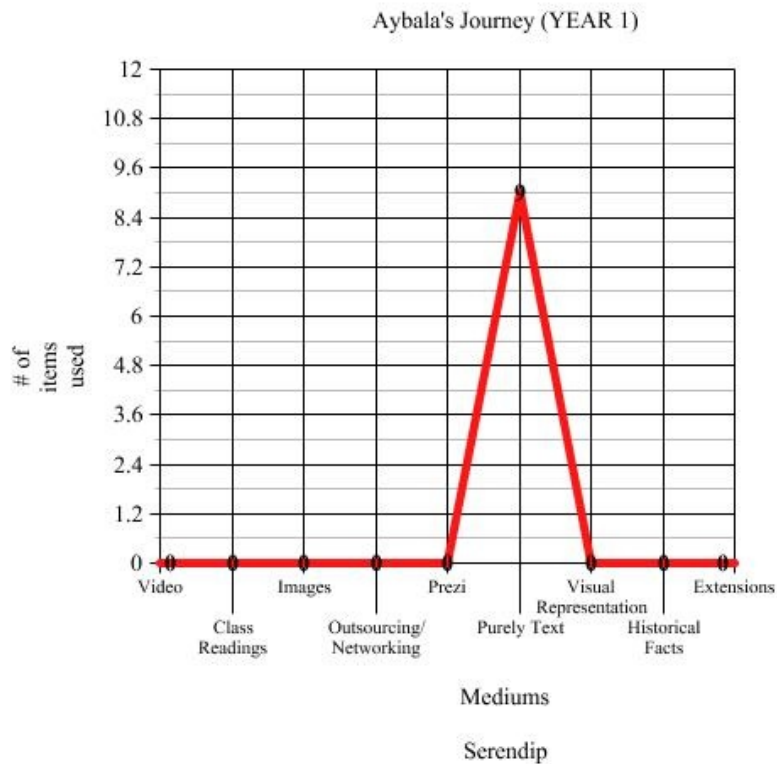
Also, the reason I feel so compelled to stress this idea of movement is because everyone, given the right tools and opportunities, are capable of it. *Learning does not discriminate. The methods in which my learning has been tested in the past do, however, discriminate*. They do not account for differences amongst learners. Hence, to me movement is *necessary* and is evidence of some kind of learning.

I have gone back and *tracked* my journey on Serendip and have created (with the help
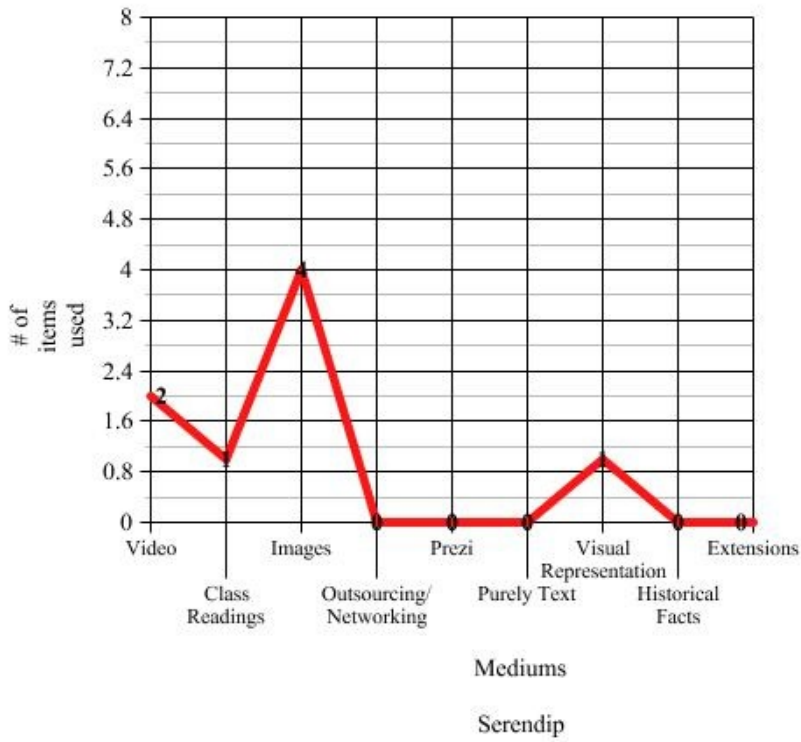
of Kate) the graph below, which is a combination of the three years of classes using Serendip.

Aybala's Journey (YEAR 1)

Aybala's Journey (YEAR 2)
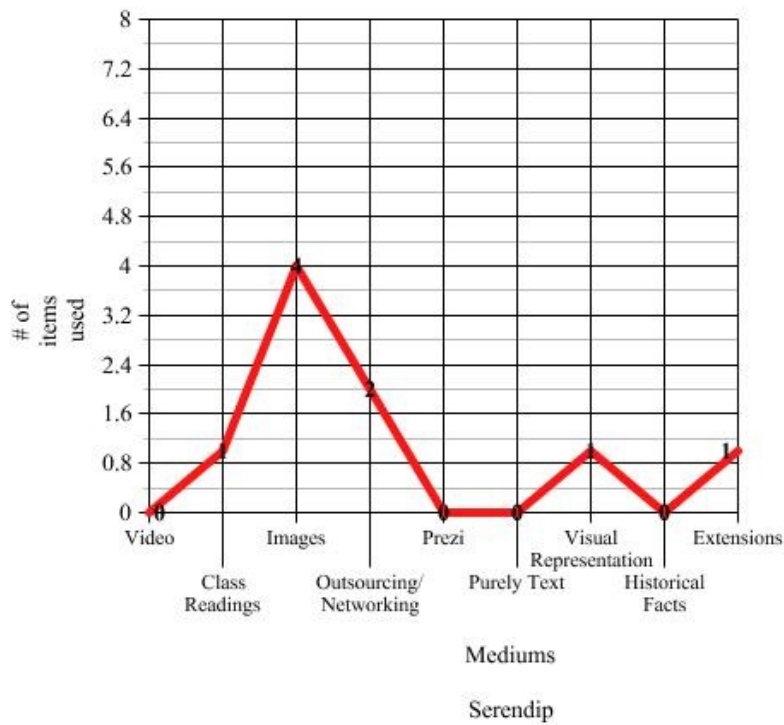
Aybala's Journey (YEAR 3)
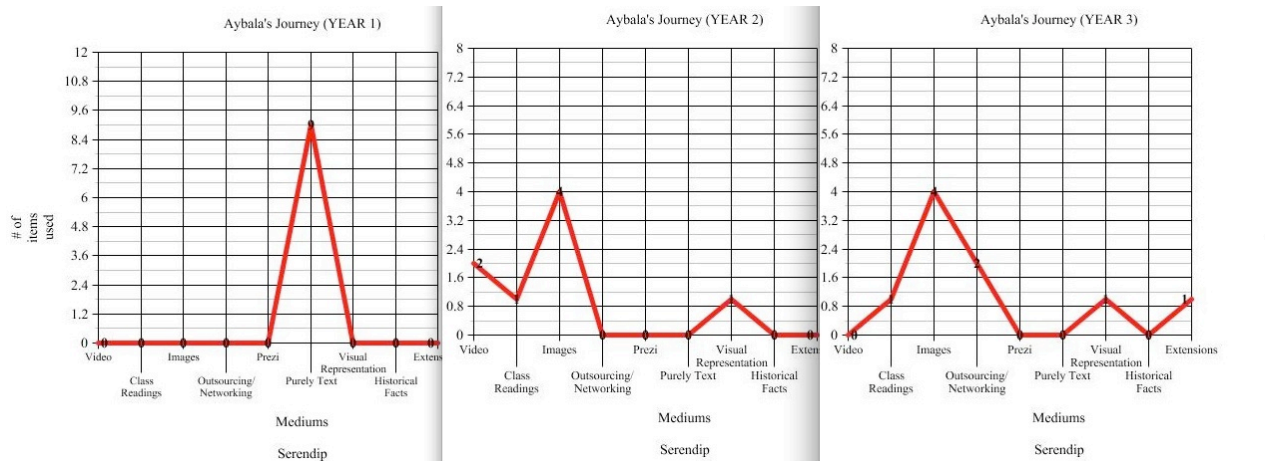
This graph to me is evidence of my learning through out my journey on Serendip. The x-axis consists of the same categories of mediums used earlier in the project showing the learning that occurred in GIST. The y-axis is the number of times each medium was used. I chose to separate the experience by years to show my movement (learning) across time. Below I am including each year individually in order to more clearly visualize each year.

Aybala's Journey (YEAR 1)

Aybala's Journey (YEAR 2)

# of items used (y-axis), Mediums (x-axis)

x-axis categories: Video, Class Readings, Images, Outsourcing/Networking, Prezi, Purely Text, Visual Representation, Historical Facts, Extensions

Serendip

Aybala's Journey (YEAR 3)

# of items used (y-axis), Mediums (x-axis)

x-axis categories: Video, Class Readings, Images, Outsourcing/Networking, Prezi, Purely Text, Visual Representation, Historical Facts, Extensions

Serendip

As seen in these graphs, the clear movement I have made is from using purely textual

methods of relaying my thoughts, to using different mediums. Though I cannot graph it, I have had movement in the sense of *personal growth* as well. I feel that through my journey on Serendip I have learned a great deal about myself, with the use of free exploration. I am allowed, no, encouraged to explore absolutely anything I can connect to something from class. This freedom has never been given to me and its value has not gone unnoticed.

I feel that what I have learned in my journey will be with me for a while, and even if forgotten one day, it will by that point (as it already has) have started to lead to other ideas and information. This, I believe, is another factor of learning that I have experienced. Things that I have learned, the movement I have been in and am currently experiencing have already started to lead to new ways of exploring life, new information, new thoughts, new insights etc. The movement and my progression of mediums seen in the graph above is evidence of this.

Before I conclude this reflection, I would like to speak on behalf of Serendip. I'm sure it is clear by now that I feel very positively for the experiences I've had with the use of this virtual world. I would like to make note of the fact that this has been my personal experience and is not meant to be a generalization of all experiences surrounding Serendip. However, I will argue that Serendip provides the grounds for learning to a greater variety of learners than do classrooms which limit one's methods of expression, as well as exploration of a variety of interests. As seen above in Gardner's Theory of Multiple Intelligences there is a great variety of ways in which learning may take place. According to Gardner, multiple intelligences that humans possess are different mediums in which intellectual ideas may be demonstrated. Serendip has been the best tool I have been provided in my academic learning career for this precisely. I have moved from using the single method of expressing myself through my verbal abilities (verbal/ linguistic intelligence) in my first year of using Serendip, to using images and videos (visual/ spatial intelligence). In my process of visual representation and building a final project I've used bodily/kinesthetic intelligence and logical/mathematical intelligence. Possibly the most important intelligences I have used more in my journey have been interpersonal and intrapersonal intelligences. On one level, my exploration into the world outside of the classroom through networking in projects such as the one in which I used online chat websites, has been amazing in both my learning of myself and my interaction with others. On another level, my experience of being on Serendip alone has allowed me to *track* my own growth in projects such as this one, as well as allowing me to connect with the world of Serendip. It has been a great journey; a great learning experience. Have I learned in my journey through Serendip? I know that I have. Is there a way in which you can assess my learning, at least with the use of a preexisting scale? In quoting my mother, I would have to say "I don't really have any way to know".

Kate's Reflection:

So, what is learning? That's been the question of this entire project. And yet, I haven't the slightest idea. What *is* learning? *What* is learning? What is *learning*? No matter where I put the emphasis, the question remains the same, and the answer still doesn't magically appear.

In the very beginning of the project, I was quick to define this indefinite word. "Learning is exposing yourself to something new and being able to compose that information to a point." I was well aware this was an answer influenced by something else. I had recently met with Professor Dalke about my progress in the class. Looking over my past three web-papers, Anne and I realized, wow, my projects haven't really had any points to them; they weren't making an *argument*. Ahhh, that infamous a-word. I cringed, Anne inquired, "is there something about the word 'argument' that makes you uncomfortable?" Yes. Why yes there is. It evoked an image of my paper on trial, my *argument* being cross-examined by an unforgiving lawyer (professor), while the heavy breathes of the jury (classmates) permeated third-degree burns onto the back of my neck, bubbling with insecurity, as their judgmental eyes trivialized my every move.

I shifted in my seat.

*Does that mean I didn't **learn** anything?*

An argument, to me, is proving that you've learned something. It's presenting information in a concise (and cutthroat?) way. It sounds…well, scary. I know that I am quite good at *visually* presenting my information to represent some sort of idea. I can at least do that kind of "arguing" well. But Anne brought up the fact that most of the time English professors really like to see their students' papers providing **some sort of argument**, with an attempt to **prove or answer** said argument by the end of said paper. None of my projects were really *proving* anything.

So, is learning the ability to <u>prove</u> that you <u>*know something*</u>? Is the "point" of learning really to have a point? According to the theory of Constructivism, learning is an active, *constructive* process. The learner, in this sense, is an **"information constructor."** People actively create their own subjective representations of objective reality. The "point?" To construct knowledge rather than to acquire it.

In this case, I <u>had</u> learned something. My web-papers, though far from traditional papers

at all, were ***constructions of knowledge*** in that I was using all sorts of mediums to formulate my ideas. My first project, a Prezi, an interactive Powerpoint of sorts, included text, images, and videos, composed in a spin-off of a crosscut sequence, a technique used primarily in film. My second, a pdf-paper written in the voice of a fictional character, was a text-based project that worked within the tools of word docs to present something that looked a little different than your typical paper. Lastly, my third web-paper was a purely visual presentation of manipulated images expanding on another students' project. **Evidence of my learning** is seen in my *active construction* of information. And this activity is preserved forever on the **cyberspace of Serendip**.

      That brings us to our second point of the project: Serendip. How does one evaluate *learning* on an **online forum** used for **teaching**? *Obviously* learning is involved. In the eyes of a constructivist theorist, one could say Serendip is a pertinent example of students acting as information constructors. The use of the Internet, for instance, allows the student to actively engage with information. Within Serendip, they are able to both *literally* and *figuratively* construct knowledge—literally by inserting links, copying, pasting, bolding, italicizing, or underlining words, sentences, or paragraphs, and figuratively by utilizing ideas and information from in-class discussions, other students' posts, and various updates they receive from the site in emails*. **New information is thus linked to prior knowledge***, a key concept of Constructivism.

      Constructivist theorist, Lev Vygotsky's Social Development Theory, gives light on another important aspect of <u>learning on Serendip</u>: ***the involvement of others***. Vygotsky's theory argues that "social interaction precedes development; consciousness and cognition are the end product of socialization and social behavior." Socialization is key on Serendip. The website describes itself as "a playground," where questions can be asked "without boundaries;" social interaction is inherent to a Serendipitous experience.

      There are three key components of Vygotsky's Scial Development, the first being that social learning begins **between people**, then **within the individual**. As the Psychology major that I am, I automatically made a connection to another theory of learning, <u>Gardner's theory of Multiple Intelligences</u>. Within this theory, there are seven ways to demonstrate intellectual ability, two of which are Intrapersonal and Interpersonal Intelligence. The ability to *relate and understand others* (Intrapersonal) and the ability to *self-reflect and be aware of one's inner state of being* (Interpersonal), are important types of intellect. Serendip taps into these intelligences by allowing students to engage on both an intra- and inter-personal level— commenting on each other's posts, expanding on each other's projects (**intr*a*cting**), while

creating independent posts that reflecting one's own ideas or opinions (**inter***acting*). Thus, social interaction, among students and other members of the cyber & Serendip community, precedes conscious acquisition of knowledge (a popular definition of learning). **Learning is an end product of interaction and engagement**.

The second component of Social Development is the MKO, the More Knowledgeable Other. This is said to be anyone who has a "better understanding or a higher ability level than the learner." A typical example of an MKO is a teacher (GIST Professors Anne & Liz), however, this could also be peers, or even computers. Aha! Serendip is a kind of *multi-layered* **MKO**. It involves not only professors and academics of the sort, but students and peers as well. The Internet, in this case, is an MKO that works *with* the individual. A **Serendip-learner** thereby utilizes all these resources to **enrich** and **deepen** their *learning process*.

Serendip, this **cybernetic space**, is a tangible representation of Vygotsky's third and final stage of Social Development—the <u>Zone of Proximal Development</u>, or the ZPD. ZPD is the "distance between a student's ability to perform a task under adult guidance and/or with peer collaboration, and the student's ability solving the problem independently." This is the *zone* where *learning occurs*. **Serendip is this zone.** In-class discussion is under the "facilitation" of our professors, whereas at-home posting online is up to the student. The active participation on Serendip is a combination of both zones, by which the student must reflect on what s/he has discovered and expand past what s/he already knows.

The ZPD, Serendip, and Social Development all encompass one theme: **exchange**. They involve *exchanging knowledge* with others and within one's self to better understand some type of information, whether old or new. There is no defined "point" to this engagement, but rather a process. The process perhaps is what one may define as learning, and how one <u>participates in this exchange</u> determines what it is they learn. Learning, however, should not be looked at as a tangible entity that can be "acquired" or "grasped," as one will most likely never be able to *physically touch* what it is that is actually "learned." Learning, in a sense, could be thought of as a **feeling** that, from the unfamiliar, enters into the realm of the familiar, or vice versa, by which one can seem to **understand**, even if for just an instance, what actually touching, grasping, *entangling* oneself with would produce, perhaps in the form of knowledge, or perhaps the *true meaning of* **Serendip***ity*.