Learning Styles & Distance Education Course Summary Report

The A-Team

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Project Timeline

When	What
9/21/09	Set up wiki (https://itec860.pbworks.com/) to support collaboration. Learners posted ideas about our topic in preparation for our first meeting.
9/30/09	Initial team meeting. We met through a webinar to discuss how to best present our topic. Structure of our online class online class and whether it would be best handled strictly online or using a combination of online and face-to-face instruction. We outlined our work for the set up.
10/08/09	Homework—we all researched learning styles surveys, took the surveys, and commented on them.
10/08—17/09	Continued collaborating via email.
10/17/09	We had a conference call to finalize our instructional objectives and instruction plans.
11/07/09	Final decisions regarding reading materials were made.
11/14/09	Conference call to go over last changes and work on site/course.
11/15/09	Final conference call to review course outline and make last minute changes.
11/15/09	Welcome email was sent to ITEC860 class.
11/16/09	Regular course meeting 4—p.m.
11/16/09	Team participated in group webinar to support classmates with question and answers.
11/18/09	Thursday chat session for learners.
11/19/09	Lonely Email sent to learners reminder.
11/20/09	Email request for formative survey sent to learners.
11/23/09	Debrief meeting through webinar with group.
11/29/09	Planning meeting to prep for class debrief.
11/30/09	860 Class debrief with learners.

Courses Agenda for Nov. 16—23, 2009

11/15 Sunday	11:25 p.m.	Welcome Email to Classmates
11/16 Monday	6:oo p.m.	Webinar for Support through DimDim Meetings (question & answer session for classmates)
11/16 Monday	7:00 p.m.	Webinar Session Ends
11/19 Thursday	4:00 p.m.	Chat Session for Support through iLearn (question & answer session for classmates)
11/20 Friday	1:30 p.m.	Lonely Email to Classmates
11/22 Sunday	4:15 pm	Closing Email to Classmates
11/23 Monday	5:00 p.m.	Webinar to debrief class with group
11/30 Monday	4:00 p.m.	Class debrief

Course Planning

We had a late start to our project for several reasons. One was the fact that one of our members' lost her parent during the process and traveled back and forth to her parent's home a couple times during the semester. The other delay was a belief held by several members of our team that we needed to get together face to face to really get started. Our team members lived all over the bay area, had jobs and kids, other classes and could not manage any face to face meetings during the whole process. We found that the Monday 4—7 time slot was the only time all four of us could plan to meet during the work week. Once we gave up the idea of meeting face to face, we actually got going.

We first created a wiki (pbWorks) and initial pages for brainstorming our ideas for the course soon after the assignment was given. We had pages for meeting notes, issue tracking, resources, learning objectives. The purpose of using the wiki was to serve as a main place for posting ideas and resources. It allowed all team members to comment on posts and respond to questions and issues as well. Journal articles and web links were posted so that all team members could begin to read about our topic using common resources (which would eventually become course resources). Having categories an folders really helped. Towards the end of the planning process, and at the suggestion of another class team, one of the members took on the role of cleaning it up in the final planning stages of our project.

The first meeting had both a phone and a video connection. There was some sharing of screens and everyone had the wiki open and was either entering information into it or discussing what was in there. On other phone conferences DimDim was used, set up by Arl. It worked well. Arl and Elizabeth were successful at sharing screens. We were all able to give feedback.

Course Design

The first things we did were look for resources and learning styles surveys. We took the surveys and rated them. We also asked each other to read the readings we found. It was hard to pull together people's ideas at first because we had not determined our learning objectives—so the ideas flew around and there was no real way to determine whether they made sense or not. Once we put together our learning objectives, the structure for our course came together rather seamlessly. Also, through the research, we realized the relationship between learning styles and multiple intelligences—something we didn't quite get before. So it was interesting to hone our vision as we learned more about what we were supposed to teach.

As we selected resources that students would learn from, we focused on addressing multiple learning styles. We discovered that many of the resources available catered towards linguistic learners. In the few cases of finding alternative options—videos and an interactive distance education course—we were concerned that the content didn't target our learning objectives as well as the "linguistic" readings. While trying to consider our learners' time limitations, we ultimately decided upon a few choice articles that would provide three key learning style approaches: Kolb, Gardner and VARK.

We wanted the learning to appeal to all types of learners. We considered doing a Powerpoint presentation with sound or a Camtasia video to show the learning path. We decided on a website to house the course, which would make the learning a more interactive experience, thus tailoring it to the bodily-kinesthetic learning. We did not leave enough time for a video. Our goal was to keep it simple and keep related parts in close proximity. We wanted to make a visual "Learning Path" that was easy to follow, incorporating links, information and resources for particular activities. It was important for us to maintain a link with iLearn so that it would be easy to post assignments. Designing iLearn to work with the website was intentional and we hope this made things easier for learners. We decided to use a linking glossary to add to the kinesthetic appeal of the site. We selected a few related videos that were labeled under a subheading and easy to find in our "Resources" section. We gave a lot of thought to the grouping of like elements, incorporating Gestalt theory.

Collaboration and the Use of Technology

Our process was collaborative and consensus-driven. Although Angela built our learning platform, through the use of Dreamweaver, the design came out of collective process, and individual work on various sections. Generally a person took on a responsibility and then passed his/her deliverables to other members of the group to review and revise. Some of the higher stake decisions, we would review in the group—such as the learning objectives, activities, and resources.

When the site was up it was easy for the team to test it since it was live. We communicated through emails, Internet chats and an occasional phone call. It was essential to send emails to all...even if it seemed redundant. We used GoogleDocs for transferring the Resources Page information. After linking some things manually, we learned that there was a way to transfer links to our GoogleDoc page, that we were not aware of. There were some technology glitches with materials done in Powerpoint—the best format for file transfer was Word.doc. At first we were sending emails about typos and which made things easier. Anthony found a way to transfer the whole site to a pdf using Adobe Acrobat and mark it up with post-its. This was great for Angela, since there was a lot to do at the last minute. Having changes identified on a pdf was an easy to follow solution.

We wanted this website to be simple, and defined four categories. Everyone worked together to develop content for the categories and collaborated on editing. Defining the learning objectives really drove the design of the website. We knew we had to provide resources for learners to accomplish these objectives and became very clear about how to do this. We wanted to be responsive to learners and create content we ourselves were interested in reading.

Usability was a key consideration. We decided to use anchor links to help users navigate and find content quickly. We used alternative text tags for images. The images used online for the Learning Styles Overview were small—we wanted to avoid a long download time. We added a link to a print pdf with more readable and accessible content. Pedagogical Rationale was written and placed next to each chart to clarify our course overview. Our goal was to keep it simple and keep related parts in close proximity.

Instruction and Student Learning

Planning instruction from the perspective of four different instructors, all with varying experiences and beliefs about instruction, is no easy task. Our groups collaboration and flexibility allowed for making instructional decisions easily.

For most participants, the MI and VARK assessment results were not a surprise. However some participants thought that they were a certain 'type' (e.g., visual) and discovered that they had a kinesthetic quality as well. Participants were expecting a single 'type' and were expecting individual assessment results to be posted for the entire class during the course. Five days into the class only 8 people has participated in the course and the results were not posted until then. Everyone agreed that taking this course helped them think of different perspectives, to walk in other's shoes, and to reflect on how they might change a distance learning course to better meet the needs of diverse learners (this was one of the instructional goals and this was achieved).

Another team goal was to be involved with our learners and to provide thoughtful feedback in forums and posts. We wanted to respond to each posting within 48 hours to show our learners that we valued their work and wanted to provide thoughtful feedback. The responsibility of responding to peers was divided among all four group members throughout the week. By doing this, each member was clear on their responsibility, all learners were responded it and it involved all instructors with our learners work. From the weekly forums and assignments, it appeared that most learners who engaged in the coursework during or week's instruction, took student's learning styles into consideration with their work. In most cases, the learners provided great feedback to their peers as well. The class felt that this level of response helped them feel appreciated and listened to and connected rather that existing in a lonely cyber-space.

One of the first assignment responses posted early in the week gave very little mention of the various learning styles types. As instructors, it was pretty clear that the particular learner did not either read through or get much from our instructional resources. In order to get that learner more engaged in the content, one of the team members quickly replied with thoughtful questions to encourage the learner but we found he never replied or surfaced in the course again.

Participants thought that the scope of the course was appropriate and that we had not assigned an inordinate amount of work. Most participants said that they completed the work within 3 hours.

Everyone was complementary about the aesthetics and use of an external web site. Participants liked the use of color and the learning path diagrams to changed as one moved through the course. One participant did not understand what a 'learning path' was and didn't understand how to navigate the course but this was the only exception.

In preparation for our course, we discussed group participation, or the lack thereof, and we concluded that only during our assigned classroom time can the entire class meet. Although we made numerous attempts to engage our learners during our week's course dates (11/16—11/23), we found many learners begin to do work after the fact. As instructors, we aren't quite sure what else we could do as their was no grading incentive. We asked peers in person in class the week before to respond to our survey by Monday night and reminded them in our opening email and our course learning path but couldn't get more than 8 (by the time of the debriefing, 15 has responded) to respond. We sent a lonely email to ask peers to do the work on Friday and a closing email on Monday but found 3 students began to do the work on Tuesday 11/24. Unfortunately, this late work not only prevented the learners from getting the instructors' feedback but it took away from the other learners work in the forum posts. One possible was to fix this problem would be to recommend that classes overlap with total duration of two weeks so that group activities could be planned during the first week based on assessments or other factors and then executed during the second week.

Please refer to graphs on next page.

A graph of the final class MI assessment:

Based on the Multiple Intelligences assessment, your top three intelligences are:
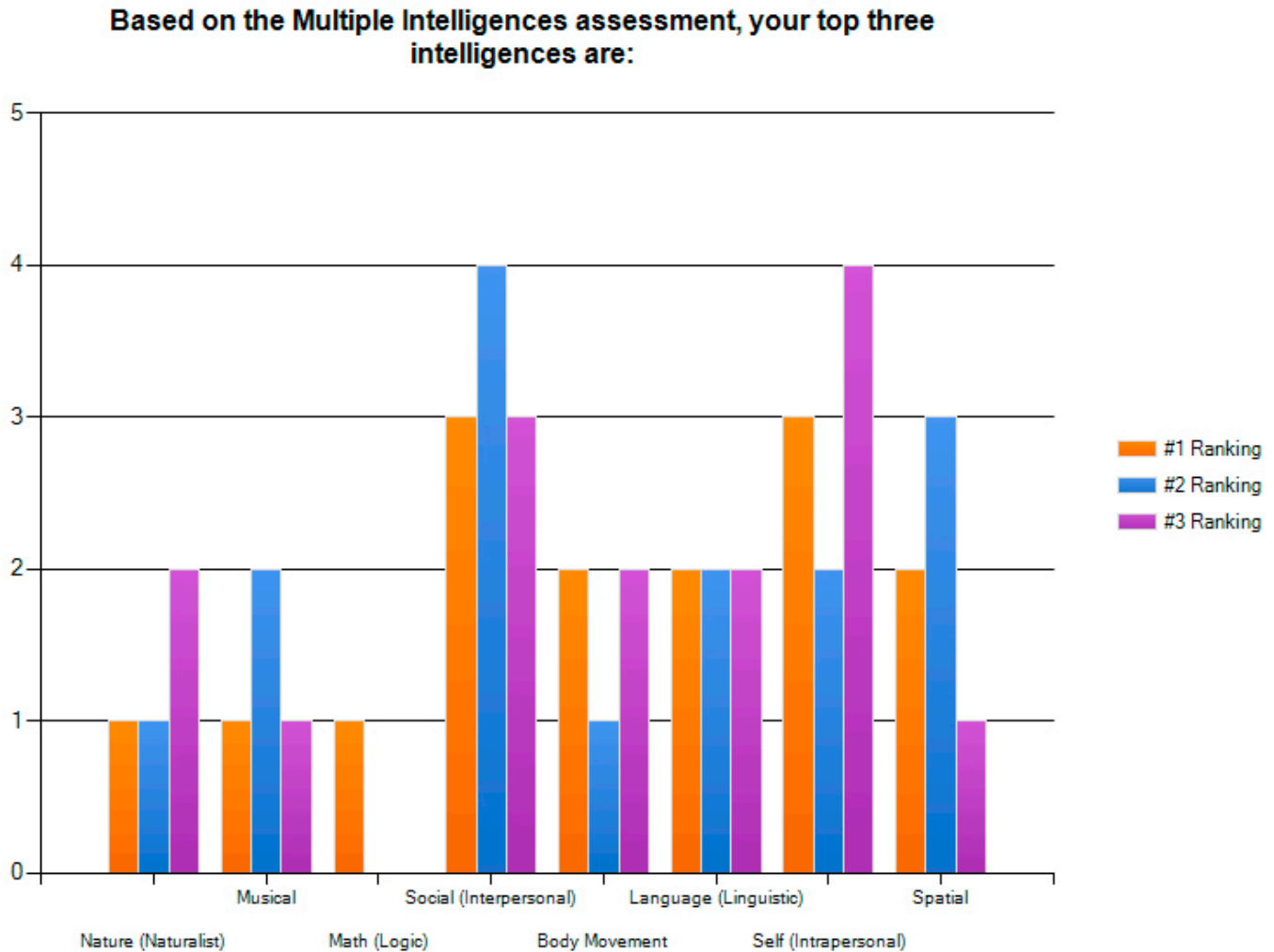
Formative Assessment

The course included a formative assessment as well as the required in class debrief. Our formative assessment survey used SurveyMonkey, a web-based survey tool, to collect the responses. Nine participants provided feedback.

There was confusion about the VARK assessment tool. Some people thought that they should select the BEST answer while others selected multiple responses. While most of the class were 'multi-type' learners (e.g., depending on the context, students would use one or more learning modalities), the fact that there was a misunderstanding about the assessment tool invalided the results.

Participants provided positive feedback that the assessment tool did prompt them to think about their learning style and most agreed that the assessments seemed to reflect their

reality. However, we need to modify the assessment and the instructions to provide better understanding of the participant's learning styles and the class as a whole.

When asked about the class itself, the results were positive in almost all areas of inquiry as shown:

Please provide feedback on the course by agreeing or disagreeing with the following statements.
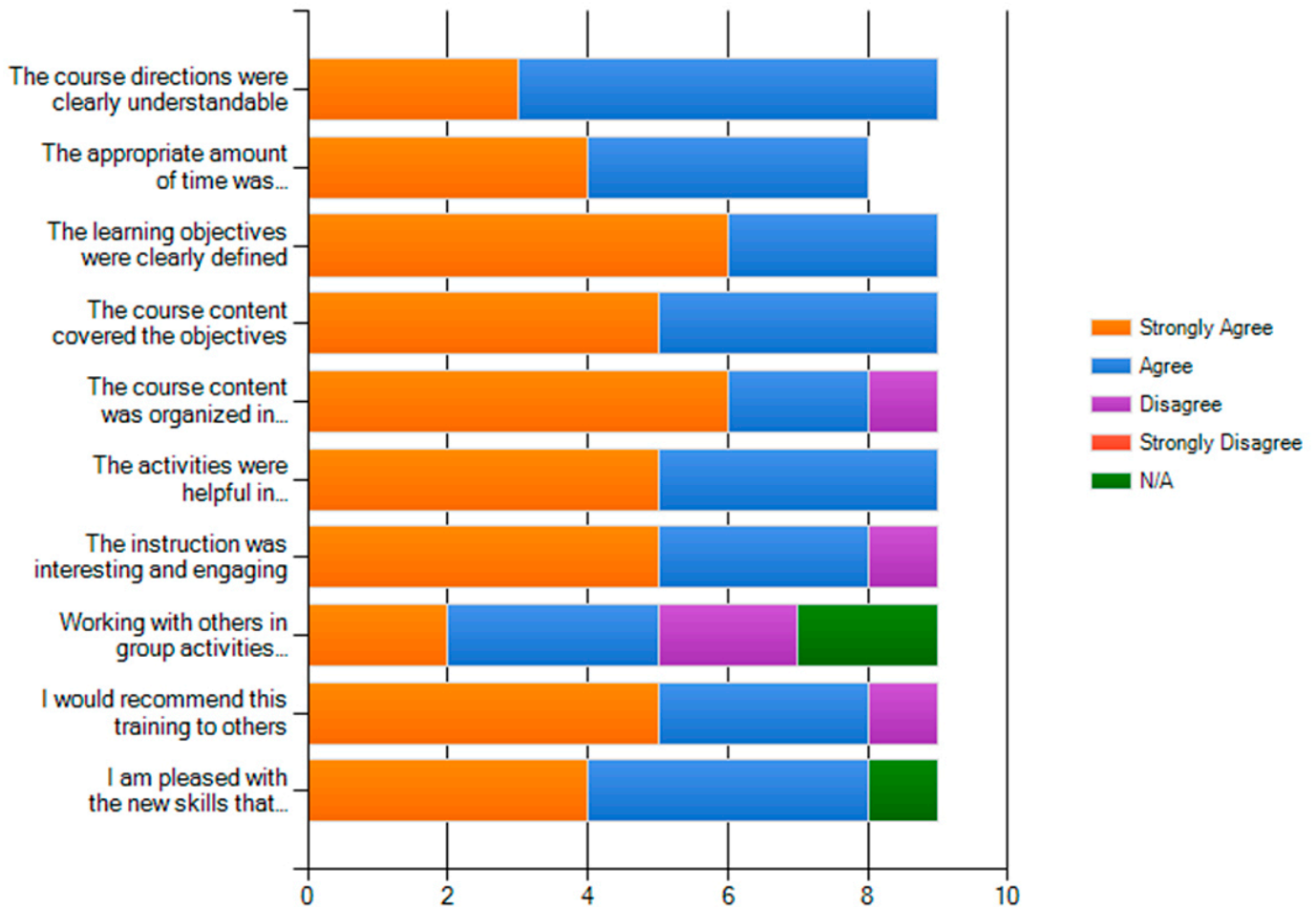
Eight out of nine participants felt that the course was well organized, interesting, and engaging. One participant stated that they would not recommend this training to others.

The survey asked about missing elements and we received the following comments:

- "Perhaps a more thorough explanation of **challenges instructors face in the use of incorporating learning styles into their classes.**"

- "I thought the team did a good job. There was appropriate and useful content, the activities were productive, the time on task reasonable. I didn't have to spend hours trying to figure out what you wanted and could devote more time to the exercise. I would have liked to have seen a **very brief outline of all the steps and the approximate times allotted** to each so I could plan my time but otherwise—good stuff."

- "Content created by instructors."

Additional comments about the course survey included:

- "Loved the simplicity of the class. Very straightforward instructions and use of pre-existing material made for a **concise and effective** class. You stayed on focus."

- "… when I first saw the web page, it took me a while to figure it out. For me, just because there are categories "Learning Objectives," "Learning Paths," and "Resources" that doesn't really tell me what I need to do **in what order.** Learning objectives—OK, I can read those. Overview—should I read that first? Why is it after the objectives? Learning Path—**what is a learning path**? I don't know that expression—does that mean that is where I will find what I am supposed to do for the week? Resources—are those going to be essential things or extra things? …Even a **simple numbering system** would have made me a much more secure learner."

- "I enjoyed taking the MI and VARKS intelligences test. It is always good to see one's learning preferences shown through on of these surveys, and have them be 99% correct, and also provide a summary of what your results show"

Future Implications

After our group debriefs, we created a list of do's and dont's for our future work as group members and distance education instructors.

Do:

- Communicate and keep a record of the project to keep track of decisions.

- Keep everyone abreast of decisions being made and milestones being reached. Copy the whole group on emails. This allows everyone the choice to be involved in decisions and reviews.

- Determine learning objectives up front to guide choices for readings and activities. Learning objectives really anchor and center instructional design.

- Be flexible and trust other team members to do a good job. People need to let others make decisions and take responsibilities for different tasks.

- Allow group members to contribute to the project based on their strengths and support them to challenge themselves around their deficits.

- Identify project roles and responsibilities—appoint a project manager, instructional design lead, technology lead, research lead.

- Unit test and User test everything (the course, the surveys, chats, the forums...).

- Develop user technology that includes audio and visual modalities. Being able to listen to AND see while on a conference call supports different learning styles (a development project IS a learning experience, too).

- Provide multiple support options for learners to receive help.

- Keep in touch with team members at all times.

- Know what each member is contributing. If the team is not sure, ask immediately.

- Be mindful of others' learning processes and help when needed to complete tasks.

- Give clear instructions about file formats you prefer to work with (e.g., create a 'standards' guideline document indicating typefaces, document formats, font size).

- Keep a clear and updated version of updated work on the wiki and let the others know where it is.

Do:

- Use a collaborative tool like Google Sites to create a wireframe or the website. This allows more than one person to work on the website and provides a place for the web programmer to obtain final content.

Don't

- Wait until you can meet in person to go forward.

- Expect that everyone on the team has heard what you've heard and come away from a discussion with the same conclusions.

- Design too large a project when there is both limited time for development and limited time for students to participate in your course.

- Put off communicating about things that could cause problems.

- Assume that all will go smooth...leave extra time for technical difficulties.

Bibliography

Theories

Gardner, H. (1993). *Multiple Intelligences: The theory in practice*. New York: Basic Books.

Gardner, H (1999) *Intelligence Reframed: Multiple Intelligences for the 21st Century*. New York. Basic Books.

Kolb. D. A. and Fry, R. (1975) Toward an applied theory of experiential learning. in C. Cooper (ed.) *Theories of Group Process,* London: John Wiley.

Required Readings

Using Learning Styles to Adapt Technology for Higher Education by Terry O'Connor Indiana State University.

Multiple Intelligences and Learning Styles from the Emerging Perspectives on Learning, Teaching and Technology—This webpage gives an excellent overview of Multiple Intelligences and ideas for application in the classroom. It also explores the VARK Learning Styles theory and its educational implications.

Kolb Learning Styles: David Kolb's learning styles model and experiential learning theory—from BusinessBalls, A well-written overview of Kolb's learning styles theory.

Resources to support culminating project:

Assessments and Learning Styles PDF, by Elizabeth and Angela, focuses on the importance of applying learning styles theory to assessment.

Multiple Intelligences: Website that contains an overview of Multiple Intelligences, lesson plan ideas, and technology considerations. The most useful section is called: Technology Considerations. The technology considerations section is an excellent resource for ideas on software, activities, web resources, and technology tools to address the mulitple intelligences of students.

Teaching and Learning at a Distance—The Learners: Multiple Intelligences—A short nuts and bolts list of suggestions for applying MI to online learning.

SurfAquarium Immersion—A really fun resource of lots of different kinds of online games and activities that speak to multiple intelligences.

How Technology Enhances Howard Gardner's Eight Intelligences—This website will explain how you can plan your instruction to accommodate each learning style that you select (found at the bottom of the screen.)

Applying Learning Styles Theories to On-line Courses

Implementing Kolb's Learning Styles into Online Distance Education—This article gives a good overview of Kolb's learning styles theory and talks about applying to DE.

Multiple Intelligences and The Design of Web-based Instruction—An article by Susan Y. Ociak and Welliam D. Milheim that focuses on how Multiple Intelligence theory can be implemented in web-based instruction. (pdf is available in our research resources)

Developing On-Line Courses for Visual / Kinesthetic Learners: A Case Study—Stephanie A. Clemons. Start on pg 59—an interesting article about creating two courses for using student's preferred learning modalities visual and kinesthetic, how students responded, and implications for educators.

Designing Effective Projects: Thinking Skills Frameworks—Learning Styles—This article talks about designing student projects to speak to different learning styles.

More Learning Styles Theories Resources

Introduction to Learning Styles—The Ageless Learner website. Simple, clearly written, and good bibliography.

Indiana State University Learning Styles site—not well organized, but good overview of 4 categories of learning styles theories.

Learning Styles from Learnativity.com—provides a brief overview of learning styles and a really nice resources section with lots of learning styles and adult education materials.

Learning Styles: An overview of theories, models, and measures—This article is an excellent overview of 20 Learning Styles theories and how they've been categorized.

Learning Styles & Preferences—An overview of the main three schools of Learning Styles theory including VAK, Kolb, and Multiple Intelligences.

Learning Styles, Expectations, and Needs of Online Students—Davison M. Mupinga, Robert T. Nora, Dorothy Carole Yaw. Coll Teach 54 no1 Winter, 2006.

Multiple Intelligences Theory—An excellent wiki overview of Multiple Intelligences theory created by Angela Dowd.

Multiple Intelligences Go To School: Educational Implications of the Theory of Multiple Intelligences—by Howard Gardner and Thomas Hatch, Project Zero, Harvard University. And article that outlines the history and theory of MI as well as its implications for education and assessment.

Relationships between Learning Styles and Online Learning: Myth or Reality?—An article by Susan A. Santo in "Performance Improvement Quarterly" that critically overviews different Learning Styles theories and looks at the research that been done on their relationship to success in online learning. (16pgs)

Should We Be Using Learning Styles? What research has to say to practice—This informative but rather long article looks at 13 learning styles theories and critically examines their reliability, validity, and impact on pedagogy. Starting on page 29 summary evaluations of the 13 learning styles theories. (84 pgs)

SurfAquarium: I Think.....Therefore.....MI! Multiple Intelligences in Education—Fabulous site on Multiple Intelligences with links to many different articles and websites.

Vak Section of Howard Gardner's Multiple Intelligences—from BusinessBalls, Begin at VAK (1/2 way down the page) This article covers both MI and VAK (including VARK, and VACT). The required reading is the section on VAK theory.