



Qualitative Methods for Test Design

Session # Pre-4 at

Software Test Professionals
Conference & Expo 2013

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These notes are partially based on research supported by NSF Grant CCLI-0717613 "Adaptation & Implementation of an Activity-Based Online or Hybrid Course in Software Testing." Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Scenarios & requirements analysis

- The requirements analyst tries to foster agreement about the system to be built. The tester exploits disagreements to predict problems with the system.
- The tester doesn't have to decide or recommend how the product should work. Her task is to expose credible concerns to the stakeholders.
- The tester doesn't have to make design tradeoffs. Her task is to expose the consequences of those tradeoffs, especially consequences that are unanticipated or more serious than expected.
- The tester doesn't have to respect prior agreements. (Caution: testers who belabor the wrong issues lose credibility.)
- **The scenario tester's work need not be exhaustive, just useful.**

Designing scenario tests is much like doing a requirements analysis, but it is not requirements analysis.

They rely on similar information but use it differently.

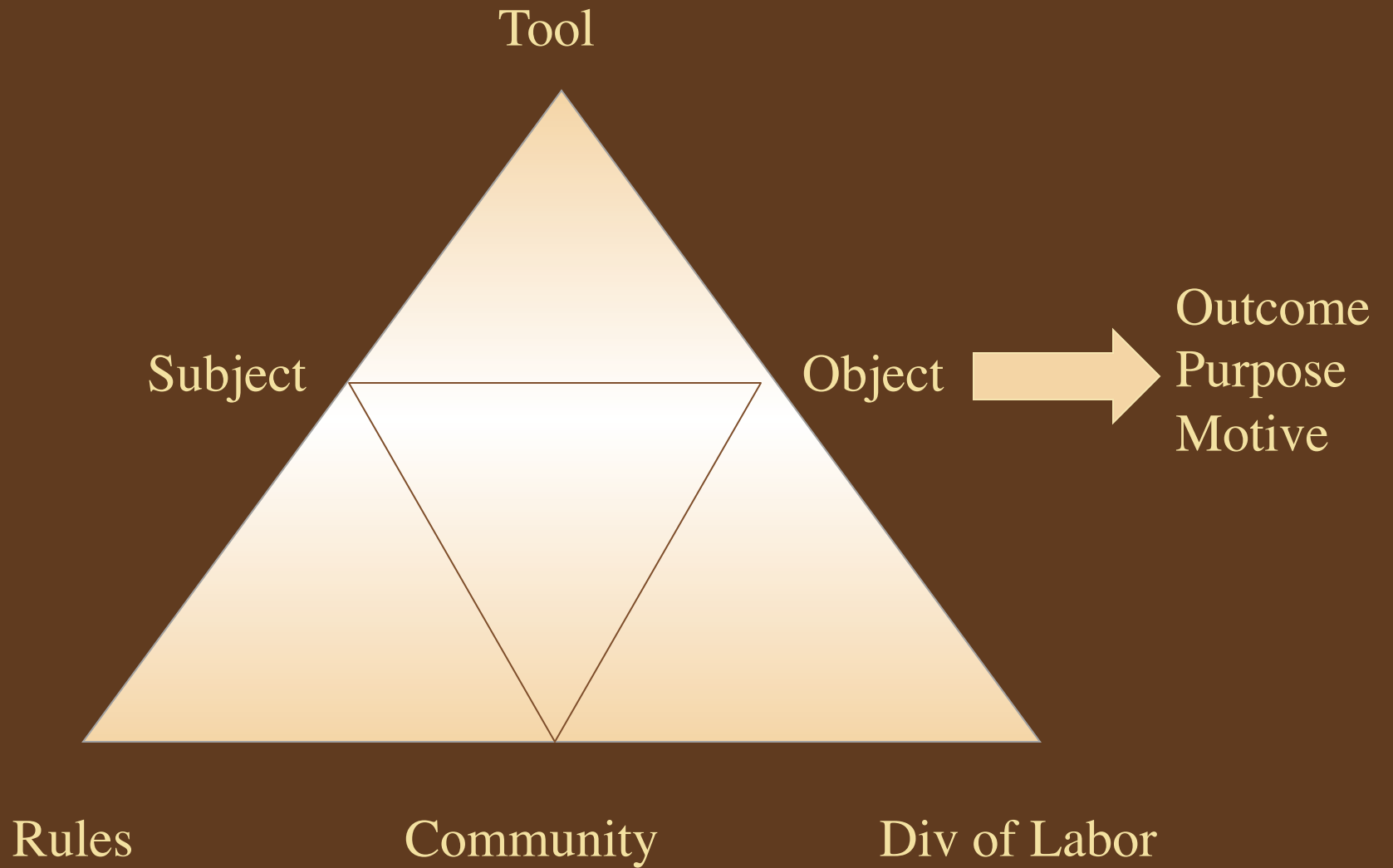
INTRODUCTION TO CHAT



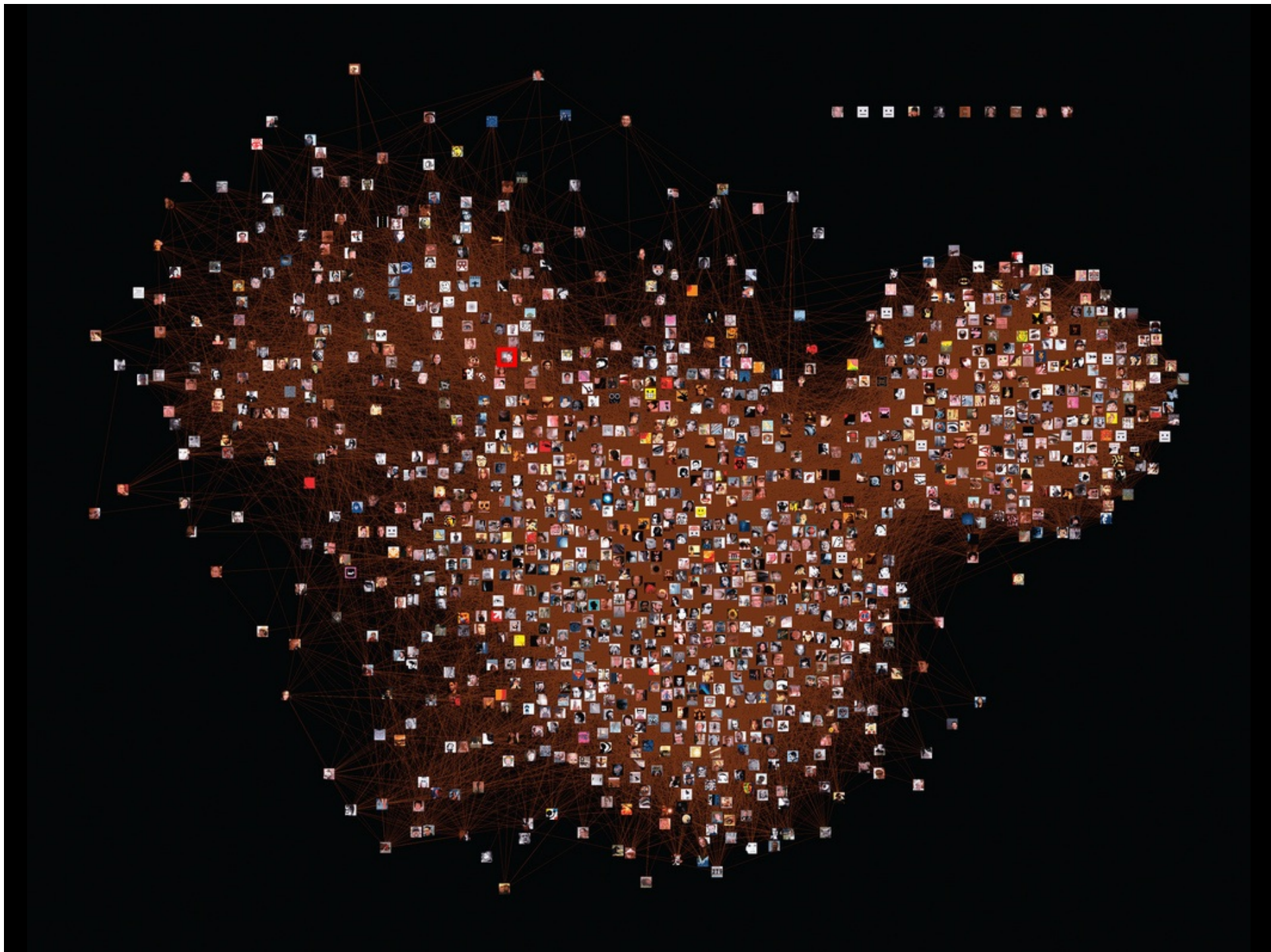
Angry Sun God (Aztec Twist, tessellated, backlist) Flickr user: EricGjerde



CHAT Model







CHAT Model



Tool

Subject

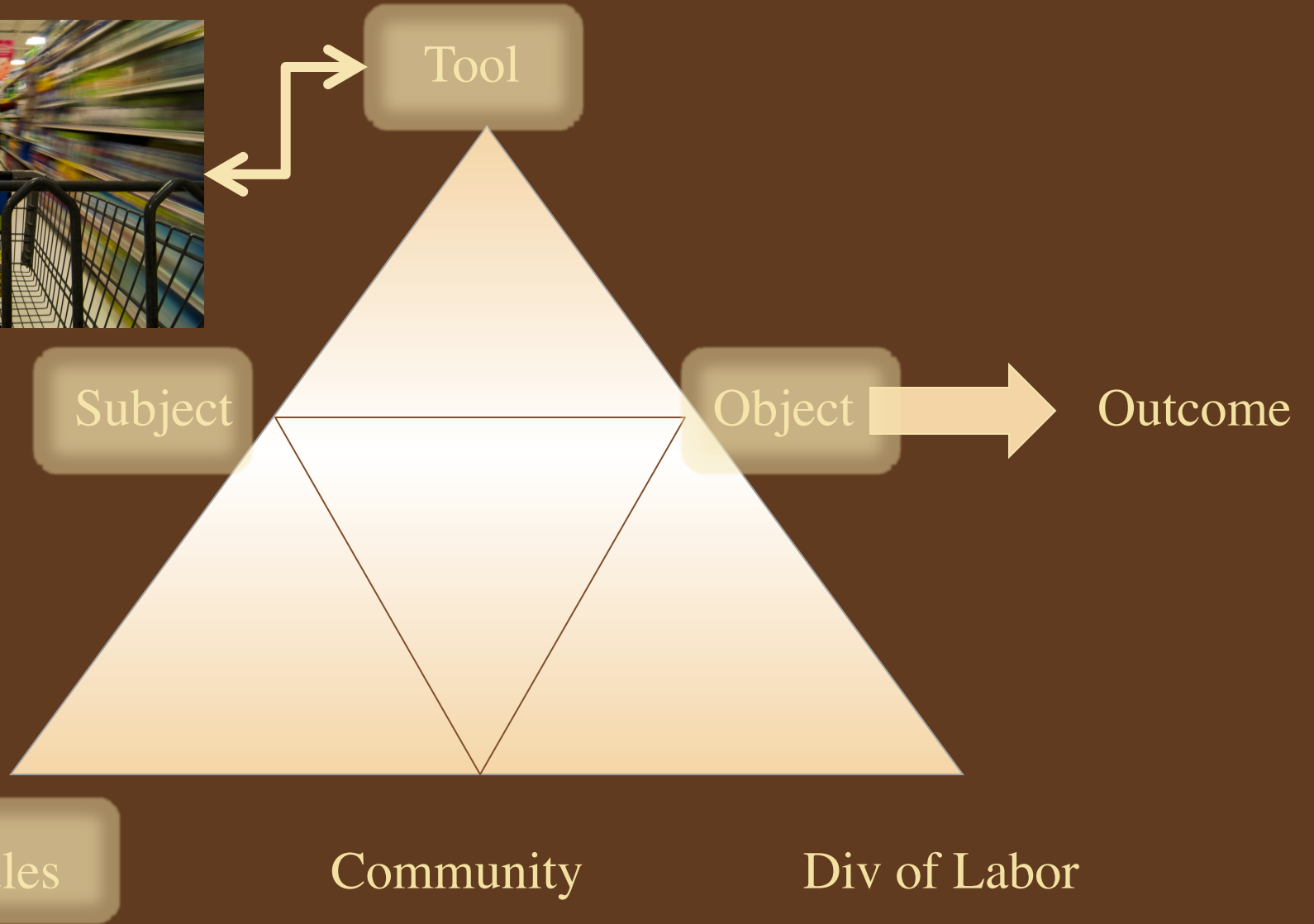
Object

Outcome

Rules

Community

Div of Labor



Things Move



Tool

Subject

Object

The Ultimate Grocery List! Courtesy of www.grocerylists.org

- | | | | | | |
|--|--|---|---|---|---|
| Fresh vegetables
<input type="checkbox"/> Asparagus
<input type="checkbox"/> Beets
<input type="checkbox"/> Broccoli / Cauliflow
<input type="checkbox"/> Carrots
<input type="checkbox"/> Celery
<input type="checkbox"/> Corn
<input type="checkbox"/> Cucumbers
<input type="checkbox"/> Eggplant
<input type="checkbox"/> Garlic
<input type="checkbox"/> Green beans
<input type="checkbox"/> Kale
<input type="checkbox"/> Leeks
<input type="checkbox"/> Lettuce
<input type="checkbox"/> Lima beans
<input type="checkbox"/> Mushrooms
<input type="checkbox"/> Onions
<input type="checkbox"/> Peas
<input type="checkbox"/> Potatoes
<input type="checkbox"/> Pumpkins
<input type="checkbox"/> Radishes
<input type="checkbox"/> Spinach
<input type="checkbox"/> Squash
<input type="checkbox"/> Tomatoes
<input type="checkbox"/> Turnips
<input type="checkbox"/> Zucchini
Other | Various groceries
<input type="checkbox"/> Baked goods
<input type="checkbox"/> Breakfast cereals
<input type="checkbox"/> Canned soups
<input type="checkbox"/> Coffee
<input type="checkbox"/> Condiments
<input type="checkbox"/> Dairy products
<input type="checkbox"/> Dry goods
<input type="checkbox"/> Frozen foods
<input type="checkbox"/> Health & beauty
<input type="checkbox"/> Household supplies
<input type="checkbox"/> Pet supplies
<input type="checkbox"/> Personal care
<input type="checkbox"/> Seasonings
<input type="checkbox"/> Snacks
<input type="checkbox"/> Specialty foods
<input type="checkbox"/> Wine & spirits
Other | Cheese
<input type="checkbox"/> Cheddar
<input type="checkbox"/> Colby
<input type="checkbox"/> Cream cheese
<input type="checkbox"/> Feta
<input type="checkbox"/> Gouda
<input type="checkbox"/> Mozzarella
<input type="checkbox"/> Parmesan
<input type="checkbox"/> Prosciutto
<input type="checkbox"/> Ricotta
<input type="checkbox"/> Swiss
<input type="checkbox"/> Tofu
Other | <input type="checkbox"/> Soups
<input type="checkbox"/> Fish
<input type="checkbox"/> Meat
<input type="checkbox"/> Poultry
<input type="checkbox"/> Seafood
<input type="checkbox"/> Eggs
<input type="checkbox"/> Nuts
<input type="checkbox"/> Oils
<input type="checkbox"/> Vinegars
<input type="checkbox"/> Wine & spirits
Other | Medicine
<input type="checkbox"/> Acetaminophen
<input type="checkbox"/> Aspirin
<input type="checkbox"/> Ibuprofen
<input type="checkbox"/> Penicillin
<input type="checkbox"/> Tylenol
<input type="checkbox"/> Vitamins
Other | Pets
<input type="checkbox"/> Cat food
<input type="checkbox"/> Dog food
<input type="checkbox"/> Flea treatment
<input type="checkbox"/> Pet supplies
Other |
|--|--|---|---|---|---|

Rules

Community

Div of Labor

IMPORTANT: Please leave this list in the cart when you're done.
 If found, please mail to Grocerylists.org, P.O. Box 752, St. Louis, MO 63188 USA
 Grocerylists.org is the world's largest online collection of food grocery lists. Visit our shopping list, our feature lists, our lists, our about our book of shopping lists or just watch the videos for tips on how to use the lists on the site www.grocerylists.org

Before you go
 • Bring a shopping bag
 • Check out the list
 • Pick up groceries
 • Check out the list
 • Return anything

Before you check out
 • Read the list
 • Check out the list
 • Pick up groceries
 • Check out the list
 • Return anything

Tensions

- Within one node of the CHAT model
- Between two different nodes
- Between old and new
- Between nearby activities



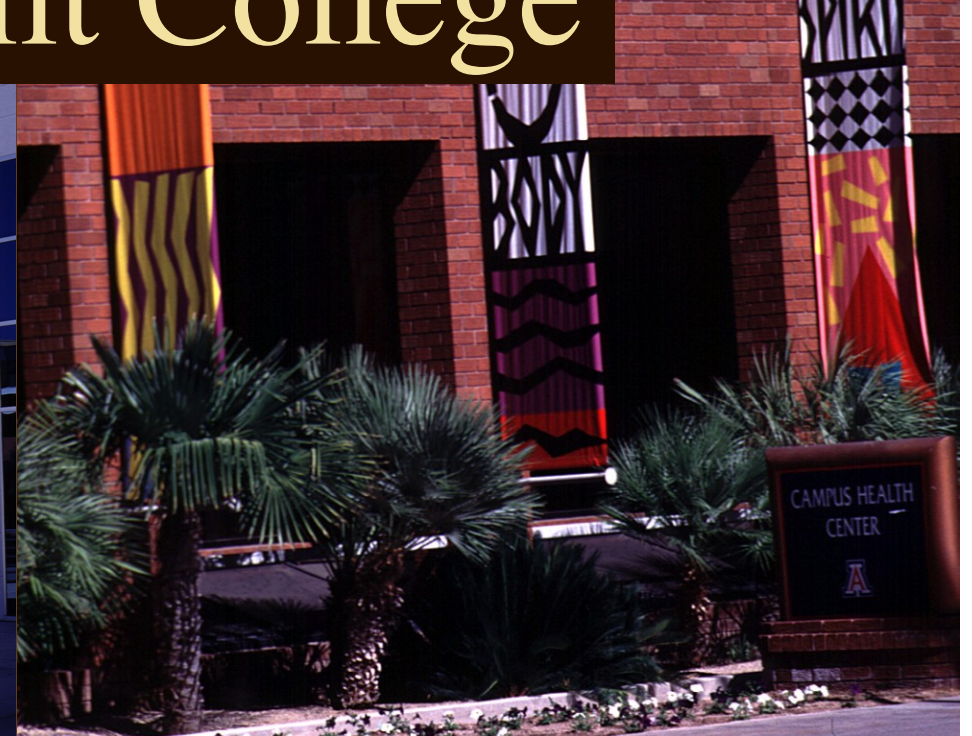
Image by Malayrish on Flickr.com

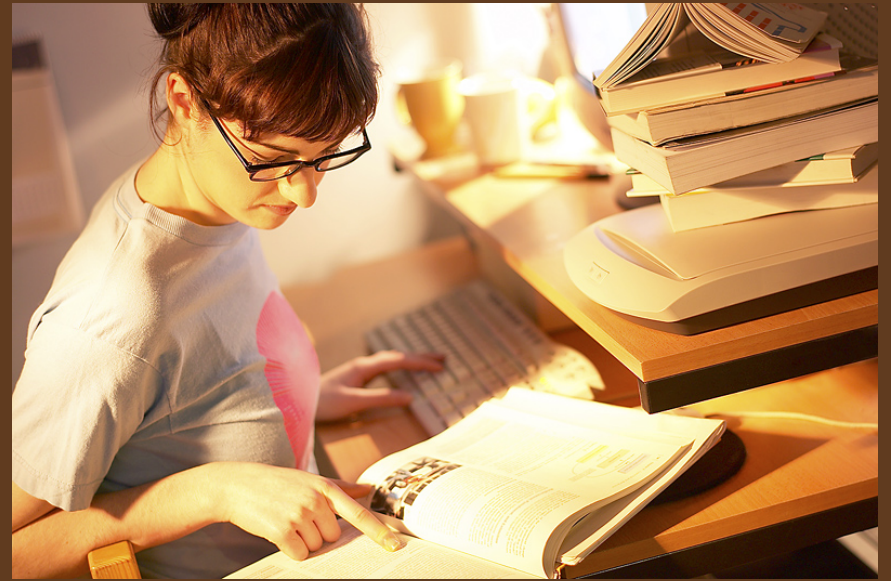
Portfolio Case Study

- Investment portfolios
- Artist' s portfolios
- Teaching portfolios



VendorBuilt College





Exploring the student experience





Notes about the students

- Very busy
- Use *MySpace* and *Facebook* for fun and for socializing
- See themselves as creative individuals
- Most are very proficient with word processing software and some with HTML


Materials > << previous next page >> Copy | Print | More... show properties

Fall 2005 Education Portfolio

AP5: Diversity

Introduction
 Directions to Student
 Philosophy of Education
 Matrix of Artifacts
 AP1: Assessment
 AP2: Communication
 AP3: Continuous Improvement
 AP4: Critical Thinking
 AP5: Diversity
 AP6: Ethics
 AP7: Human Development and Learning
 AP8: Knowledge of Subject Area
 AP9: Learning Environment
 AP10: Planning
 AP11: Role of Teacher
 AP12: Technology
 Field Experiences
 Credentials
 Letters of Recommendation
 Lesson Plan Submissions
 Internship Evaluations

Artifact and Rubric



Place the your case study from ESOL 315 as the artifact and rubric providing evidence of the AP of **DIVERSITY** in this section. You may upload, cut and paste, attach or scan your materials in. If the project was done in _____ you may also provide a link. Provide an introductory description of the artifact including its name, class in which it was generated, and semester the class was taken.

Reflection Piece

In this section, you will reflect on the artifact(s) that you have chosen to include in your portfolio to demonstrate your abilities in the area of **DIVERSITY**. You should present your reflection in a narrative form explaining how this artifact has affected you. Consider the following:

- What have you learned from doing this?
- What skills and knowledge have you taken from the processes leading to this artifact?
- What would you do differently if you could redo this artifact? Is there anything you would change?
- Are there any inherent weaknesses in this artifact?
- What did you find most useful about doing this artifact?
- How have you grown? How has this work contributed to or demonstrated evidence of growth?
- What can you apply from the completion of this artifact that may help you in future teaching situations?

When you write your reflection be sure to use the pre-service indicators as a guide to supporting your argument that this evidence or artifact does indeed reflect the Accomplished Practice. Use the language of the indicator and AP itself and either highlight it, underline it or bold it to indicate to the reader its source.

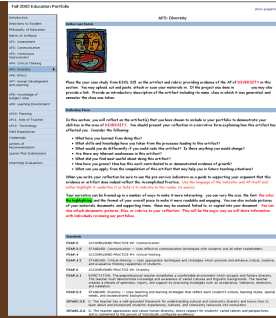
Your narrative can be livened up in a number of ways to make it more interesting: you can vary the size, the font, the color, the highlighting and the format of your overall piece to make it more readable and engaging. You can also include pictures of your materials, documents, and supporting items. these may be scanned, linked to, or copied into your document. You can also attach documents, pictures, files, or rubrics to your reflection: This will be the major way we will share information with individuals reviewing our portfolios.

Standards

FEAP.2	ACCOMPLISHED PRACTICE #2: Communication
FEAP.2.2	STANDARD: Communication -- Uses effective communication techniques with students and all other stakeholders.
FEAP.4	ACCOMPLISHED PRACTICE #4: Critical-thinking
FEAP.4.2	STANDARD: Critical-thinking -- Uses appropriate techniques and strategies which promote and enhance critical, creative, and evaluative thinking capabilities of students.
FEAP.5	ACCOMPLISHED PRACTICE #5: Diversity
FEAP.5.1	EXPECTATION: The preprofessional teacher establishes a comfortable environment which accepts and fosters diversity. The teacher must demonstrate knowledge and awareness of varied cultures and linguistic backgrounds. The teacher creates a climate of openness, inquiry, and support by practicing strategies such as acceptance, tolerance, resolution, and mediation.
FEAP.5.2	STANDARD: Diversity -- Uses teaching and learning strategies that reflect each student's culture, learning styles, special needs, and socioeconomic background.
INTASC.3.E	K: The teacher has a well-grounded framework for understanding cultural and community diversity and knows how to learn about and incorporate students' experiences, cultures, and community resources into instruction.
INTASC.3.G	D: The teacher appreciates and values human diversity, shows respect for students' varied talents and perspectives, and is committed to the pursuit of 'individually configured excellence.'

Notes regarding VendorBuilt

- *CommercialFolio* use required
- Faculty provided a template
- Specific content requirements – archiving projects from courses
- Required a matrix of artifacts



Commercial Folio



VBC Mallory Fall 05 Education Portfolio

Introduction

Philosophy of Education

Matrix of Artifacts

- AP1: Assessment
- AP2: Communication 1
- AP2: Communication 2
- AP3: Continuous Improvement
- AP4: Critical Thinking
- AP5: Diversity 1
- AP5: Diversity 2
- AP6: Ethics
- AP7: Human Development and Learning
- AP8: Knowledge of Subject Area
- AP9: Learning

Introduction

SPLASH Page

Hello! Thank you for taking the time to review my portfolio!

My name is Mallory Vendor and I am currently a senior pursuing my undergraduate degree in Elementary Education at VendorBuilt College. I look forward to my upcoming student-internship and graduation in the spring of 2006 and all of the possibilities that lie ahead of me. This portfolio is a way for me to show you how I have grown as a student and as an educator.

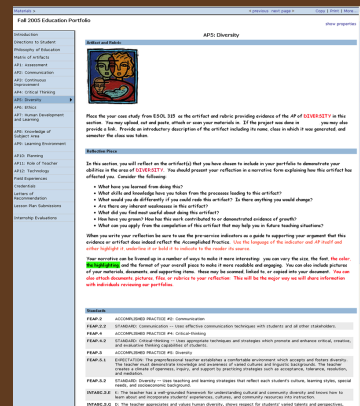
I have known since my childhood that I want to teach. Because of this, I have worked closely with young children for most of my life. My first job was at my church's Day School and I also got the chance to participate in a child-care vocational program during all four years of high school. Since coming to college, I've completed many practicum hours in local elementary schools at various grade levels. I've also worked for over two years at an after-school program in a



Courses	Artifacts	AP 1	AP 2	AP 3	AP 4	AP 5	AP 6	AP 7	AP 8	AP 9	AP 10	AP 11	AP 12
EDU 406 (Continuum)	Personal Observation			X									X
EDU 357 (Behavior Management)	30 Certification Paper		X							X			
EDU 200 (Tests/Measurements)	Test Construction Project	X									X		
EDU 324 (Instructional Design)	Media Project		X										X
EDU 321 (General Methods)	Lesson Plan	X						X		X			
EDU 301 (Classroom Methods)	Unit Plan							X		X			
ESL 315	Case Study	X	X	X									



Community



Courses	Artifacts	AP 1	AP 2	AP 3	AP 4	AP 5	AP 6	AP 7	AP 8	AP 9	AP 10	AP 11	AP 12
EDU 406 (Curriculum)	Personal Orientation to Curriculum Paper			X	X							X	
EDU 357 (Behavior Management)	Behavior Management Plan		X							X			
EDU 203 (Tests/Measurements)	Test Construction Project	X									X		
EDU 324 (Instructional Design)	Multimedia Project		X										X
EDU 321 (General Methods)	Lesson Plan	X							X		X		
EDU 321 (General Methods)	Unit Plan								X		X		
ESL 315 (Cross Cultural Comm.)	Case Study Ethnography		X		X	X							
ESL 325 (Applied Linguistics)	Applied Linguistics Project					X			X			X	
ESE 209 Introduction to Exceptionality	Connections Project New and Scholarly Literature							X	X				
EDU 481 (Internship)	See Student Summative Forms Folder												
EEC 209 (Intro to Exceptionality)	Case Study:							X	X				

Tensions

- Within one node of the CHAT model
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- Between old and new
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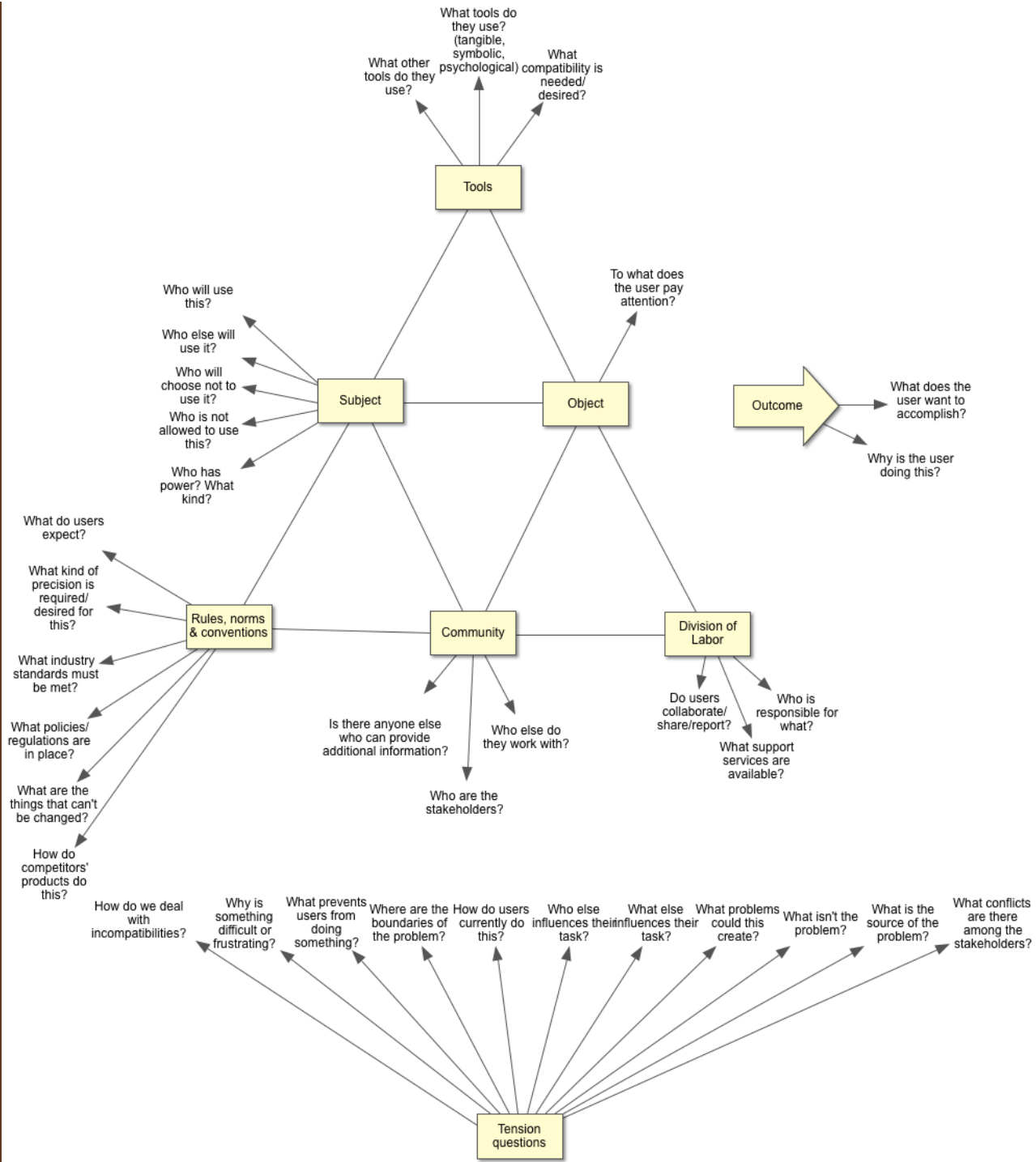
Image by Malayrish on Flickr.com



INTRODUCTION TO REQUIREMENTS ANALYSIS

Interest Analysis

Person	Role	Interests	Activities/ Benefits	Features	Challenges	Scenarios
<p>Who is interested in this software and how it will be used? People on this list are likely to have competing interests. Think broadly to include both internal and external stakeholders as well as favored and disfavored users.</p>	<p>Describe the role</p>	<p>Broadly speaking, what are this person's "interests"? What are they trying to accomplish and why? How important is this to them?</p>	<p>Not all interests will be fulfilled by one piece of software. What benefits/activities will this software enable?</p>	<p>What are the most important features this person will need? What sequences will they use? How does this impact other parts of the system(s)?</p>	<p>What challenges and pressures does this person face? What interferes with this person's ability to complete their tasks?</p>	<p>How could you incorporate this into your suite of scenario tests?</p>



SCENARIO TESTING



BLACK BOX SOFTWARE TESTING: INTRODUCTION TO TEST DESIGN: LECTURE 4: SCENARIO TESTING

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**BLACK BOX SOFTWARE TESTING:
INTRODUCTION TO TEST DESIGN:
LECTURE 2(B): SLIDES 168-184**

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**BLACK BOX SOFTWARE TESTING:
INTRODUCTION TO TEST DESIGN:
LECTURE 4(C): SLIDES 312-333**

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Image Credits from Flickr

307/672

Angry Sun God

Cereal at the iggle

Craziest Trader Joe's in the world

Day 47/365 - Dead Tree Graveyard

Domestic strife

Grocery List

Grocery Lists

Hanging the show, 4

hermitlabs

Katie making a list

None

P5109269.jpg

P6069812

Sarah_Grad_2009_104_5

Social Network Diagram of the Earliest [sic] Flickr Users

Teamwork (from below)

Thanksgiving Supplies

The Smallest Grocery List Ever

untitled

iPhone Grocery List

Fuschia Foot

EricGjerde

juliekaffe

juicyrai

Kevin H

kbbbristol

mattack

BrittneyBush

*keaggy.com

jspad

susiewrites

Motorito

Julie, Dave & Family

Julie, Dave & Family

nsaplayer

Quiplash!

Casey J

phil_g

alykat

B Tal

Grocery Store IQ website