
Teaching and Learning with Qualitative Research Software

Challenges for Doctoral Students and
Dissertation Advisors

New England Educational Research Organization (NEERO)

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Panel Participants

- Judith Davidson, Ph.D., Associate Professor, Graduate School of Education, UMass-Lowell
 - Charmaine Hickey, Ed.D., Director-Faculty Resource Center, UMass-Lowell
 - Stacy Penna, Ed.D., QSR International
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Qualitative Research Software

- Available for some two decades
- Has yet to be full integrated into doctoral student training

What are the challenges?

- Experienced researchers are avoidant.
- It is not part of qualitative research training.
- New users are new researchers.
- Many users have tried and failed because they lack support.



Coming to Know QR Software: My Story



- Began in 1998 w/Nudist as a researcher
- Moved to NVivo in 1999 as a QR teacher; have worked to integrate NVivo in QR classes
- Have overseen numerous dissertations with QR software
- Worked to develop institution-wide support for QR software and its use

The Challenge and Opportunity of QR Software in dissertation work

- QR software makes QR dissertations portable and transparent!
- Doctoral dissertation advisors must understand how to read and write in the new e-project genre.

DiGregorio S. & Davidson J. (to be published in late 2007). Research Design in Qualitative Research Software. Open University Press.

Using Qualitative Research Software at UMass-Lowell

- 4 cases describing issues relating to the use of QR software in doctoral dissertation work:
 - Research design
 - Coding strategies
 - Issues of validity
 - Visual tools for organization and analysis
 - 1 case focusing on institutional support for the use of QR software
-

Research Design in Qualitative Dissertations: The “NVivo Shell”

Charmaine P. Hickey, Ed.D.

Research Design in Qualitative Research

- “... an interconnected and flexible structure”
(Maxwell, 1996, p. 3).
 - “an iterative process that involves ‘tacking’ back and forth between different components of the design, assessing the implications of purposes, theory, research questions, methods, and validity threats for one another”
(Maxwell, 1996, p. 4).
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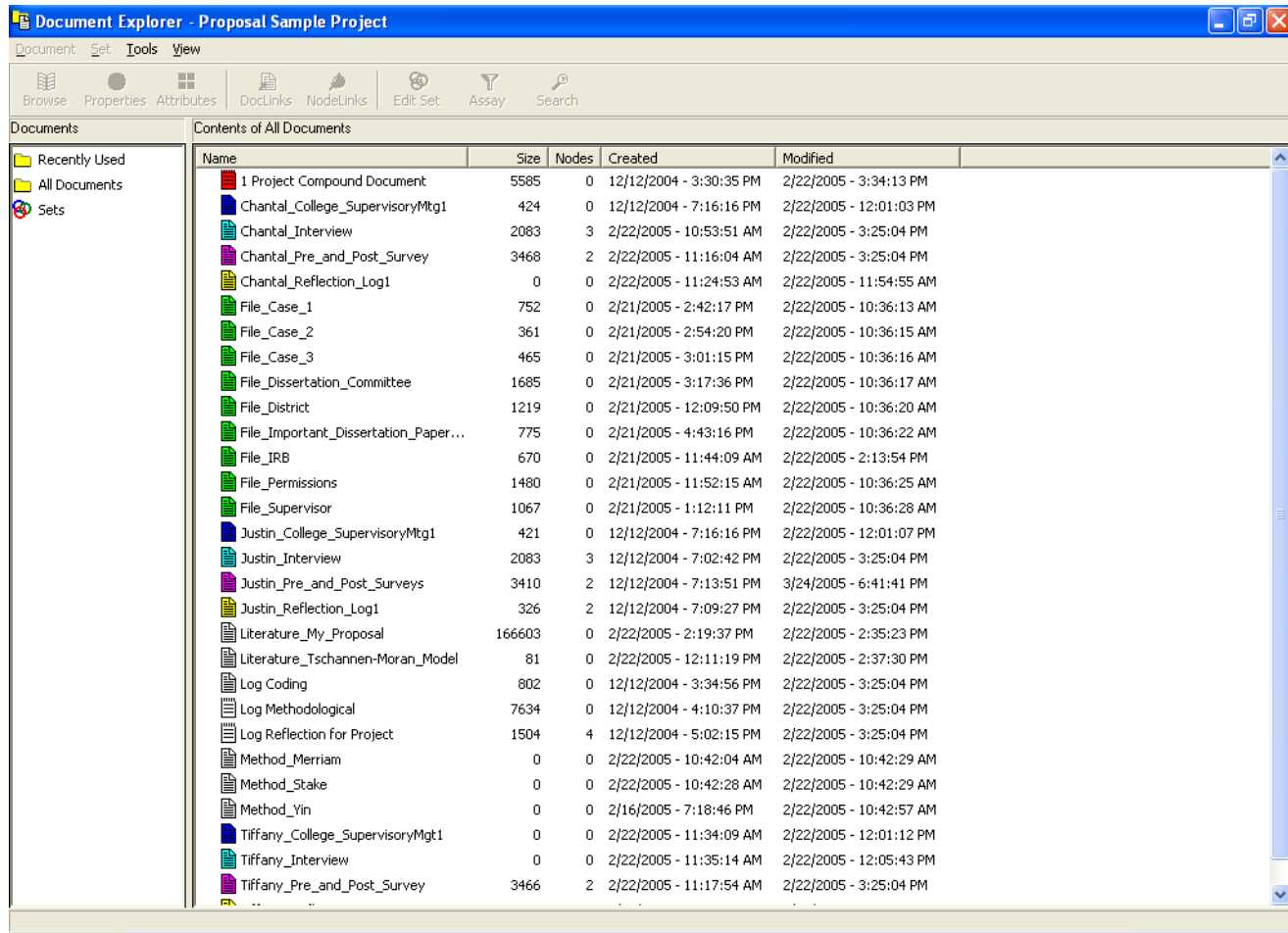
Gap in the Information

- Most talk/instruction is focused on the analysis of qualitative data or about 'doing' qualitative research.
- The NVivo Shell unique:
 - Promotes thinking about using the software PRIOR to data analysis
 - During research design stage
 - Helps with 'tacking'

Development of notion of the NVivo Shell

- Dissertation question best answered by qualitative research
- Range of familiarity with NVivo and Qualitative software
- Range of trust in qualitative software and in my capabilities as a researcher

Sample of what would hold, manage, and analyze my data



Document Explorer - Proposal Sample Project

Document Set Tools View

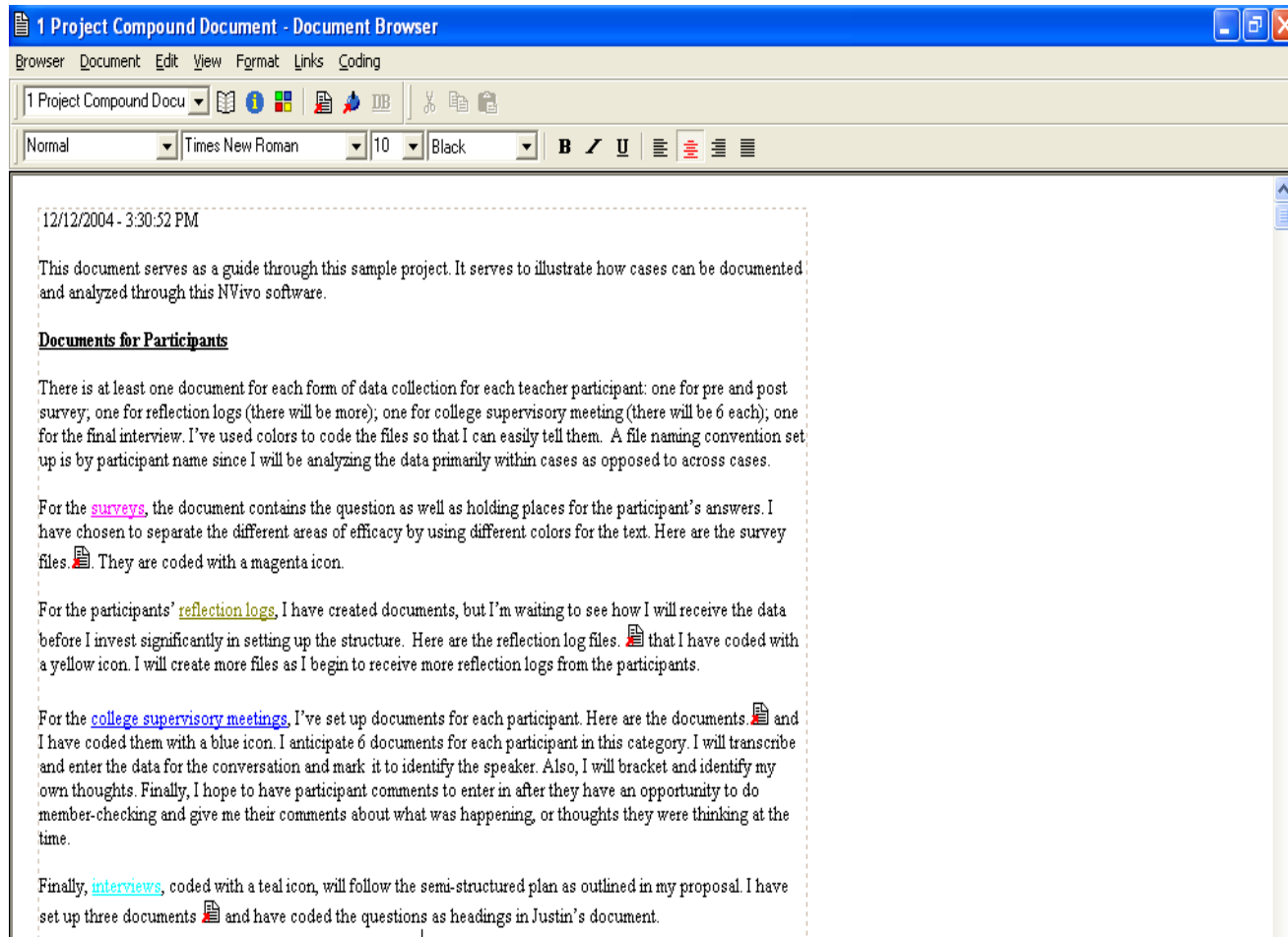
Browse Properties Attributes DocLinks NodeLinks Edit Set Assay Search

Documents

Contents of All Documents

Name	Size	Nodes	Created	Modified
1 Project Compound Document	5585	0	12/12/2004 - 3:30:35 PM	2/22/2005 - 3:34:13 PM
Chantal_College_SupervisoryMtg1	424	0	12/12/2004 - 7:16:16 PM	2/22/2005 - 12:01:03 PM
Chantal_Interview	2083	3	2/22/2005 - 10:53:51 AM	2/22/2005 - 3:25:04 PM
Chantal_Pre_and_Post_Survey	3468	2	2/22/2005 - 11:16:04 AM	2/22/2005 - 3:25:04 PM
Chantal_Reflection_Log1	0	0	2/22/2005 - 11:24:53 AM	2/22/2005 - 11:54:55 AM
File_Case_1	752	0	2/21/2005 - 2:42:17 PM	2/22/2005 - 10:36:13 AM
File_Case_2	361	0	2/21/2005 - 2:54:20 PM	2/22/2005 - 10:36:15 AM
File_Case_3	465	0	2/21/2005 - 3:01:15 PM	2/22/2005 - 10:36:16 AM
File_Dissertation_Committee	1685	0	2/21/2005 - 3:17:36 PM	2/22/2005 - 10:36:17 AM
File_District	1219	0	2/21/2005 - 12:09:50 PM	2/22/2005 - 10:36:20 AM
File_Important_Dissertation_Paper...	775	0	2/21/2005 - 4:43:16 PM	2/22/2005 - 10:36:22 AM
File_IRB	670	0	2/21/2005 - 11:44:09 AM	2/22/2005 - 2:13:54 PM
File_Permissions	1480	0	2/21/2005 - 11:52:15 AM	2/22/2005 - 10:36:25 AM
File_Supervisor	1067	0	2/21/2005 - 1:12:11 PM	2/22/2005 - 10:36:28 AM
Justin_College_SupervisoryMtg1	421	0	12/12/2004 - 7:16:16 PM	2/22/2005 - 12:01:07 PM
Justin_Interview	2083	3	12/12/2004 - 7:02:42 PM	2/22/2005 - 3:25:04 PM
Justin_Pre_and_Post_Surveys	3410	2	12/12/2004 - 7:13:51 PM	3/24/2005 - 6:41:41 PM
Justin_Reflection_Log1	326	2	12/12/2004 - 7:09:27 PM	2/22/2005 - 3:25:04 PM
Literature_My_Proposal	166603	0	2/22/2005 - 2:19:37 PM	2/22/2005 - 2:35:23 PM
Literature_Tschannen-Moran_Model	81	0	2/22/2005 - 12:11:19 PM	2/22/2005 - 2:37:30 PM
Log Coding	802	0	12/12/2004 - 3:34:56 PM	2/22/2005 - 3:25:04 PM
Log Methodological	7634	0	12/12/2004 - 4:10:37 PM	2/22/2005 - 3:25:04 PM
Log Reflection for Project	1504	4	12/12/2004 - 5:02:15 PM	2/22/2005 - 3:25:04 PM
Method_Merriam	0	0	2/22/2005 - 10:42:04 AM	2/22/2005 - 10:42:29 AM
Method_Stake	0	0	2/22/2005 - 10:42:28 AM	2/22/2005 - 10:42:29 AM
Method_Yin	0	0	2/16/2005 - 7:18:46 PM	2/22/2005 - 10:42:57 AM
Tiffany_College_SupervisoryMtg1	0	0	2/22/2005 - 11:34:09 AM	2/22/2005 - 12:01:12 PM
Tiffany_Interview	0	0	2/22/2005 - 11:35:14 AM	2/22/2005 - 12:05:43 PM
Tiffany_Pre_and_Post_Survey	3466	2	2/22/2005 - 11:17:54 AM	2/22/2005 - 3:25:04 PM

A look at the first page of my Compound or 'Start Here' Document



The NVivo Shell

- A photograph of 'My NVivo® Shell', showing all of its components.



© 2005 Charmaine P. Hickey. Photo: John Wren, 2007

Sustainability/Outcomes

- A way to think about data in research design phase before it is collected
 - Helped work toward consistency, reliability, and trustworthiness of the data.
 - The notion of the “NVivo Shell” is being used by a wider audience: dissertations, university research, qualitative research.
-

Concluding Thought

- By engaging the notion of the NVivo Shell, qualitative researchers can be on “the first wave” of qualitative research design, data management, analysis, and methodology, and use it to ‘tack’ among these throughout the research.
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Coding Plan using NVivo7

Stacy L. Penna, Ed.D.

Coding Plan using NVivo7

- Organizing Cases
 - Case Nodes
 - Attributes for Cases
 - Mixed Strategies
 - Case Oriented Strategy
 - Variable-Oriented Strategy
 - Coding
 - Broad Brush Coding/Open Coding
 - Axial Coding
 - Selective Coding
 - Queries
 - Coding Journal
-

Organizing Cases

■ Case Nodes

- Container for all data from a case can be kept

■ Attributes

- Before coding create attributes for cases.
- Based on demographic information from interviews

Case Nodes

Cases

	Name	Sources	Refer
+	Center	2	2
+	Teacher 1	8	8
+	Teacher 2	8	8
+	Teacher 3	6	6
+	Teacher 4	8	8

Cases

	Name	Sources	References
+	Center	2	2
+	Teacher 1	8	8
-	Teacher 2	8	8
	Artifact FT_Case 2	1	1
	Artifact_Case 2	1	1
	Interview Transcript_Post_Case 2	1	1
	Interview Transcription_Pre_Case 2	1	1
	Observation_Case 2	1	1
	Participant Log_Case 2	1	1
	Photo Log Museum_Case 2	1	1
	Photo Log_Case 2	1	1

Case Attributes

Attributes	
	Name
	Attend summer institutes
	Center Experience
	Field Trip Exp at Center
	Field Trip per year
	Gender
	Graduate Education
	Major
	Middle School
	Minor
	Primary Sources from Center
	Social Studies Pedagogy
	Student Structure
	Teacher Certification
	Teaching S.S. at current M.S.
	Teaching S.S. over career
	Teams
	Use Center's resources
	Workshops at Center
	Years Teaching

Mixed Strategies

(Miles & Huberman, 1994)

■ Case Oriented Strategy

- ❑ Analyze one case in-depth first before others
- ❑ Broad Brush Coding
- ❑ Open Coding

■ Variable-Oriented Strategy

- ❑ Look for themes across cases.
- ❑ Axial Coding
- ❑ Selective Coding

Broad Brush/Open Coding

(Bazeley & Richards, 2000; Gibbs2002)













■ Broad Brush Coding

- Themes
- Categories
- Actions







■ Open Coding

- Read through the broad brush codes line by line for categories of information to put in a child node.

Broad Brush

Tree Nodes			
	Name	Sources	References
	 Administration	11	39
	 Center	21	178
	 Field Trip Experience	6	24
	 Literature Review	0	0
	 Partnership	1	1
	 Students	12	76
	 Teaching Practices	4	27

Open Coding

	Teaching Practices	4	27
	Collaboration_in school	15	27
	Instructional methods	20	157
	Post field Trip Experience	17	34
	Pre-Field Trip	17	46
	Teacher's Role	8	35

Axial Coding

(Gibbs, 2002)

- Categories are refined, related and interconnected (p. 167).
 - Cross Case Analysis: Variable Oriented Strategy
 - NVivo Search Tools:
 - Text Search: (Hands on, collaboration)
 - Matrix Coding (collaboration)
 - Models
-

Axial Coding

-	Field Trip Experience	6	24
-	FT Collaboration	9	141
	FT_Curriculum	4	29
	FT_Instruction	7	57
	FT_Management_	4	49
+	FT Content	16	114
+	FT Instructional strategies	16	145
+	FT Resources	19	144
	Teacher Actions	7	360
	Teacher's role_FT	13	34

Selective Coding

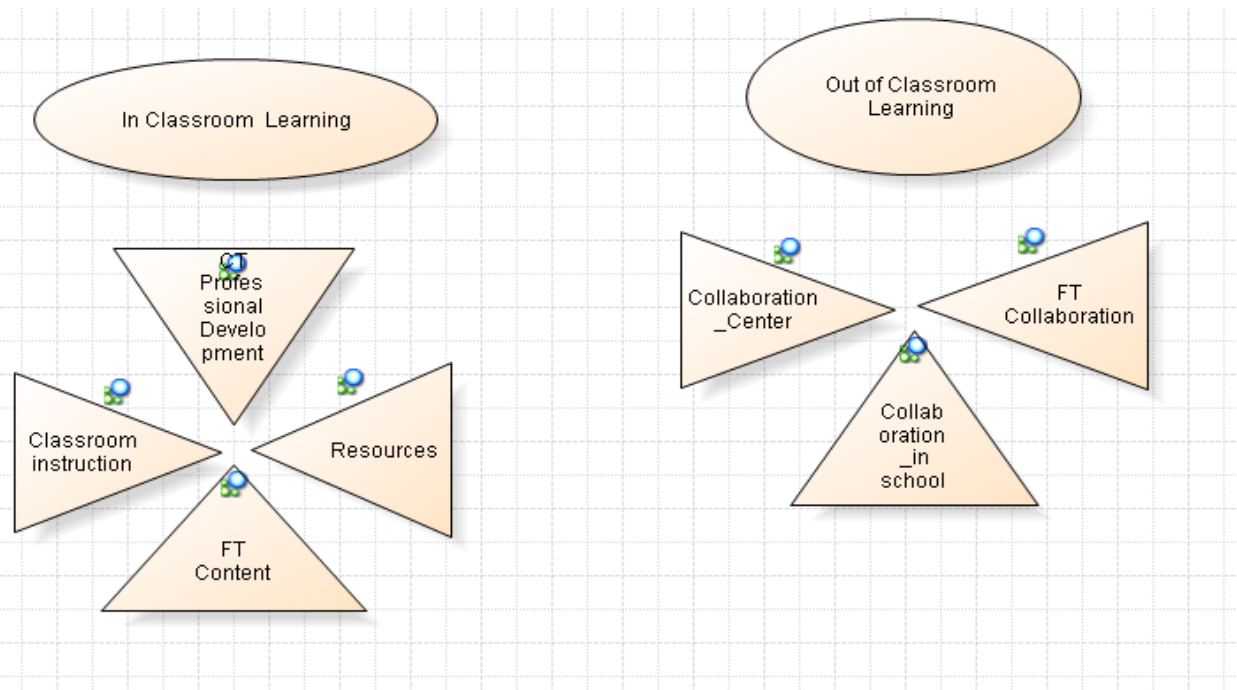
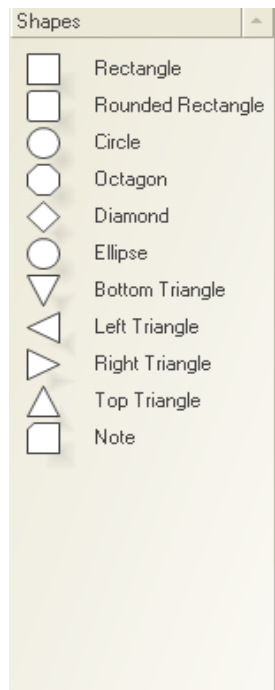
(Gibbs, 2002)

- Central categories that tie all other categories together are identified and related to other categories (p. 167)
- The effect of historical site's resources on educational practices of teachers.
 - 3 Themes/Practices
 - Classroom Instruction
 - Pedagogical Content Knowledge
 - Collaboration

Selective Coding

Name	Sources	Reference
Themes	0	0
Collaboration	0	0
Collaboration_Center	9	41
Collaboration_in school	16	28
FT Collaboration	9	141
Instructional Methods	0	0
Assessments	7	10
CT Professional Development	13	71
FT_MT Centered	13	54
Hands-on Activities	18	90
lesson plans	8	15
Prep	7	18
Resources	32	151
Visual Resources	0	0
PCK	0	0
Challenge	6	10
community connection	5	6
Content Knowledge	18	58
Historical content	16	102
Hybrid Lesson	11	26
resources classroom	16	88

Coding with Model



Queries: Verify Coding






■ Text Search

- ❑ Find words relevant to coding.
- ❑ Example: Hands-on instruction

■ Matrix

- ❑ Compare one group of nodes or attributes with another group of nodes or attributes.
- ❑ Analyze across emergent themes
- ❑ Example: Collaboration between teachers & museum

Query: Text Search

Hands On - Results Preview		
	Name	In Folder
	Center	Cases
	Teacher 3	Cases
	Teacher 4	Cases
	Teacher 2	Cases
	Teacher 1	Cases

Query: Matrix Search

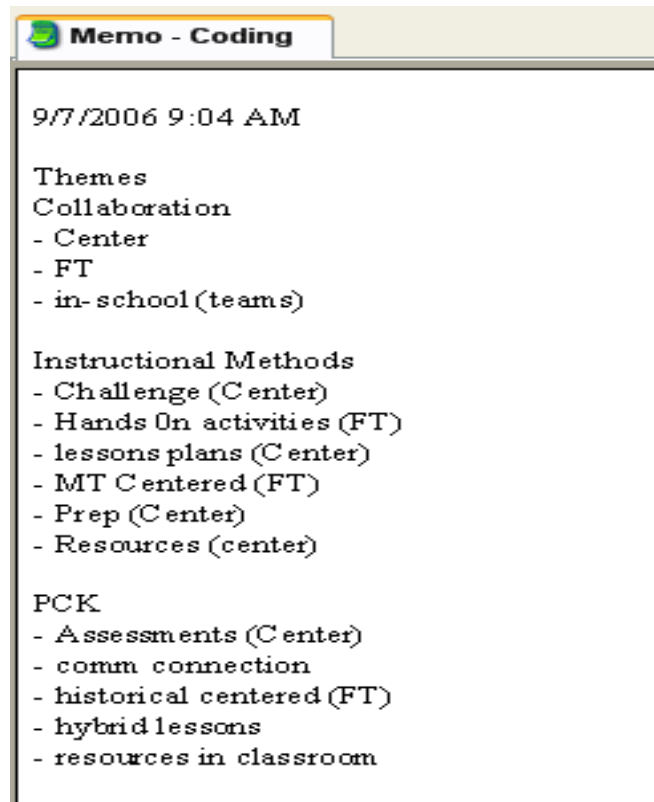
Collaboration_Cen				
	A : Teacher to Teacher ▼	B : Center to Teacher ▼	C : Teacher to Center ▼	D : Mutual ▼
1 : Teacher 1 ▼	2	0	1	0
2 : Teacher 2 ▼	1	0	1	0
3 : Teacher 3 ▼	2	2	2	0
4 : Teacher 4 ▼	0	0	1	0

Coding Journal

(di Gregorio, 2003)

- Notebook: while coding write down
 - Ideas
 - How you are coding: Tree nodes/Child nodes
 - Ah-Ah's
 - NVivo Coding Journal
 - NVivo memo
 - Date & Time stamp
-

Coding Journal



NVivo7 Advantage

- Reflecting before and during coding
- Flexible Coding
- Making Coding Public

Enhancing Validity of Qualitative Dissertation Research by using NVIVO

Carolyn Siccama, Ed.D.

Validity

“the correctness or credibility of a description, conclusion, explanation, interpretation, or other sort of account” (Maxwell, 1996, p. 87)

■ “Traditional” strategies

- Audio recording and verbatim transcription
- Reflective summaries
- Member checking
- Triangulation

■ “Non-Traditional” strategies using NVIVO (Richards, 2004)

- Audit and log trails
 - Interrogate interpretations
 - Scope data
 - Establish saturation
 - Visual representation
-

Audit and Log Trails

- Allows for
 - ❑ Monitoring research process
 - ❑ Tracking decisions and assumptions
 - ❑ Tracking origins of key concepts
 - ❑ Tracking evolution of coding categories
 - ❑ Monitoring subjectivity

 - Examples:
 - ❑ Date and Time stamps
 - ❑ Methodological Logs
 - ❑ “Proposal unfolding” Log
 - ❑ Memos
-

Interrogate Interpretations

“establishing a sound and thorough inquiry into the data” (Richards, 2004)

- Strong foundation of codes allows for:
 - Access to data by case
 - Access to data by interview question
 - Access to data by topic or emergent theme

- Attributes and case nodes
 - Help with interrogating the data
 - Intersect descriptive data and interpretive data
 - Examine interaction and intersection of data

Scope Data

“ for a well founded analysis and to check the completeness and validity of coding” (Gibbs, 2002; Richards, 2004)

- Identify subsets of data to search
 - Allows for:
 - ❑ Ask specific questions
 - ❑ Identify themes
 - ❑ Make claims
-

Establish Saturation

“for rich and robust explanations” (Richards, 2004)

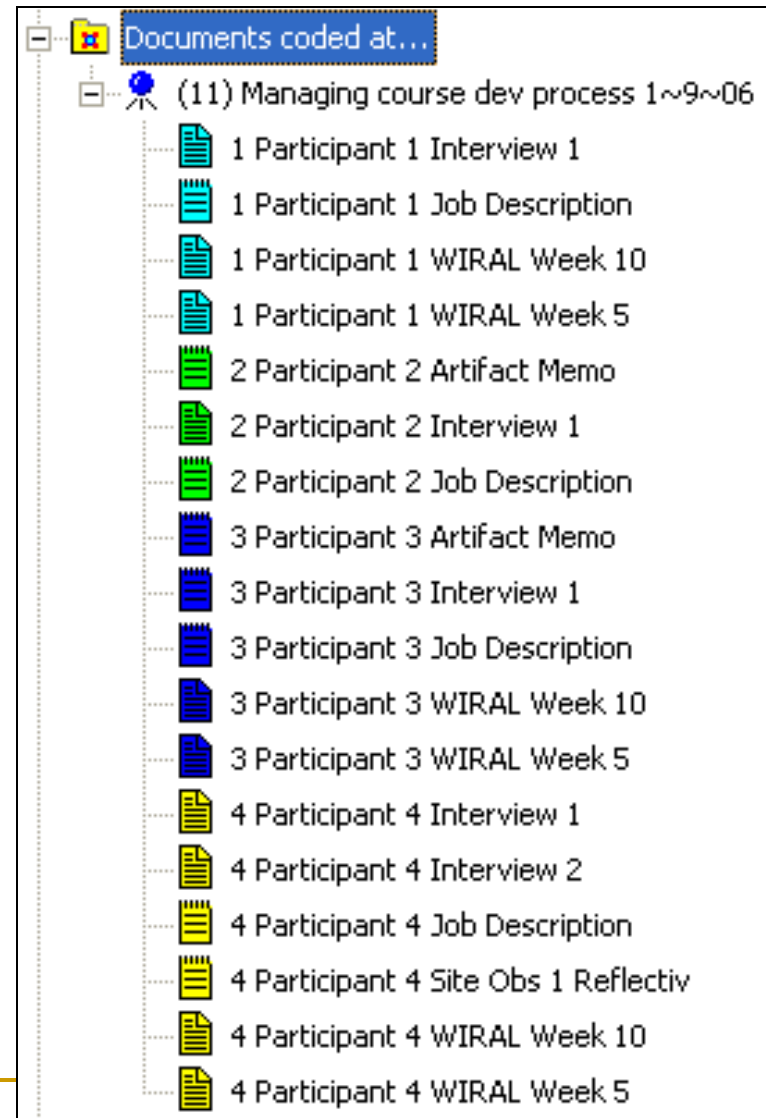
- Multiple tools within NVIVO
 - Show connections between
 - Development of ideas
 - Clarify concepts and their relationships
 - Emergent themes
 - Can help to identify overlap in coding
-

Visual Representation






- The challenge:
 - ❑ Software is 'alive'
 - ❑ Final written document is static
 - My solution
 - ❑ Provide richness, depth and insight into data analysis process
 - ❑ Document how validity threats were ruled out
 - ❑ Help to substantiate claims
 - ❑ Triangulation
-

NVivo and Visual Representation

- Substantiate claims
- “traditional” strategies
- Triangulation

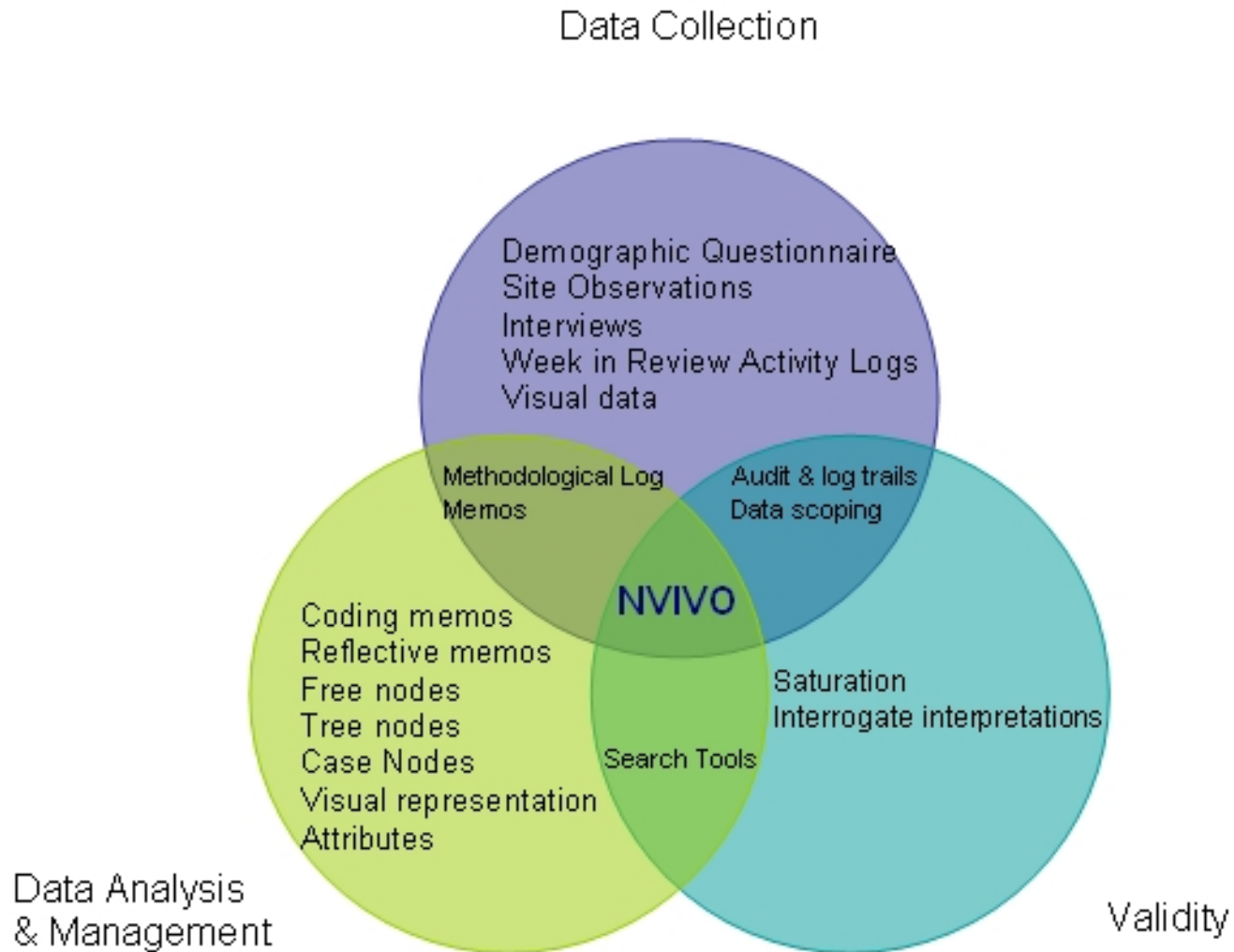


Visual representation within a Dissertation

Nodes in /Managing course dev process 1~9~06					
Title	No.	Passages	Created	Modified	
 timelines & checklists	1	36	1/10/2006 - 12:13:49 PM	1/23/2006 - 8:44:32 PM	
 Meetings	2	34	1/10/2006 - 12:14:01 PM	1/11/2006 - 8:23:25 PM	
 Behind the Scenes	3	16	2/5/2006 - 4:39:24 PM	2/8/2006 - 10:51:03 AM	
 fac in various stages of online cour	4	29	1/10/2006 - 1:17:30 PM	1/23/2006 - 8:47:28 PM	
 challenges	5	17	1/10/2006 - 1:20:58 PM	1/23/2006 - 8:38:19 PM	

- Provide additional visual evidence
- Capture research process as it unfolds

NVIVO Integration into Study



Visual Data in the Doctoral Dissertation: Using Qualitative Software to Assist in Organizing and Analyzing

Stuart P. Robertson

The Study

- Focused on the theoretical underpinnings of the creation of a new setting and the practical application to the founding of charter schools.
 - The problem was explored through qualitative research methodology using a case study design.
-

Data Collection

- Observations
 - Interviews
 - Artifacts
 - Photographs
-

Data Organization & Analysis

- Observations and interviews generate large amounts of rich data
 - Enhances the analysis process
 - Presents a challenge in organizing the data for maximum accessibility and usefulness.
- Photographs compound that challenge
 - Often reside separate from the rest of the data
 - Limited ability to interact with them during the analysis process.

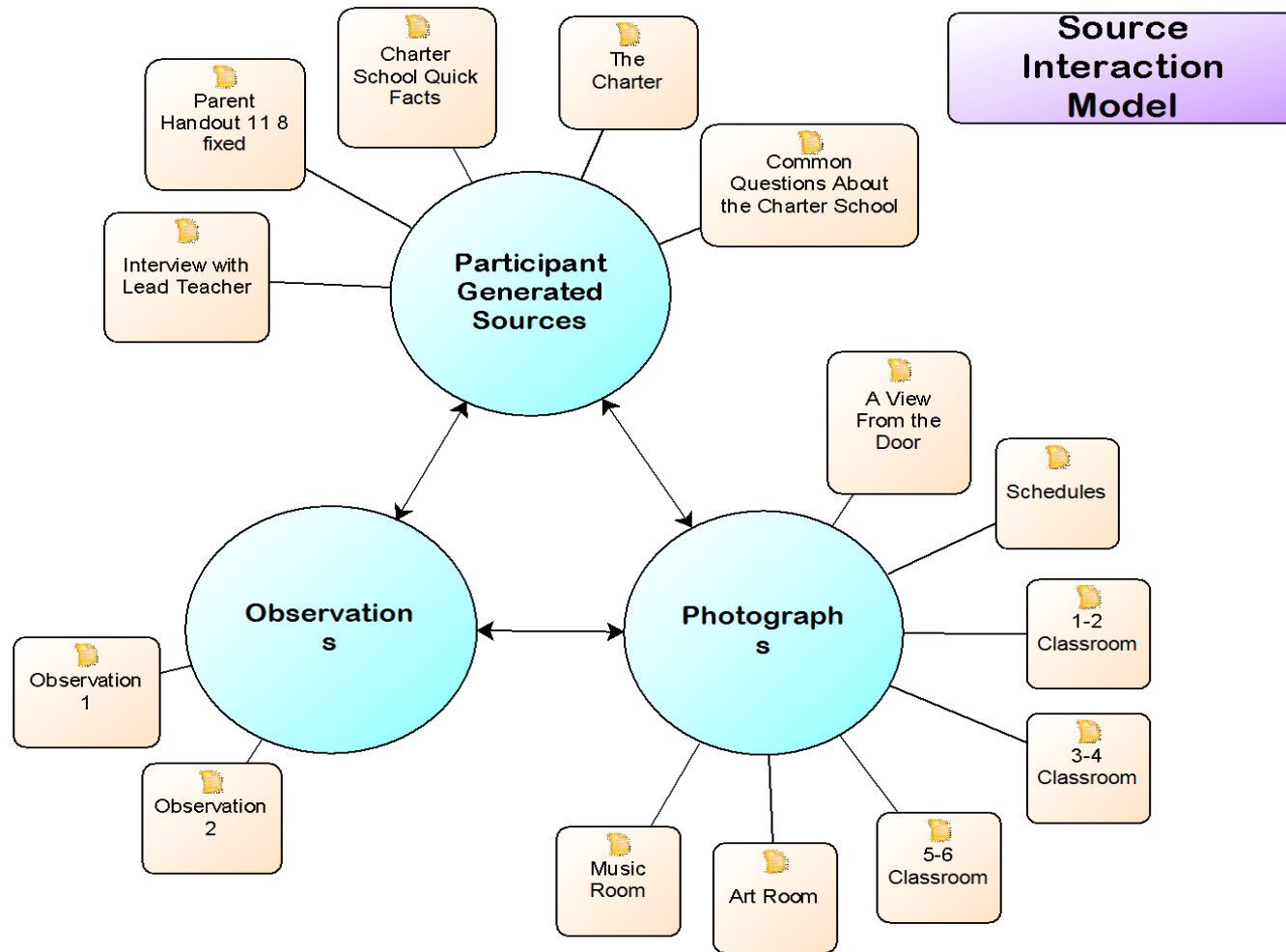
Why Use Visual Data?

- “Unanticipated connections can be discovered as an image creates relationships among diverse elements of form and experience and brings these to a new wholeness.” (Jongeward, 1997; p. 2)

The Role of Visual Data

- Provide an overview of the setting
 - The structure of the learning environment was seen as a manifestation of the subjects' beliefs about education
 - The photographs were of various classrooms from a variety of perspectives
-

Source Interaction Model



Simple and Yet...



- *Today's Schedule – This is what was written on the board when the students came in. I noticed how similar it was to the typical daily schedule of a traditional class. This made me think about what I had read in Sarason's *The Creation of Settings and the Future Societies* when he talks about the fact that new settings can't escape the culture that created them.*

A View From the Door



Visual Data & Qualitative Software

- This study utilized NVivo 7[®] from QSR
 - Photographs could be included in documents
 - Entire photographs could be coded at appropriate nodes
 - Photographs were accessible through searches and queries
-

Visual Data & Qualitative Software

Exploring Beliefs_Charter School Case Study.nvp - NVivo

File Edit View Go Project Links Code Tools Window Help

Normal Times New Roman 12

Sources Coded Code As Name Furniture Arrangement Tree Nodes/Cuban Descriptors

Nodes

- Free Nodes
- Tree Nodes
- Cases
- Relationships
- Matrices
- Search Folders
- All Nodes

Tree Nodes

- Background
- Catalyst for Change
- Charter School Description
- Cuban Descriptors
 - Centers
 - Furniture Arrangement
 - Instruction
 - Materials
 - Movement
 - Talk
- Expectations
- Finances
- High_Low
- Impetus
- Influence
- Interviews
- Positive_Negative
- Regularities of Schooling


Sources

- Sources
- Nodes
- Sets
- Queries
- Models
- Links
- Classifications
- Folders

Furniture Arrangement

<Documents\Media Artifacts\A View From the Door> - § 1 reference coded [0.11% Coverage]

Reference 1 - 0.11% Coverage



<Documents\Observations\Observation 1> - § 4 references coded [2.24% Coverage]

Reference 1 - 0.22% Coverage

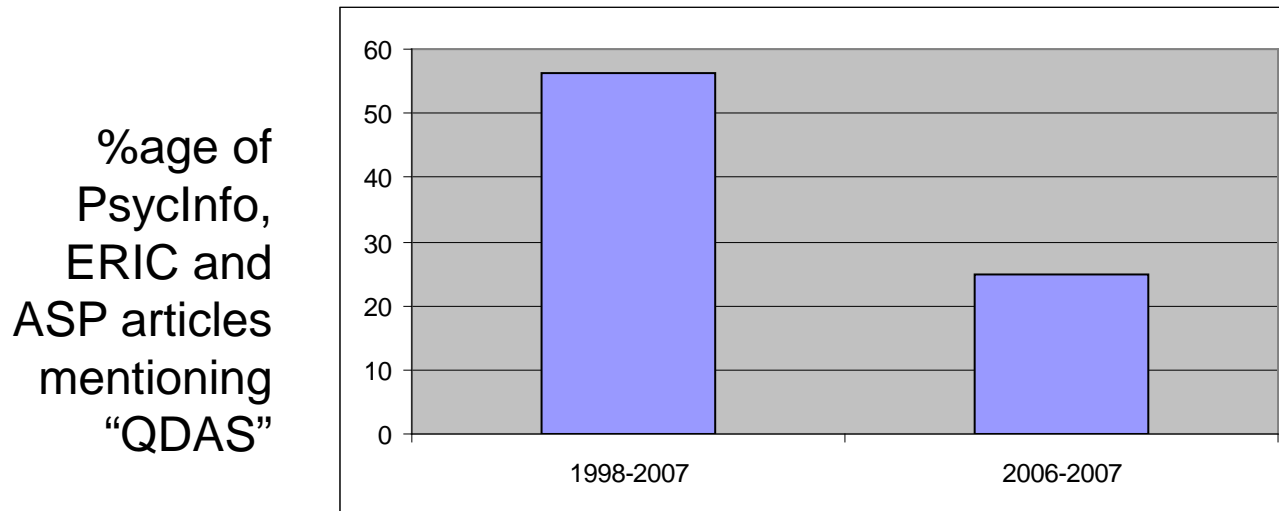
The students were all sitting at their tables.

Qualitative Data Analysis Software: Bridging the Divide

Cynthia Jacobs

QDAS isn't “news” anymore...

Many articles mentioning QDAS used to be *about* using QDAS (56%)



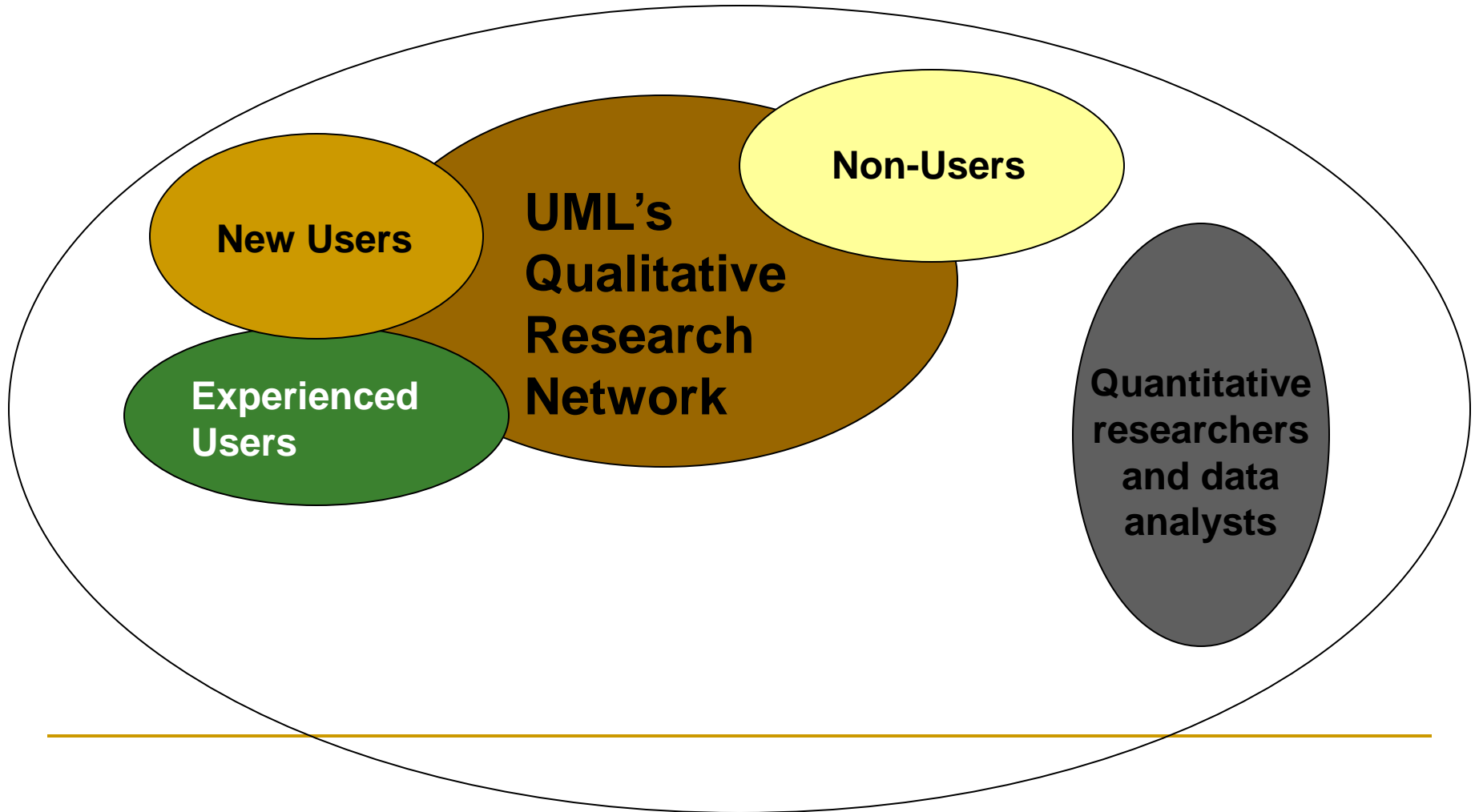
Now, most articles mentioning QDAS are about a study's findings

...but it's still a challenge

Graduate students often suffer when

- Dissertation advisers are unfamiliar with the capabilities and benefits of QDAS
 - QDAS training opportunities are limited
 - Committees include both users and non-users
 - Mistrust exists among users at different levels
-

Our “Qualitative Research Network” Exposes and Bridges the Gap



What is the QRN?

- Links graduate students, faculty, and others engaged in qualitative research
 - Offers formal and informal gatherings for methodological discussion
 - Fosters course development
 - Links members to research and publication opportunities
 - Volunteer origins; funded since 2005
-

4 Stepping Stones Across the Divide

Readily available software

- 100-seat site license – 97% filled seats
 - 1/3 installed in labs, classrooms
 - Training site for faculty, staff, students
 - Enables integration in methods courses
 - Available for research group meetings
-

4 Stepping Stones Across the Divide

QDAS Training

- One-day Introductory & Intermediate Courses
 - Oversubscribed for the 3rd time this year
 - Faculty, staff, graduate students, outside researchers

 - Faculty Only “NVivo Tasters”
 - One-hour one-on-one introduction
 - How can NVivo help *me*? What does it *do*?
 - Caution: One taste is never enough!
-

4 Stepping Stones Across the Divide

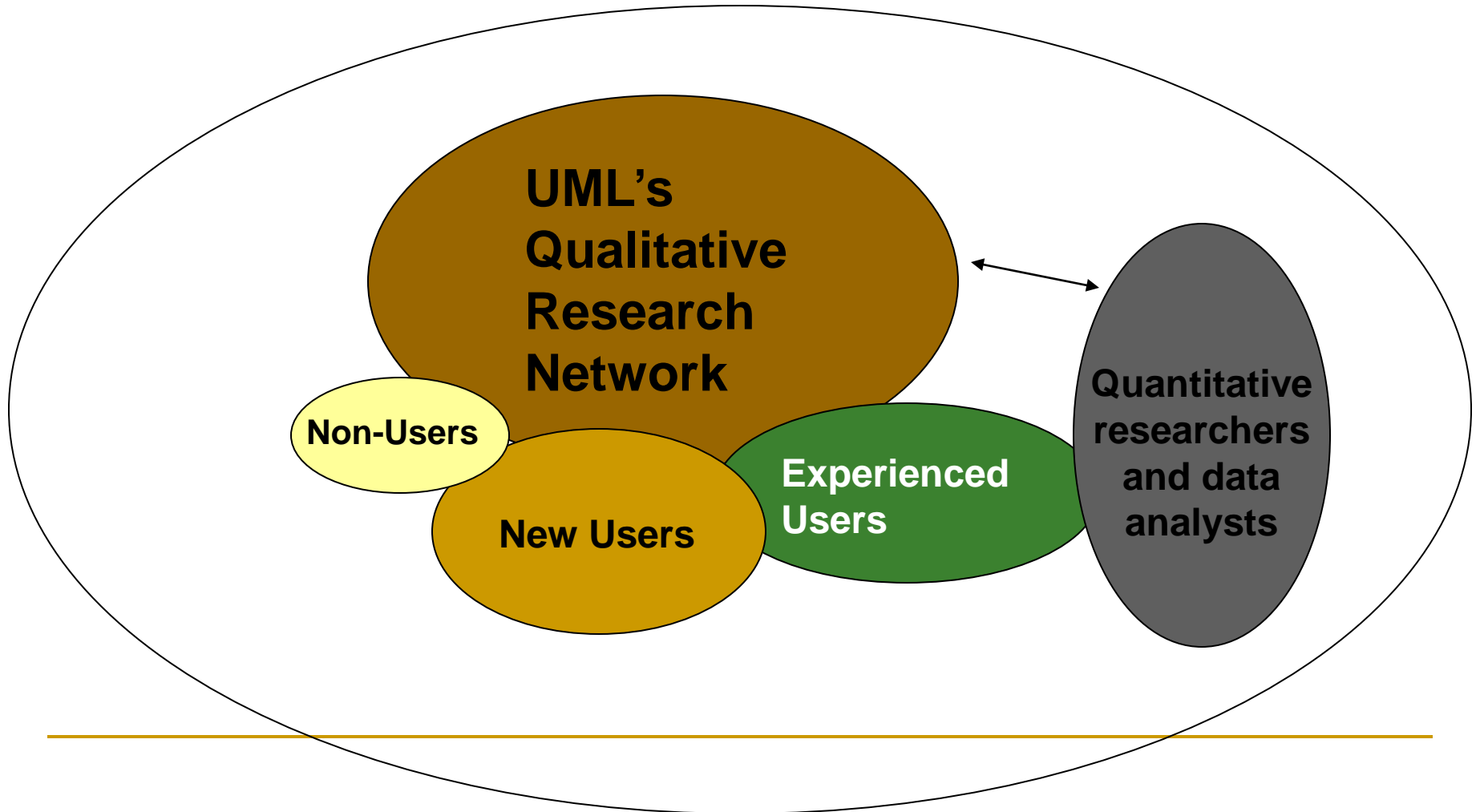
User Groups

- Monthly, topic-focused, one-hour meetings
 - Informal setting
 - “Guest” host comes with a question or strategy to share
 - Faculty, staff, graduate students
 - Serves beginners to advanced users

 - Fertile ground
 - Explore new applications
 - Generate multiple possible solutions
 - Identify new opportunities, needs for training, support
-

4 Stepping Stones Across the Divide

Open Discussion



Next Steps: Self-Assessment

- Tools for communication between users and non-users (e.g., the NVivo “shell”)
 - More strategies
 - Encouraging, tracking use of strategies
 - Methods courses incorporating QDAS
 - How many? How much?
 - Every new user is one less non-user
 - Are we making *good* use? Can we trust *and* question one another as users?
-

Contact Us!

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Stuart Robertson, spr928@adelphia.net

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