Identifying information-related competencies to align educational support

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Texas A&M University

http://wikimapia.org/7071/Texas-A-M-University-TAMU

- 17 Colleges and 2 branch campuses
- Houses the George Bush Presidential Library and Museum
- Serves more than 68,000 students

Texas A&M University Libraries

Medical Sciences Library

https://library.tamu.edu/

- Began as veterinary library
- One of the premiere veterinary libraries and collections in the world
- Populations include five professional programs

College of Veterinary Medicine

Health Sciences Center

- College of Nursing
- College of Medicine
- College of Pharmacy
- College of Public Health

Project's Background

- Medical Sciences Library holds a place on the veterinary curriculum committee

- 2014-2016 veterinary curriculum committee mapped the curriculum
  - The *New Graduate Outcomes* and rubrics were developed
  - Of the 30 *Outcomes*, 1 specifically addresses information

- New veterinary curriculum began in 2017

- Other professional programs at Texas A&M are in the process of updating and mapping their curricula

Research Question

What is the best way for MSL subject librarians to support the curricular competencies of the five professional programs and align this support in a sustainable way across the programs?

Two main points:

1. Evaluating instructional support for MSL's professional programs, within the context of evolving programmatic competencies

2. Working towards a sustainable model for MSL subject librarians to provide consistent levels of instructional support across their five professional programs while tailoring support for each

Aligning the Competencies

- Competencies for each professional program had field-specific:
  - Jargon
  - Buzzwords
  - Emphases

https://wallscover.com/cryptex.html

Thematic Analysis

- Qualitative Content analysis
  - Glaser's grounded theory
    - Naturally emerging themes
    - Unbiased by literature perspectives

- Coding frame
  - Documents collected for five professional program competencies
    - Documents for 4 of the 5 programs freely accessible online
    - Contacted curriculum committee for 5th program's competencies

Research Team Responsibilities

Coder 1

- Developed method
- Created coding rubric
- Collected documents
- Generated data
- Consensus voting

Coder 2

- Assisted developing method
- Provided feedback for coding rubric
- Collected documents
- Generated data
- Consensus voting

Coder 3

- Generated data
- Provided feedback for coding rubric
- Consensus voting

Coder 4

- Conceived project idea
- Arbitrated coding when Coders 1-3 could not reach consensus

Developing the Coding Rubric

Pilot phase

- generated themes from thorough reading of the competencies from all 5 professional programs
- Worked with Coder 2 to develop a method that was both explainable and reproducible
- Created a coding rubric to facilitate coding in qualitative analysis software (MAXQDA)

5 Professional Programs had a total of 179 curricular competencies

- College of Nursing competencies: 19
- College of Medicine competencies: 53
- College of Pharmacy competencies: 10
- College of Public Health competencies: 61
- College of Veterinary Medicine competencies: 36

Thematic Categories

Seven major themes emerged from an initial reading of the documents

- Clinical skills
- Communication skills/Human interaction
- Didactic knowledge and understanding
- Information seeking behaviors and skills
- Legal awareness, organizational awareness, and advocacy/ethics
- Statistics, experimental design understanding or application
- Other

Refining the Coding Rubric

- Two MSL subject librarians were invited to help generate data for the project.
  - Subject librarians in Public Health and Veterinary Medicine
  - Coder 2 (veterinary medicine) and Coder 3 (public health)

- Coder 2 and Coder 3 provided feedback on the coding rubric
  - Added inclusion and exclusion criteria
  - Removed examples that were not clear

- Coder 1-3 used an updated copy of the rubric to independently code all five professional programs' competencies.

Example from Coding Rubric

Preliminary Code Categories	Coding Question	Inclusion Criteria	Exclusion Criteria	Exclusion Crit
Clinical Skills	Is *treatment* OR *diagnosis* OR *providing care* the overarching theme of the competency?	[action verb]+description about or use of medical tests/procedures, development of patient plans, physical examinations/palpations, use of collected information/data to inform diagnosis, and phrases such as "provide health OR palliative care."	If the medical tests or procedures are NOT the focus and are being used FOR an application that would be categorized in a different core area	Demonstrate un epidemiology of diseases within a and the approac useful in reducir incidence and pr **TAMU Medical Schoc*
Communication Skills/Human Interaction	Is *communication* the overarching theme of the competency?	[action verb]+description about communication using any form of media including charting, collecting information from a population, or considering/accounting for/communicating	NA	NA

Competency Examples

Nursing	Work as a change agent to apply and disseminate research outcomes within the practice setting.
Medicine	Demonstrate an understanding of the manner in which diverse cultures and belief systems perceive health and illness and respond to various symptoms, diseases, and treatments.
Pharmacy	Provide comprehensive patient-centered care by designing, implementing, evaluating and continually refining pharmacy care plans based on best pharmacotherapy practices that incorporate health literacy, cultural competence, and psychosocial and socioeconomic factors to optimize patient outcomes. Provide evidence-based care to populations through disease management programs and protocols
Public Health	Apply an understanding of feedback loops to public health dynamics
Veterinary Medicine	Prepare a medical record, documenting all relevant client and patient information, and communicate with the animal health care team using the medical record.

Data Generation

- MAXQDA qualitative software was used for coding
  - At the time, only qualitative software with webcrawler browser plugin and integrated statistics package

- Coder 1 used the MAXQDA webcrawler browser plugin to capture PDFs of the 4 programs with web-available competencies

- Coder 2 contacted the curriculum committee for her subject, collected the 5th competency, and sent it to Coder 1

- Coder 1 sent out PDF versions of all 5 competencies to ensure everyone coded the same versions

- Each coder used MAXQDA to code the competencies independently

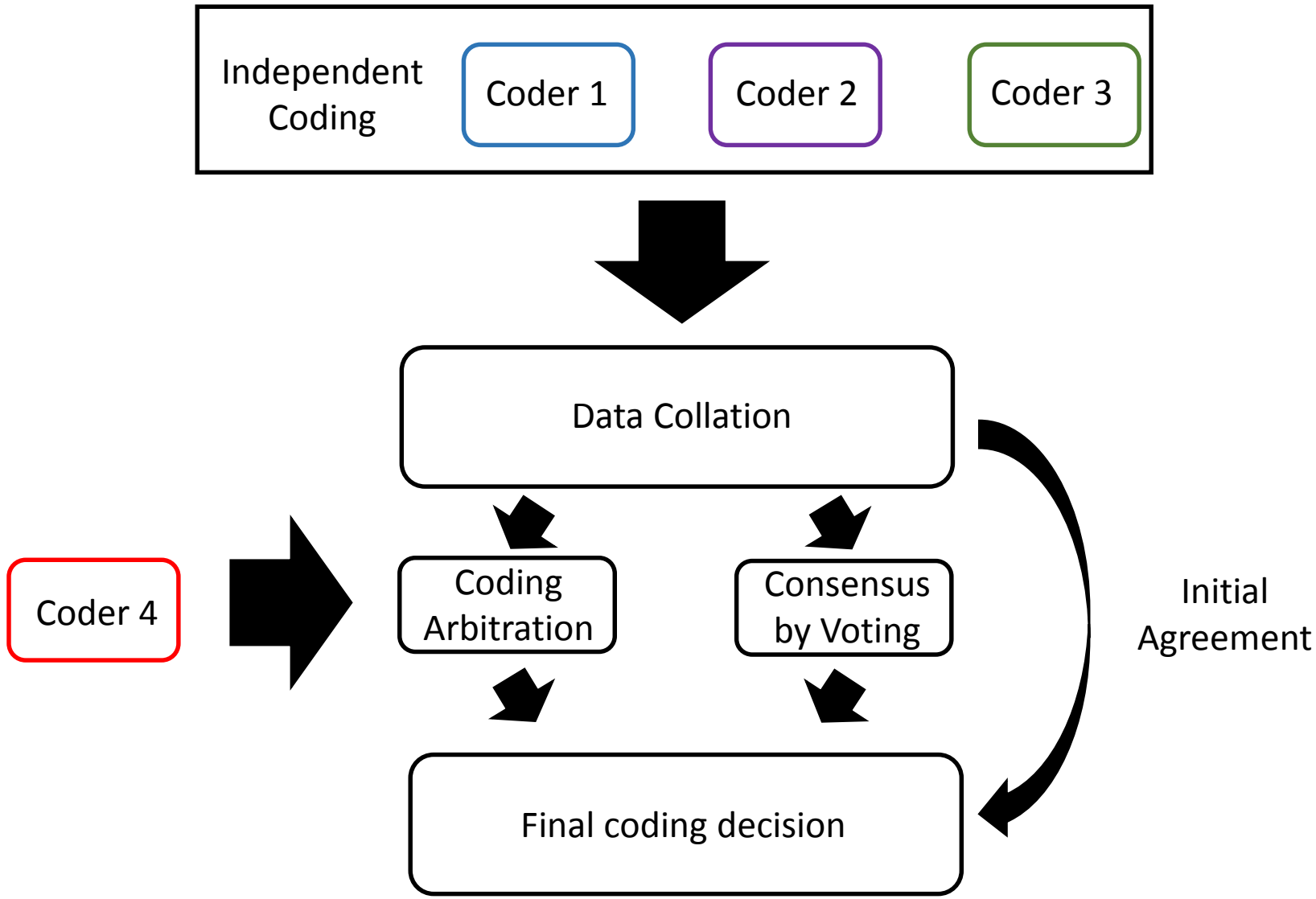
- After coding, the coders met twice to discuss coding, consensus voting, and identify competencies for arbitration

https://www.youtube.com/channel/UCo-7hn68W4KEgcydaMUh5XA

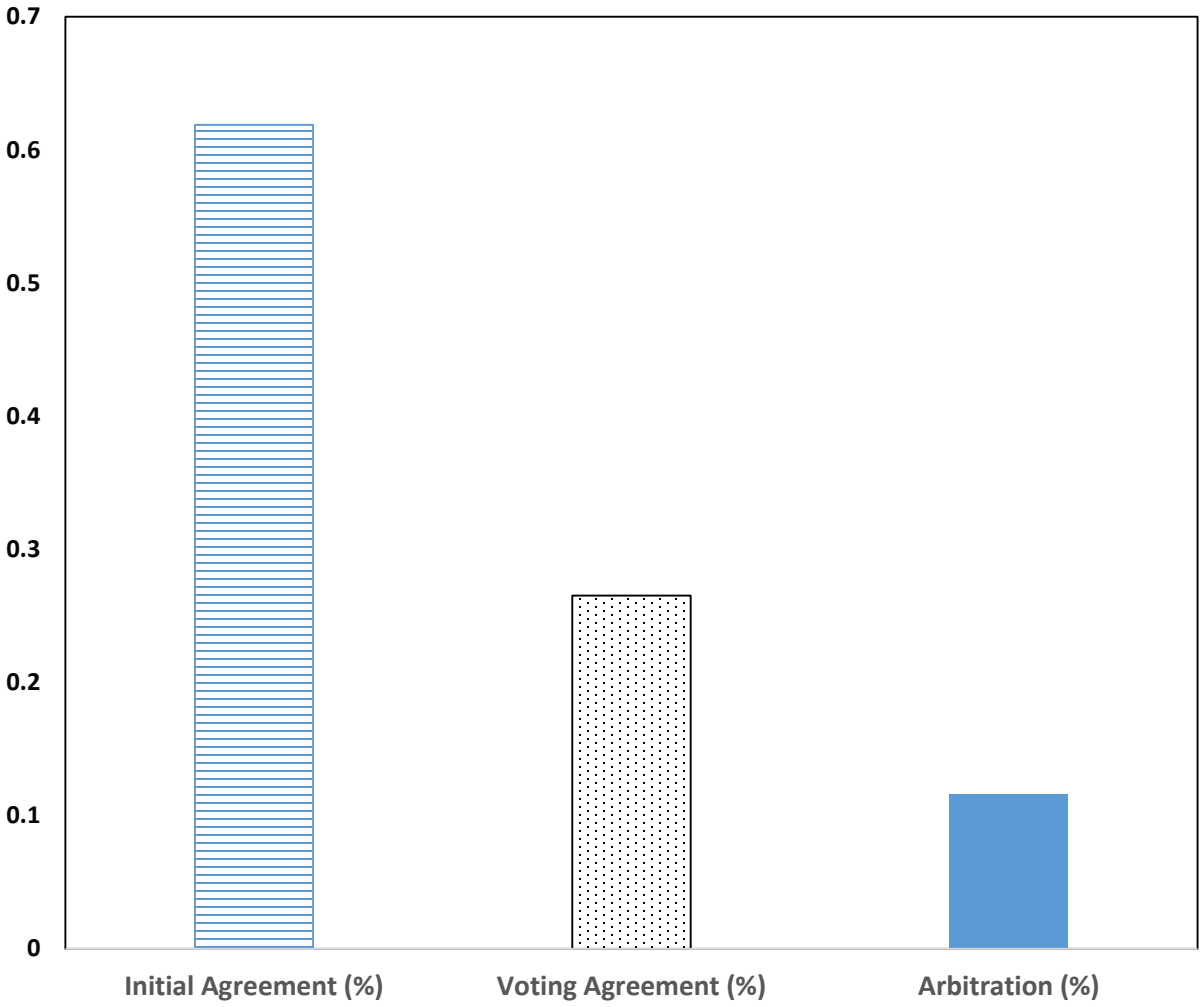
Data Collation

Coder role descriptions

Coder 1	Independent data generation
Coder 2	Independent data generation
Coder 3	Independent data generation
Coder 4	Arbitrated coding that couldn't be solved by consensus

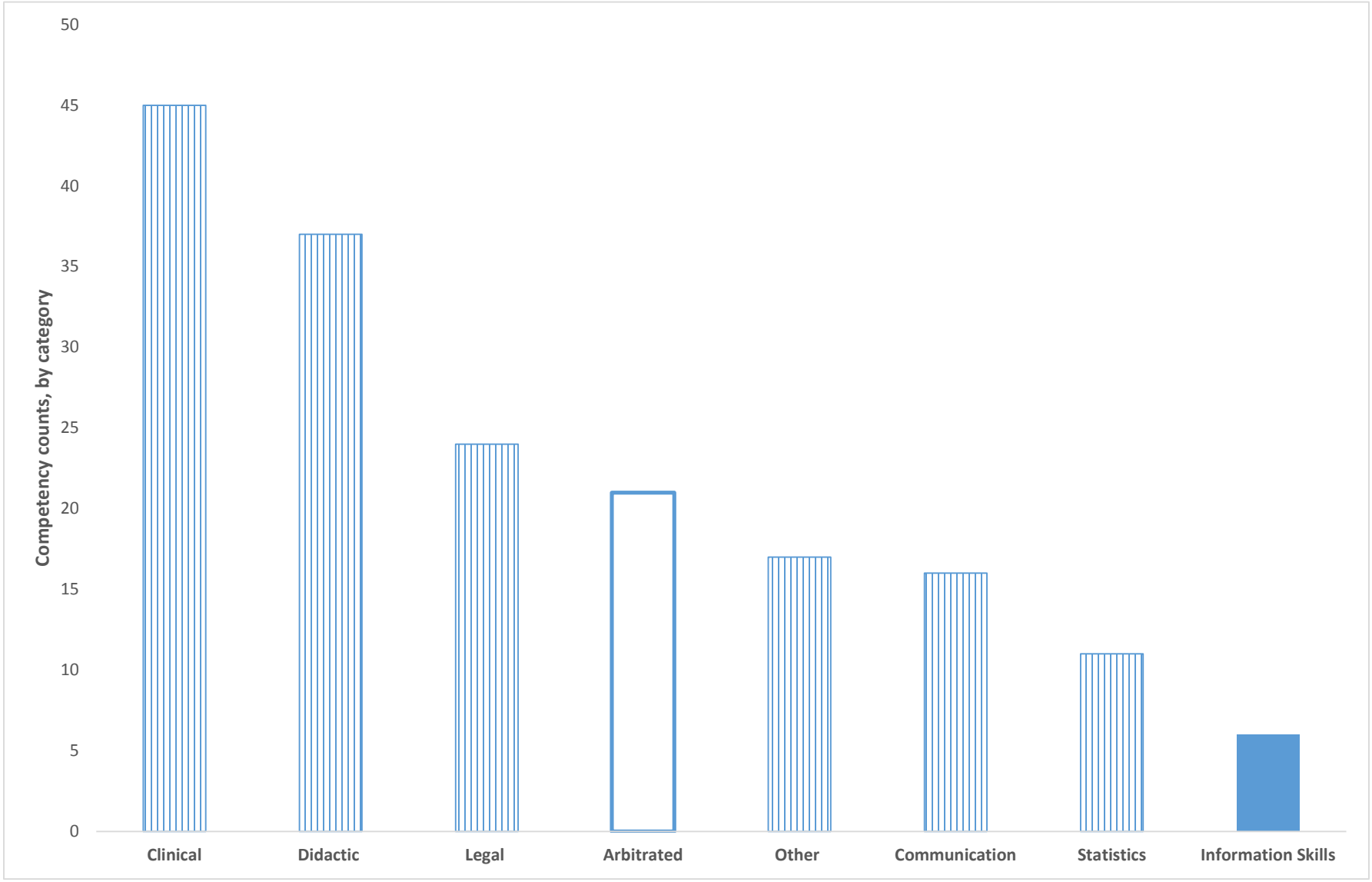


Coding Agreement



- 61.8% initial agreement using the coding rubric (Coders 1-3)
- 26.5% additional agreement reached by voting (Coders 1-3)
- 11.6% of the competencies were arbitrated (Coder 4)

Competencies in Thematic Categories



- Total of 179 Competencies across 5 professional programs
- For this round of coding, each competencies was only labeled into one category
- Identified overarching theme of category
- 6 competencies about information skills

Findings, Perspectives, and Reflections

- Aligning competencies between programs was often difficult because each contained multiple concepts framed for that specific program/profession

- Interpreting the language became an issue because each set of competencies used field-specific jargon

- During coding, additional themes became apparent that needed to be accounted in the second round of coding
  - **Leadership**
  - **Ethics**

Evaluating Instructional Support

- This first round of coding assigned a single overarching theme to each competency
- Individual elements that made up the competencies were not accounted for in the first round of coding
- This analysis will be used to identify underlying types of information-seeking behaviors and skills.

Next Steps

- Each competency will be recoded, accounting for all elements and phrases for their content
- The coding rubric will be updated to account for the two new additional themes: **Leadership** and **Ethics**
- This coding will be used to identify underlying types of information-seeking behaviors and skills implied in the competencies

Questions