

# Constructing a Functional Taxonomy of Writing Analytics

Susan M. Lang

The Ohio State University

Co-authors, Laura Aull, Wake Forest University

Bill Marcellino, Rand Corporation

THE EIGHTH INTERNATIONAL CONFERENCE ON WRITING ANALYTICS,  
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# Exigency: Why Now?

Shum, et al's (2016) definition of writing analytics: "Broadly defined, writing analytics involves the measurement and analysis of written texts for the purpose of understanding writing processes and products, in their educational contexts. Writing analytics are ultimately aimed at improving the educational contexts in which writing is most prominent" (481).

# Models/ Prior Attempts

- Peña-Ayala, A. (2018). Learning analytics: A glance of evolution, status, and trends according to a proposed taxonomy.
- Moxley, J., & Walkup, K. (2016). Mapping Writing Analytics. In *EDM (Workshops)*.
- Rude, C. D. (2009). Mapping the research questions in technical communication. *Journal of Business and Technical Communication*, 23(2), 174-215.

Research Profiles/Areas/Theoretical Underpinnings (from Moxley, et.al., 2017)

## *Theorization/History*

### *Data*

Acquisition  
Cleaning/transformation  
Storage  
Database Construction/Management

### *Digital Writing Environments*

LMS/PMS  
Augmented Discussion  
Augmented Writing Environment  
Augmented Review

### *Analytics Processes*

Exploratory  
Descriptive  
Predictive  
Prescriptive

### *Assessment*

Individual (Student or Instructor)  
Aggregate/Disaggregate (Student or Instructor)  
Learning Assessments (i.e. SLOs)  
Effectiveness Assessments (i.e. comparative pedagogies)  
Meta (i.e. evaluation of assessment protocols)

### *Ethical*

Privacy & Data Protection  
Fairness (in all its attributes)  
IRB Regulation/Ethical Conduct of Research  
Consequence

### *Implementation Paradigms and Tools*

In-house/in-program tools  
Intra-institutional collaboration (i.e., with Institutional Research)  
Commercial partnerships and/or software  
Communication of results

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Potential Impact on  
Students

Difficulty in Creating  
Pipeline of Scholars

Challenges and Learning Curves  
for Methodologies

Little or No Literature  
with definitions

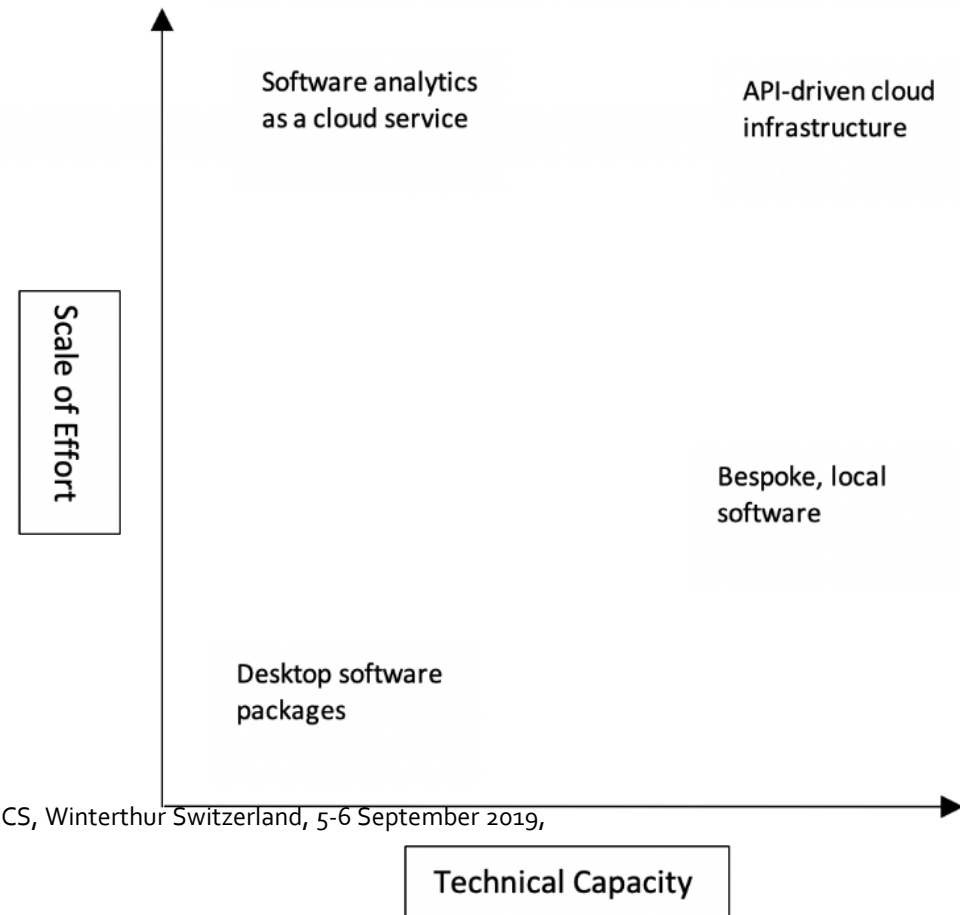
# History/Theory

- History of the field is unsurprisingly brief
- “Theory” becomes a complex term, as the field draws from a multiplicity of theories connected to composition studies, technical communication, computer science, and the like.

# Implementation Paradigms

Two important considerations for implementing a WA analytics effort are the scale of the efforts and the technical capacity available for implementation.

Writing Analytic Paradigms by Scale and Technical Capacity



# Data

- Acquisition
- Cleaning/transformation
- Storage
- Database construction/management

# Digital Writing Environments

- Early Environments (HyperCard, StorySpace, Daedalus Integrated Writing Environment)
- Commercial Learning Management Systems (BlackBoard, D2L, Canvas, Turnitin)
- Locally developed environments (Writers Exchange, USFWrites, Raider Writer, ELI Review)





# Analytics Processes and Uses

- Premises underpinning writing analytics processes
- Processes/Uses

# Assessment

- Construct evidence
- Scoring evidence
- Decision evidence
- Extrapolation evidence

# Ethical Considerations

- Privacy and data protection.
- Openness and transparency are essential and should be an integral part of institutional policies.
- Big data will impact all society.
- Data selection facilitates certain conclusions not others.
- Algorithmic accountability.

“Analog privacy in a digital world”

# Ongoing Challenges

- Defining the field as we expand the field
- Facing challenges
  - Explaining impact of our work on students
  - Developing an ongoing pipeline of scholars/researchers in the field
  - Implementing empirical/quantitative methods to a resistant audience
  - Building a body of foundational documents

# Conclusions

- Writing Analytics is an emerging, multidisciplinary applied area of study that to this point has largely focused its efforts on a limited range of instructional situations. As a specialization that has as primary characteristics agility and malleability, it is imperative that those of us professing to do writing analytics make the effort to define how our work fits the larger conversation of our area. This taxonomy provides us with a framework for doing so.
- It also provides us with a way to describe the field to new/interested researchers in order to broaden the stakeholder pool and create sustainability.

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