Plan Overview

*Data Management Plan created using DMPTool*

**Title:** Teacher Agency, Leadership and Collaboration: Complex Examinations of Teacher Learning-Practice

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Data Collection

What data will you collect or create?

To answer our overarching research question of:

- What does teacher learning look like (e.g., impact, outcomes, perspectives and experiences of teachers, relationships across and to additional malleable factors, etc.) when teacher agency, leadership and collaboration are foundational and organizing factors in professional learning experiences?

our mixed-methods data collection plan includes common data collection protocols and approaches across each of the six local inquiry teams. Our study has three phases as described below.

**Phase 1 - Capacity Building**

(Febuary 2020-June 2021)

**Instrumentation Finalization**

For use in our larger study for data collection to begin in year 2, we will develop and finalize two survey/test instruments to be used with teachers.

1. An instrument that examines teacher knowledge, perspectives and experiences with agency, leadership and collaboration in professional learning. This instrument will be further referenced in this document as the TALC (Teacher Agency, Leadership and Collaboration) instrument.

2. A survey that examines teacher knowledge, perspectives and experiences with elements of critical sociocultural pedagogy (as operationalized by the CREDE Standards for Effective Pedagogy) that facilitates communication in the classroom. This instrument will be further referenced in this document as the Communication Pedagogy Instrument.

Building off of Co-PI Hammer’s successful and innovative approaches to measurement/instrument development (Hammer, Fischer & Koch-Priewe, 2016; Ehmke, Hammer, Köker, Ohm & Koch-Priewe, 2018) and informed by Gitomer and Zisk’s (2015) “Design Framework for Assessment and Validation of Teacher Knowledge” (p. 34), these instruments will be more than simple likert-scale surveys. They will utilize various approaches to meaningfully and complexly explore teacher knowledge, experiences and perspectives. To finalize these instruments we will collect data via cognitive interviews, work with expert panels, and engage in multiple rounds of testing instrument items/approaches. These data collection efforts will lead to the validation of reliable instruments to be utilized in our study during Phase 2. Each round of testing of each instrument will require at least 50 participants. Therefore we anticipate ~300 participants to help us finalize our instrumentation (~150 per instrument). These data will be collected online via Qualtrics and linked to a locally developed (at UNL) database (password protected and secure). We will also use a restricted access Box folder (at UNL) to store data relevant to this work (cognitive interviews, reviews from expert panel members, etc.). These formats for data collection and storage will be shared across our multi-institutional team as well as long-term access in the data. This is true for all of the data described in this data management plan.

**Interrater Reliability**

In order to collect observation data that speaks to each other across the six local inquiry teams, each Co-PI, local teacher collaborator and local research team member (this includes anyone who will participate in the collection of observation data across the study) will need to successfully participate in inter-rater reliability efforts during Phase One regarding the observation tool based on the Six Standards, the Standards Performance Continuum Plus (SPC Plus) (Doherty, Hilberg, Epalooose, & Tharp, 2002; Teemant, Leland, & Berghoff, 2014). These efforts require participation in online meetings, ratings of online videos collaboratively as well as collaborative visits to local classrooms to test out the use of the SPC Plus. Co-PI Teemant has established supports for developing interrater reliability that we will utilize along with an online test (which includes classroom scenarios and clips of practice). Each member of our team will have to take the inter-rater reliability test regarding the SPC Plus to generate the data we need to ensure interrater reliability. This test will be completed online via Qualtrics and the data will be stored in our project database at UNL.

**Needs Assessments**

In order for our local inquiry teams to successfully design plans for professional learning around the Standards for Effective Pedagogy to begin in Phase 2 (that have teacher agency, leadership and collaboration as foundational and organizing factors), we will develop and implement a needs assessment for each inquiry team to locally utilize to collect data that will inform us of important contextual information around current professional learning practices and policies as well as opportunities and constraints for teacher agency, leadership and collaboration in professional learning. These data will be collected uniformly across the project, but the assessment/data collection protocol will be co-developed across the project leadership team using questionnaires, document analysis, observations of existing professional learning practices, and interviews with teachers and local professional learning leaders. The data will be collected both in-person and online and will be stored in our project database as well as in our project restricted access Box folder.

**Phase 2 - Team-Based Mixed Methods Research**

(Across three academic years: AY 2021-22, 2022-23, 2023-24)

Each year we will scale up. Year 1 of Phase 2 will include 6 inquiry teams with 10-15 participants each (n = 60-90). Year 2 of Phase 2 will double the amount of participants, building off of the leadership of teachers who participated in the previous year (n = 120-180). Year 3 will continue to double, also building off of the leadership of participants from the previous two years (n = 240-360). The sample sizes listed here are for intervention and will have matched sample sizes (or larger) of control.

For this study we will collect quantitative and qualitative data both regarding the context as well as perspectives of intervention (teachers who participate in the inquiry teams) and control (teachers who participate in local business-as-usual professional learning). Making this mixed methods study quasi-experimental, the intervention samples sizes will be matched (or be larger in size) with control group participants. In general the data we are collecting fall into one of the following categories:

- Survey/Test data (collected online via Qualtrics and our project database or in person via paper/pencil and entered into project database)
- Interviews (collected in person and video/audio taped then transcribed and stored in a restricted access Box folder)
- Observations of both K-12 classrooms and Professional Learning (collected in person, where possible video/audio recorded, transcribed and stored in a restricted access Box folder. Where video/audio is not possible, extensive written notes will be taken and stored in a restricted access Box folder)
- Artifacts (collected in person, online and via data transfer agreements). These include policy documents, relevant websites (district, school, etc.), publicly available data, student learning data collected by school/districts, artifacts from learning contexts (both K-12 and professional learning; both teaching and learning artifacts from teachers and students), and images of classroom materials (no images will be taken of humans without their express written consent).

**Contextual/Control Data**

These are the data we will collect annually to answer our overarching research question:

- TALC and Communication Pedagogy Instruments with control teachers (pre/post–at the beginning and end of the school year)
- Modified Tripod Survey (published via Measures of Effective Teaching project) to collect student perspectives on teaching across Local Education Agency (LEA) (including intervention teachers classrooms). If LEA has another student survey they use, we will explore the use of that survey rather than asking students to take an additional survey.
- Interviews with relevant building and district leaders regarding perspectives and experiences with professional learning, particularly as it relates to teacher agency, leadership and collaboration.
- Policy documents at state, district and school level regarding professional learning and student learning
- Publicly available data regarding student learning
Selection and Preservation

How will you manage access and security?

How will the data be stored and backed up during the research?

Storage and Backup

How will you manage copyright and Intellectual Property Rights (IP/PR) issues?

How will you manage any ethical issues?

How will the data be collected or created?

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Storage and Backup

How will you manage copyright and Intellectual Property Rights (IP/PR) issues?

How will you manage any ethical issues?

How will the data be collected or created?

Documentation and Metadata

What documentation and metadata will accompany the data?

Ethics and Legal Compliance

How will you manage any ethical issues?

How will you manage copyright and Intellectual Property Rights (IP/PR) issues?

How will you manage access and security?

Selection and Preservation
Which data are of long-term value and should be retained, shared, and/or preserved?
All of our data should be retained for at least a few years beyond the project's length to ensure sufficient time to learn as much as possible from the data. If it is determined that our data might be valuable to other researchers, we will work with the appropriate entities to share our data as appropriate.

What is the long-term preservation plan for the dataset?
We will preserve our data for five years after the end of the project (project end date planned for January 31, 2025). After those five years, we will destroy the data, unless another plan has been put into place to share and/or use the data further.

Data Sharing

How will you share the data?
We will only share the data within our research team via our database and the use of restricted access Box folders. If through our dissemination efforts and collaborations with our funders we determine that our data is of value to researchers outside of our research team, we will work with our funders and the UNL attorneys (as well as UNL IRB) to create the necessary conditions to ethically share our data.

Are any restrictions on data sharing required?
We don't currently know if we will share our data outside of our project team. But if we do decide to share our data, we will have whatever restrictions are necessary to be in compliance with our IRB and to protect our research participants.

Responsibilities and Resources

Who will be responsible for data management?
PI Viesca at UNL is responsible for the overall data management across this project. Each Co-PI is responsible for the agreed upon locally collected data. This means that each Co-PI is responsible for collecting the agreed upon data as agreed across the project and sharing it in the agreed upon ways through our database and restricted access Box folders. We have a history of already successfully doing this that we hope to continue with this new study.

What resources will you require to deliver your plan?
We are requesting the necessary resources through the "Teachers As Learners" funding competition with the James S. McDonnel Foundation. The resources we are requesting (in combination with the resources at UNL, our local institutions and from our own expertise) are necessary for us to deliver this plan.