Plan Overview

A Data Management Plan created using DMP Tool

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

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Funder: Digital Curation Centre (dcc.ac.uk)

Funding opportunity number: 41730

Template: Digital Curation Centre

Last modified: 07-08-2024

Copyright information:

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

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

(February 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. An instrument that examines teacher knowledge, perspectives and experiences with elements of critical sociocultural pedagogy (as operationalized by the CREDE Standards for Effective Pedagagy) 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 allow for sharing across our multi-institutional team as well as long-term access to the data. This is true for all of the data descibed 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, Epaloose, & 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 relibability 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 utilized to collect data that will inform us of important contextual information around current professional learning practices and policies as well as opportunities and contraints 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 paricipated 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 schools/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
- Observations of K-12 classrooms (using the SPC Plus) across schools where intervention teachers work (pre/post--at the beginning and end of the school year).
- Observations of professional learning (business as usual) in the LEA as appropriate.
- Artifacts related to observations of both K-12 and professional learning in LEA.
- School and district collected student learning data (content area standardized test scores, student demographic information and English language development test scores) shared via data transfer agreements (as a baseline). These data will need to be connected to the participants in our study (intervention teachers), but we will also want broader trends in the school/district so we will collect data from across the LEA.

Intervention Data

These are the data we will collect directly with the inquiry team participants (intervention teachers):

- TALC and Communication Pedagogy Instruments (pre/post--at the beginning and end of the school year)
- Interviews with teachers (beginning/mid year/end of year) to go in-depth on perspectives of teacher agency, leadership and collaboration in professional learning as well as to learn in-depth about each participants background, interests, perspectives, etc.
- Observations using SPC Plus -- minimum of 4 observations across the school year (beginning of year and then every ~2 months).
- Observations of Inquiry Team Professional learning events (could occur online, in-person, etc.-- depends on what the inquiry teams develop in Phase 1).
- Artifacts related to observations of both classroom teaching and inquiry team professional learning events.

Phase 3 - Sustainability, Analysis and Dissemination

(June 2024-January 2025)

This phase will have minimal data collection, but a plan and process will be designed during Phase 2 to follow up on sustainability practices during the final phase of the project. We anticipate that this will include questionnaires and brief interviews with teachers and local stakeholders in the LEA.

How will the data be collected or created?

The data described above will be collected using agreed upon standards and methodologies. Each Co-PI on this project has already collaborated on a large-scale inter-disciplinarly professional learning project (ICMEE, see https://cehs.unl.edu/icmee/) and has experience collaborating to co-plan and implement data collection standards. We already have experience collaboratively collecting data via a database linked to qualtrics as well as sharing data via restricted access Box folders. Our process is to collaboratively design our approaches to naming files and folders as well as what is stored where. As we co-construct these agreements, we also have a process of keeping a file where all the information is stored to ensure each team member has the tools and resources necessary to follow agreed upon protocols. We seek to limit confusion by having one main folder where information about procedures and policies can be accessed. This folder is separate from the folder where we store data. Further, we meet regularly online and record our meetings, which allows us to revisit conversations and agreements as necessary. We have a successful track record of working together to share locally collected data while also adhering to collectively designed approaches and standards in that data collection. Of utmost importance is our adhearance to IRB protocols and plans as well as any agreements we put in place with LEAs around data collection. For instance, when we meet for our online meetings, we only discuss research participants by their pseudonyms or codes.

Documentation and Metadata

What documentation and metadata will accompany the data?

When we get data from districts (student data) we will need documentation and metadata to ensure we can work with the datasets. However, we will not need or ask for student identifiers. These are the only data that we will not be generating ourselves. For the data we generate ourselves, we will keep documentation in order for our data to be useable across our large research team, but also potentially for secondary anlysis, if appropriate.

Ethics and Legal Compliance

How will you manage any ethical issues?

We will collect all data following approved plans and procedures from UNL's IRB as well as under the guidelines and approvals of each LEA where we are collecting data. We have a long history of doing this kind of research and always work with our participants to ensure that their privacy and identity is protected. Phase 1 of our project is an important phase for getting all of the necessary approvals in place and planning for how we will recruit and gain consent for research participation. We have a long established process of using pseudonyms and codes to store data as well as discuss research participants work and will continue that in this project. In order to project sensitive data (any data that has identifiers) we will have a secure project database as only store sensitive data in our restricted access Box folder.

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

The data will be owned by UNL with agreements to our subawarding instititutions around data access and co-ownership. We will work with our attorneys at UNL to manage any copyright or Intellectual Property Rights issues that may arise. If it is useful and reasonable to make our data available to a third-party or licensed for reuse, we will work with our attornerys to set a strong plan in place.

Storage and Backup

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

We will build a password protected database to ensure the data is stored in a safe and protected way. This is already our practice and is working very well. We will also use existing university resources such as Box to have restricted access box folders where our data can be backed up and shared across our proejct team securely.

How will you manage access and security?

Our database will be developed to be password protected and only research team members will have access to the data stored there. We can even make it so that only some people have access to identifying information and others do not (depending on their role in our research team). Between our database and restricted access Box folders, we can ensure that the data is protected and only those who should have access will have access (our research team members).

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 valueable 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.