



LOWELL PUBLIC SCHOOLS
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TO: Jeannine Durkin, Acting Superintendent
FROM: Paul Schlichtman
RE: Patricia Adams – Permission to Conduct Research
DATE: April 22, 2019

Patricia Adams is a ninth grade science teacher at Lowell High School, and is currently enrolled in a doctoral program at Walden University. She is proposing to conduct research on the implementation of the FOSS science curriculum at the middle school level.

The research has the support of Marti Cohn, our district science coordinator. The research proposal complies with school district policies (File LC), and it requires school committee approval for her to proceed. I recommend approval of her request.

Her proposal is attached for your review.

To: Lowell School Committee

Re: Proposal for my doctoral study at the middle schools

From: Patricia Adams

I have received approval from Walden University for the following study:

Understanding Teacher Experience with the Change to Inquiry-Based Instruction.

March 13th was my oral defense with my advisors at Walden and then I will be able to begin collecting data for the final chapters of the project study. I have read the district policies for educational research and this study will gain insight into the newly implemented FOSS curriculum at the middle schools.

~ I will increase my knowledge about the experiences and challenges middle school teachers have with the new inquiry-based FOSS curriculum.

~ This will help the district better understand the challenges teachers have and what they may need moving forward with the curriculum.

~ One of the objectives of the science department is to increase inquiry-based learning in the science classroom. This aligns with the NGSS science standards.

~ I will also follow district and university procedures for confidentiality (Appendix E). I will also ensure the collection of data does not interfere with the teacher's responsibilities.

~ Once I have invited teachers to participate (criteria listed below) and have consent, I will organize a schedule to observe the teachers. My plan will be to take a personal day from LHS. Jill Rotschild (FA headmaster) and Stephanie Selvaggio (my department head) are aware of my study and I will get permission to be out of the classroom from them. I will schedule a day that will be least disruptive to my students.

~ I will plan on scheduling the interviews with teachers after school so there will be no disruption to the classroom.

I have listed below the specific research questions for this project study. I have also included the cover page and abstract for my doctoral project study. I have also included the research questions section. Martha Cohn the science curriculum coordinator has also been helping me on my doctoral journey and is supporting my study.

Research Questions

Inquiry-based teaching in science has been at the center of science education for decades and research has supported inquiry-based instruction in the classroom versus traditional teaching methods (Abdi, 2014; Crawford, 2012; Maxwell et al. 2015; NRC, 2013; Rivera Malucci et al. 2014). However, in the local district there is evidence that many teachers have not successfully shifted their instructional practices. This is a key concern in science education (Meyer et al., 2013) and much research has addressed what inhibits this goal in a local district during vertical team meetings. While some research suggests implementing an inquiry-based curriculum to help teachers shift their practices, it is currently unknown how the implementation of FOSS is progressing in a local district or if teachers have been implementing the curriculum. This case study, guided by a conceptual framework on change theory (SEDL, 2016) will answer four research questions about middle school teacher challenges and experiences implementing the FOSS curriculum.

1. What are middle school science teachers' Stages of Concern (SoC) implementing the FOSS curriculum and shifting their instructional practices to an inquiry-based model?

2. What is the Level of Use (LoU) of the new curriculum that is being implemented in the local district?
3. What instructional strategies are teachers using that are consistent with the features of inquiry-based instruction (LoU)?
4. What successes and challenges, and needs do teachers report when implementing an inquiry-based science curriculum?

Participant Procedures and Confidentiality

I plan on interviewing and observing ten science teachers from each of the nine middle schools. Martha Cohn has been supporting me on this journey and has agreed to provide me with the email addresses of all the science teachers. My plan is to invite all science teachers to participate and then if needed randomly choose a few from each middle school. In my proposal, I have a sample letter for the principals of the middle school making them aware of my study (Appendix D). Teachers will then sign an informed consent (Appendix E). The criteria for the participants in this research study are:

1. Teaching in the local district and in grades 6-8
2. Have at least three years' experience teaching science
3. Have a secondary level (initial or professional) teaching license in Massachusetts for grades 6, 7, and 8
4. Have implemented at least one inquiry-based curriculum unit this year

The following is a sample of Appendix E – teacher consent form

Appendix E: Teacher Informed Consent Form

You are invited to take part in a research study of the new inquiry-based science curriculum. The researcher is inviting all sixth through eighth grade science teachers, who meet the selected criteria, to participate in the study. This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

A researcher named Patricia Adams-Gouthro, who is a doctoral student at Walden University, is conducting this study.

Background Information:

The purpose of this study is to gain an understanding of the experiences and challenges teachers have had implementing the new inquiry-based curriculum.

Procedures:

If you agree to be in this study, you will be asked to:

- Participate in a one-on-one interview about inquiry-based instruction and the new curriculum. The questions and forms will be available on Google Docs. Feel free to email me any questions you may have about the study. The interview should take about 45 minutes.
- Allow the researcher to observe one of your lessons (investigations from FOSS) using the new inquiry-based curriculum.
- Provide the researcher with the lesson plans you created that go along with the lesson that will be observed.
- Member checking will involve a summary of the findings to be returned to you so you can check the findings for accuracy of the data.

Voluntary Nature of the Study:

This study is voluntary. Everyone will respect your decision of whether you choose to be in the study. No one at your school or in the school district will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. You may withdraw from the study stop at any time.

Risks and Benefits of Being in the Study:

The risks involved with the study are stress and anxiety from being in a research study however; these will not pose risk to your safety or wellbeing.

Benefits of taking part in this study is you will give you a chance to express your experiences, suggestions, and challenges implementing the inquiry-based curriculum. This information may assist the district in establishing some professional development next year.

Payment:

You will not receive any payment for agreeing to take part in this study.

Privacy:

Any information you provide will be kept confidential. The researcher will not use your personal information such as your name, your telephone number, your address, or your school for any purposes outside of this research project. Also, the researcher will not include your name, your address, your telephone number, your school, or anything else that could identify you in the study reports. Data will be kept secure by storing in a place where only the researcher has access to the data. Data will be kept for a period of at least 5 years, as required by Walden University.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via her mobile phone number (978) 807-5843 or email padams@lowell.k12.ma.us. You may also contact Walden IRB at irb@waldenu.edu.

The researcher will give you a copy of this form to keep.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. Signing below, I understand that I am agreeing to the terms described above.

Printed Name of Participant

Date of consent

Participant's Signature

Researcher's Signature

Abstract

Understanding Teacher Experience with the Change to Inquiry-Based Instruction

by

Patricia Adams-Gouthro

M.Ed. Curriculum and Instruction: University of Massachusetts Lowell, 2002

BS, Framingham State College, 1998

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

Walden University

[last month of term you graduate] 2019

Abstract

Based on the National Research Council recommendations, an urban school in Massachusetts incorporated an inquiry-based curriculum through Full Option Science System (FOSS) into the nine middle schools; however the teachers at LMS (pseudonym) have struggled to shift their instructional practices to be more inquiry-based. This qualitative study will use the Concerns Based Model (CBAM) as a framework to determine if and how the recently adopted FOSS curriculum helps teachers align their practices with inquiry-based instruction. Data will be collected from a purposeful sample of a maximum of 12 middle school science teachers, who currently teach science and are using the FOSS curriculum. Data will be collected using teacher lesson plans, the CBAM Levels of Use, observations of teacher lessons, and teacher interviews. These data will be coded in categories using a combination of a priori from CBAM framework and the NGSS science practices, as well as descriptive codes emergent codes. From these categories themes will be identified in order to understand teacher experiences and challenges implementing inquiry using the FOSS curriculum and to explore the ways in which the new curriculum has helped teachers shift their instructional practices. The results from this study may inform the science professional development for the local district. This study may bring about social change in the classroom as teachers prepare students through inquiry-based instruction to become better problem solvers and actively participate in their own learning.