

Beth Berkeley

Patricia Stafford

RSM 541 Action Research Module 1

31 January 2015

Literature Review on Action Research Topic Integrating Technology with Inquiry-Based Instruction

One of the goals in my building, as implemented by administration, is to integrate inquiry-based instruction into lesson planning. Inquiry-based lessons (IBL) focus on allowing students to develop their own question about a topic and then perform research to find the answer. It allows the student to drive instruction and increases student engagement. One of my personal goals is to increase the number of opportunities for the LMS to collaborate with classroom teachers. During my interview with my mentor LMS, I discovered that research is an important topic in the SLM. During our discussion we decided that we would like to blend all of these needs and goals, thus I began to look for articles that blended research with collaboration and IBL. A great way to combine the two goals is to integrate technology into inquiry-based instruction. After a bit of searching, I decided to demonstrate that student success during an inquiry-based lesson increases with the use of technology (i.e. online databases, NoodleTools, and GfE). Additionally, this quarter, I am integrating inquiry-based instruction into my Reading Like a Scientist: Inventions Reading Module. As this is something that I am excited about I hope that it will be something that I personally can benefit from in addition to my students.

Annotated Bibliography

Integrating Curriculum, Instruction, and Assessment in Project Based Instruction: A Case Study of an Experienced Teacher

Petrosino, Anthony. "Integrating Curriculum, Instruction, and Assessment in Project Based Instruction: A Case Study of an Experienced Teacher." *Journal of Science Education and Technology* 13.4 (2005): n. pag. Web.

This article discusses a case study of a classroom in which students participated in inquiry based learning within a technology rich environment. This article investigates how the integration of inquiry-based instruction increases student engagement, created a community of learners, helped develop individuals, and helped develop a sense of the unit. As I am looking for information to support the integration of technology in IBL, this is a perfect resource in support of my hypothesis.

Learning How to Design a Technology Supported Inquiry-Based Learning Environment

Hakverdi-Can, Meral, and Duygu Sonmez. "Learning How to Design a Technology Supported Inquiry-Based Learning Environment." *Science Education International* 23.4 (2012): 338-52. Web.

This article addresses the researchers' desire to develop scientifically and technologically literate students while creating inquiry based lessons within a Science classroom. The authors state that students who participate in inquiry based, technology rich programs achieve higher learning outcomes than those who do not. The authors also propose that the teacher is a key in the TSIL (Technology Supported Inquiry Learning) classroom. This article directly supports my hypothesis by connecting student success to the use of technology during research with a strong support from teachers.

Instructional Approaches on Science Performance, Attitude and Inquiry Ability in a Computer-Supported Collaborative Learning Environment

Chen, Ching-Huie, and Chia-Ying Chen. "Instructional Approaches on Science Performance, Attitude and Inquiry Ability in a Computer-Supported Collaborative Learning Environment." *Turkish Online Journal of Educational Technology* 11.1 (2012): 113-22. Web.

This article discusses the effects of inquiry based learning on a group of 96 7th grade students in comparison to that of problem-based learning. The two groups participated in the same web-based project, however the IBL groups were asked to actively participate in predicting, hypothesizing, and testing during the unit. The other students were not nearly as successful or engaged in the topic as they were not as involved with the design. The cited results connect student success with the use of computer-supported learning.

The Impact of Enquiry-Based Learning on Academic Performance and Student Engagement

Summerlee, Alistair, and Jacqueline Murray. "The Impact of Enquiry-Based Learning on Academic Performance and Student Engagement." *Canadian Journal of Higher Education* 40.2 (2010): 78-94. Web.

The authors of this article propose that students who participate in EBL (Enquiry-Based Learning) programs were far more prepared, confident, and were more engaged than students who did not. The article also defines what specifically a EBL classroom is and how to develop EBL. The information discovered in this article helps define what IBL is and how it affects student success. Results demonstrate an increase in future student success and directly connect student participation in IBL to success.

Integrating Technology to Foster Inquiry in an Elementary Science Methods Course: An Action Research Study of One Teacher Educator's Initiatives in PT3 Project

Capobianco, Brenda, and James Lehman. "Integrating Technology to Foster Inquiry in an Elementary Science Methods Course: An Action Research Study of One Teacher Educator's Initiatives in a PT3 Project." *Journal of Computers in Mathematics and Science Teaching* 25.2 (2006): 123-46. Print.

This article outlines the progress of one participant in a teacher preparation program. In order for teachers to become effective users of technology in the classroom, teacher preparation programs need to model its use. From using computers for communication purposes (email) to integrating different online and hardware based resources, future teachers must receive appropriate training to integrate them correctly in an inquiry-based classroom. By learning to effectively utilize technology, teachers become successful mentors for their future students. As students learn how to effectively use technology while doing research, they will become more successful life-long learners. Teacher success = student success.

Author	Title	Year	Source	Student Engagement	Inquiry Based	Technology Integrated	Role of Teacher
Anthony Petrosino	Integrating Curriculum, Instruction, and Assessment in Project Based Instruction: A Case Study of an Experienced Teacher	2005	Journal of Science Education and Technology	X	X	X	X
Meral Hakverdi-Can, Duygu Sonmez	Learning How to Design a Technology Supported Inquiry-Based Learning Environment	2012	Science Education International		X	X	X
Ching-Huie Chen, Chia-Ying Chen	Instructional Approaches on Science Performance, Attitude and Inquiry Ability in a Computer-Supported Collaborative Learning Environment	2012	Turkish Online Journal of Educational Technology	X	X	X	X
Alistair Summerlee, Jacqueline Murray	The Impact of Enquiry-Based Learning on Academic Performance and Student Engagement	2010	Canadian Journal of Higher Education	X	X		
Brenda Capobianco, James Lehman	Integrating Technology to Foster Inquiry in an Elementary Science Methods Course: An Action	2006	Journal of Computers and Science Teaching	X	X	X	X

	Research Study of One Teacher Educator's Initiatives in a PT3 Project						
--	--	--	--	--	--	--	--