

Examining Inquiry-Based Learning Stages of Concern for High School Agriscience Teachers

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Introduction

- Over 50% of high school students in the U. S. lack proficiency in science (Partnership for 21st Century Skills, 2008)
- 27% of 11th grade students in Nebraska lack proficiency in science (Nebraska Department of Education, 2015)
- Nebraska Coordinating Commission of Postsecondary Education Funded this project

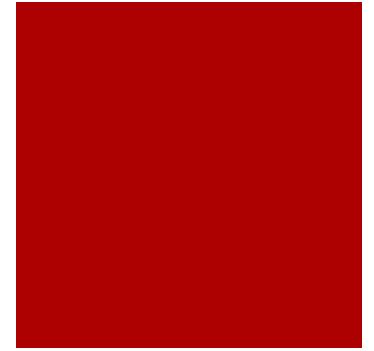


PD Goals

- Enhance science literacy in Nebraska by
 - providing secondary life science educators with a year long professional development (PD) program
 - Teaching real-world science through
 - genetics,
 - muscle biology,
 - microbiology,
 - nutrition
 - Using inquiry-based teaching methods



Components of the PD



- Face-to-Face Workshop (2 day)
 - Introduction to inquiry-based learning
 - 4 inquiry-based labs
- Zoom webinars
- Inquiry-based lab development and facilitation



Purpose

- The purpose of this study was to examine how participation in a teaching professional development program focused on how inquiry-based learning methods affected the concern stages of 10 Midwest agriscience teachers considering the use of inquiry-based learning in their classrooms.



Objectives

- 1) Determine participants' SOC for IBL at the beginning of the professional development program.
- 2) Determine participants' SOC for IBL at the end of the professional development program.
- 3) Assess change(s) that occurred in participants' SOC for IBL as a result of the professional development program.



Theoretical Framework

- Concerns Based Adoption Model (CBAM)
 - Implement and assess innovations or changes being implemented in an organization (American Institute for Research, 2019)
 - Innovation Configurations, Stages of Concern Questionnaire (SOCQ), and Levels of Use
 - The SOCQ evaluates concerns of individuals as they progress through seven stages of adoption of an innovation



Methods

- Participant Selection
 - Criterion-based sampling
- Data Collection
 - One-group Pretest-posttest
 - Stages of Concern Questionnaire (George, Hall & Stiegelbauer, 2013)
- Data Analysis



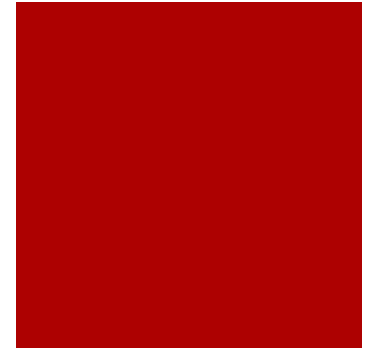
SOCQ Manual (George, Hall & Stiegelbauer, 2013)



IMPACT	6	Refocusing	The individual focuses on exploring ways to reap more universal benefits from the innovation, including the possibility of making major changes to it or replacing it with a more powerful alternative.
	5	Collaboration	The individual focuses on coordinating and cooperating with others regarding use of the innovation.
	4	Consequence	The individual focuses on the innovation's impact on students in his or her immediate sphere of influence. Considerations include the relevance of the innovation for students; the evaluation of student outcomes, including performance and competencies; and the changes needed to improve student outcomes.
TASK	3	Management	The individual focuses on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, and scheduling dominate.
SELF	2	Personal	The individual is uncertain about the demands of the innovation, his or her adequacy to meet those demands, and/or his or her role with the innovation. The individual is analyzing his or her relationship to the reward structure of the organization, determining his or her part in decision making, and considering potential conflicts with existing structures or personal commitment. Concerns also might involve the financial or status implications of the program for the individual and his or her colleagues.
	1	Informational	The individual indicates a general awareness of the innovation and interest in learning more details about it. The individual does not seem to be worried about himself or herself in relation to the innovation. Any interest is in impersonal, substantive aspects of the innovation, such as its general characteristics, effects, and requirements for use.
	0	Unconcerned	The individual indicates little concern about or involvement with the innovation.



Results



- Teachers' change in stage of concern:
 - 70% had no change
 - 30% progressed positively

- Teachers' profile change:
 - 40% no change
 - 30% displayed increased resistance
 - 20% emergence and 10% decline in management concerns



Results

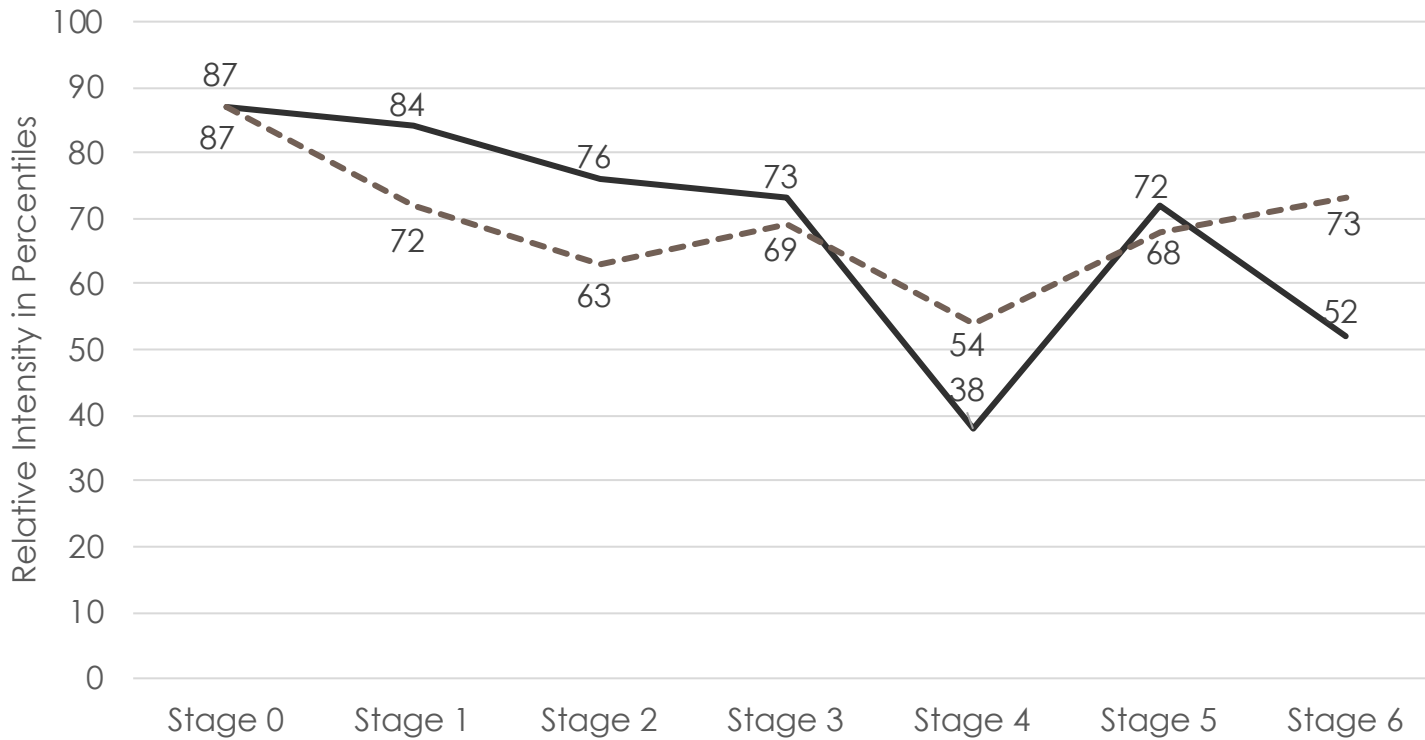


Figure 2. Before and after SOCQ profiles for the group.



Recommendations and Implications

- Teachers may need longer professional development and tailored support as they implement IBL
- Consider using successful teachers as model educators during professional development
- Researchers should explore characteristics of different adopter profiles and if these profiles can predict stage of concern profiles



Thank You!

Any Questions?

