

ASSESSING ASSESSMENT: HOW USE OF THE CONCEPT INVENTORY OF NATURAL SELECTION INFLUENCES THE INSTRUCTIONAL PRACTICES OF AN EXPERIENCED BIOLOGY PROFESSOR AND SUPPLEMENTAL INSTRUCTION LEADER

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ABSTRACT

Assessment is critical to enhancing student learning and understanding. Formative assessment tools such as concept inventories (CIs) could be valuable in moving toward such goals. A recent addition to biology education, CIs hold much promise for helping faculty to understand their students' preconceptions and therefore, how to design lessons to better support students' conceptual change processes. While these are the hopes of the developers, no one has examined what educators *actually do* with results of the CIs. Likewise, academic support programs such as Supplemental Instruction (SI) have gained attention as mechanisms by which to improve student understanding and achievement. However, little research has examined the mechanisms by which those learning gains are attained. This case study used interviews with an experienced biology professor and an experienced SI Leader to examine how they used the collective results of the *Concept Inventory of Natural Selection* (as a pre- and post-test) to design and implement lessons in a large lecture introductory biology course or in SI sessions. Identified themes describe these educators' views of learning, knowledge of assessment principles, and knowledge of assessment interpretation and action taking. This study sheds light on areas of strength as well as needed professional development and education for faculty members and SI Leaders. It provides the first data on how CIs may be used in the biology classroom and in SI sessions. It also identifies areas of educator knowledge where more understanding and research is greatly needed by the teacher educator community.