

Focus, Fiddle, and Friends: Experiences that Transform Knowledge for the Implementation of Innovations

Frank, K. A., Zhao, Y., Penuel, W. R., Ellefson, N., & Porter, S. (2011). Focus, fiddle, and friends: Experiences that transform knowledge for the implementation of innovations. *Sociology of Education*, 84(2), 137-156.

Purpose: The goal of this study is to identify how different experiences contribute to knowledge required for teaching and whether the value of different sources of knowledge depends on a teacher's current level of technology implementation.

Subjects: This study focused on the use of network data from 470 teachers in 13 schools in the Midwest.

Research Methods: Researchers collected three forms of data: a survey of all staff, interviews with key informants on focus schools, and observations of professional development in each district. The survey contained 33 items in various forms such as multiple choice and open-ended. The interviews followed a set of questions regarding policy, investment, technology, and attitudes regarding technology. The interviews conducted with various faculty in each district included the district superintendent, district technology director, principal for one focus school in each district, and three to five teachers in each chosen focus school.

Findings: Teachers at low levels of implementation used computers approximately 31 times throughout the year of teaching and more than doubled their use between the first and second year. Teachers at intermediate levels of implementation used computers approximately 101 times throughout the year and, on average, increased this by 13 uses into the next year. Teachers with high levels of implementation used computers approximately 319 times throughout the year but decreased their use of computers on average by 73 for the second year.

Implications: These findings provide support for the study's foremost hypothesis regarding the need to match knowledge source with the initial level of implementation. At the lowest levels of implementation, the effect of professional development was statistically significant. At intermediate levels of implementation, the effect of exploration and experimentation was statistically significant. At the highest levels of implementation, interactions with others were statistically significant. Findings may imply that interactions with colleagues are vital to sustaining the use of innovative technology, such as computers, within the classroom.