

Educational Organization Structure Supports Curriculum Change

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Educational Organization Structure Supports Curriculum Change Need for Research

As early as 1997, Williams and Wise asserted that initial steps must be taken to integrate innovative teaching paradigms to bridge high school agricultural education curriculum with newly developed knowledge of sustainable agriculture actions. The National Research Council's (NRC, 1988) "Reinventing Agricultural Education for the Year 2020" encouraged education to become fundamental in the evolution of sustainable agriculture systems curricula. As of 2003, few states had developed explicit curricula that included sustainable agricultural content (Santone, 2003). It has also been demonstrated that excellent teaching promotes reduction of the learning gaps seen in diverse populations (Finn & Sousa, 2014). The purpose of this research was to investigate one school's system-wide approach to implementing a new problem-based interdisciplinary sustainable agricultural curriculum.

Theoretical Frame

The research was guided by Schine's (1971, 1988) theoretical conceptualization of three dimensions of an organization for study: Hierarchy, Function, and Inclusion. These organizational structures set the framework for describing how a system works to achieve their goals (Minterzberg, 1983). Hierarchy is conceptualized as the various units of an organization and relates rankings of the units within the organizational chart. Function is the definition of the various work tasks performed by units within the organization. Inclusion is the perceived distances between persons within a unit, and the distances of various units from the central power of the organization. These conceptualizations are congruent with organizational structure research (Ahmady, Mehrpour & Nikooravesh, 2016).

Methodology

The research being described emerged from data collected as part of a larger research program. The larger research project was a mixed-methods case study using a sequential explanatory design (Creswell, 2013) involving a census of the teachers (N=17) of the Global Impact STEM Academy (GISA), including one administrator. The case was defined as those teachers and administrators at GISA; a two-year old high school, in Springfield, OH, which was designed as an early-college high school, concentrated on STEM (science, technology, engineering, and mathematics) curriculum in agbioscience. The teachers and administrator were chosen as the case due to their roles in implementing the tenants of problem-based interdisciplinary learning focusing on agricultural issues. A positivist research paradigm informed the research team, therefore, a descriptive research design was utilized to accomplish the objectives. A deductive approach was used for the purpose of describing.

The outcomes from the semi-structured focus group interview will be described. The focus group interview was facilitated by graduate students using a code book protocol. The protocol was developed by the research team and reviewed by a panel of experts consisting of professors and graduate students with expertise in qualitative research and sustainable agriculture. The interviews lasted approximately one hour. During the interview, teachers were first asked to individually complete a personal written reflection based on guided questions. Verbal discussion followed the written reflections. Participants consented to audio-recording which was later transcribed by a third party. Content analysis of the focus group transcriptions and written reflections was completed to identify themes.

Results

Outcome themes emerging from the data analysis were organized around the organization structures conceptualization identified *a posteriori* from organizational structures theory. Responses from focus groups, presented in Table 1, were used to show how GISA is innovative in the hierarchy, and inclusion dimensions to implement curricula reform for sustainable agricultural practices.

Outcome Theme 1: Shared Organizational Power

The theoretical dimension of Inclusion is defined as relative distance from a staff member to the central decision making core of the organization (Schine, 1971, 1988). At GISA faculty, administrators, and students are all included in a shared decision making process for educational goal setting. The school's process demonstrates that participants in the organization have a short theoretical distance to decision making power. Teacher responses showcased that teachers feel empowered to enact innovation in curricular and pedagogical decisions in their classrooms. Collaboration between faculty is also an organizational norm.

Outcome Theme 2: Overlapping Organizational Structure

The Hierarchy dimension is theoretically defined as relative ranks (Schine, 1971; 1988) and predicates decision making functionality. At GISA faculty, staff, and administrators include internal and external partners in collaborating towards excellence in teaching in learning. While organizational roles exist, problem-solving and decision making occurs collaboratively to meet school purpose.

Table 1.

Selected Participant Responses

Participant Number	Comment
#11	"Asking how can we make the school zero waste and then leave it up to the students to working with them mumble to get to that goal."
[Unknown Person]	"We are also a school that tries different things, so we aren't afraid to try different projects and different ideas so maybe there is projects that you would like us to implement maybe. That we wouldn't be afraid to try."
#20	"...partnership...it was just something I picked up along the way..."
#18	"Like we have a senior that for their capstone is going to take the unused food in the cafeteria..."
#12	"Yeah the department... we collaborate quite a bit. And all of the science department... Generally collaborates continuously..."
[Unknown Person]	"Definitely not my area of expertise at all, so possibly bringing in an expert or finding the right academic journals or sources because we create our own curriculum."

Conclusions and Recommendations

The model for GISA's organization structure is an example of shared decision-making, and internal and external partnering that can facilitate curriculum change. Continued research on GISA's organizational structure should examine its relationship to excellence in teaching and learning. Additionally, other schools could utilize this model for implementing curriculum reform.

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