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HOW INNOVATION ATTRIBUTE PERCEPTIONS INFLUENCE COMMUNITY COLLEGE ADOPTION OF PROGRAMS PROMOTED BY AN EXTERNAL AGENCY

By

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Abstract

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This research found that the perception of Relative Advantage is most significant to an organization's adoption decision through answering the question: Do innovation attribute perceptions influence community college adoption of programs promoted by an external agency? The influence of the other four attributes on community college organizational decisions is less clear. This study explored how an educational institution weighs various novel curricular programs for institutionalization to meet organizational goals and how organizational perception of the characteristics of an innovation, or attributes, influenced the adoption decision. In particular, the innovations under study were promoted by an external agency formed as an interorganizational relationship made up of two- and four-year colleges. To study the influence, quantitative and qualitative data collection techniques were employed in a multiple case study comprising three community colleges. The case study was guided by six propositions developed from previous studies reported in the literature. In addition, the study recognized the importance that various organizational levels within a college, academic vice presidents, coordinators of international programs and faculty, might have on the adoption decision.

The case findings were analyzed and reported out by the six propositions. Proposition 1, the influence of innovation attribute perceptions on community college adoption decisions will mirror the findings in the literature supporting the theory, was

partially confirmed. The perception of an innovation's Relative Advantage was most important in forming a community college's adoption decision. Proposition 2, the faculty member or administrator with the strongest link to the promoting agency will function as the change agent for promoting innovations, was not confirmed. What emerged from the data was that the perceived value of the interorganization relationship to each international program coordinator framed how the individual continued to promote the international module innovation on his or her campus. Proposition 3, the coordinator will use interpersonal communication channels to strengthen the attribute perceptions of relative advantage, compatibility, trialability, and observability while decreasing the perceptions of complexity to increase the likelihood of innovation adoption, was confirmed. Proposition 4, individual change agents will define an innovation to serve differing purposes at each college studied, was confirmed. Proposition 5, the way an organization institutionalizes an innovation will influence organizational communication structures and consequently impact productivity, was confirmed. The community colleges modified their organizational communication structures to support the innovation adoption decision made that provided the greatest relative advantage for their institution. Proposition 6, faculty and administrators will view the purposes of the innovations differently, was confirmed. Members of each organization level perceived the innovation as serving different organizational ends.

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Chapter 1: Problem Background

American community colleges operate in an environment of continuous change--both internally and externally. Stakeholders press for changes in leadership practices, planning methods, fund allocation, curriculum revisions, and other innovations. In addition, it is common for agencies, external to the community college, to develop sets of best practices for promulgation. These agencies represent a variety of interests as discussed by Stark and Lattuca (1995). Some of the examples they cite as influencing higher education are agencies concerned with either general institution or professional program accreditation while other organizations, for instance the Accounting Education Change Commission, may have missions to promote a specialized curriculum or pedagogical innovations, and often geographic or national agencies advance curricular changes.

Without a centralized national or centralized educational system in many states, community colleges are free to select from myriad innovations that best fit individual institutional need. Under these circumstances, what sways a community college to adopt an innovation? How might an external change agency cachet an innovation in order to attract the interest of a community college? This research project partially answers these questions through surveying and interviewing community college faculty and administrators within one Midwestern state to explore the role innovation attribute perceptions played in the adoption decision. Equally important was recognizing and researching innovation attributes as antecedents of change in higher education, in particular community colleges. Rogers (1995) defines the period of time preceding the

decision as the "persuasion stage" when an individual or an organization is deciding to either adopt or reject an innovation.

Organizational decision-making during the innovation adoption process is an under-explored area of research and most notably the role of innovation attribute perceptions in the decision process (Rogers, 1995; Tornatzky and Klein, 1982). In addition, what prepares postsecondary institutions for adopting change is not often studied. Gaining a better understanding of how attributes are perceived and used in organizational decision-making can lead to more suitably crafted proposals, which are more likely to move through the internal decision-making process of the organization.

In particular, three international curricular program efforts promoted by the interorganizational relationship, Educators Dedicated to Internationalizing Curricula (EDIC) a pseudonym, were the innovations under investigation. EDIC is a consortium of two- and four-year colleges within one Midwestern state dedicated to increasing international awareness through various educational efforts. By way of documenting the adoption process for these specific programs by EDIC member community colleges, common decision influences were identified that can guide other change agencies and agents in promoting curricular program innovation to community colleges.

Research Question

Of particular interest to this project was the research question: Do innovation attribute perceptions influence community college adoption of programs promoted by an external agency? Did community college administrators and faculty hold different perceptions about innovation attributes with respect to the same innovations? And finally, using the three innovations with differing rates of diffusion success, what

evidence existed in the data that perception of the different attributes influenced the decision to adopt?

In answering these questions, it was thought that additional threads of inquiry might arise. It was speculated, depending upon the research findings, that it might be of interest to explore whether every adopted community college international curricular programming innovation shared a common pattern.

Answering the proposed research question gave a better understanding of how perceptions of innovation attributes influenced community college adoption of programs promoted by an external agency. Not only can external organizations or individuals wishing to affect change in community colleges better understand how to couch innovations, but also a significant gap in diffusion of innovation research literature is filled.

Extent of the Study

The purpose of this study was to focus on the influence of innovation attribute perceptions on community college decisions to adopt programs promoted by an external agency. Therefore, issues of leadership practices or style were not of primary interest but their influence on how the innovation was defined at various institutions was noted. Governance or decision-making structures were not investigated directly but their role was apparent in how organizational communication systems were framed in response to the innovations at the three community college sites studied. The narrow focus of this research did not allow for a full study of how institutions implemented strategic planning or institutionalize change efforts except when these processes were directly related to the adoption of the innovations under study. The dependent variable, adoption of

international curricular programs promoted by EDIC, does not imply that this research examined community college curricular structure. It was the intention to study an organizational issue and not international curriculum or prevailing curricular theories. Furthermore, this was not an evaluation of EDIC effectiveness as a change agency, but lessons can be drawn from this study by EDIC about how it can increase the likelihood of institutional adoption of the innovations it promotes in the future.

Researchers have developed a large and broad body of literature around diffusion of innovation. This study was an attempt to study a narrow area of that research—the influence of innovation attribute perceptions on organizational decisions to adopt change promoted by external agencies. Therefore, this study did not measure innovation adoption thresholds or rate of adoption by community colleges. Nor were barriers to adoption explored. The goal of this project was not to describe wholly the process of adoption but to define the influence of attribute perceptions on the decision to adopt. As such, this study was not concerned with the solo faculty attempts at internationalizing curriculum. The organizational innovativeness of community colleges was not studied. And, the research did not explore contingent innovation-decisions or the optional decisions of individuals to adopt the innovation but focused on the organizational steps in the decision to adopt.

Community colleges are motivated by numerous events, issues, and persons to adopt innovation. These motivators and their influence were not part of this research study. In particular, the influence of "competition" or what social learning theory literature refers to as "following the Harvards" was not considered as integral to the final

phase of the decision-making step studied. It was assumed that the influence from events, issues, and persons was exerted during the first phases of the decision.

It is understood that an organization's structures, dynamics, resources, along with its leadership are important predictors of innovation adoption. This project looked at what the researcher believed to be the final step of the adoption decision process and hypothesized that the perceptions of innovation attributes were the crucial linchpin by which adoption decisions were finalized.

Defining the Terms

To assist the reader, it is important to define the terms used in this research project. The factors named thus far are common terms that have many meanings associated with them depending on reader reference and experiences. Therefore, it is important to establish a working definition for each term drawn from the literature used in framing the research question.

Diffusion of innovation literature. Rogers (1995) presents a concise history outlining the development of the theoretical precepts for diffusion of innovation and a comprehensive summary of its literature. He traces the beginnings to the French sociologist/social psychologist Gabriel Tarde's work during the early 1900s and to the work of the British and German-Austrian anthropologists known as diffussionists of the same period. In addition, Rogers (1995) chronicles modern diffusion research traditions beginning with two rural sociologists, Ryan and Gross, who followed the adoption of hybrid seed corn by Iowa farmers in the early 1940s. Reaching across disciplines, they took theoretical social constructs developed by American anthropological scholars in the

1920s and applied them to the diffusion of agricultural practices. Thus, began the migration of innovation diffusion research to most disciplines.

The largest bodies of diffusion research can be identified in ten academic disciplines and sub-disciplines: anthropology, early sociology, rural sociology, education, public health and medical sociology, communication, marketing and management, geography, general sociology, and general economics (Rogers, 1995, p. 42-43). By applying the research traditions of disciplines or sub-disciplines, one can often predict which of five general units of analysis named by Rogers (1995, p. 90-91) will be used in conducting a study: social systems, members of social systems, dyadic network links within and between social systems, or innovations. In categorizing known diffusion research across all fields and disciplines, Rogers (1995, pp. 90-91) determined that eight main dependent variables emerged:

1. Earliness of knowing about an innovation by members of a social system;
2. Rate adoption of different innovations in a social system;
3. Innovativeness of members of a social system (the members may be individuals or organization);
4. Opinion leadership in diffusing innovations;
5. Diffusion networks;
6. Rate of adoption on innovations in different social systems;
7. Communication channel use (e.g., whether mass media or interpersonal); and,
8. Consequences of an innovation.

In addition, he isolated common independent variables that are studied: characteristics of system members, attributes of innovations, patterns in the network links between system members, systems norms, characteristics of the social system, change agent variables, types of innovation decisions, innovativeness, and nature and use of the innovation (Rogers, 1995, pp. 90-91). A deeper discussion of the origins of the research paradigm may be found in the article by Valente and Rogers (1995).

Innovation. Rogers (1995) provided the broadest definition for innovation when he wrote, "an *innovation* is an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p. 11). Therefore, innovation in this study referred to an international curricular program that was new to a community college. The particular curricular programs under study were those that originated external to the college—programs promoted by EDIC.

Innovation attributes. Generally, it is through the discipline lenses of communication and rural sociology that innovation attributes are viewed, as the *perceived* characteristics of the innovation (Johnson, 1997). Traditionally, in the literature, there are five characteristics that are common to all innovations: relative advantage, compatibility, complexity, trialability, and observability. In particular situations or industries, research has shown that an innovation may have other characteristics that influence the decision to adopt. For instance, Dearing & Meyer (1994) found eleven distinct characteristics when applied to hazardous waste bioremediation process innovation that were considered important to the decision to adopt by firms engaged in the clean-up of toxic waste sites. In addition to the traditional five, Dearing & Meyer isolated other attributes such as economic advantage, effectiveness, and reliability. To remain consistent with the findings of Lindquist (1978), whose work formed a basis for this research project, the strength of the five universal attributes were tested, leaving the discovery of any additional characteristics that may have importance to community colleges in their adoption decisions for future research.

External influence. Lindquist (1978) made a persuasive case for the power wielded by external forces over colleges and universities for initiating change. He stated

"students of academic reform find, in fact, that most change in colleges and universities appears to have an external stimulus behind it" (p. 28). Lindquist does not imply that colleges only respond to agencies that exercise regulatory authority, but that influence frequently originates through college associated networks. In recording his findings from the cases studies, he wrote, "nearly every local innovation had a model as a stimulus and guide" (1978, p. 224). These models were from geographically close institutions, new top administrators bringing programs with them, or the chief administrators becoming aware of models being implemented at other institutions. Using Lindquist's (1978) findings as a lens provides an opportunity to look at the influence of an organization such as EDIC. This study's operational definition of external influence was: the influence wielded by an organization that is outside of the governance systems of individual community colleges under study but whose staff and other coalition members maintain close association with one another. Therefore, this researcher considered EDIC to be an external influence by virtue of its being a member of a network of colleges but being outside of the formal organization of any of the colleges.

Adoption. As individuals or organizations progress through the decision making process, a point is reached where "a decision to make full use of an innovation as the best course of action available is made or conversely, the decision is made to reject the innovation" (Rogers, 1995, p. 21). This definition does not imply that the innovation will be fully implemented or integrated into the organization; and, its future continuance is not suggested by this definition. It was expected that the community colleges studied in this research project would have varied responses to EDIC promoted curricular program innovations. Some decisions were to reject a particular international curricular program

or to discontinue the program after adoption while other program innovations continue. The study focused on determining the strength of perceived attributes and the role that those attributes played in college decisions to adopt, whether the program was implemented and continued or whether it was implemented and then discontinued.

External change agency. There are many categories of external agencies that can influence community college decision-making. For instance, agencies created by legislation such as state departments of education; regional accreditation agencies; state universities with altered transfer requirements; and so on. This study examined the influence of one particular type of external agency—a change agency—by exploring how community college faculty and administrators perceived the attributes innovations proposed by this external agency.

Rogers (1995) suggests that a change agency is simply an organization that "wishes to influence clients' innovation-decisions in a direction deemed desirable" by the agency (p. 335). The literature abounds with examples. For instance, Grilli & Lomas (1994) explored physician acceptance of practice guidelines promulgated by medical organizations between 1980 and 1991 to improve the quality of care. Dearing & Meyer (1994) studied the effectiveness of the U. S. Environmental Protection Agency's demonstration projects for technology transfer in the field of hazardous waste bioremediation. In the Midwest and central regions of the United States, the North Central Accreditation Commission on Institutions of Higher Education promoted assessment of student learning as an essential criterion for general institutional accreditation (Lopez, 1997). This study focused on the adoption of international curricular programs promoted by the change agency, EDIC, a coalition of higher

education institutions under the outreach auspices of the fictitiously named Midstate University (MU). EDIC was dedicated to internationalizing two- and four-year college and university curricula especially, from the perspective of the social sciences and liberal arts and with an emphasis on developing countries.

The prior terms are used frequently in the description and results of this research study. It is important to gain a mutual understanding of how they are consistently used in the writing. Other terms, used less frequently, are defined in the context in which they were used.

Importance of the Study

The potential for the results of this research project to contribute to the body of diffusion of innovation literature is unquestionable; as well, they possess implications for practice. In the latest edition of his seminal work, *Diffusion of Innovations*, Everett Rogers (1995) characterizes approximately 7,000 diffusion research projects by variables and of these, only 1 percent investigates innovation attributes--the factors influencing the decision to adopt. Largely, these studies center on an individual's decision to adopt. There are few organizational studies in this category of diffusion research and of those studies investigating the organizational decision process, most often, there is a strong organizational leader or change champion identified as central to the adoption process (see Becker 1970; Walton, 1970-71). This study differed in its focus by investigating the importance of innovation attribute perceptions at the organizational level and not from the perspective of an individual.

This research has the potential for impacting the practices of both community colleges and agencies external to the colleges. In organizational decision-making,

understanding the interplay of decision components is important (Scott, 1998). Ferreting out and understanding the beliefs or conditions imbedded in its culture, which shape decision-making provides a learning opportunity for the organization. Using the findings of this research will provide community colleges wishing to become more aggressive in their programming the understanding of how to manipulate innovations to better assure adoption by the organization.

In addition, innovation promoted by external change agencies must compete with other external and internal innovations vying for adoption by community colleges. Often curricular innovation springs from an individual college faculty member constructing new meaning from a unification of different disciplines by applying what Boyer (1990) refers to as scholarship of integration. The faculty member may informally share this curricular innovation with departmental members or formally share the innovation with discipline colleagues through publications or presentations. Whether the innovation originates internally or externally, or with an individual or an agency, this researcher believed it was important to determine the influential strength and role of each innovation attribute perceptions to community college decisions to adopt. This understanding can provide a roadmap for positioning future recommendations by change agencies, increasing the likelihood that a promoted innovation will successfully permeate the organizational decision-making process of community colleges.

Chapter 2: Literature Review

Everett Rogers (1995, p. 163) conceptualized the diffusion of innovation as a broad, general theory encompassing five stages: knowledge, persuasion, decision, implementation, and confirmation. He hypothesized that diffusion is encouraged to progress from stage to stage by means of communication, either interpersonal or mass media. In addition, Rogers (1995) placed diffusion of innovation within the context of prior conditions. Since the publication of the first edition of Rogers' *Diffusion of Innovations* in 1962, his diffusion model has become the most prevalent frame for research on innovation (McAnany, 1984).

Not all innovation researchers consider the multi-discipline use of Rogers' model as positive. Warner (1974) saw the model's popularity as a research design as a disadvantage. It was his contention that the body of diffusion of innovation research is spread over a very broad range but that each discipline has looked at only a narrow scope of variables or situations. He believed that this hampers the generalization of findings and the building of a comprehensive diffusion model. Warner's criticism is valid but the model effectively explains aspects of how innovation diffuses regardless of the discipline lens used. It is this effectiveness of explanation that made it a useful model for this research study. The research question established finite parameters for study and constructs meaning within higher education. Therefore, the vast body of literature dedicated to the innovation-decision model proposed by Rogers (1995) was not be fully explored—only the literature that was pertinent to the research question: Do innovation attribute perceptions influence community college adoption of programs promoted by an external agency?

This review presents four major subdivisions of the literature related to the research question. The first is a brief description of environmental issues impacting institutions of higher education. The second section describes the role of change agencies in promoting change. An analysis of the second stage of diffusion, persuasion, comprises the third section. The final section, draws consensus from the literature to support the research proposed in this paper.

Change Forces

Within the Rogers (1995) model, prior conditions shape how the innovation-decision process progresses. For this research project, felt needs or problems, as manifested in change forces, was considered the most general prior condition impacting Midwestern community colleges. Every postsecondary institution feels the pressure to react to the forces for change (American Council on Education, 1999). College committees are empanelled to seek innovative ways to respond to the latest threat or opportunity. Faculty members discuss techniques for engaging students in the classroom. Legislatures look for ways to assure the taxpayer that the colleges and universities in their state are offering quality educations.

Change brews not only in the outside world but bubbles up inside of the organization. It is assumed seeking out appropriate innovation to address these forces becomes a priority for most institutions.

External forces. The most provocative coverage of external forces for change in higher education can be found in the work of Peterson and Dill (1997) and the American Council on Education (1999) monograph "On Change: En Route to Transformation". Specifically, the literature regarding these forces can be categorized into six broad

themes: competition, globalization, demographics, technology, accountability, and economics.

Peterson and Dill (1997) point to the competition from institutions within and outside of postsecondary education as sources of threat. It is suggested that outside of the academy, media and entertainment organizations will soon be delivering educational opportunities that are attractive alternatives to the traditional offerings of colleges and universities (Peterson and Dill, 1997; Sullivan and Siggins, 1993). Within the academy, new forms of institutions and delivery methods are emerging, such as the virtual Western Governors' University described by Gardner and Livingston (1996).

The American Council on Education (1999) stressed the importance of globalization of institutions and curricular programs to meet the changing needs of the marketplace. There is a growing need for graduates entering the workforce to be knowledgeable about multiple cultures, their languages, and trade practices; in addition, students from other nations are joining American classrooms or participating in asynchronous learning (Doucette, 1998). Shifting classroom demographics to include multiple ethnicities and an aging student body is a well-documented change force (American Council on Education, 1999; Bonvillian and Murphy, 1996; Cohen and Brawer, 1996).

Norris and Dolence (1996) emphasized the crucial role of technological advances. With technology having a life span of six months to three years, huge sums of money must be invested continuously in upgrading IT systems, attracting the technicians to service the systems, and training faculty and administrators in its use. Peterson and Dill (1997) approached technology as a change force that will reconfigure curricular

programming and student services. They concluded that swiftly changing technology will impel workers to continually upgrade their skills and that postsecondary institutions must create curricular programs to meet these demands and to design flexible delivery options for the offerings.

Legislative and public calls for accountability are growing louder (American Council on Education, 1999; Green, 1997; Stark and Lattuca, 1995; Sullivan and Siggins, 1993). Government, employers, parents, and students are holding institutions accountable for what is taught and how it is taught. Regional accreditation agencies are demanding that colleges and universities measure student learning over the course of a student's tenure at the institution (Lopez, 1997).

Declining federal and state dollars bring economic concerns to colleges and universities (American Council on Education, 1999; Bonvillian and Murphy, 1996; Sullivan and Siggins, 1993). With shrinking public funding, postsecondary institutions must curtail expenditures while raising student contributions through increased tuition.

Any one of the six forces for change identified above is a powerful driver of institutional reformation, but taken together they batter the foundations of colleges and universities.

Internal forces. While the external environment is awash in multiple changes, the internal environments of postsecondary institutions are far from placid waters of contentment. From within the academy, there are calls for restructuring the higher education experience and its institutions. These internal forces for change are best represented in three works by Boyer (1990), Barr and Tagg (1995), and Norris and Dolence (1996).

Boyer (1990) envisioned restructuring the professorate. He advocated for faculty to embrace a more full recognition of scholarship that includes discovery, integration, application, and teaching. There can no longer be a disconnection between the purposes of higher education and the society, and it is incumbent that the faculty assists with bridging the gap (Rice, 1996).

Barr and Tagg (1995) called for revising the common institutional focus on teaching to one of learning. They suggested that this begins in the classroom but permeates throughout the language used in colleges and universities and to allocation of funds based on learning outcomes. Lovett (1996) joined their appeal by recommending that learning be more broadly defined than that which occurs in the classroom; she too, advocated for measuring learning outcomes rather than gauging education by seat time.

Norris and Dolence (1996) sought to dismantle the current organizational structures of postsecondary institutions and replace them with cross-functional teams. This call for flattening college and university organizational structure is a common theme in the literature (Alfred and Carter, 1997; Benjamin and Carroll, 1996; Snyder, 1993). It is thought that streamlining the decision-making functions will allow institutions to act more quickly and therefore be more resilient to change forces.

These calls from within the academy are as powerful as the external change forces. These are the voices of faculty and administrators who wish to transform colleges and universities.

Change issues unique to community colleges. As institutions of higher education, community colleges experience the universal external and internal change forces mentioned in the preceding paragraphs. In addition to those effects, Cohen and Brawer

(1996) highlighted several that are unique to the community college, of which three are significant forces for change. Firstly, they pointed to the external change force growing out of the emphasis on vocational education created not only by student interest but also by the influx of federal and state job development monies. Secondly, Cohen and Brawer (1996) traced an internal force for change to the need for an extensive developmental curriculum to assist a growing body of students to acquire the basic skills needed for college level work. Lastly, they identified a part-time work force as an internal change force—between 50 and 60 percent of community college faculties are adjuncts who move in and out of teaching on a regular basis and bring new ideas and ways with them.

Forces against change: homeostasis. As leading authors writing about organizational systems, Morgan (1997) and Senge (1990) noted that organizations resemble complex organisms in their ability to maintain homeostasis—the balancing of external forces with internal demands to preserve status quo. External force is countered by internal adaptation, and the organization is returned to previous levels of operation so that old systems are restored.

Kennedy (1995) indicated that postsecondary institutions demonstrate homeostasis. In his review of major trends in the literature regarding internal resistance to change in institutions of higher education, he categorized the forces against change into two general themes: local governance issues and political issues. Therefore, when college administrators seek a groundswell of support from the faculty for changes departmental political realities come into play. Tenure decisions, academic promotions, and allocation of current and future resources depending on who is the department chair, are just a few issues that shape a department's political climate (Kennedy, 1995.) The

meeting of the two forces, administrative goals and departmental realities, leaves only one safe route for most colleges and universities: status quo.

Change and community colleges. In contrast to Kennedy (1995), Levin (1998, 2000), an astute observer of the influence of change forces on community colleges, differs in his view of how these institutions react to change. He documented the responsive nature of community colleges to stakeholder demands such as increased participation as a workforce partner with employers and local governments and the globalization of the institution. However, he has found that community college responsiveness to change forces has not been as profound or deep as to alter its mission or values. It is his contention that

> the essential nature of the community college, its identity, is embedded in what it does; in its actions and change processes. Thus, the organization's responses to external stimuli . . . are expressions of organization and efforts to not only maintain but also reproduce its identity. (Levin, 1998, p.2)

Summary. If Rogers (1995) is correct that to understand the origins of innovation one must consider prior conditions, then colleges and universities should be a breeding ground for innovation to contend with external and internal forces for change. Yet, homeostasis is a powerful force for maintaining an institution's current circumstances. There are educational institutions that do more readily respond to environmental stimuli--community colleges. Levin (2000) wrote that the mission of these institutions is one of change. When student bodies evolve, employers have new needs, or faculty search for ways to engage working adults, innovations are embraced by the community college.

Change Agencies

Miles (1964) wrote that there exists "a vast complex of associations devoted to the interests of one category or another of educational practitioner [that] also exerts a good deal of influence on educational innovation" (p. 38). What types of associations or organizations are these? How do they exert their influence? Applying Rogers' (1995) theory that diffusion is transported through channels of interpersonal and mass communication, one can sort educational change agencies by the preferred type of communication channel: mass or interpersonal communications.

Mass or mediated communication. Examples of organizations using mass or mediated communication channels to encourage diffusion of innovation predominate in the literature (Grilli and Lomas, 1994; Narula and Pearce, 1986; Wallack et al., 1993). It is also true that educational organizations heavily utilize mass communication channels. For instance, organizations such as National Endowment for the Humanities, National Institute of Education, Association of American Colleges, Carnegie Foundation for the Advancement of Teaching, American Association of State Colleges and Universities, Education Commission of the States, National Governors' Association, among others (Stark and Lattuca, 1997, p. 81) publish scholarly treatises and more prosaic pieces to engage a broad audience in discourse. Stark and Lattuca (1997) captured the debate initiated by these change agencies calling for curricular reform in colleges and universities. Organizations, such as these examples, engage in extensive deliberation or debate in their publications in order to reach potential adopters and to encourage diffusion of the promoted change.

A great number of organizations distribute guidelines or best practices to member individuals or organizations; for instance, Grilli and Lomas (1994) researched the compliance rate of Canadian physicians with adopting practice guidelines, and Johnson et al. (1998) studied the impact of technology mandates issued by a national health organization to local chapters. In a similar fashion, regional accrediting agencies encourage the diffusion of institutional improvement (Lopez, 1997). Through the promulgation of accreditation criteria and annual meeting sessions, member institutions of higher education are encouraged to adopt assessment of student academic achievement via a formal planning and evaluation process (Lopez, 1997).

Interpersonal communication. Other associations take on a more collegial role in attempting to affect reform by utilizing two different interpersonal communication channels: change agents and interorganizational relationships. Many organizations adopt the strategy of sending change agents into the field. The agent is an employee of the organization or an advocate of its mission and is empowered to persuade others to adopt the innovation promoted by the sponsoring organization (Rogers, 1995). This model is used extensively by land grant college and university extension services (Rogers, 1995). Other examples of the change agent model are its use in third world countries for economic development (Auwal and Singhal, 1992) and for targeting of HIV/AIDS programs (Svenkerud et al., 1998).

This research project investigated innovation promoted by the organizational communication model--interorganizational relationships. This structure does not solely rely on an organizationally defined change agent but does utilize interpersonal communication channels to diffuse innovation (Powell and DiMaggio, 1991). Gray

(1985) described this framework in educational institutions as a counter to adversarial problem solving by creating a "process model of collaboration" (p. 917). By establishing interorganizational relationships, both the educational institution and the association can "create long-term structures to support and sustain their collective appreciation and problem-solving activities" (Gray, 1985, p. 917).

Interorganizational relationships can exist between two or more established organizations or can be the coming together of several organizations to form a new coalition to advocate for change that would mutually benefit their constituents. Howze and Redman (1992) describe the formation of such a coalition during the late 1980's. Several organizations in Virginia became increasingly concerned with poor Virginians' access to health care. Informally, members of such diverse groups as the American Lung Association, the AARP, Urban League, the Virginia School Boards Association, and the Virginia Cooperative Extension Service met to discuss health related issues. In 1989, they formally established the Health Promotion and Education Council of Virginia to promote social innovation to the Virginia Assembly. Just as that council is a change agency using interorganizational relationships to promote change, so is EDIC. As described in the introduction, EDIC is an organization of representatives of two- and four-year colleges joined in an interorganizational relationship to promote international curricular programs in institutions of higher education.

Summary. Yin and Gwaltney's (1981) research verified the importance of interorganizational relationships in educational settings. They found that

> when a local school district improves its services, it is often assisted by another organization . . . a new idea is transmitted by one of these organizations to individuals in a local school district. The idea may then be put into practice. (p. ix)

This research project studied the influence of the attributes associated with three innovations promoted by EDIC, a higher education change agency. The agency was characterized by interorganizational relationships and it was assumed that the interpersonal communication channels inherent in this organizational structure encouraged the process of diffusion. This research focused on the "persuasion stage" of the Rogers (1995) model, which is prior to the "decision stage" at which point community colleges decided to either adopt or reject each of the three innovations.

Persuasion Stage – Innovation Attributes

Rogers (1995) described the persuasion stage of diffusion as that period following awareness of an innovation when individuals or organizations begin to form opinions about a change. He stated that the opinions are affective in nature and usually influenced by information gained from peers rather than by systematic research. This incoming information is sorted into five basic categories or attributes of perceptions about the innovation: relative advantage, compatibility, complexity, trialability, and observability. In many situations, there will be additional attributes depending on individual or organizational circumstances. Attribute perceptions answer basic questions for the decision-maker. For example: How will this be an advantage to the organization or me (relative advantage)? Is it fairly close to how we already do things (compatibility)? Is it simple and easy (complexity)? Must we integrate the total innovation or is it possible to try parts (trialability)? Where can I see this in action (observability)? How the attributes are perceived (the answers to the decision-maker's questions) shape the decision to adopt or reject the innovation.

Role of attributes in research. A common usage of attributes has been as a typology of findings (Howze and Redman, 1992; Lindquist, 1979; Svenkerud et al., 1998). Lindquist (1979) used innovation attributes to sort higher education case study findings into categories. Utilizing the properties of the attributes, he suggested future action strategies for colleges and universities wishing to become more innovative. Howze and Redman (1992) wrote retrospectively about a successful interorganizational effort; they applied the characteristics of innovation attributes to the alliance actions to explain successful efforts. Svenkerud et al. (1998) used the characteristics of innovation in the process of program review. By using the attributes as coding devices for a qualitative analysis, components of successful AIDS/HIV prevention programs were identified. These authors and others who have used attributes as "organizers" have not contributed to the body of knowledge explaining the role and influence of innovation attributes on the diffusion process except to demonstrate the utility of attributes for grouping observations or events.

A preponderance of early studies employed innovation attributes as independent variables associated with the rate of diffusion (Carlson, 1965; Evans and Leppmann, 1970; Fliegal and Kivlin, 1966). This has not been a fruitful area of research. For instance, Carlson (1965) was one of the first researchers to apply Rogers' diffusion model to educational settings. He utilized several curricular innovations (e.g., modern math, programmed learning) to compare the influence of each innovation attribute on adoption rate. This study and others that followed share several common weaknesses: (1) attributes lacked common/established definitions; (2) attribute presence was defined by an expert, or a group of experts, and not the adopter/decision-maker; (3) innovations were

not presented in the same way. In this and other studies, the strength of attributes has not predicted adoption rate. Evans and Leppmann (1970) explained more fully

> The findings of our investigation support the view expressed by Rogers that the actual characteristics of an innovation are of little importance to its adoption. What does seem to matter is the way in which the individual perceives the relative values of an innovation . . . Attempts, then to delineate the different characteristics of an innovation might very well proceed from the perceptions of the individual or the group--that is, they would make subjective rather than objective evaluations. (p. 16)

In a single article, Ostlund (1974) reported two significant studies. He used housewives' perceptions of new products to predict the probability of future product purchase and to assess the relative importance of innovation attribute perceptions as predictor variables. Both studies showed that the perceptual variables (relative advantage, perceived risk, complexity, observability and compatibility) were far more successful as predictors of purchase than personal characteristics of the respondents. Thus, with the rigorous studies conducted by Ostlund (1974), came verification that the importance of innovation attributes are in their secondary meanings (perceptions) and not their primary characteristics.

As described by Tornatzky and Klein (1982), prior to Ostlund (1974), studies had assumed that a primary characteristic, such as cost which had been associated with the innovation attribute relative advantage, would be a defining reason for adoption. Research did not bear this out, but innovation attributes were present. What role did they play? It was Ostlund (1974) that confirmed the theoretical conjecture that personal perception of an innovation attribute is pivotal to the adoption decision.

Therefore, it was the intent of this research to study how the innovation attribute perceptions held by members of community colleges within one Midwestern state influenced the organizational decision to adopt three innovations promoted by EDIC.

Recent innovation attribute literature. Two comprehensive reviews and analysis of innovation attribute literature have been compiled by Tornatzky and Klein in 1982, and by Johnson in 1993. In addition, Everett Rogers has continually tracked all innovation research since 1962 and used the findings to modify his diffusion of innovation theory. Each subsequent edition of the publication, *Diffusion of Innovations*, contains a broad and extensive review of the literature. Accordingly, it seems most appropriate to limit this literature analysis to research conducted in the past twelve years—covering the years 1992 through 2004.

Three published works by Johnson (1993), Tornatzky and Klein (1982) and Rogers (1995) included extensive reviews of the literature. These works provided the foundation for early literature review.

Tornatzky and Klein (1982) conducted a meta-analysis of the findings from the 75 known studies researching the influence of innovation characteristics on the adoption-implementation decision. Confirmation of relationship to adoption of several attributes was the primary finding of the meta-analysis. Three of the ten innovation characteristics reviewed were consistently related to adoption: compatibility and relative advantage were positively related while complexity was negatively related. The researchers felt that while this finding was interesting, it was inconclusive due to the lack of common attribute definitions between studies. The authors wrote that this lack of agreement on

meaning probably contributed to the large number of innovation characteristics studied and to the less than statistically significant relationships.

As a result of the one meta-analysis, Tornatzky and Klein (1982) proposed seven distinguishing factors that contribute to the ideal study of innovation attributes. Those factors are:

1. The study should be predictive rather than retrospective;
2. Adoption and implementation decisions should be considered as dependent variables;
3. Rigorous research methods that lend themselves to replication should be utilized in order to establish a body of research from which generalizations can be made;
4. Issues of validity should be addressed by reliable measures of innovation characteristics as perceived by the decision-makers;
5. More than one attribute must be studied so that predictions across attributes can occur;
6. Information about attributes should be gathered across several innovations; and,
7. Study the adoption of innovations by organizations and not individuals.

Using these seven factors to code the 75 studies, the authors found no research projects that contained all seven design factors—in less than 10 percent of the studies were five or more factors present. Since the publication of the Tornatzky and Klein (1982) review and meta-analysis, researchers have been using the Tornatzky and Klein design criteria as a yardstick for drafting new research projects (Dearing and Meyer, 1994; Moore and Benbasat, 1991; Robbins, 1992; Rogers, 1995).

Included in the Johnson (1993) book, *Organizational Communication Structure,* is a comprehensive review of the innovation attribute literature as it relates to the impact of communication structures on various aspects of organizations. Seventeen of the works Johnson (1993) identified, that had implications for the studying the influence of innovation attribute perceptions, were written between 1980 and 1990.

Johnson's (1993) interest was with the influence of innovation on organizational outcomes and productivity. In Chapter 10, he describes how perceptions of innovation attributes influence organizational communication structures and consequently impact productivity. From an organizational communications perspective, Johnson found that two innovation attribute perceptions, complexity and compatibility, were most salient to the role of innovation in productivity and organizational outcome issues.

Although the focus of this volume is internally generated innovation, many of the findings can be applied to organizational behavior in general and community colleges in particular. For instance, he stated that interpersonal communication channels are the most effective and flexible means for carrying information about innovations in organizations. Use of this channel is able to decrease perceptions of complexity and therefore, assist with overcoming an adoption barrier. Yet, if an innovation is perceived as complex as well as having low compatibility, then the organizational risk factor becomes too great for the effective use of interpersonal communication channels. Understanding the underlying relationship between the attribute perceptions of complexity and compatibility becomes important to any change agent or agency trying to affect change in an organization or community college.

Johnson (1993) found much evidence, as did Rogers (1995) that "informal channels [of] persuasion, or influence, [are] the primary means available to secure participation in an innovation" (p. 163). It is necessary for the change agent or agency to use interpersonal communication channels to strengthen the attribute perceptions of relative advantage, compatibility, trialability, and observability while decreasing the perceptions of complexity.

In reviewing the attribute literature, Rogers (1995) wrote that

> Little effort has been devoted to analyzing 'innovation' differences (that is, in investigating how the properties of innovations affect their rate of adoption) . . . Diffusion researchers in the past tended to regard all innovations as equivalent units from the viewpoint of their analysis. This is an oversimplification, and a dangerous one. (p. 204-205)

Rogers (1995) referenced the Tornatzky and Klein (1982) meta-analysis and literature review. He agreed with their suggestions for how to strengthen attribute research methodology and noted that the attribute relationship to adoption that they identified continues to explain a significant amount of variance in rate of adoption studies. Predominately, Rogers (1995) placed the discussion of attributes into the broad context of his model for diffusion of innovation—for instance, focussing on how perception of innovation attributes are influenced by communication channels. For an in-depth discussion of innovation attributes, one must seek out the sources cited by Rogers (1995).

In analyzing research conducted during 1992-2005, multiple databases and bibliographic references in articles, books, and theses were used to search out current writings that examined the importance of innovation attributes in implementation and adoption decisions. Eight articles and 13 dissertations, written during 1992-2005, were identified. There is a striking difference between six of the studies and the remaining articles and dissertations. The studies conducted by Dearing (1997), Dearing and Meyer (1994), Johnson et al. (1998), Meyer et al. (1997), Moore and Benbasa (1992), and Wilson et al. (1999) have either added new knowledge or methodology to the study of innovation attributes. The studies described in the articles by Cockerill et al. (1999) and Grilli and Lomas (1994) are extensions of previous attribute findings to other fields, as was the research conducted by the dissertators.

Dearing (1997) methodically researched how communicating innovation attributes influenced the decision to adopt. He found that the presence of too much observability and trialability in technology transfer situations decreased diffusion. Dearing evaluated the effectiveness of the U. S. Department of Energy integrated hazardous waste management demonstration projects for "diffusing sets of new engineering and biology innovations from federal laboratories and universities to private businesses" (p. 262). Representatives from private enterprise could visit the various demonstration projects from implementation through culmination. The discussion between potential adopters and the scientific teams mounting the demonstration projects were analyzed. Dearing learned that gaining too much information about an innovation under development can drive away adopters—missteps, risk hazards, conjectures on effectiveness, all are communicated to the potential adopter. It appears from the Dearing research, that potential adopters are more comfortable adopting a "finished" innovation. Out of this evaluation research grew three new innovation diffusion concepts described by Dearing and Meyer (1994): the attribute matrix, the innovation profile, and the potential for adoption rating (or PAR score). At this time, it appears from searching the literature, that these concepts have not been tested.

Johnson et al. (1998) evaluated the effectiveness of information technologies within an interoganizational design—a national organization with a network of autonomous regional service units. Their findings imply "that organization members rate contrasting dimensions of an innovation differentially, depending on the nature of the specific technology" (p. 1). Employees rated the attributes of each of three computerized innovations differently compared to how compatible they were to prior personal

experience. For instance, the attributes associated with using email as a primary communication tool were rated higher by those familiar with the use of a computerized outreach system or computerized office management system. This research sparks the notion that there may be a sequence or lining up of attribute perceptions which could possibly determine adoption or implementation decisions. Out of this same evaluation project, Meyer et al. (1997) contrasted the attributes of three preventive health innovations. Once again the attributes for compatible innovations were rated differently compared to prior personal experience of the rater.

Moore and Benbasat (1991) used a single innovation, the personal computer work station, to test the influence of attributes on the adoption decision. Preceding their work, instruments to measure attribute perceptions were primitive and not reliable. Moore and Benbasat's contribution to the field of innovation diffusion is the development of a very reliable and valid survey instrument to test attribute influence.

Wilson et al. (1999) used two innovation attributes, radicalness and relative advantage, and the influence of organizational climate to explain the adoption of a technological innovation across an industry. They contrasted climate issues in 70 hospitals to the adoption of imaging technology (MRI). These authors contributed to the field of innovation diffusion through the linkage of organizational climate with innovation attributes as a determinant of the adoption decision.

If the other studies did not contribute new knowledge or methodology to the field of innovation diffusion, did they measure up to the Tornatzky and Klein (1982) ideal study of innovation attributes by including the seven distinguishing factors mentioned

earlier? Only one dissertation study met five of the seven factors of superiority (Barnsley, 1994).

When considering the first factor identified by Tornatzky and Klien (1982) that the study should be predictive rather than retrospective, the research projects have become more sophisticated in the past two decades. The authors found no predictive studies in their sample; on the contrary, in the group of 15 studies for this literature review that did not contribute new knowledge or tools, 9 were predictive in nature. The second Tornatzky and Klien (1982) factor, that both adoption and implementation decisions should be considered as dependent variables, has become more prevalent in recent studies. They reviewed one article that studied both the adoption and implementation decisions and in the past nine years, there have been three dissertators to study both dependent variables.

Of the 15 studies that did not contribute new knowledge or research tools to the field of diffusion of innovation, none met the third Tornatzky and Klien (1982) factor for an optimal study: contributing to the body of research from which generalizations can be made. A single dissertator (Holcombe, 2000) used the survey tool developed by Moore and Benbasat (1991) but the research question, tool, and results are not congruent. Holcombe used a survey that was validated for predicting the influence of attributes on the decision to adopt an innovation yet the research question implies that Holcombe was studying the *rate* of implementation. In addition, the findings are somewhat suspect if Gross et al. (1971) were correct in their criticism of Rogers' theory for diffusion. They assert that the proposition that individual organization members evaluate whether they will adopt the innovation or even discontinue its use after adoption, "does not apply to

major education innovations in most school situations . . . (p. 21)." Their research showed that most innovation in schools is done by fiat and that teachers must comply with the adopted policy. Holcombe (2000) investigated secondary teacher usage of the Internet in school districts that had received state grants for the implementation of Internet based teaching strategies. It is possible that his findings would not be duplicated in situations where there are no incentives for a district's teachers to utilize the Internet in the classroom.

Great strides have been made toward addressing issues of validity by utilizing decision-maker perceptions of innovation characteristics, the fourth factor of excellence. In the studies that Tornatzky and Klien (1982) analyzed, only one-third utilized decision-maker perceptions contrasted with 87 percent of the studies conducted since 1991. This trend to incorporating more rigorous study factors can also be seen in the number of attributes studied in each project, the fifth criterion identified by Tornatzky and Klien (1982). In the original study, 20 percent of the projects utilized a single attribute; but 100 percent of recent studies included multiple attributes as independent variables. This positive trend continued with the seventh factor: 60 percent of recent studies studied organizations as the adopting unit as compared to 45 percent in the original analysis. Remaining in about the same proportion of study is the sixth factor, gathering information about attributes across several innovations. Previously and currently, about 20 percent of studies utilize attributes from multiple innovations.

What is evident by this analysis is that the more rigorous the research project vis-à-vis incorporating the seven factors identified by Tornatzky and Klien (1982), the more likely the research will add new knowledge or methodological tools to the field. The six

exemplary studies identified earlier all incorporate five or more of the factors. Future researchers would do well to model their studies on the seven factors proposed by Tornatzky and Klien (1982).

Intersecting Conceptual Frameworks

Concepts drawn from the writings of three authors formed the foundation for the proposed study of: "Do innovation attribute perceptions influence community college adoption of programs promoted by an external agency?". More than 25 years after Lindquist (1979) wrote about bringing change to postsecondary institutions, his writings remain provocative. He proposed utilizing a synthesis of communication and planned change strategies to affect change. He noted that, "the locus of power within a college or university, in summary, will tend to lie among senior faculty leaders and high administrators who are respected and esteemed" (p.28) but who are unable to bring about change due to departmental and faculty control over teaching and research functions. It is to this group that he directed his writings. He conducted comprehensive case studies of change initiatives at colleges and universities and then categorized the findings by innovation attributes. Lindquist showed how one might use knowledge about the characteristics of attributes to position change initiatives in colleges and universities and then apply various communication or planned change strategies to increase the likelihood of adoption. From the Lindquist (1979) studies, researchers know that innovation attributes play a role the decision-making of colleges and universities.

Rogers (1995) presents the theoretical foundation for how diffusion of innovation occurs. An integral part of the theory is Stage Two, Persuasion. The many studies tracked by Rogers show that decisions to adopt and to implement innovation arise out of

the perceptions the decision-maker holds about the characteristics implicit to the innovation. Five attribute perceptions are common to every innovation: relative advantage, compatibility, complexity, trialability, and observability. From the body of innovation attribute literature, it is known that all of the attribute perceptions except complexity are positively related to the decision to adopt; complexity is negatively related. What is not clear from the literature is the universal importance of the relationship. Some studies have found statistically significant relationships for some variables and not others while other studies reported only positive or negative (but not statistically significant) relationship to adoption of the variables. This variability of findings leads one to question if there might not be another dimension to innovation attributes.

In an unpublished paper, Johnson (1997) based a series of suppositions on similar findings that he and others reported in two articles, Johnson et al. (1998) and Meyer et al. (1997.) In both studies, attributes for compatible innovations were rated differently compared to prior personal experience of the rater. Johnson (1997) hypothesized that there is a progression or stepping of attribute "pro" and "con" perceptions. The perceived attributes of several innovations can possess the same relationship to adoption, but that does not mean all innovations will be adopted. He supported the view that this queuing of attribute perceptions can be manipulated to enhance the probability of adoption.

Thus, the evolution of the research question: Do innovation attribute perceptions influence community college decisions adoption of programs promoted by an external agency? Rogers (1995) provided a theoretical model for conceptualizing innovation diffusion at both the personal and organizational levels. Lindquist (1979) pointed to the

importance of external agencies and organizations in promoting colleges and universities to adopt innovation and he utilized innovation attributes to characterize successful change efforts. Finally, Johnson (1997) suggested a raison d'être for what we all know, out of a group of good innovations one is better.

Summary

The literature has shown that colleges and universities operate in environments, internal and external, that seethe from change forces. The community college is not immune to this turbulence but is better suited than other postsecondary institutions to respond, in that their missions are crafted to create educational institutions which are responsive to environmental and stakeholder need.

In the Midwest, community colleges and several four-year colleges have joined together to form a interorganizational change agency, EDIC, to explore ways to meet several forces for change: growing need to globalize the curriculum, respond to employer need for employees with sensitivity to international issues, growing diversity in the student body, etc. Their decisions whether to adopt or reject three EDIC promoted innovations, was studied.

Rogers (1995) presented a convincing argument supported by the literature, that innovation attribute perceptions formed by community college leaders and faculty are indicative of their decision to adopt the promoted changes.

Chapter 3: Methodology

The means for answering the research question posed by this study, "Do innovation attribute perceptions influence community college adoption of programs promoted by an external agency?", called for a case study design that incorporated quantitative and qualitative techniques tailored to a retrospective study using a small, well-defined population. A cross-site analysis (Miles and Huberman, 1984) design was implemented using community college administrators and faculty within one Midwestern state as subjects and three community colleges also in that state as sites. Additionally, archival materials from the external agency, Educators Dedicated to Internationalizing Curricula (EDIC), were used.

To define the research question, six propositions were developed. Each proposition was identified with a particular method for soliciting the data relevant to confirming the proposition. Two data gathering tools were employed: a questionnaire based upon an instrument developed by Moore and Benbasat (1991) and an interview protocol developed around this questionnaire. During interviews, additional organizational questions designed to elicit organizational information regarding structure, spending patterns for international educational programs, and leaders that advocate for change were posed to those identified by EDIC staff as knowledgeable informants. In addition, EDIC archival materials were used as a data source.

The community college personnel were questioned about their perceptions of the attributes of three EDIC sponsored international curricular innovations (described in the Linking Data to Propositions section of this chapter) promoted over a twelve-year period by the agency. In the third edition of Robert Yin's *Case Study Research: Design and*

Methods (2003), five major components of a case study research design were laid out: research questions, propositions, units of analysis, data linkage to propositions, and data analysis procedures. The discussion of this research project follows the outline developed by Yin (2003) for implementing case studies. Figure 1 presents a visual organization of how the case study was operationalized for this particular study.

This research project investigated the influence of innovation attributes on community college decision-making. The inquiry was framed by the question: Do innovation attribute perceptions influence community college adoption of programs promoted by an external agency? As noted by Merriam (1988), the use of case study methodology is most appropriate when inquiry boundaries can be sharply drawn around an organization, program or individuals and the resulting information can be used to add knowledge about or to improve practice. The nature of this study's research question fits neatly within the limitations set out by Merriam. The case study narrowly focuses upon a group of community colleges within one Midwestern state, members from three organizational levels in those colleges and three unique innovations promoted to those institutions. Utilizing multiple sources of data gained through the case study process gave an understanding of how innovation attributes influence community college adoption decisions.

The literature confirms the existence of innovation attributes (Dearing, 1997; Dearing and Meyer, 1994; Johnson et al., 1998; Meyer et al., 1997; Moore and Benbasat, 1991; Robbins1994; Rogers, 1995; Wilson et al., 1999) and affirms the significance of attribute perceptions (Evans and Leppmann, 1970; Ostlund, 1974; Tornatzky and Klein, 1982) in the decision to adopt or not to adopt. This study was undertaken to replicate the

Figure 1

Case Study Design

Research Question: Do innovation attribute perceptions influence community college adoption of programs promoted by an external agency?

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Propositions:

1. Relationship of attributes to adoption decision replicate other findings
2. Change agent has strong link to EDIC
3. Change agent uses interpersonal communication to aid adoption decisions
4. Change agent defines innovation to fit organization
5. Institutionalization impacts communication and productivity
6. Organizational levels view innovation differently

↓

Units of Analysis:

Phase 1 - Survey

- 10 Community Colleges within one Midwestern state
- 21 Chief Administrators
- 25 Faculty members

Phase 2 - Interviews

- 3 Community Colleges within one Midwestern state
- 2 Academic vice presidents
- 3 International program coordinators
- 8 Faculty members

↓

Data Linkages:

Phase 1 - Survey

- 3 Innovations
- Questionnaire via mail and Web
- EDIC archival data

Phase 2 - Interviews

- 1 Innovation and international programming in general
- Questionnaire via interview
- 6 Organizational questions

↓

Data Analysis Procedures:

- Statistical analysis
- Pattern Matching
- Multiple case: explanation building and cross-case synthesis

importance of innovation attribute perceptions to organizational decision-making—specifically, academic-programming decisions made by community colleges.

Study Propositions

To shape a case study and to maintain its direction, Yin (2003) suggested developing study propositions. These are the supporting questions or auxiliary statements that arise out of the primary research question. By defining these threads of exploration early, the research maintains its focus and the researcher has a structure for analyzing the resulting findings. The following six propositions framed this study:

Proposition 1. The influence of innovation attribute perceptions on community college adoption decisions will mirror the findings in the literature supporting the theory.

In the Tornatzky and Klein (1982) meta-analysis of common innovation attributes, plus the tracking of innovation research by Rogers (1995), and the Moore and Benbasat (1991) research on the importance of perceived attributes, the relationship to adoption of several innovation attributes have remained stable. When testing attributes against adoption decisions, compatibility and relative advantage were positively related while complexity was negatively related. Relationship to adoption of other attributes has been less definitive. Therefore, it was likely that the community college decision data when tested would replicate findings from prior studies.

Proposition 2. The faculty member or administrator with the strongest link to EDIC will function as the change agent for promoting a EDIC innovation.

Rogers (1995) wrote, "One of the main roles of a change agent is to facilitate the flow of innovations from a change agency to an audience of clients" (p. 336). The structure of EDIC, as an interorganizational relationship of institutions interested in

internationalizing their curricula, suggested that the change agent would be the institutional representative that chose to attend and participate in EDIC sponsored events and meetings on a regular basis. Since it was impossible for all organizational decision-makers to participate in every EDIC function, it was conceivable that there would be one or two institutional representatives who would assume the position of change agent even though it was not identified or recognized by EDIC delegates and staff.

Proposition 3: The change agent will use interpersonal communication channels to strengthen the attribute perceptions of relative advantage, compatibility, trialability, and observability while decreasing the perceptions of complexity to increase the likelihood of innovation adoption.

Johnson (1993) pointed out that interpersonal communication channels are more effective in transmitting information about highly complex innovations. The innovation studied, Innovation 2: Summer Institutes, explored the attribute perceptions associated with developing and using international curriculum modules. It is assumed that designing and writing a curricular module can be involved and difficult. Therefore, it was likely that change agents would encourage module development in face-to-face interactions rather than utilizing mediated or mass communication channels (i.e., distributing academic articles).

Proposition 4. Individual change agents will define a EDIC innovation to serve differing purposes at each college studied.

One of the generalizations developed by Rogers (1995) relates innovation adoption to the ability of the change agent to predict the client needs. It was assumed that the community college change agents had intimate organizational knowledge of areas

that were lacking or needed improvement. Therefore, it was likely that innovations introduced by these change agents would be directed at rectifying these insufficiencies.

Proposition 5. The way an organization institutionalizes an innovation will influence organizational communication structures and consequently impact productivity.

Organizational culture appears to have significant impact on the adoption of innovation (Johnson, 1993). The more compatible an innovation is to the organizational culture (e.g., values, experiences, and necessities) the more likely it is to be adopted. Whether the adoption decision is made at the formal level of organizational goal setting or at the functional group level, communication structures will be developed or modified to promote the implementation of the innovation to meet perceived organizational needs. Therefore, it was likely that the EDIC innovation would serve different needs at each community college studied and that the productivity of the college would be altered by the adoption of the innovation.

Proposition 6. Faculty and administrators will view the purposes of the innovations differently.

The research conducted by Meyer, Johnson, and Ethington (1997) suggested that "innovation adopters and stakeholders may have contrasting views about specific innovations" (p. 125). Therefore, it was likely that administrators, coordinators and faculty would view the EDIC innovation as serving different organizational ends.

Units of Analysis

This research project sought to clarify the influence of attribute perceptions in community college academic decision-making when considering whether to adopt an externally promoted innovation. Therefore, the unit of analysis is the organization,

specifically the academic component of a community college. Following is a short description of how a broad network of individuals at different sites, which composed the sample, provided data to build a general understanding of what role innovation attribute perceptions played in adoption decisions at the organizational level. Data collection occurred in two phases, the first a broad, encompassing survey and the second, more focused, in-depth interviews.

Yin (2003) cautioned that it is critical to carefully define the units of analysis when doing a case study especially when using individual responses to draw conclusions about organizational behavior. He made the observation that in this situation, " . . . conclusions cannot be based entirely on interviews as a source of information . . . " (p.76) because this can lead to basing findings solely on individual inferences about organizational behavior. To counter this effect, questionnaires and archival materials supplemented interviews as data collection tools to ground the findings in organizational behavior.

Colleges. To adequately address the research question, "Do innovation attribute perceptions influence community college adoption of programs promoted by an external agency?", both community college faculty and executive level administrators served as sources of data. Only community colleges identified in EDIC archival materials as receiving funding associated with the three international programming innovations were candidates for study. Using EDIC archival materials, colleges were first grouped by innovations adopted and then levels of EDIC participation. Natural breaks between levels of participation lead to creating four groupings according to level of innovation adoption and level of participation:

Group 1. Composed of one community college that had high adoption/high participation (adopting 3 innovations with 10 or more participants),
Group 2. Comprised of six community colleges that had moderate adoption/moderate participation (adopting 2 innovations with 5 or more participants),
Group 3. Comprised of five community colleges that had low adoption/moderate participation (adopting 1 innovation with 5 or more participants), and
Group 4. Comprised of four community colleges that had low adoption/low participation (adopting 1 or fewer innovations with less than 5 participants).

It was decided to excluded the colleges forming Group 4, with low levels of participation and innovation adoption, from the study since these institutions had not participated in an EDIC function in more than eight years. Administrative teams and faculty members were surveyed in the remaining twelve institutions composing Groups 1-3.

Interviews. As the case study progressed, three community colleges were identified by EDIC staff and by informal conversations with the state's community college faculty and administrators as having strong international programs. In addition, these three colleges represented each of the three groupings of institutions studied: high adoption/high participation, moderate adoption/moderate participation and low adoption/moderate participation. Likewise, the colleges were geographically distinct: one rural, one suburban, and one urban. Using the general criterion identified earlier, to solicit data from all levels of decision-makers when possible, academic vice presidents, international program coordinators, and faculty were interviewed at these three institutions. Four of the thirteen interview subjects received the original survey instrument and only one chose to complete it. The data collected through the interviews gave definition to Propositions 2-6. The variety of individuals interviewed, spanning all

levels of the decision-making process, provided insight into how each organization made its adoption decision.

Linking Data to the Propositions

This section of the methodology discussion is organized into two segments. The first part describes how data were collected in Phase 1 and Phase 2. The second part links specific propositions with the data generated either through the survey or through interviews, which provides a preview of how the findings are reported.

In Table 1, each proposition is followed with the data set used to either confirm or refute its validity. Yin (2003) suggested that this is an important first step in designing a case study because the wealth of data that are available through the use of this technique can be so all-encompassing that limits must be set early.

Data collection. This section of the methodology discussion covers both stages of data collection. Phase 1 – Survey describes the development of the questionnaire, procedures for implementing the survey and the innovations studied. Phase 2 – Interviews is a discussion of the interview protocol, the selection of innovation topic and coding of interview responses.

Earlier, it was established that the literature confirms the existence of innovation attributes and affirms the significance of perceptions about the attributes. A questionnaire (see Appendix A) was used to discern what influence faculty and administrator perceptions of an innovation's attributes had upon their community college's decision to adopt a curricular innovation.

Moore and Benbasat (1991) developed an instrument to measure the perceptions of innovation attributes. The innovation that they were studying was adoption of

Table 1

Data sources used to validate case study propositions

Proposition	Derivation of Data
1: The influence of innovation attribute perceptions on community college adoption decisions will mirror the findings in the literature supporting the theory.	Survey and interview data
2: The faculty member or administrator with the strongest link to EDIC will function as the change agent for promoting a EDIC innovation.	Interview data
3: The change agent will use interpersonal communication channels to strengthen the attribute perceptions of relative advantage, compatibility, trialability, and observability while decreasing the perceptions of complexity for continued adoption of an innovation.	Interview data
4: Individual change agents will define a EDIC innovation to serve differing purposes at each college studied.	Interview data
5: The way an organization institutionalizes an innovation will influence organizational communication structures and consequently impact productivity	Interview data
6: Faculty and administrators will view the purposes of the innovations differently.	Interview data

personal computer workstations. Since the instrument was designed as a tool to study information technology (IT) innovations, it was necessary to modify the instrument to examine the adoption of postsecondary innovations. Moore and Benbasat (1991) encouraged the use and modification of their instrument to a wider study of innovation

attributes; they wrote

> It was our intention; however, that any scales developed should also be generally applicable to a wide variety of innovations . . . the resulting instrument is therefore general enough to be used, with slight modifications, in most diffusion studies. (p. 194)

Moore and Benbasat (1991) noted that during the design phase of their research project, they found that known innovation attribute survey instruments were neither internally nor externally valid. "Furthermore, no comprehensive instrument to measure the variety of perceptions of innovations existed. Such an instrument should be vital to diffusion research, thus . . . [action] was undertaken to develop one" (Moore and Benbasat, 1991, p. 194). With that goal in mind, Moore and Benbasat (1991) set about operationalizing measures of the five attribute perceptions as defined in Chapter 1: relative advantage, observability, trialabilty, complexity/ease of use, and compatibility, plus their two additional attribute perceptions of image and voluntariness.

Using other scales developed by innovation researchers, an initial item pool was developed by Moore and Benbasat (1991). Innovation-specific and redundant items were dropped and new items developed to correspond fully with the innovation concept being investigated. Items were sorted four times. During the first cycle, Moore and Benbasat (1991) asked judges to sort items into constructs and to name and define each category. The action of the judges assisted Moore and Benbasat (1991) with establishing content validity for scale intent. At the conclusion of the final sort, Moore and Benbasat (1991) calculated Kappa scores to measure inter-rater reliability or the level of agreement between raters on both ranking of items and establishing categories (Fitz-Gibbon and Morris, 1987). The Kappa scores ranged between 0.70 and 1.00, approaching what Hays (1994) described as perfect agreement between raters when K is 1.0.

Moore and Benbasat (1991) conducted two pilot administrations and a field test with the instrument. During the field test, 800 questionnaires were distributed to individuals in seven companies. Moore and Benbasat (1991) randomly split the sample; the first split was used to search for scale improvement, and the second split was used to test scale revisions. Final (Cronbach's) alpha scores were between 0.71 and 0.80 indicating a high level of internal consistency of the scales (Fitz-Gibbon and Morris, 1987).

The instrument developed by Moore and Benbasat (1991) had eight scales: voluntariness, relative advantage, compatibility, image, ease of use, result demonstrability, visibility, and trialability. The adapted instrument may be found in the Appendices. Two of these scales, voluntariness and image, were incorporated into the instrument to support the innovation that they studied, personal work stations (PWS). In the organizations studied by Moore and Benbasat (1991), individuals were free to use a PWS or to use other computer equipment, which lead the two researchers to include a voluntariness scale. Moore and Benbasat (1991) referenced previous innovation attribute research that defined image as part of the attribute relative advantage. They made the decision to create a separate scale to measure the importance of innovation image perception in the adoption decision based upon their impression that having a PWS would be seen as a high status tool in the organizations they were studying. It was decided that these two scales were not relevant to this study and therefore, were not included in the modified instrument. This decision is based upon the work of Lindquist (1978). He implied in his book that colleges and universities adopted new programming innovations to address performance "gaps" and not as prestige enhancements. In

addition, he identified governance issues as a consideration in innovation adoption decisions. Voluntariness is a difficult concept to apply to institutions of higher education.

Moore and Benbasat (1991) noted that construct validity for all scales except "observabilty" were very high. Referring back to the original definition coined by Everett Rogers in 1983, they extracted the concepts of visability and communicable to others or "result demonstrability" from the definition. The development of two scales provided the needed construct validity to measure the concepts of "observability." It was decided to use both scales in the modified instrument. Lindquist (1978) wrote that new programming was often observed at nearby or similar institutions and investigated for adoption as was programming that administrators or faculty members had heard described at conferences or by professional acquaintances. Lindquist's (1978) case studies support the dual construct of the innovation attribute, observability, making it applicable to the community college setting of this study.

Moore and Benbasat (1991) developed thirty-seven items for use in six scales that measure relative advantage, compatibility, complexity/ease of use, observability/result demonstrability, observability/visibility, and trialability. Moore and Benbasat (1991) indicated that in the eight scales there are twenty-five out of the thirty-seven items , or twenty items when the two superfluous scales are omitted, that could be used as a shorter version of the questionnaire without adversely impacting the construct validity of the scales or their reliability. They cautioned that the alpha scores reported are only for the sample used, and the shortened scales had not been tested on other, new data. The Cronbach Alpha reliability coefficients reported by Moore and Benbasat (1991) for the various shortened scales are: 0.90 for relative advantage, 0.86 for compatibility, 0.84

complexity/ease of use, 0.79 observability/result demonstrability, 0.83 observability/visability, and 0.71 trialability. Given those acceptable levels of reliability, the decision was made to use the shortened scales since the questionnaire asks the same questions about the three separate innovations.

Table 2 presents examples of how the wording of items was modified to fit the three educational innovations studied. After modifying the questionnaire, it was distributed to a small number of community college faculty and administrators. This pilot tested the psychometric property, reliability, of the rewritten items.

Table 2

Examples of modified questionnaire items

Example Of Original Items	Rewritten Items
Relative Advantage Scale: 7. Using a PWS enhances my effectiveness on the job (p. 216).	*Relative Advantage Scale:* Starting a Fall Event will enhance the effectiveness of the college's work.
Compatibility Scale: 1. Using a PWS is compatible with all aspects of my work (p. 216)	*Compatibility Scale:* Participating in the Visiting Scholar Program is compatible with all aspects of the college's work.
Visibility Scale: In my organization, one sees PWS on many desks (p.216).	*Observability/Visibility Scale:* In my college, one will see Summer Institute project outcomes in many classrooms

Faculty and administrators at twelve community colleges that actively participated in the EDIC organization and its functions were surveyed using the modified questionnaire. In addition, it provided the protocol for interviewing selected faculty and administrators, who had not responded to the mailed instrument, at three of the state's community colleges that have a reputation for strong international programming. Those

interviewed represented various organizational levels within the colleges. In addition, each community college site was selected from one of the three groupings of organizations by EDIC innovation participation/adoption rates.

In his book *Survey Research Methods*, Babbie (1990) described two basic survey designs. The first, cross-sectional survey methodology, is used when data collection occurs only once across an identified sample that will be used to describe a larger population. The ability to determine relationships between variables is also a characteristic of cross-sectional survey methodology. The second, longitudinal survey methodology, is used when a researcher wishes to track changes over a period of time by collecting data at several points of time. Babbie (1990) subdivided the longitudinal survey methodology into three survey design variations: trend, cohort, and panel studies. These designs require collecting data at intervals over a span of time but vary in how the populations are constructed and the types of change occurring in these populations. Trend studies survey representative samples of a general population at various points; Babbie (1990) cited political campaign polls as an example of this type of design. Cohort studies follow changes to a unique population over a lengthy period of time using different samples from that population to explain how change is occurring in their ranks. A panel study, as described by Babbie (1990), follows change in a unique population over a period of time by using the same sample but employing multiple factors particular to each respondent to characterize the genesis of change.

Babbie (1990) pointed to the longitudinal survey and its subcategory methodologies as rich sources for data to understand how and why a population changes over a period of time, but he cautioned that these methodologies demand extensive

resource commitments from the researcher. Windsor, et al. (1984) also advised researchers to consider the *economy* of design when considering the family of longitudinal survey methodologies. Babbie (1990) and Windsor, et al. (1984) cited dollar and time expenses and the stability of the sample population over time as traits of these types of surveys which the researcher should carefully consider before employing.

With these considerations in mind, a cross sectional survey was conducted. In addition, the case study was designed to understand how innovation attribute perceptions influenced community college decisions within one Midwestern state to adopt change and did not purport to research the change process of that adoption.

The more visible members of the population of interest are easily identified and are a small number: EDIC member community college faculty and administrators who were associated with the decision to adopt or reject the three EDIC promoted international curricular innovations. It was determined, after consultation with the EDIC staff, that there were between three and twenty individuals at each of sixteen community colleges who could be described as involved and crucial to the adoption decisions, and they comprised most of an identifiable population. In a situation such as this where "a small subset of a larger population in which many members of the subset are easily identified but the enumeration of all is nearly impossible" (Babbie, 1990, p. 97), Creswell (1994), Miller (1991) and Babbie (1990) all suggested considering the use of purposeful or judgmental sampling, a nonprobablility sampling strategy. Utilizing random sampling methods to assist with generalizing findings to a larger population was not truly applicable in this instance for two primary reasons. First, this was a retrospective study without the possibility of constructing an experiment or quasi-experiment through

forming treatment and control or comparison groups for identifying characteristics that may explain a larger population. Second, the defined population being sampled was small and known allowing most, if not all, to be included in the survey.

Of the 30 state community colleges, 16 participated in EDIC and 12 of the participating institutions were surveyed. In EDIC archival records, EDIC event attendance lists exist; all persons attending any EDIC sponsored event can be identified. Utilizing this resource, the population of interest was identified and was requested to participate in the research. The final survey sample was comprised of 104 community college faculty and administrators.

In addition, EDIC staff members identified one or more knowledgeable individuals in each institution who the staff believed were associated with the decision to adopt or reject the EDIC sponsored innovations. These informants were interviewed for contextual organizational information relevant to the adoption decision process.

Included in the category of purposeful sampling are two techniques for constructing sample populations: snowball or chain sampling and quota sampling. When employing the snowball technique, the sample population is determined by asking respondents who else to question and continuing until few new names surface (Patton, 1990), whereas, quota sampling as described by Miller (1991) is the grouping of a known population by predetermined characteristics and selecting a proportion of each population to interview. Utilizing the quota sampling technique "introduces some stratification effect" (Miller, 1991, p. 63), which was beneficial for studying the organizational issues investigated in this project. Quotas were set both for institutions and respondents with

the caveat that quota sampling, as does all purposeful sampling techniques, made it difficult to generalize findings to a larger population.

Rather than solicit respondents from all sixteen EDIC community college members, an institutional quota was set by grouping community colleges according to the strength of affiliation with EDIC (determined by number of participants attending EDIC sponsored events) and by number of innovations adopted. Participants and institutions involved in the three program innovations were determined from EDIC archival records and sorted into the four groups described earlier in the Units of Analysis section. Groups 1 through 3 formed the subject pool. Members of Group 4 institutions were excluded because of the low rates of EDIC affiliation and participation. Subjects from the remaining 12 EDIC participating community colleges were surveyed. This purposeful sampling allowed for inferential comparison between like "EDIC affiliated" institutions.

Surveys were sent to all remaining faculty members, who had attended a EDIC event, at each of the institutions asking them to participate in this study. The number ranged from three to ten per community college. Furthermore, chief administrators constituted another survey quota group. Predominately, chief academic administrators were identified as EDIC-involved, though there were exceptions, such as college presidents, community coordinators, vice presidents of student affairs, liaisons for international programs, and others. By only surveying administrators directly associated with EDIC, the perceptions of "hidden" decision-makers could have been overlooked. The construction of a quota group including relevant administrative, but not EDIC affiliated, decision-makers is supported by the findings of Stolz (1991). She wrote that when making program adoption decisions in organizations, policy-makers were most

influential and that implementers have little say in the initial decision to adopt. Therefore, a quota survey group including the president, chief academic officer, chief student affairs officer, chief financial officer, and community or international programs coordinator at each institution surveyed was asked to participate.

Utilizing quota survey methodology accomplished three key outcomes. First, the data sets lent themselves to analysis by organizational units and not just by individual responses. Two, with small numbers of respondents, a community college that was highly active in the MIEON organization and its events could possibly have skewed the results of the data set. By setting respondent quotas, the data were less weighted by high response-rates from individual institutions. Third, by instituting administrative quota samples, it was possible to reach all decision-makers and not just EDIC stakeholders.

Using a purposive sampling process limited the survey to respondents who were most knowledgeable about the decision process for adopting or rejecting one or more of the EDIC innovations. As explained by Babbie (1990) and Miller (1991), this is the primary advantage of using purposive sampling and this technique best fits the purposes of this case study. The research was conducted to better understand EDIC member community colleges' innovation decision making processes.

As stated earlier, this was a cross-sectional study utilizing a quota sampling process. Survey instruments and a cover letter explaining the research project were mailed to all EDIC member community college faculty and administrators who were identified by participation in EDIC events and by EDIC staff members as probable decision-makers in their college's determination to adopt or reject the three proposed curricular programs. In addition, surveys were sent to key college administrators. Efforts

were made to contact those decision-makers who had left the college to accept employment elsewhere, for retirement purposes, or for other reasons for participation in the survey. For those subjects who were more comfortable using electronic communication forms, a Web-site, www.tallyzone.net-survey.html, was developed to host the questionnaire. The survey letter instructed the subjects in how to access the site. Subjects were given the option to use either version, print or electronic, to respond.

For greatest return rates, Dillman (1978) recommended four mailings: the initial mailing of the instrument; a postcard reminder; a second copy of the questionnaire to non-responders; and a third copy of the questionnaire to non-responders utilizing certified mail. The Dillman (1978) recommendations were modified to reflect the prevalent availability and acceptance of technology today.

Step 1: The initial mailing of the survey instrument was sent to identified subjects and included a cover letter giving respondents the option of using the enclosed postage paid envelope to return a completed paper instrument or to complete the survey instrument on-line. Six subjects utilized this on-line feature. Each subject was assigned a unique personal identification number (PIN) that could access the questionnaire web-site and was used to track non-respondents. Programming of the questionnaire web-site restricted respondents to one submission of a completed survey instrument. One respondent provided both a completed paper questionnaire and completed the web-form of the instrument. The earliest response, as determined by comparing post-mark with web-site tracking data, was used. Unfortunately, this first mailing was distributed as spring semester was ending at most community colleges because it took longer than

expected to receive permission from the university committee overseeing research involving human subjects.

Step 2: Following the Dillman (1978) recommendation, postcards were sent to all, one week after the original mailing. The postcard "serves as both a thank you for those who have responded and as a friendly and courteous reminder for those who have not" (p.183). The Internet URL for the web-based edition of the questionnaire was noted on the postcard along with the PIN assigned to that person. In addition, e-mails containing the same information as the postcards were sent to the subjects. EDIC participant lists were compared to various community college directories published on their Web-sites and email addresses were noted.

Step 3: Those who did not return the questionnaire received a follow-up mailing as the fall community college semester began. Enclosed were the instrument, a stamped return envelope, and a cover letter asking that they either complete the paper or web-based survey instrument. During Step 2, communications from several subjects to the researcher indicated that there was an organizational identity problem. The role played by EDIC as the change agency was not apparent to many of the participants. A note of explanation (Appendix B) of the interorganizational relationship represented by EDIC and three other organizations promoting international programming to the state's community colleges was drafted and included in this mailing. Three weeks after this mailing the case study immediately progressed to the interview stage.

The judgmental sample was made up of 55 faculty members and 49 administrators (Table 3). The survey instrument did not reach 11 sample members (10.6 percent) due to outdated addresses. Therefore, the subject pool was decreased to 93: 48

faculty members and 45 administrators. Of those returning the survey instrument, nine subjects indicated that they would not respond to any portion of the questionnaire. Predominately, the non-responders had retired from their positions at various community colleges and felt that they had left that life behind.

Table 3

Survey distribution and response rates by category expressed both in raw numbers and percentages

	FACULTY MEMBERS		ADMINISTRA-TORS		COLLEGES	
	N[a]	%[b]	N[a]	%[b]	N[a]	%[b]
Surveys distributed	55	100.0	49	100.0	12	100.0
Surveys undelivered	7	12.7	4	8.2	8	66.7
Response rates by categories	21	38.2	25	51.0	12	100.0
Refusals to participate in survey	5	23.8	4	16.0	6	50.0
Innovation 1: Fall Event						
Participated in decision	3	14.3	0	0.0	3	25.0
Did not participate in decision	13	61.9	21	84.0	9	75.0
Innovation 2: Summer Institute						
Participated in decision	1	4.8	1	4.0	2	16.7
Did not participate in decision	15	71.4	20	80.0	10	83.3
Innovation 3: Scholar in Residence						
Participated in decision	2	9.5	2	8.0	4	33.3
Did not participate in decision	14	66.7	19	76.0	8	66.7

[a]Raw number
[b]Rates expressed in percentages by category

Utilizing EDIC archival materials and through consultation with EDIC staff, three programmatic initiatives were identified in a Kellogg Foundation grant funding proposal and in documentation for the use of Title VI funds granted by the United States Department of Education (USDE). According to the EDIC staff, these three innovations had varying rates of success. When more than seventy-five percent of the participating community colleges adopted an innovation, the staff considered the innovation very

successful; whereas, they termed an innovation adopted by approximately fifty percent of the colleges to be moderately successful. Proposed innovations with less than a ten percent adoption rate were considered unsuccessful by the EDIC staff.

Tornatzky and Klein (1982) suggested that studying innovations with varying rates of success could strengthen attribute perception research. Therefore, the following three EDIC promoted innovations were selected for study: the Fall Event, termed by the staff as the most successful innovation promoted by the organization; Summer Institutes, which the staff labeled as moderately successful; and the Visiting Scholar Program, viewed by the staff as a failure.

EDIC Innovation 1 – Fall Event evolved from informal relationships between several community colleges and Midstate University (MU) faculty and was the initiative for establishing the EDIC consortium. Several rural community colleges established, with the assistance of MU faculty, fall events focused on international themes. As an outreach effort, MU personnel invited members of other two- and four- year colleges to discuss developing a coalition to further international curricular development in the Midwest. Those postsecondary institutions that accepted the invitation to join the alliance constitute EDIC's membership. Other institutions have sporadically participated in various events but are not considered members of the coalition.

The new group petitioned the Kellogg Foundation for funding for academic years 1989/1990 and 1990/1991 to support developing Fall Events at all EDIC member colleges. The Kellogg Foundation granted funding to support bringing cultural events and scholarly presentations to each member campus, supplying consultation assistance, and funding to provide curriculum development assistance to faculty at member

institutions. With more than seventy five percent of member community colleges adopting a Fall Event program, EDIC staff and advisors term this innovation the most successful promoted by the coalition.

EDIC Innovation 2 – Summer Institutes were created through USDE Title VI funding to support undergraduate international studies and foreign language programs. Funding was granted to EDIC for the academic years 1994-1996 to establish Summer Institutes. The eight-day curriculum workshops were designed to assist faculty with developing focused international curricular modules and to offer on-going assistance to insure that the curriculum would be piloted in the following year. About half of the EDIC affiliated community colleges institutions enrolled faculty in the Summer Institutes. Having met the fifty-percent participation criterion, the EDIC staff and advisors refer to the adoption of this innovation as being moderately successful.

EDIC Innovation 3 – Visiting Scholar Program emerged during Academic Year 2000-2001. EDIC members and staff recognized a waning interest in the organization. Various meetings were held with coalition members in an attempt to find new direction for the organization. Housed in the MU administrative structure under the fictitiously named Center for International Directives (CID), EDIC activities were directed by the CID staff and funding was officially procured through CID auspices. During Academic Year 2001-2002, CID set aside USDE Title VI funds to endow the Visiting Scholar Program. Faculty members from EDIC affiliated colleges were invited to spend five days on the MU campus to pursue areas of international curriculum interest. The scholarships covered all travel, room, board, consulting fees, and fees for special on-campus seminars and events. This innovation clearly falls into the category identified by EDIC staff as not

being successful—less than ten percent of the membership participated. In fact, only one EDIC community college member sponsored a faculty member's attendance.

Thirteen interviews were conducted over a four-month period. Referring to the criteria discussed in the earlier section, Units of Analysis, three colleges were selected as the interview sites based upon their EDIC participation and innovation adoption rates. Representatives from each of the three selected community colleges participated.

It was determined that faculty who implemented an innovation would be asked to participate. It was believed that they would more easily recall their perceptions of the innovation's attributes during the decision phase, as compared to a faculty member who chose not to implement an innovation eight to ten years ago. Eight faculty members from two community colleges agreed to be interviewed. At the Group 3 representative community college, no faculty members were available for interviews. Most EDIC event participants from that college were no longer at hand; out of the original participants, only the academic vice-president and coordinator for international programs remain. At the other two community colleges, the faculty interviewed represented a wide variety of disciplines and fields: nursing, physics, business, English, writing, civil engineering, etc.

It was thought that the chief academic officer would be an important college leader to interview. Resources are allocated and academic programming direction set by this college leader. This position nurtures new innovations or allows them to wither. The academic vice-president at the Group 1 representative community college was interviewed, as was the Group 3 representative community college vice president. Unfortunately, the academic vice-president at the Group 2 representative community

college recently retired and moved from the area. The researcher was unable to locate her.

The international program coordinator was interviewed at each of the three institutions. The coordinator at the Group 3 representative college assumed the position at the retirement of an active EDIC member several years ago. The current coordinator has been less closely affiliated with EDIC but still maintains some ties.

Out of the 46 responses by administrators and faculty received from the mail/Web survey, 34 indicated that they did not participate in the Fall Event adoption decision on their respective campuses. Three respondents, all faculty members, indicated that they participated in the decision to adopt the curricular innovation on their campus (see Table 3). Each of the faculty members represents a different institution. For Innovation 2: Summer Institutes, one faculty member and one administrator responded that they participated in the decision concerning its adoption at their institutions, while 35 respondents did not. The two decision-making respondents represent different institutions.

In a pre-analysis step, the responses were aggregated by scale. This pattern matching (Yin, 2003) was used to discern indicative response clusters. The intention was to identify the most salient innovation as the basis for the faculty interviews. In every instance, the responses for all six scales clustered around similar values for the Summer Institute innovation (see Table 4) indicating that there was a similarity of attribute perception across the innovation. Clustering of responses occurred only within two scales for the remaining two innovations.

Using response data generated by two sample members can only be used to indicate of patterns of perception. A faculty member and an administrator from two different community colleges indicated that they participated in the adoption decisions for utilizing the Summer Institute Innovation, the development of international curriculum modules, at their campuses. When aggregated by scale, the responses were closely related for this innovation. The similarity of perception occurring for only the Summer Institutes innovation and not the other two leads one to speculate on probable reasons. First, it is probable that Fall Event is so thoroughly institutionalized at most campuses that it was difficult for respondents to separate the decisions surrounding its establishment from contiguous organizational decisions. Second, since the Visiting Scholar innovation was not widely adopted by member community colleges, conceivably it was not as well known and therefore, firm perceptions were not formed.

It was decided that, as the case study moved into the interview phase, the investigator would be sensitive to the presumptions presented in the preceding paragraph. When greater clarity of perceptions about the attributes of Fall Event and Visiting Scholar innovations did not emerge in the first few interviews, the primary focus of the interview component then targeted attribute perceptions associated with the innovation of international curriculum modules in the later interviews.

All interviews were conducted by the researcher and all but four were conducted in person. The other interviews were via telephone. The interviews were recorded and transcribed; in addition, the interviewer made notes as the interviews progressed. A database was created using Excel and all data were entered into it for analysis by protocol question, by organizational question, and by proposition.

Table 4

Clustering[a] of responses[b] by innovation and by scale

Relative Advantage Scale: Q1-5	Compatibility Scale: Q6-8	Complexity/ Ease Of Use Scale: Q9-12	Observability/ Result Demonstrability Scale: Q13-16	Observability/ Visability Scale:Q17-18	Trialability Scale: Q19-20
Innovation 1: Fall Event (3 respondents)					
SA=0	SA=0	SA=1	SA=1	SA=1	**SA=1**
A=8	**A=2**	A=6	A=5	A=2	**A=4**
U=3	**U=4**	U=2	U=3	U=2	**U=1**
D=3	**D=3**	D=2	D=3	D=0	D=0
SD=1	SD=0	SD=1	SD=0	SD=1	SD=0
Innovation 2: Summer Institutes (2 respondents)					
SA=1	SA=0	SA=0	**SA=1**	SA=0	SA=0
A=7	**A=6**	**A=7**	**A=5**	**A=1**	**A=4**
U=1	U=0	U=0	U=1	**U=2**	U=0
D=1	D=0	D=1	D=1	**D=1**	D=0
SD=0	SD=0	SD=0	SD=0	SD=0	SD=0
Innovation 3: Visiting Scholar (4 respondents)					
SA=4	SA=2	SA=1	SA=1	SA=0	**SA=2**
A=7	A=3	A=6	A=7	**A=4**	**A=5**
U=6	U=1	U=4	U=3	**U=1**	U=0
D=3	D=6	D=2	D=4	**D=3**	D=1
SD=0	SD=0	SD=1	SD=0	SD=0	SD=0

[a] Clusters of similar responses are boxed

[b] SA = Strongly Agree; A = Agree; U = Unsure; D = Disagree; SD = Strongly Disagree

In all instances, the survey questionnaire was used as the interview protocol to provide continuity of data subject matter, in other words, the interviewer used the survey questions as the protocol. The interviewer explained the purpose of the interview, described the interviewee's rights to terminate the interview at any time and that the data would be presented in the aggregate, and gave each subject a statement of the University's human subject rights to sign and a personal copy. For those interviews conducted over the phone, the statement was emailed to the subject prior to the interview. The subject was asked to either send the form electronically or by mail it to affirm his or her consent to participate in the interview. The subjects were instructed at the beginning of the interview to think back 10-12 years to when the decision was under consideration to adopt. As the interview progressed, the subjects had to be prompted frequently to focus on the events preceding implementation of the innovation.

Early on it became apparent that relying solely on the questionnaire, as the interview protocol, would have to be modified somewhat. The vice-presidents could not or would not address operational issues concerning an individual innovation. For instance, the question "developing international modules will improve the quality of work the college does" lead into lengthy discussions about the global development of international programming at the college rather than the specific curricular innovation of inserting international modules into each course. Probing did not help the interviewee shift focus from the strategic goal of the administration for integration of global perspectives into student experiences as contrasted with the operational task of implementing a curricular innovation at the classroom level. It appeared that the vice presidents broadly linked all international curricular efforts.

Likewise, the faculty found it difficult to think that a curricular innovation would be furthering the work of the college because the interviewee would generally define "work of the college" as the role of the college's chief administrators in setting strategic goals. When answering the question "developing international modules will improve the quality of work the college does," faculty members would invariably say that they did not think about how developing international curriculum modules would further the administration's goals for diversity. Instead, faculty members focused on reasons that centered upon personal interests, wishing to broaden their students' knowledge, or to meet a departmental goal.

On the other hand, international program coordinators frequently interchanged their points of view from the strategic goals of the administration to what was happening at the course level. Most often, they placed the adoption of the innovation decision into the context of how the work of international programs would be impacted. For instance, when answering the question "developing international modules will improve the quality of work the college does," the coordinators referenced the mandate given to them by the administration to develop an international program. Then they would proceed to describe how adoption of one of EDIC innovations by the faculty advanced the goals of the administration. Their viewpoint most often reflected the role of change agent as described by Rogers (1995). He wrote about how change agents bridge the gap between organization and individual implementers in the diffusion of an innovation. These distinct levels of vision confirmed Proposition 6 and its analysis may be found in the following chapter. It was these varying levels of innovation perception that lead to relaxing the interview protocol from highly-structured to moderately-structured.

Using a less structured interview protocol allowed greater flexibility for the subjects to address areas of their interest. For instance, vice presidents preferred focusing their comments on the Fall Event innovation, international programming events that were popular within the community, or the broad goals of the college. International program coordinators tended to fit both the Fall Event and Summer Institutes/international modules into how each of the innovations related to the program he or she developed. By comparison, faculty members only answered questions about international modules, the most concrete or product-like innovation. One of the international program coordinators interviewed was the only adopter of the "Visiting Scholar" innovation. Other interviewees had not heard of the program or confused it with other study opportunities.

Following Miles and Huberman's (1984) suggestion for creating an accounting scheme for data coding to define perspectives, the degree of expressed affect was used to ascertain strength of agreement or disagreement with the survey instrument questions used as the interview protocol. Interview transcripts provided each respondent's response to the questions, in turn, these were coded as strongly agree, agree, unsure, disagree, and strongly disagree. A second, independent coder confirmed the classification of comments by response category. Located in Table 5 are examples of interviewee responses that were coded to correspond to questions on the survey instrument.

Each of the international program coordinators served as the informants and answered questions related to the organizational context in which the adoption decision was made. The questions were constructed to elicit any unusual organizational structures, policies or leadership influences that might set one institution apart from the

Table 5

Examples of interview response interpretation for coding purposes

Strongly Agree:

- Absolutely! I couldn't see how it wouldn't improve the curriculum by having an experience like that.
- I can't imagine a time in any college where the international world wouldn't be significant.
- I thought it was critical to a good education; that this work would be critical to the success of the college and that it was essential.

Agree:

- From my office, I considered it part of the college.
- I knew I might meet with some resistance. But, I feel as if I have seen this work.
- Preferably, yes, for this group of students to be prepared to undertake similar work in their courses or maybe, again you always wonder about what sticks with them.

Unsure:

- Definitely possible, not necessarily easy
- I don't think that really was on my mind
- I think . . . to the extent that I can remember, my concern was about the students; and what the college was doing would always be second or third.

Disagree:

- I don't think the community was aware of where the programs came from.
- I think that that's a no in a lot of classes and there is resistance from folks who have a jammed packed 16 week (system).
- Not really, in fact I felt that a lot of what we were doing and had done was without necessarily the blessing of the administration of the college.

Strongly Disagree:

- I never had a sense that the college wanted us to do anything. The whole thing was ground up, not top down.
- It has always been difficult.
- No. we didn't. We have a group of folks who are firm believers that we need to identify our core business and we stick with that, and global education may not be part of the core business.

others. They were asked the following questions:

1. Is there an unusual organizational structure in place?
2. Who serves in key administrative positions?

3. Does the college have a history of strong resource allocation to international programming?
4. Do the organizational dynamics support innovative educational programs?
5. Was there a "change champion" associated with international programming?
6. In particular, were there one or more EDIC program champions?

Because the organization context questions were not open-ended, they were only somewhat effective in establishing the organizational context in which adoption decisions were made. By far, the richest organizational insights derived from the interviews with the program coordinators, faculty and academic vice presidents.

The use of EDIC archival data and the development of a questionnaire for both the survey and interview protocol proved to be effective data collection methods. The distribution of the questionnaire using survey methodology resulted in interesting and informative patterns of evidence, plus "hidden" organizational identity issues were surfaced. Using the questionnaire as the interview protocol resulted not only in data related to attribute perceptions but also provided rich contextual data.

Data Analysis Procedures

The case study analysis was developed using two methodologies, statistical analysis and cross case synthesis. Using both quantitative and qualitative methodologies in a case study is a common practice according to Yin (2003). A multiplicity of analytical techniques offers the researcher an opportunity to collect data across broad populations in addition to in-depth probing of a particular site or issue.

Through Proposition 1, this research project intended to compare the ratings of innovation attribute perceptions of one or more organizational groups to the results found in other studies. For this purpose, the static coded (Miles and Huberman, 1984) faculty members' ratings of their perceptions of the Summer Institutes innovation attributes

(described above) were used. The data set was small but did not preclude using basic descriptive statistical tools and calculating degree of association among the perception ratings. Four instructors from each the suburban and the urban community colleges provided responses during their interviews that could be coded in ways to correspond with the survey instrument scales. Averaging available data created scale values.

First, a visual inspection of the faculty data array was conducted for unusual response patterns and to note missing values. Second, a Pearson Product Moment correlation was calculated using the data from the faculty members' responses about their perceptions of the international curricular module innovation attributes. Two Product Moment correlation calculations were performed to ascertain degree of association by item and by scale. Third, means for each scale were calculated to determine relative importance of each scale to the respondents; and fourth, the standard deviations of the six scales were computed to measure their variance.

In the Miles and Huberman (1984) sourcebook, cross case synthesis is recommended as one methodology to increase the generalizability of case study findings while maintaining the ability to understand how each finding is uniquely shaped at individual locations. Utilizing the cross case synthesis methodology was crucial to validating Propositions 2-6. Two ordered matrices (Miles and Huberman, 1984) were developed for entering interview data by proposition. One matrix compared propositions by site and the other compared propositions by position held within the college. As the matrices were analyzed, themes emerged. The themes coalesced by proposition across sites and college positions; support or non-support for individual propositions was determined. As an example for the reader, a small section of the matrix comparing

Proposition 6 by organizational positions may be found in Table 6. This table presents an illustration of how the interview data were arrayed for analysis. As shown in the example reproduced in Table 6, the matrix provides one with the ability to easily discern the differing purposes served by an innovation as defined by vice presidents and faculty members. All data for the matrices were abstracted from the transcripts of the taped interviews.

Table 6

Example of cross-case synthesis matrix

Proposition 6: Faculty and administrators will view the purposes of the innovations differently.	
SCC-AVP[a]	UCC-F(a)[c]
1. I saw how it [international programs] could enrich all curricular efforts 2. International programming became a part of the strategic plan and was reflected in the operational plan.	1. I was very interested in cross- or trans-cultural health issues. I thought it would be terrific for the . . . program. 2. in spite of the administration, we [faculty] will keep it going
RCC-AVP[b]	SCC-F(a)[d]
1. Experience the difference, used it [international programs] to combat student naiveté or parochialism. 2. It [international programs] provides an opportunity for experiences--especially those life altering experiences. 3. [provide students with] career experience	1. Saw international modules as a ground up effort. 2. No, I wasn't overly concerned with that [the college's work] at the time. 3. I saw the project related to [coordinator]'s office not to the college

[a]SCC-AVP: suburban community college academic vice president
[b]RCC-AVP: rural community college academic vice president
[c]UCC-F(a): urban community college faculty member (a)
[d]SCC-F(a): suburban community college faculty member (a)

Presentation of the interpretation of findings. The narrative and tables depicting quantitative data comprising Chapter 4: The Case Study, present the conclusions without

further reference to how the findings were derived. All methodological discussions are contained in this chapter.

A multi-site, embedded case study was used to answer the research question: Do innovation attribute perceptions influence community college adoption of programs promoted by an external agency? Midwest community college administrators and faculty provided data through a survey and through interviews about three EDIC sponsored international curricular innovations promoted over a twelve-year period.

Deriving six propositions from the adoption of innovation literature followed Robert Yin's (2003) suggested case study research design. The propositions were validated using both quantitative and qualitative methodologies.

Chapter 4: The Case Study

The case study was conducted in two stages. Phase 1 was a survey of administrators and faculty and Phase 2 consisted of interviews. The quantitative data derived during the first stage survey were used to structure the collection of qualitative data during Phase 2 for example, determining which innovation became the focus for the interviews. How each proposition, in support of the research question, was either confirmed or negated was based solely on the data gathered during Phase 2 of the case study.

This chapter begins with a description of the three community college sites that were used to investigate how innovation attribute perceptions influenced community college adoption of programs promoted by an external agency. College web sites, physical observations by the researcher, interviews with knowledgeable organizational informants, and fall enrollments found on the State Community College NETwork provided data with which institutional commonalties and differences could be inferred (see Table 7) through comparison. The next section explores how each of the six propositions supporting the research question were either confirmed or negated by using the qualitative data gathered through college faculty and administrator interviews at the three sites. Finally, the findings are integrated into a general statement section about the impact of innovation attribute perception on community college adoption decisions.

Community Colleges Sites

The three community colleges selected as the Phase 2 institutions for the case study received EDIC funding for promoting the three international programming innovations used in this study. Through conversations with EDIC staff and with

Table 7

Comparison of community college case study sites.

	Rural Community College	Suburban Community College	Urban Community College
Campus Established	1966	1961	1966
Fall Enrollment	1,918	10,450	10,438
Administrative Structure	President: 2 served during period of innovations	President: 2 served during period of innovations	President: 1 served during period of innovations
	Academic vice president: 1 served during period of innovations	Academic vice president: 2 served during period of innovations (recent retirement of original vice president)	Academic vice president: 2 served during period of innovations (recent retirement of original vice president)
	Liberal arts dean	Liberal arts dean	Liberal arts dean: original dean left organization
	International programs coordinator: 2 served during period of innovations	International programs coordinator: 1 served during period of innovations but position cut	International programs coordinator: 1 served during period of innovations
Innovation Adopted	Fall event: modified to be programs throughout the academic year	Fall event: modified as two days of events each semester	Fall event: modified to be programs throughout the academic year
	Scholar in Residence: not adopted	Scholar in Residence: adopted, coordinator participated	Scholar in Residence: not adopted
	International modules/Summer Institutes: adopted but discontinued	International modules/Summer Institutes: adopted	International modules/Summer Institutes: adopted
Purpose Served by Module Innovation	Discontinued in favor of a regional exchange program institute housed at the college	Adopted to further the mission of the college; reporting and reward systems modified to support innovation	Adopted by the faculty and promoted through regional faculty development institute housed at the college

state community college faculty and administrators, these colleges are known for their strong international programs. In addition, these three colleges represented each of the three groupings of institutions surveyed during Phase 1 of the case study: high adoption/high participation, moderate adoption/moderate participation and low adoption/moderate participation.

During the 1980s and 1990s, colleges and universities were responding to the directives from their accrediting agencies to incorporate views of the larger society into the organizations. For instance the Higher Learning Commission of the North Central Association of Colleges and Schools, the accrediting agency for the three colleges, first criterion for accreditation is specific on this issue. The core component 1b of this criterion reads, "In its mission documents, the organization recognizes the diversity of its learners, other constituencies, and the greater society it serves" (NCA, p.3.1-3). In response, colleges were organizing their missions to address the issue and general education departments were including this need for understanding diversity in their curricular core competencies. The EDIC innovations were just a few of the many efforts at each college to meet this accreditation criterion.

College characteristics. The three community colleges are in differing geographic locations: rural, suburban and urban areas. As a convenience, these geographic descriptors, rural, suburban and urban are used for identifying the community colleges in the following sections. The rural college is in an isolated area serving mostly farming and recreational communities. There are no major cities or heavily populated areas nearby; to reach the college, one must leave an interstate highway and travel over state and county roads for more than thirty miles. In contrast, the urban community college

lies at an exit of a main interstate highway that traverses the Midwestern states. The college is about equal distance, three hours, from two of the larger metropolitan areas in the United States. In addition to the main campus, there is a campus located in the central section of the downtown of a moderate sized city. Making-up the local taxation base are manufacturers, agribusinesses, and commerce, one of which is a Fortune 500 company. Close by is a state university. The suburban community college serves three small cities. Predominately, it is a rural area but there are several manufacturers, and the world headquarters of a Fortune 500 company is located there. Also, one of the smaller state universities is close by. The main campus is equal distance from the cities and is located at the exit of an interstate highway; the college has established satellite campuses in the downtown areas of the three cities. The physical plants of the colleges are of similar style: attractive, contemporary buildings that hug the ground. The three main campuses of the colleges opened within five years of one another during the early 1960s.

The latest fall enrollments, 2003, for the state's community colleges as reported by the Community College Services Unit of the State Department of Labor and Economic Growth Office of Post-Secondary Services show that there were 211,197 students enrolled in the colleges and that one-third of the students were full-time. Seven of the state's community colleges enrolled less than 3,000 students, fourteen colleges had fall enrollments between 3,000 and 10,000 students, and seven colleges had enrollments over 11,000 with only two of those having more than 20,000 students. The urban and suburban community colleges serve approximately the same number of students each fall, 10,000, making them moderate sized institutions. Full-time student enrollment is 40 percent for both colleges. The rural college enrolls 2,000 students, 30 percent full-time,

each year placing it in the lower enrollment quadrant for the state's community colleges. The demographics of the student bodies are similar: more than half are female, the median ages fall between 22 and 23, and the students are predominately Caucasian. The urban and suburban institutions employ approximately 200 full-time and 250 part-time faculty members. The rural college has 35 full-time and 85 part-time faculty members on staff.

When asked about administrative structures, each college informant described a typical academic administrative configuration (Cohen and Brawer, 1996): president, vice president for academics, deans, department heads and faculty. For instance, the rural community college vice president named off the positions at his college and then said, "I think the structure itself is fairly traditional. I don't think if you look at the organizational chart it looks weird." He went on to state that the coordinator of international programs reported directly to him, which is the case also, at the other two colleges.

Internationalizing the colleges. Early in their histories, the liberal arts deans at both the urban and suburban community colleges were instrumental in establishing an international mission for the colleges. During the interview, an urban community college faculty member remembered the role played by his dean

> We worked mostly with the dean back then. The dean of, I don't remember what it was called back then, it's had about three names since then; basically, dean of the liberal arts . . . She was supportive in her very gentle way. She sort of steered the program through the web of administrators without giving them, probably, too much information. She moved it along that way. You know, before people realized it was a viable thing . . . she was a perfect soldier for us. Some of the other folks here hadn't such an international view of things. So she was the right person, at the right place, at the right time.

This dean's interest in internationalizing the curriculum sprang from personal experiences. The faculty member related that the dean and her husband were world travelers, and that had sparked her interest in exposing the students to a larger view of the world.

The dean at the suburban community college had begun investigating internationalizing her curricula as a faculty member. Shortly before she assumed the position of dean, the president decided that the college needed to move toward more of an international focus. Because of his personal management style, many members of the college, both faculty and administrators, brought ideas to him for backing. This "open door" policy spawned many, although, fragmented international efforts. The suburban community college vice president that participated in this research project was the faculty member who moved into the position of dean of liberal arts and then to the vice presidency. She remembered that, "There was nobody holding it together. That's what the vice president took charge of and pulled it together . . . An assignment I had was to see what was out there and pull it together into a comprehensive program . . . As a dean, I got fascinated with it and started to see the potential there was in the international program to enrich other things that we did." Her strong belief that incorporating international themes into the college's curriculum enriched students' experiences lasted throughout her academic career. To assist her with carrying out the internationalization of the curriculum, she appointed a faculty member to head up the effort and created an office to spearhead the venture. In addition, the concept was broadened to be more inclusive by folding in international affairs into the college's effort to become more diverse.

The president at the rural community college shared the open door administrative style found at the suburban college during the development period for international programs. According to the coordinator, "If we [faculty or staff] got an idea relating to education, basically [we could] pop into [the vice president's] office or the president or both and say 'why don't you do this' and sum it up and make a decision in a span of an half hour." As she continued with the interview, she remarked how she misses that flexibility or quick responsiveness to ideas since a new president has been installed. The current president is much more formal in administrative style and prefers to maintain official channels of communication. The vice president reflected on this change of administrative style

> I think there has been an attempt lately at the school to make the [decision-making] process more formalized and not just as far as global awareness but all of activities. There may be a lot more red tape to go through, and of course any bureaucratic structure can do a good job of justifying policies and procedures. Obviously any organization this complex needs to have certain bureaucratic processes. I am afraid we are going into a direction of establishing such formalized structure we may not be able to make these decisions [as quickly as before].

The president at the urban college never became as involved in the international program decision-making as the other two presidents were. One faculty member reflected upon the president's involvement in internationalizing the curriculum, "the president was good but it wasn't her issue but she did give us the support to go on. She wasn't necessarily a cheerleader but that was alright."

As discussed earlier, the academic vice president of the suburban community college assumed the role of change agent for promoting various international program innovations. As change agent, she provided the bridge between EDIC and her college for advancing the innovation. The vice president at the rural community college was a

willing supporter of international program innovations. He spoke of an instructor who was very involved with EDIC and how he supported this instructor by releasing him from teaching for one course a year to coordinate international programs on the campus. The vice president was willing to leave curricular issues to faculty but took a direct role in developing trips for the college's students to ethnic neighborhoods in the Chicago area. His uncle, who was involved in immigrant services for another Midwest state, assisted with the arrangements. In this instance, he operated as a change agent for international programs but not for international curricular innovations. At the retirement of the faculty member, the vice president appointed a part-time faculty member to assume the responsibilities. When asked if she considered herself to be closely associated with EDIC, she answered that she was unsure. The other international program coordinators were in agreement that they were closely associated with the organization.

The vice president for academics at the urban community college was never closely associated with the international programming efforts. It was the dean of liberal arts who gave a faculty member the additional charge to develop "something international." From the data collected, other urban college faculty members do not have a relationship with EDIC. They have sporadically attended programs and have done a few joint presentations with the EDIC staff. One of this college's faculty members related, "I remember doing a presentation at another college with EDIC faculty. [Our college] has always enjoyed a relationship with MU on international relations. We feel like the little brother or sister that has been invited to come along and that feels neat." The only college representative for EDIC interorganizational affairs for the urban institution was the coordinator of international programs. Time and again during faculty

interviews references were made to when the coordinator brought back ideas from MU or the visits of University faculty.

College innovation adoption. The three community colleges constituting this case study adopted at least two of the three innovations, to varying degrees, promoted by EDIC. The suburban community college adopted all three innovations.

Innovation 1. The fall event innovation began as the product of informal relationships between MU faculty and several community colleges. The cooperative relationship produced events focused on international themes. Funding was successfully secured to formalize this assistance during 1989-1991. The funding supported cultural events and scholarly presentations on all EDIC campuses and allowed MU to supply curriculum consultation assistance and faculty development opportunities at the institutions. This innovation is considered by the EDIC staff to be the most successful since more than 75 percent of the member community colleges adopted it. The three colleges instituted various forms of the fall event innovation.

Grant funding specifically for bringing international speakers and cultural functions to its remote campus was received by the rural community college. The funding made it possible for the college to host traveling art exhibits from abroad and international dance and musical companies. MU faculty members continued to visit the campus to speak on various topics of international interest. After the funding ceased in 1991, the fall event evolved into lectures by either internationals from the student body or the community or by faculty members and students who had experienced one of the international exchange programs. Fall event migrated from a two-week affair with a

presentation each day to a series of presentations scheduled throughout the academic year. The vice president described the impetus for this scheduling change

> Initially . . . it took place over a two week period and you can't obviously arrange a time that is perfect for everybody where you have people coming and going; it is a commuter campus where people don't spend time . . . It is hard to schedule ten presentations for a two hour block within a two week period . . . It was always difficult in the sense of the logistics.

Originally, one of several goals for fall event was to serve as an outreach activity to acquaint high school students and community members with the rural community college and its services. Funding cutbacks at the local level resulted in school districts foregoing non-essential transport of students. This decision impacted the attendance during the two-week event. The shift to presentations throughout the year now allows the college's students, faculty and staff flexibility in their scheduling and community members still attend those sessions that are of interest. In addition, other international activities began during this period continue. The college heavily recruits international students and student trips to ethnic neighborhoods are organized. Plus, a community college association for international exchange programs grew out the rural community college's experiences with fall event and is located on the campus today.

The fall event innovation was adopted by the suburban community college and structured much the same as was the rural community college's two-week event. The differences were that there were several (two or three) presentations each day and the activities were compressed into a single week. The vice president eloquently described how and why fall event was brought to her community college

> The college reconstructed its vision; part of that vision was that we needed to have our students mindful of diversity. We were going into a global economy. Things were happening in the automobile industry that we couldn't figure out.

> We figured we had to get in. Everybody is not going to take a class so we had to target towards the large groups, students and faculty. That turned out to be our global awareness week, which we did once a year in the beginning [fall term]. All week long there were programs every day. Teachers had integrated the learning outcomes in the courses they taught. We had everything from GM talking about ISO, if you were in the technical area, you'd know about that, if you weren't, you wouldn't know. They [the students were] exposed to large and wide varieties of things that were happening the world. When we were able to have exchange faculty, we had people [that] could speak with knowledge and experience about progress. We learned what it was like not to be able to feed your children or a mother might choose upon birth to kill a child to protect the others because there was not enough. This blew the people apart and it got them to a place that this was not right or wrong, it was about resources and what people have to do to stay alive. Most times, our visitors from their observations, that Americans have so much and they take things for granted and don't appreciate what they have. I think many of our people came to hear this. [They] talked about things we have and take for granted. You could hear the difference. It was one of the biggest learning experiences. It is still going on.

The academic vice president and the faculty member tapped as the international program coordinator recently retired from the college. As the guard changed and financial pressures grew, the college has undertaken many changes. One was the scaling back of the fall event to three days in the fall semester and two days in the spring semester to evenly spread the expenses across the academic year. Speaker honoraria are modest or nonexistent but the college does compensate speakers for their travel; in addition, there are advertising fees associated with building community awareness of programming, additional custodial pay, supplies and minimal refreshments. Seemingly small expenses but part of a "tightening of the belt" move that includes faculty putting all handouts on-line so that copying costs can be better controlled.

During the same period that the college implemented fall event, it pursued other avenues for internationalization. For instance, the college aggressively developed sister college relationships within Africa and Mexico. Faculty and students sought yearlong academic exchanges between the institutions. The experiences of these participants were

folded into the fall event initiative. The vice president collected data on these exchanges and is currently developing an impact study for the funding agency that made grant monies available for the exchanges.

The genesis of fall event on the urban community college campus took a different route. A faculty member described what happened, "[The coordinator] and I came into [the college] at the same time, 1986, [we] became friends. We talked about developing an international program while running together. [The coordinator] invited [me] to join the group. [He] had a bunch of people from Midstate who would come over and lecture, on various topics and issues." Another faculty member more fully described these sessions, "When [the coordinator] was first forming an international studies committee, a faculty group got together to talk about maybe just having an international festival. We weren't even talking about curriculum at that time. I joined that group. We would have a program, just come hear what was being presented by either another faculty member or someone from Midstate University." From these informal "brown bag" presentations for students and staff, there later emerged an international awareness week of presentations and poster sessions that culminated in an international festival complete with food, music and dancing. The festival event continues today and tickets are sold. Most years, the event is sold out. Currently, the week of activities has been replaced by thematic events throughout the year that involve not only presentations but also cultural experiences (e.g., Dia de los Muertos celebrations of food, piñatas, music, dancing, and speakers; plus, Spanish lesson during the week's lunch hours). The events vary in length, sometimes a single day or others may continue for a week.

Innovation 2. The summer institutes innovation was funded through a federal grant awarded to EDIC for the academic years 1994-1996 to establish the program. The workshops offered on the MU campus were designed to assist faculty with developing focused international curricular modules and to offer on-going assistance to insure that the curriculum would be piloted in the following year. Grant monies provided full funding to support all EDIC member attendees and provided funding for workshop leaders. About one-half of the EDIC affiliated community colleges enrolled faculty in the summer institutes, leading the EDIC staff and advisors refer to the adoption of this innovation as being moderately successful.

Each of the community colleges studied sent faculty to the summer institutes developed by EDIC. The faculty member who served as the international program coordinator at the rural community college during those years, attended along with the academic vice president and two other faculty members. The coordinator developed several modules for the classes he taught and encouraged the faculty who attended the workshop with him to develop international modules. When the coordinator retired seven years ago, the inclusion of international modules in the curriculum ceased.

Of all EDIC member institutions, the suburban community college had the greatest number of attendees, nineteen, at the summer institutes. It can be speculated that the measurement of international efforts, which were folded into the tenure system, would encourage interest in the curriculum workshops. As a practice, the international program coordinator tracked the modules developed and which courses they supported. For faculty members unable to attend one of the summer institutes, she encouraged and worked directly with them to develop modules to support their curricula. She has been

absent from the college for nearly four years, yet the faculty members interviewed reported continued use of the modules.

Six faculty members, including the international program coordinator, from the urban community college attended one of the several EDIC summer institutes. The coordinator began teaching the college's cohort of faculty interested in internationalizing the curriculum how to develop modules for their classes. The faculty welcomed this assistance. One of the interviewees reported being pleased with the invitation to join the coordinator's group, "When [the coordinator] was developing the idea of curriculum modules, I thought that this was a great idea for the . . . curriculum here . . . I jumped on the bandwagon . . ." This innovation took root and exploded; today, a vibrant institute flourishes at the college. The institute trains faculty members from other colleges throughout the region in the development of international modules to support various curriculums (i.e., allied health, science, and mathematics).

Innovation 3. The visiting scholar innovation was piloted as a new direction for EDIC during Academic Year 2000-2001, to counter waning interest in the organization. In the MU administrative structure, EDIC was a part of the Center for International Directives (CID), its organizational activities were directed by the CID staff and funding was officially procured through CID. Some of the general grant monies were earmarked for postsecondary outreach. These funds were set aside to endow the Visiting Scholar Program. CID invited faculty members from EDIC affiliated colleges to spend five days on the MU campus to pursue areas of international curriculum interest. The scholarships covered all travel, room, board, consulting fees, and fees for special on-campus seminars and events. Restrictions associated with the use of the grant monies were maintained by

hosting the visiting scholars on the MU campus so that CID affiliated faculty might work closely with them. This innovation clearly falls into the category identified by EDIC staff as not being successful as only one EDIC community college member accepted the opportunity.

When asked about their interest in becoming a CID supported visiting scholar at Midstate University, the interviewees from the rural community college confused the program with a Fulbright initiative and later realized that they were not familiar with the opportunity. Several faculty members from the urban community college became interested in taking advantage of the program after they learned of it from the interviewer. The single participant, thus far, in the program was the international program coordinator from the suburban community college. She was delighted with the experience and felt that it was crucial in preparing her for a sabbatical in South Africa. She was able to sharpen her writing and research skills through the support provided by CID; she continues to publish papers that grew out of the experience. Upon her return from sabbatical to the suburban community college, her office was dissolved and its functions folded into the student services department. She chose to take early retirement as a result of the organizational restructuring. It is unclear to this author how the experience provided any benefit to her community college except by continued exposure of the institution to the EDIC/CID staff. The academic vice president from her college spoke of the innovation in terms of great individual rewards provided to the coordinator. As the coordinator left for her sabbatical, the vice president retired. They have maintained a social relationship and perhaps this is the focus of the vice president's personalization of benefits to the coordinator.

Validity of Propositions

During Phase 1 of this study, survey data shaped how Phase 2, interviews and site visits, of the case study was constructed. In Phase 1, survey responses were aggregated by scale and response clusters matched (Yin, 2003). The responses for all six scales clustered around similar values for the summer institute innovation (see Table 4), and not across all scales for the other two innovations, indicating that was a similarity of attribute perception for this innovation. Therefore, summer institutes or the inclusion of international curricular modules became the primary innovation investigated during Phase 2.

Analysis of interview data gathered at three sites during Phase 2 supported that the propositions originally developed to guide the research project were valid. In the following section each proposition is presented along with the findings that support it. Faculty interview data were coded in an effort to transform qualitative data into quantitative data for comparison with findings reported in the literature. The resulting quantitative data were used to test Proposition 1; qualitative data were used to confirm the remaining five propositions.

Proposition 1. The influence of innovation attribute perceptions on community college adoption decisions will mirror the findings in the literature supporting the theory.

To test support for Proposition 1, faculty members' ratings of their perceptions of the summer institutes innovation attributes were coded and used. As described earlier, Phase 1 survey data showed this innovation to have the most cohesive perceptions and faculty members at each case study site had the freedom to or not to adopt and implement this particular innovation. Other studies (Moore and Benbasat, 1991; Rogers, 1995;

Tornatzky and Klein, 1982) found when testing attribute perceptions against adoption decisions, compatibility and relative advantage were positively related while complexity was negatively related; how the remaining two attributes, trialability and observability, were perceived was less definitive.

This proposition, of the original six, has the least support in the case study findings. Interview data from the eight faculty members were coded and entered into the appropriate scales. The small number of subjects limited analysis to descriptive statistical functions (e.g., means, correlations, standard deviations). The original intent for this proposition was to compare quantitative data gathered during the case study to Moore and Benbasat (1991) results. The sampling errors for this data set were too great and the N too small to derive Kappa scores for measuring inter-rater reliability or Cronbach's Alpha reliability coefficients for gauging the internal consistency of the scales as Moore and Benbasat (1991) had when developing the original instrument.

When consulted, Table 8 presents several interesting observations. The standard deviations for scales 1, 4, 5, and 6 are within the same range, yet the variations of scales 2 and 3 are greater. Using the raw coded interview data, one can observe that for Scale 2: Compatibility, the faculty from the urban community college consistently answered that they felt the writing of international curricular modules was less compatible with the work of the college. For instance, less agreement is shown through the answer provided by an urban college faculty member, "[for me it was compatible] but I am not sure it was consistent through the college." Faculty members from the suburban community college indicated strong agreement that the development of the modules was very compatible with the work of their college as evidenced by a faculty member's reply, "the college has

Table 8

Faculty responses for Innovation 2: Summer Institutes by question and by scale with means and standard deviations[b].

	Scale 1: Relative advantage						Scale 2: Compatibility				Scale 3: Complexity					Scale 4: Observability/results;					Scale 5: Observability/ visibility			Scale 6: Trialability		
Case[a]	Q1	Q2	Q3	Q4	Q5	mean	Q6	Q7	Q8	mean	Q9	Q10	Q11	Q12	mean	Q13	Q14	Q15	Q16	mean	Q17	Q18	mean	Q19	Q20	mean
UCC/1	4	3	3	3	3	3.20	4	2	2	2.67	4	4	4	--	4.00	2	2	3	4	2.75	2	2	2.00	3	4	3.50
UCC/2	5	3	4	4	4	4.00	1	4	2	2.33	1	3	5	--	3.00	4	5	4	4	4.25	3	3	3.00	5	2	3.50
UCC/3	4	4	3	5	3	3.80	4	4	2	3.33	2	4	4	2	3.00	4	4	4	--	4.00	3	2	2.50	4	4	4.00
UCC/4	2	4	3	5	5	3.80	3	2	2	2.33	4	3	4	4	3.75	5	4	4	--	4.33	5	2	3.50	5	5	5.00
SCC/1	3	4	2	5	3	3.40	5	4	4	4.33	3	3	4	4	3.50	3	4	4	4	3.75	4	2	3.00	3	3	3.00
SCC/2	2	5	2	--	5	3.50	4	--	4	4.00	2	1	--	4	2.33	4	4	4	--	4.00	3	3	3.00	4	2	3.00
SCC/3	4	--	4	3	--	3.67	5	3	4	4.00	4	3	2	2	2.75	2	2	2	3	2.25	2	4	3.00	3	4	3.50
SCC/4	4	5	4	5	3	4.20	5	5	4	4.67	5	5	5	4	4.75	--	5	2	4	3.67	4	4	4.00	3	3	3.00

Scale 1		Scale 2		Scale 3		Scale 4		Scale 5		Scale 6	
mean:	3.70	mean:	3.46	mean:	3.39	mean:	3.63	mean:	3.00	mean:	3.56
sd:	0.97	sd:	1.20	sd:	1.15	sd:	0.99	sd:	0.91	sd:	0.96393292

[a]UCC = Urban Community College; SCC = Suburban Community College; a, b, c and d = individual faculty members

[b]Individual faculty member's responses grouped by Scale 2 means

a general education objective...that students that graduate are required to have a global and international awareness [therefore, inclusion of the modules are compatible with the work of the college]." Later in this section, exploring how the innovation was defined in Proposition 4 and investigating how, in Proposition 5, it was institutionalized at each institution could explain this differing of opinion between the faculty members from the two community colleges. Examining the raw data presented in Scale 3: Complexity indicates that two of the four suburban community college faculty members interviewed believed that the writing of an international curricular module was a complex task while the other two did not. One could speculate on the reasons for this inconsistent rating by faculty members from the same college working with the same international programs coordinator. One interpretation could be that the suburban coordinator was more effective in applying her interpersonal skills while assisting two faculty members in developing their curricular modules or perhaps those two faculty members more adept at developing curriculum. The answer is not clear from the data.

The Pearson Product Moment correlation calculations of questions (Appendix C) and of the scales (Appendix D) did not advance the interpretation of findings for Proposition 1. The number of subjects makes an explanation difficult to craft using correlations. When examining Table 9 reproduced as Appendix C, one finds that the reported correlation for 13 of the 180 question pairings was statistically significant ($p < .05$). However, the small N of respondents (8) requires an r of $> .70$ to achieve $p < .5$, and at that alpha level, one might expect to find 9 of the correlations to be significant due to chance.

There was evidence that one instrument scale, Four: Observability/Results (questions 13-16), functioned as developed by Moore and Benbasat (1991) even considering the small N of respondents. The four items comprising the scale are strongly intercorrelated (r's of .81, 180, .52, .37, .59 and .56) which suggest that the respondents rated the observable results of the international curriculum module innovation very similarly in the various aspects of those items. That is, the interviewees believed that they could accurately observe the results of the innovation and describe those results from different perspectives. The other scales did not demonstrate high internal consistency, as the items do not appear intercorrelated in meaningful ways.

By using the scale means reported in Table 8, this study did find that Scale 1: Relative Advantage was rated as very important to the adoption decision, as was the Relative Advantage factor reported in the Tornatzky and Klein (1982) meta-analysis. Tornatzky and Klien (1982) found Compatibility and Complexity to consistently influence the adoption decision although the quantitative data presented in this proposition are inconclusive in their support. A clearer understanding of the importance of compatibility and complexity to community colleges in the adoption decision-making process emerged through the interpretation of the qualitative data presented later in Propositions 4 and 5.

Proposition 2. The faculty member or administrator with the strongest link to EDIC will function as the change agent for promoting a EDIC innovation.

There is a lack of published research on the role of an interorganizational change agent. Without the guidance of other studies, it was assumed that the EDIC staff would be able to identify those institutional members that were most supportive of the EDIC

organization and therefore, could be assumed as change agents. The EDIC staff provided the names of four individuals: the coordinators of international programs at the urban and suburban community and the academic vice presidents of the suburban and rural community colleges. EDIC staff described how these persons had been supportive of forming the organization, its goals, all of its programs, and had participated in the development of the innovations under study. This assumption, that the EDIC staff could identify the change agent, was not supported by the data. This research found that how close an individual perceived his or her ties to EDIC determines the adoption decision for the international module innovation. This finding suggests that the individual makes a personal commitment to becoming the interorganizational change agent.

For instance, the coordinator and vice president at the suburban community college were closely associated with EDIC and their college's programming closely followed the innovations being promoted by EDIC. In fact, when probed about the college's relationship with EDIC, the vice president was amused reporting that

> . . . the concept we had was that we [would develop] some things. EDIC had resources to help us do that. It was interorganizational cooperation; . . . Sometimes we used them and sometimes they used us. There was a lot of exchanging. I think that all of it was they were doing it with us that made all of the difference in the world.

She continued with relating how MU staff and faculty often sought out the assistance of her college because it was a very early adopter of an international education initiative, sister-college partnerships. In the beginning, MU was embarking on an outreach effort to community colleges and wished to understand the differences between the academic programming needs of a community college and a research university seeking to internationalize their curricula. This early collaborative effort resulted in securing grant

funds to create EDIC. When the suburban college international program coordinator was asked if she considered herself to be closely associated with EDIC, she strongly agreed and added that she "considers it one of the most pivotal groups in internationalizing her college's curriculum." The vice president and coordinator's acknowledged perception of having strong bonds with EDIC identify them as change agents of the interorganizational relationship.

When contrasted with the experiences of the rural community college, a very different picture emerges. The practice of including international modules into the curriculum at this college was discontinued with the retirement of the faculty member serving as the international program coordinator. Yet the EDIC staff had labeled this community college's academic vice president as a committed member of the interorganizational relationship. Why had the innovation been discontinued at this college but the institutionalization of the innovation continued at the suburban college after the retirement of both the vice president and coordinator? It was assumed that at the rural community college there would be some vestige of international curricula modules since there was a EDIC staff identified change agent present in the organization. It was learned that during the period that EDIC was developing and promoting the curricular innovation of inclusion of international modules, the vice president was not particularly active in EDIC. At his college, only the retired coordinator functioned in the role of EDIC change agent.

In his interview, the vice president from the rural college reminisced about his introduction to EDIC: "The former president and [the retired coordinator] invited me to go with them to several programs on international education down in East Lansing." It

was these conferences that introduced him to the interorganizational relationship, EDIC. His keen interest and involvement came several years after the introduction of the innovation under study. He shared that he finds EDIC meetings beneficial for exploring new ideas and for the networking opportunities. His participation in EDIC is shaped by his perception of it as an organization from which one gains contacts with people and ideas and not for crafting products that can be transported back to one's campus.

When the coordinator for international programs at the rural college was asked about her affiliation with EDIC, she replied that she "do[es] not see a need to be affiliated with EDIC. They are a source of expertise to be tapped when need be." Her perception reflects that of her vice president. In addition, she explained that originally there were four or five faculty members who were loosely associated with EDIC and its globalization efforts but that now the faculty members' efforts are not really supported. This lack of support is reflected in the vice president's personal view of international education or experiences

> . . . there [is] an insularity that people feel, it is important not only to learn about Africa but to actually learn about Africa from an African when many people never get the chance to interact with an African or African/American living up here. It is surprising how many people really haven't traveled out of the district and that holds them back in terms of their career options. The students that have those experiences, their horizons and choices broaden. I see that as so crucial.

It became apparent at the close of these two interviews that neither the vice president nor the coordinator perceived of themselves as change agents for EDIC. Nor, are there organizational policies in place to encourage the continuance of the innovation. Therefore, it is not surprising that the innovation was discontinued in favor of arranging

international exchanges and the continuance of seminars throughout the year that originated out of fall event.

The EDIC staff labeled the international program coordinator at the urban community college as a strong supporter of the organization and an excellent informant candidate for this study. Therefore, it was assumed that the coordinator could be thought of as the EDIC change agent for his college. After consideration, it is apparent that his perception of his role with EDIC is weakening. This change in perception appears to be linked to his growing reputation as the leader of another regional interorganizational relationship promoting globalization of the curriculum. This organization was founded at his college and is rapidly garnering recognition and prestige in the Great Lakes area. The coordinator described his role in developing EDIC and promoting its early efforts. During the interview with him, it was obvious that he is distancing himself from EDIC. In explaining how he viewed the organization, he stated that in the past few years, "EDIC took a dive in effectiveness because some community colleges were not valued and not supported." Whether he was referring to his college or other colleges was not clear.

His distancing of himself from EDIC was further supported by the interviews with the urban community college faculty. One instructor was rather puzzled by questions concerning EDIC's relationship to developing international curriculum modules. She said the coordinator "interacted with the MU people" and followed up with explaining how their local global organization was responsible for training community college faculty to develop international curriculum modules. The four faculty members interviewed from the urban community college attributed the innovation to their coordinator and faculty rather than to EDIC.

This view contrasts sharply with the opinions held by faculty members at the suburban community college. These instructors recognized that the innovation originated with the MU affiliated group but lauded their coordinator for her assistance with implementing the project. They pointed out how she suggested that particular courses that they taught would benefit from the inclusion of international modules, and she followed up on particular interests of the faculty, suggesting how that might lead to a module. For instance, the geology instructor did his doctoral research on sub-Sahara soils and the coordinator suggested that he might want to tie this in with the study of American deserts.

The perception of one's affiliation with EDIC appears to determine whether that person is actually functioning as its change agent for each community college studied. The persisting strength of affiliation appears to have shaped how the innovation adoption continued at a college or whether it was discontinued. The perceived value of the EDIC interorganization relationship to each international program coordinator framed how he or she continued to promote the international module innovation on his or her campus. In addition, the case study findings indicate that there may be a linkage between perceived strength of EDIC affiliation at the time of innovation promotion and the continued adoption of an innovation.

Proposition 3. The change agent will use interpersonal communication channels to strengthen the attribute perceptions of relative advantage, compatibility, trialability, and observability while decreasing the perceptions of complexity for adoption of an innovation.

It is assumed that designing and writing a curricular module can be involved and difficult. Therefore, Johnson's (1993) point that interpersonal communication channels are more effective in transmitting information about highly complex innovations should play an important role in how the coordinators of international programs presented information to faculty members about the development of modules. The development of Proposition 3 grew out of the assumption that change agents would encourage module development in face-to-face interactions rather than utilizing mediated communication channels (e.g., distribution of EDIC developed outlines).

Although the coordinator of international programs from the rural community college is not a EDIC change agent, she is the change agent for other international programs and experiences. The college discontinued the implementation of the EDIC module development innovation, but other innovations such as the workshops originating from the fall event experience and international exchange study programs exist on the campus. The coordinator indicated that she used interpersonal channels to encourage faculty members to adopt the innovations that she currently promotes. For instance, she described how she interests faculty members in one innovation: "I sell the exchange programs to the faculty as a travel opportunity." Since most faculty members would have some travel experience, even if it was within the state, selling the chance to travel internationally increases the positive perceptions of relative advantage, compatibility, trialability, and observability innovation attributes while demystifying the complexity of the assignment.

The international program coordinator was described as selling the innovation by three of the four suburban community college instructors interviewed. One faculty

member related how the coordinator sold her on adopting the innovation: "[the coordinator] knew I was already doing the content in my learning community experience classes. She suggested I formalize it by writing a module and make it the organizer for the learning community experience." Thus, by making this suggestion, the coordinator was able to make the faculty member feel more positive about trying this innovation. The coordinator addressed relative advantage by suggesting that the module become the curriculum organizer for the course. The innovation attributes of trialability and observability were seen more positively since the coordinator assured the faculty member that she was already doing it, while a complex task was made simpler by pointing out the similarity to what was occurring currently in the course. Other faculty members echoed the use of this strategy by the coordinator. In addition to faculty, the academic vice president lauded the coordinator's adroit use of interpersonal communication channels. She observed that the coordinator had a "wonderful style of working with people. She could position or present ideas that caught the attention of the faculty and could get them actively engaged intellectually." The coordinator was more modest in her view; she saw herself as support person to the faculty.

A faculty member at the urban community college described how the international program coordinator utilized the interpersonal communication channels at the college: "[He] talked to everyone about his ideas. He worked hard to develop the program, personally organized international celebrations, he lobbied for the program, and he's a great promoter of the programs now." The coordinator was able to increase faculty members' positive perceptions of the innovation's attributes by creating a spirit of team effort. One faculty member alluded to the coordinator's heritage as shaping how he

approached working with the faculty. The coordinator is an émigré from a country known for its close family structures and collaborative working styles. Three of the interviewees explained that the coordinator had invited them to be "a member of his team"; in addition, it was said that "[the coordinator] got the faculty together almost like a family; we'd travel and present together. Lots of outside of the job relationships were formed. [He] makes our families feel included." Other descriptions of the coordinator's use of interpersonal communication channels included mentoring of faculty during the process of writing a module, general discussions with groups of faculty members about the process of writing a module, learning the results of the coordinator's own modules and being recruited by the coordinator to write a module. By using these communication strategies, the coordinator structured what Rogers (1995) referred to as prior conditions. The faculty at the urban community college had a strong commitment to including international modules into the curriculum; it became a norm of the social system. By manipulating these conditions, the persuasion stage (Rogers, 1995) of the adoption decision becomes easier to navigate. To become a member of the team, one has to include a module making it more compatible to the role of faculty and therefore, increasing its relative advantage. Having the ability to observe the process decreases complexity of the task and increases the sense of being able to try out the idea before committing.

It appears that the coordinators effectively utilized interpersonal communication channels to make an innovation more attractive for faculty adoption by heightening the positive attributes and decreasing the sense of complexity associated with the innovation. This tactic was observed at all three sites even though the rural college had discontinued

the innovation under study. The rural coordinator used interpersonal communication channels to increase the adoption rate one of the international program innovation that the college was now actively promoting.

Proposition 4. Individual change agents will define a EDIC innovation to serve differing purposes at each college studied.

Serving as a bridge between an organization promoting the innovation and the adopters is a role often attributed to change agents (Rogers, 1995). Change agents shape the innovation to best fit their organizations. As the interviews progressed at the three sites, this bridging role crystallized for the international program coordinators. All three coordinators spoke of receiving a mandate from the administration to begin an international program; the details or configuration of the effort were left to the coordinator. Each of the coordinators chose to define the innovation in differing manners.

At one site, the coordinator defined the innovation as not supporting the goals of her institution nor those goals held by her vice president. She chose to allow the innovation to die while promoting a different innovation, more in accord with the goals she perceived as important. The coordinator from the rural college did not perceive of herself as an EDIC change agent but adopted that role for a different interorganization relationship with a mission related to that of EDIC's. She defined her mandate as the bridging of the new organization's goals with those of her vice president. He believed that cultural immersion has a more profound impact on students than did international curricula infusion. It was to the coordinator's advantage to develop a perception of herself as the change agent for the new organization.

The coordinator explained that she had been a part-time faculty member and assumed some of the responsibilities of the role of international program coordinator as the former coordinator transitioned into retirement. As the newly designated coordinator fully assumed tasks of her role, she often accompanied the vice president to the meetings of a state community college association. With the lobbying of her vice president, the association took an active interest in providing international exchange opportunities for students and faculty. Since their college had been providing these experiences in a limited manner, it was a natural step for the association to ask the rural community college to coordinate the effort for the association. Each participating college provided an administrative fee to the rural college for coordinating the program. The outside funding for administration of the exchange program finally provided the vice president with an opportunity to make the international program coordinator position full-time. With the promise of continuous funding, the international programming goals held by the vice president could be folded into those of a larger, state organization and thereby, offer job security to the new coordinator.

For the coordinator, the adoption of the new organization's innovation was more compatible to her goals and to those of her vice president than was the EDIC innovation. As a way of explaining she said, "an international program cannot be successful without complete administration support. Faculty can't do it by themselves." She was clearly articulating her belief that the EDIC inclusion of international module innovation could not have the full support of her college's administration and therefore, it was futile to allocate resources to support its continued adoption at her college.

In sharp contrast was how the innovation was defined to advance the goals of the suburban community college. The academic vice president recalled that, "the college reconstructed its vision; part of that vision was that our students needed to be mindful of diversity." She continued with an observation that at the time, the Midwest was moving into a global economy but most students and community members did not know what that meant. The international program coordinator defined the development of international curriculum modules as a way to meet the vision. Two of the faculty members articulated this during their interviews. One instructor noted that the coordinator encouraged her to write a module that would introduce students to a more diverse view of the world but assured her that the inclusion of a module was not mandated. The second faculty member explained that the module was important because, "it was related to the mission of the college and served [the college's] community; fostered diversity." The college change agents for the suburban community chose to define the EDIC innovation as an embedded organizational goal with curricular implications whereas, the rural community college discontinued the EDIC innovation because it did not advance the beliefs and goals of the vice president.

A third variation of how the innovation was defined by a coordinator was found at the urban community college. He is deeply committed to internationalizing the curriculum through faculty development. During an interview with him, he stated "the international modules are a critical curricular innovation. Prior to their introduction faculty would show an occasional foreign film as an international curricular effort." Now science and mathematics faculties introduce their students to the life and customs of major theorists who are mostly from countries other than the United States. The allied

health curriculum has cultural care spiraled through each course and through each year while the softer fields of study (e.g., management) have writing assignments based upon international topics. Unlike his counterpart at the suburban community college, the urban coordinator does not rely only on encouraging individual faculty members to create an international curriculum module. Using the EDIC model as the structure for the regional institute housed on his campus, the coordinator schedules curriculum development workshops that are open not only to his college's faculty but also to other community college faculties. The institute has taken the EDIC innovation and made it the product of the institute. The faculty members serve as workshop leaders and mentors to other regional faculty, often developing long-lasting collegial relationships. Every faculty member interviewed had very positive experiences to relate concerning the module development workshops that were delivered by the institute.

The interviews showed how the three coordinators crafted very different definitions of the EDIC international curricular module innovation. The coordinator from the suburban college defined it as a useful tool for promoting the organization's mission. The coordinator from the rural community college defined it as not useful and did not promote its continued implementation because the vice president preferred cultural immersion to curricular initiatives. The coordinator from the urban college defined the innovation as a useful product for an institute devoted to faculty development.

Proposition 5. The way an organization institutionalizes an innovation will influence organizational communication structures and consequently impact productivity.

Johnson (1993) crafted a broad definition for organizational communication structure: "[It] refers to the relatively stable configuration of communication relationships

between entities within an organizational context" (p.11). Relationships are evidenced by the formal elements of an organization that control and coordinate how the work is processed, for instance an employee handbook or organizational chart, and the informal elements that reflect how information flows through the "pipelines" of an organization. Johnson (1993) pointed out that there is a great variety in how entities are defined: individuals, work units, and groups of work units. Furthermore, Johnson (1993) emphasized how organizational communication structures must change during the phases of innovation adoption and implementation. Structures utilizing informal communication will decrease resistance to the innovation and move the organization toward adoption but "implementation requires high formalization" (Johnson, 1993, p. 172). Without the organizational communication structural changes, productivity will not increase. An organization's culture (i.e., values, experiences, and necessities) provides the context in which the communication structures are developed and maintained. Consequently, the likelihood of adoption of an innovation is also dependent upon the degree of compatibility with the organization's culture.

Following the adoption decision, communication structures are developed or modified to promote the implementation and institutionalization of the innovation to meet organizational needs. Likewise, when the decision is not to adopt or to discontinue adoption, organizational communication structures reflect that choice. Confirmation of how communication structures support adoption decisions can be evaluated through the productivity of the innovation under study.

Following the adoption decision and implementation, the three community colleges institutionalized the international curricular module innovation quite differently.

Rogers (1995) described the adoption of an innovation as a continuous cycle: initial adoption decision, implementation, re-adoption decision, continued implementation or adaptation, and so forth. He sees the institutionalization of an innovation as the continuation of the adoption decision (Rogers, 1995). The curricular module innovation was abandoned, or according to Rogers (1995) a re-adoption decision was not made, in favor of a different innovation offering more individualized experiences following the retirement of the former international programs coordinator at the rural college. With time, international modules were no longer offered in courses and all vestiges of the innovation were gone from the institution.

Using Johnson's (1993) model for organizational communication structures, both informal and formal elements were utilized by one college for increasing its productivity. The innovation was used by the suburban college as one of several tools to expose students to the issues of a diverse world. The adoption of the innovation was facilitated through informal communication elements for instance, the coordinator's conversations with faculty members. The organization's formal elements were modified through the creation of an administrative office and adjustment of the tenure guidelines to increase the likelihood that the innovation would be institutionalized.

By relying solely upon an informal element in the organizational communication structure, dialogue between faculty members, the coordinator and faculty from the urban college were able to effect change to the formal elements of college's communication system plus develop a communication system unique to the faculty's definition of the innovation. The coordinator and faculty chose to use the module innovation as a means for developing a specialized certificate program for students and for enhancing faculty

development. The communication structures in each college developed in support of the chosen innovation definition and the productivity of the international programs continue to support the definition decision.

The importance of providing experiences for the naïve or parochial student, what he termed life-altering events, was the focus of the rural college's academic vice president interview. He provided numerous examples of individual students who were greatly impacted by their travels either abroad or to ethnic enclaves within the United States. For instance, he told the story of a student named Tanya and her experience during a trip to Chicago's ethnic neighborhoods

> [The schedule was comprised of ethnic representatives speaking about] the unique issues and problems associated with their culture. [The time] was interspersed with good ethnic food and in a couple of instances some cultural presentations as well. [The trip] was two and one-half days and the students had never been to a big city or gone into an ethnic neighborhood [before]. It was a very intense experience. These can be life-altering experiences. One student, who happened to be [from our college], she was terrified for the first two days. She always had to be with somebody. The last day of the trip we were in Chinatown and we were supposed to meet at a specific time. [Noticing she was not with the group, people began asking] where was Tanya. She wanted to go off by herself to window-shop and explore the neighborhood. For Tanya, there was a lot of growth in a very short period of time [on that trip]. Since that time, she has moved out of her shell and become a very poised and confident young woman.

In addition, he gave examples of community college presidents who had not given much importance to international programs at their institutions until they were given the opportunity to travel abroad. If organizational communication structures and productivity are shaped by the processes by which an innovation is, or is not, institutionalized, it is not surprising that the curricular module innovation withered at this college. It is through the office of the academic vice president that resources and

curricular innovations are directed. With the funding from the state community college organization supplying additional monies, the vice president's personal vision for cultural immersion could shape how these resources and programs are delivered. The international program coordinator confirmed the importance of the vice president's vision when she stated that international programming needed to "move beyond the curriculum" because classroom modules could not provide an intense experience. For her, it is important to strengthen the communication structures that support the cultural immersion innovation and assure it is productive. If a future re-adoption decision is made not to continue this innovation, her full-time position will be eliminated. She works hard at promoting faculty and student exchanges to all of the state's community colleges.

The academic vice president stated that she and president of the suburban community college, "wanted to pull together a[n international] program and measure its impacts." Therefore, they "created an office and administrative position to increase the visibility of international programming." In addition, this office was responsible for implementing operational plans that met the college's strategic goal of increasing its population's awareness of the diverse nature of the world. Introducing international modules was just one of several initiatives operationalized through the strategic planning process of the college. Others included faculty and student exchanges with sister colleges, learning communities developed around ethnic or racial themes, block classes integrating international perspectives and two or more disciplines, and so forth—all coordinated by the newly created administrative office. Also, the faculty tenure system was revised to reward instructors for utilizing one or more of the initiatives. During faculty interviews, the interviewer was made aware of an administrative policy to pay a

small honorarium to faculty who developed modules. At the conclusion of her interview, the vice president commented that her retirement and that of the international coordinator would not bring the internationalization of the curriculum to a halt. As an example, she reminisced

> Faculty said they wanted [global awareness week] twice a year . . . They recommended that the global awareness [committee] would do a program two days each semester. [The new format] may weaken the community consciousness but meanwhile the president now has a speaker series, other things going on that may not be [wholly] global awareness, they are doing other things. They are still happening. It is part of the normalization process.

Definitely, much of the visible shell of international programming at the college had changed but the core concepts were too firmly entrenched in the organizational communication structure, via the formal elements of planning and rewards, of the college to cease. Faculty interviews verified her appraisal. All four instructors interviewed mentioned missing the guidance of the coordinator now that her responsibilities had been subsumed into the student affairs office. There were many comments about the degree to which programs had changed but productivity of the innovation continued. Faculty members were still including the modules that they had developed into their classes and several continued to be heavily involved in other international initiatives.

The international module innovation is kept alive through adroit use of both formal and informal elements of the urban community college's organization communication structure by the international program coordinator and by the faculty. In addition, the coordinator and faculty have developed an analogous organizational communication structure. The coordinator and three of the four instructors interviewed related how supportive the original general education dean was of their efforts but that

the president and other officers of the college were indifferent. One faculty member noted that, "the administration does not consider international education as part of its core business." This faculty member went on to say

> The college administration was not supportive in many ways, for instance:
> - faculty had to be in the classroom, therefore release time to go present or attend meetings/conferences pertaining to developing international curriculum wasn't granted;
> - unless a presentation directed at students was directly related to an approved course objective, faculty couldn't release the students for attendance;
> - staff, such as librarians and counselors, could not attend because presentations were held during their normal "work day."
>
> The administration never formally recognized what the faculty was doing.

The faculty member's comments illustrate how the formal elements of the college's communication system imparted a message that adoption of this innovation would not further the work of the college as defined by the administration.

Perhaps out of a sense of rebelliousness, the faculty and coordinator created their own organizational communication structure, with both formal and informal elements, in support of the innovation. A faculty member gleefully described their efforts as a, "slight insurrection or battle of the college." The coordinator's structure began with the development of a "family" of interested faculty. Several faculty members mentioned how personal relationships have developed through the camaraderie of this experience. Since there was not administrative support or resources for a program such as the one developed at the suburban college, the urban coordinator utilized the informal elements of interpersonal communications with faculty members for implementation of the innovation. With the implementation of the innovation in classrooms, students began to show a strong interest in international courses but the coordinator and faculty realized that there was not a viable employment market for community college students with an

associate's degree in international studies. In addition, advanced international courses taken at a community college would not transfer to four-year institutions. The coordinator assured the interviewer, "[that] there's no way [local universities] will accept these courses."

The core-planning group determined that there was enough faculty interest in developing international modules for inclusion into basic course work for a student to be able to complete an international certificate. A faculty member verified this

> I thought we would be able to run classes. For instance College Writing I that all schools offer, we offer maybe fifty or more of those in the fall semester. I knew we could [insert an international module into] a handful of those classes, so I figured we would be able to utilize it without many problems. The only thing I . . . suspected would happen if we were to cost the school big bucks, [is that] we'd be stopped at that point. To modify classes [by adding an] international component, I thought it was up to [the faculty]. Again, the school didn't block our way.

It is at this juncture that the underground communication structure intersected the formal elements of the college's communication structure. Now there exists on the college's term schedule course sections that are marked as applying towards a certificate of international studies in addition to various associate degrees. For instance, students may select from any number of writing sections, some of which include international curricular modules which are identified with a "G" following the section number—students not pursuing the certificate may enroll in these sections also because all departmental agreed upon learning objectives are met in addition to the added international module.

A summary of the interview finding shows that the urban college has used its success to gather other community colleges throughout the Midwest to form an association that promotes the inclusion of international modules into the curriculum,

strong faculty development programs focused on international education and other initiatives. What started as an underground organizational communication structure at the urban college matured into a highly successful, autonomous regional faculty development institute. The institute is supported by grants from the United States Department of Education and through event attendance by other community colleges faculty members.

At the three community colleges, three unique structures developed for organizational communication to serve individual college needs and consequently, the productivity associated with the innovation was impacted. The rural college communicates the importance of personal experiences and the decision to re-adopt the module innovation is not made but a decision to adopt exchange programs for individual faculty members and students is made to better support the goals of the organization. The suburban college wishes to measure the impact of the innovation and integrates innovation outcomes into its organizational planning structure; the outcome products continue after the retirement of the key administrators. The urban community college has an administration that communicates a lack of interest in international education but has a faculty committed to the idea, resulting in a strong implementation of the innovation. Using its span of organizational control, the curriculum, the faculty has effectively institutionalized the innovation.

Proposition 6. Faculty and administrators will view the purposes of the innovations differently.

Building upon the findings of Meyer, Johnson, and Ethington (1997) that "innovation adopters and stakeholders may have contrasting views about specific

innovations" (p. 125), this proposition looked at how administrators, coordinators and faculty viewed the EDIC curricular module innovation. Following is a description of how members of each organizational level perceived the innovation for serving different organizational ends.

Many of the questions on the survey instrument that served as the interview protocol asked how an aspect of the innovation promoted the work of the college. Administrators readily acknowledged the connection between innovation and the college's work. For instance, the suburban vice president commented that, "it could enrich the students' college experiences." The international program coordinators' views were slightly different. They thought of the innovation as a way to fulfill the assignment given to them by administration and accepted, that therefore, the assignment was the work of the college. Every faculty member interviewed, however, had difficulty with the wording of the questions that a curricular innovation could be construed as the work of the college. A faculty member from the suburban college said, "I didn't think about the work of the college but about the students." This feeling that "the work of the college" belongs to the administrators and teaching belongs to faculty was echoed by an urban college faculty member, "at the time, I didn't relate it to the college."

As reported previously, chief academic officers focused upon international programming in general. Their remarks centered on the gains this type of program could produce for the college's goals. For instance, the vice president from the rural community college said, "I saw how [international programs] could enrich all curricular efforts." Echoing his thoughts was the vice-president from the suburban college. She believed that exposure to international topics sensitized students to important world

issues that could enhance their future careers. The vice president pointed out that local and most state employers were seeking employees with a broader understanding of what it meant to engage in international business.

Bridging the gap between administrative opinion of the innovations and faculty conceptions were the international program coordinators. Not a single coordinator linked the international module innovation to strategic goals of the college. Broader statements were made, such as "international programs build awareness." There was much discussion about the implementation phase—working with faculty and developing useful "products" for the students. The coordinators shared that they felt a separation from administration, or rather, a different direction. For instance, the coordinator from the urban college stated that the development of international modules is "faculty driven with some administrative support." It was as if the coordinators did their work with the benevolence of the administration. Each of the coordinators made a point of saying their work did not cost the college much. When questioned about the beginning of the international programming efforts, the descriptions provided by the coordinators of their charges from administration was *laissez faire* in nature: create an international program.

The faculty perceived of the adoption of the international curricular module innovation in a radically different manner than did the coordinators. Every faculty member interviewed viewed the effort as discipline related and not college related. Statements such as, "No, I wasn't overly concerned with [the college's work] at the time;" "I didn't think about the work of the college but about the students;" and "I don't give much thought to the college—it would make the administration happy if I thought that way more often" were made by the faculty members. Most faculty members

interviewed echoed the belief shared by an instructor at the urban community college: "This has been very different because the program came from bottom up and everything else is top down."

Rather than attributing the innovation to arising outside of the faculty ranks or even the college, it was viewed as a locally developed faculty tool to meet student needs, as evidenced by comments such as "it was important to provide developmental students with a 'quality' college experience," and "student focus is a personal mission." In addition, faculty saw the innovation as a means to advance departmental goals. At both community college sites where faculty members were interviewed, an institutional learning outcome promoting the study of the diverse world had been adopted. Half of the instructors interviewed mentioned that the modules became a way to meet this learning outcome. The disparity between acknowledging that the innovation was used to meet a college goal and the faculty's acceptance of the work of the college as the development of learning outcomes can be best summed up by the statement of an instructor at the suburban community college: "administration doesn't foster these [curricular] innovations."

In "doing" the work of the faculty, developing international modules, six of the eight instructors interviewed linked the innovation directly to the coordinators. None of the faculty members viewed the international program coordinators as a representative of the administration but as a faculty support person, as illustrated by a suburban faculty member stating, "I saw the project related to [her, the coordinator's] office not to the college."

This wide variation in how faculty, coordinators, and chief academic officers viewed the innovations supports the anecdotal findings of Meyer, Johnson, and Ethington (1997). They found, as did this research, that innovation perceptions vary according to the level of position within the organization.

Answering the Research Question: How Innovation Attribute Perceptions Influence Community College Adoption Of Programs Promoted By An External Agency

Clearly, for the community colleges studied, the most important innovation attribute influencing the adoption decision is Relative Advantage. In this aspect, this study conforms to the findings of other research reported in the literature. The importance of this attribute was verified even though this particular study investigated the attribute's influence on an organizational decision rather than an individual decision to adopt.

There were several ways the perception of relative advantage played a key role in a community college's decision to adopt a program promoted by the external agency, EDIC. For example, the vice president of the suburban community college who wanted the curriculum to be more inclusive of diversity issues saw the relative advantage of writing international modules as a vehicle to achieve her goal. The college institutionalized the innovation as one of several tools to meet the challenge of broadening their core curricular competencies. In promoting the innovation's adoption, the coordinator of international programs heightened the faculty's perception of its relative advantage to meet individual classroom goals and those of their departments.

Wishing to engage faculty in making the urban college's coursework more globally focused, the coordinator saw the relative advantage of promoting international module development. The faculty responded positively to being invited to join an

exclusive subset of faculty members devoted to the development and inclusion of modules. In fact, one faculty member called the early coalition, "the Mafia of the college." When the relative advantage of using modules to internationalize the curriculum is not valued, as was the case at the rural community college, modules that are developed will not be used and new efforts will not emerge.

Other attribute perceptions cited in the literature as being consistently important to the adoption decision are Compatibility and Complexity, but their influence on community college adoption decision-making is less clear. Compatibility does not stand alone in its influence in this study but appears to be linked to two additional factors: how the change agent defines the innovation and how members of the organization define the organization's work. The coordinator and vice president from the suburban community college defined the development of international modules as advancing the goals of the college while faculty acknowledged this as an end product of the modules but steadily maintained that their primary importance was to the classroom. Members from each organizational level defined the innovation differently and shaped that definition to be compatible with the work they do.

At the urban community college, the perception of Compatibility of module development with the work of the college was also an issue. The faculty members interviewed about the development of the modules saw them as advancing their work as instructors but did not see the modules as linked to the overall work of the college. It is at this college that module development has spun a parallel organizational communication structure outside of the college's communication structure through the independent institute promoting international curriculum. Module development is

defined as the work of a subset of the faculty and not related to the work of the larger body of faculty or to the administration's work.

Clearly, the coordinator mitigated the perception of Complexity for faculty members at the urban community college by leading workshops detailing the process of curricula module development. During the workshops, the coordinator encouraged collaboration between attendees. Each faculty member interviewed related his or her successful development of modules to the group support offered in a workshop format. In this manner, the coordinator deftly shared the burden of lessening Complexity of the innovation by encouraging the attendees to work together on developing modules under his guidance. It was a different situation for faculty members from the suburban college who found the task of module development somewhat complex. They received one-on-one encouragement and advice from the coordinator but completed their task on their own.

Whether in a workshop setting or one-on-one dialogue, both coordinators used the interpersonal communication strategy of selling. The coordinators broke down resistance to module writing by simplifying the task and highlighted its features to promote the implementation of the innovation, thereby increasing the innovation's Relative Advantage and Compatibility while decreasing Complexity. On the urban campus there was an added dimension, not only did the coordinator sell the development of modules but he also promoted membership in a faculty subgroup dedicated to the globalization of the curriculum. Through this exclusive membership, he increased faculty members' perception of Relative Advantage plus the innovation attribute perception of Image, or prestige, identified by Moore and Benbasat (1991) but not included in this study of

innovation attributes. When an urban faculty member accepted the responsibility for offering international modules in their course, members of the faculty subgroup, who were seasoned in module development, worked closely with the new member as did the coordinator. The fostering of this collegial relationship was by far the most effective interpersonal communication strategy used by the coordinators. Through membership in this faculty subgroup, intense personal relationships developed that crossed academic disciplines. These relationships took on dynamics that could be characterized as family.

The final factor in answering the research question, "How do innovation attribute perceptions influence community college adoption of programs promoted by an external agency?," is the perception held by the college's interorganizational agency representative of his or her relation to the agency. How this perception changes over time impacts the adoption of the innovation and the continued adoption decision over time. The original three coordinators felt a close connection with the agency when the innovation was first promoted. The coordinators' close tie with the agency appeared to influence the attribute perceptions held by others within the college as adoption decisions were made. Each college adopted the development of international curriculum modules and the innovation continued for several years as it was originally promoted by the agency. Over time, there has been little change in the innovation at the suburban community college. The agency representatives from that college have maintained strong ties to EDIC even after their departure from their institution and sustained the belief that the innovation helped their college achieve crucial aspects of its mission and goals. This is in contrast to the rural college where the original EDIC representative retired and the new coordinator did not build a strong relation with EDIC. She did not value the

innovation as helpful in meeting her college responsibilities. As a result, the innovation was discontinued. The urban coordinator's EDIC tie grew weaker as his new organization gained strength. The innovation continued unchanged on the urban campus but the acknowledgement of EDIC's role in its development was lost. The development of international curriculum modules were no longer an EDIC innovation but became an institute innovation.

Chapter 5: Research Overview

This study answered the research question: Do innovation attribute perceptions influence community college adoption of programs promoted by an external agency? It also advances the understanding of how these perceptions influence an organization's decision-making process. In particular, this research explored how an educational institution weighs various novel curricular programs for institutionalization to meet organizational goals. The resulting findings offer a new understanding of postsecondary organizational behavior.

Research Synopsis

The internal and external forces pressing two- and four-colleges for organizational responses to economic, political, leadership and curricular issues have been well-chronicled (American Council on Education, 1999; Cohen & Brawer, 1996; Peterson and Dill, 1997; Stark and Lattuca, 1995; Sullivan and Siggins, 1993). These forces for change necessitate that institutions operate in an environment that is continuously shifting. Often, the chosen response to these calls for change is the adoption of an innovation that is either generated internally or one that is promoted by an agency external to the college (Doucette, 1998; Gardner & Livingston, 1996; Howitz and Redman, 1992).

Predominately, innovation attributes research focused on the individual decision to adopt an innovation. This research explored how the organizational perception of the characteristics, or attributes, of an innovation influenced an institutional decision to adopt. In particular, the innovations under study were ones promoted by an external agency. A group of two- and four-year colleges formed an interorganizational agency,

Educators Dedicated to Internationalizing Curricula (EDIC), to promote the common goal of internationalizing their curricula. Case study methodology was employed to investigate how attribute perceptions of the agency's three promoted curricular innovations influenced adoption decision-making at three community colleges. As the case study moved from Phase 1, the survey stage, into Phase 2, interviews, the focus narrowed to investigating one of the innovations: Summer Institutes, the development of international curricular modules.

As the literature points out (Rogers, 1995; Tornatzky and Klein, 1982), organizational decision-making during the innovation adoption process is an under-explored area of research as is the role played by innovation attribute perceptions in the decision process. Cached within this field of research is little about what prompts postsecondary institutions to adopt an innovation to promote organization change (Rogers, 1995). The impact of innovation attributes have long been studied (Rogers, 1995) without definitive success. It was Ostlund (1974) who ultimately determined that the major importance of innovation attributes is the perceptions held by decision-makers about the attributes. Two additional landmark studies concerning the importance of innovation attributes were the meta-analysis of the seventy-five known research projects done by Tornatzky and Klein (1982) and the work by Moore and Benbasat (1991) to develop an instrument which measured the influence of the perceptions on the adoption decision.

The case study was guided by six propositions developed from previous studies reported in the literature. In addition, the project recognized the importance that various organizational levels within a college might have on the decision to adopt a particular

innovation. Therefore, three organizational levels: academic vice presidents, coordinators of international programs and faculty, were embedded into the multiple case study.

Analysis of Findings

The case findings were analyzed and reported out by proposition. The propositions were then used to derive an answer to the research question.

Proposition 1, the influence of innovation attribute perceptions on community college adoption decisions will mirror the findings in the literature supporting the theory, was partially confirmed. As with other researchers' findings (Dearing, et al., 1994; Meyer, et al., 1997; Tornatzky & Klein, 1982), the perception of an innovation's Relative Advantage was most important in forming a community college's adoption decision. Several examples of the importance of this perception surfaced during the interviews. For instance, vice presidents viewed the introduction of various innovations as efficient processes for advancing organizational goals and coordinators of international programs stressed the relative advantage of a particular innovation when promoting its adoption to the faculty. In the instance when the perception of relative advantage of an innovation weakened, the adoption of that innovation was discontinued by the rural community college.

Many other studies (Cockerill et al., 1999; Dearing, 1997; Dearing and Meyer, 1994; Grilli and Lomas, 1994; Johnson et al., 1998; Meyer, et al., 1997; Moore and Benbasat, 1991; Ostlund, 1974; Robbins, 1992; Rogers, 1995; Tornatzky and Klein, 1982) have consistently found that the perception of Compatibility of the innovation is positively linked to adoption of an innovation whereas, the perception of Complexity of

the innovation is negatively associated. Meaning that the more *like* an innovation is to a college's practices or programs the more favorably the innovation is viewed and contrary, an innovation is not viewed favorably by a college if it seems to be complicated to implement or understand. In this case study, the influence of these two attributes was less clear. It appears that one's organizational level structures how these attributes are perceived. Therefore, how compatible an innovation was to the work of the college was defined by the role of the respondent's within the institution; and how they defined the work of the college. Administrators viewed innovations as compatible with the mission and goals of a college (institutional vantagepoint) whereas, faculty did not acknowledge a link to the institution per se but to their individual or departmental needs (more local vantagepoint). Complexity appeared to have little influence on the adoption of an innovation. The strength of Relative Advantage and how Compatibility is defined appeared to outweigh any influence of Complexity.

Proposition 2, the faculty member or administrator with the strongest link to EDIC will function as the change agent for promoting a EDIC innovation, was not confirmed. Early on, it was important to establish who functioned as the link between the EDIC and the community college as an intermediary change agent. EDIC staff identified several college representatives who were thought to be supportive of the organization, its goals and programs. The assumption that these individuals carried out a campus change agent role related to the promotion of the innovation was not supported by the data. What emerged from the data was that the perceived value of the EDIC interorganization relationship to each international program coordinator rather than the ties that coordinator

maintained with EDIC framed how the individual continued to promote the international module innovation on his or her campus.

Proposition 3, the change agent will use interpersonal communication channels to strengthen the attribute perceptions of relative advantage, compatibility, trialability, and observability while decreasing the perceptions of complexity to increase the likelihood of innovation adoption, was confirmed. This proposition explored the assumption that international program coordinators would encourage module development through interpersonal communication channels rather than utilizing mediated communication channels such as, working one-on-one with faculty members as they developed modules rather than distributing module development guides. Indeed, the coordinators effectively used interpersonal communication techniques such as one-on-one persuasion to make innovation adoption more attractive for faculty by heightening the positive attributes and decreasing the sense of complexity. This tactic was observed at all three sites even though the rural college was promoting an innovation other than the one under study.

Proposition 4, individual change agents will define an EDIC innovation to serve differing purposes at each college studied, was confirmed. Using Rogers' (1995) idea that the change agent is the bridge between the organization promoting the innovation and the adopters, this study looked at how the change agent shaped the innovation to fit with his or her organization. The three coordinators crafted very different definitions of the EDIC international curricular module based upon how they believed their commission for carrying international programming would be best served. One coordinator defined it as a useful tool for promoting the organization's mission, which supported her vice president's strategic initiatives with creating changes within the

college's rewards systems to reinforce efforts to internationalize the curriculum. Another defined it as not useful since her college focused upon cultural immersion programs for students and faculty therefore, she did not promote continued implementation of the innovation. The third coordinator defined the innovation as a useful product for an institute devoted to faculty development housed at his college but not part of the college's organizational structure.

Proposition 5, the way an organization institutionalizes an innovation will influence organizational communication structures and consequently impact productivity, was confirmed. As predicted by Johnson (1993), this study found that the adoption of an innovation is dependent upon the degree of compatibility with the organization's culture as evidenced by the alignment of organizational communication structures to support productivity associated with the decision. The three community colleges comprising this study modified their organizational communication structures to support the innovation adoption decision made that best served the institution's needs. One communicated the importance of personal experiences and the innovation died in favor of exchange programs for individual faculty members and students. A second college wished to measure the impact of the innovation and integrated outcomes into its planning structure; the outcome products continued after the departure of the EDIC change agents. The third college had a faculty committed to international education but an administration that lacked strong interest. To counter this, the faculty institutionalized the innovation solely through the curriculum and created strong external communication structures to insure the continued promotion of the international curricular module innovation to other community colleges.

Proposition 6, faculty and administrators will view the purposes of the innovations differently, was confirmed. To probe for verification of the anecdotal findings that members of various organizational levels view innovations differently found in the Meyer, Johnson, and Ethington (1997) research, this study looked at how administrators, coordinators and faculty viewed the EDIC curricular module innovation. The case study findings confirmed that members of each organization level perceived the innovation serving different organizational ends. Academic vice presidents readily acknowledged the connection between innovation and the work of the college, most often linking it to their institution's mission statement. The international program coordinators' views were of a bridging nature; they thought of the innovation as a way to fulfill the assignment given to them by administration and therefore, that made it the work of the college. Faculty members balked at considering a curricular innovation as the work of the college. They saw the inclusion of international modules into their course curricula as fulfilling a student, departmental or personal need.

In answer to the research question, how do innovation attribute perceptions influence community college adoption of programs promoted by an external agency, Relative Advantage is the most compelling. The influence of the other attributes on community college organizational decisions is less clear. The function of the remaining attributes is dependent upon how the change agent defines the innovation, how members of the organization define the organization's work, the way in which interpersonal communication strategies are used, and the change agent's perception of his or her tie to the interorganizational relationship.

Implications

With a better understanding of the adoption decision-making process used by community colleges, common principles can guide change agencies and agents in promoting innovations to community colleges. These principles can be used to identify the best way to position an innovation for widespread adoption and to lead decision makers to agreement, across the board, on an innovation. The foremost principle is the singular importance of the innovation attribute perception of Relative Advantage to an organization's adoption decision while the other four innovation attributes, compatibility, complexity, observability and trialability have little influence. Closely related to the importance of Relative Advantage is the dichotomy of innovation definitions assigned by the organization's leaders as compared to members at other levels within the organization and the risk for an organization when it does not plan for the succession of the innovation. Other principles relate to the role of the interorganizational relationship agency with potential adopting institutions; for instance, how are intermediaries between organizations selected and how are innovations promoted.

Agencies and agents promoting change need to be cognizant that each level within the organization considering an innovation shapes its own perception of relative advantage. Top-level leaders see relative advantage as synonymous with advancing the mission and goals of the institution. When considering an innovation, leaders exhibited a laser-like focus on advancing their organizations, and the decision-making strategies that they employ resemble the use of a sieve for filtering those innovations that provided greatest relative advantage to the organization. Members of other levels within the organization consider the perception of relative advantage in terms of personal or job related goals rather than furtherance of the organization, as for example, does an

innovation advance the job assigned or enhance a faculty members' classroom performance.

Congruence between innovation and the mission of the institution is of utmost importance. It is the mission of most community colleges to be responsive to stakeholder demands -- predominately, those arising from workforce partnerships with employers and local governments. Should a land grant university, as part of its outreach mission, wish to promote an innovation to area community colleges, it is suggested that the staff not use the more traditional academic terms to describe an innovation. For instance, entitling a program "Linking International Curriculum to Today's Issues" would convey that the innovation is more congruent with the mission of community colleges and the goals of its faculty as compared to a title such as "Scholars in Residence." Aligning the promotional language of the innovation to enhance the perception of relative advantage for both college administrators and faculty will increase the likelihood of adoption.

In the program title example cited, "Linking International Curriculum to Today's Issues," administrators would immediately identify the experience as a means for promoting the organization's mission of globalization, and faculty interest would be piqued by such a title as an experience to assist with attaining departmental goals in support of the college's mission or to further their students' needs. The experience being offered by the outreach unit of the university would not change, it would remain an immersion experience for individual faculty members. It is important for change agencies and agents to keep in mind that members of community colleges cannot relate to an innovation that on the surface is not closely related to their institution's core business. It is innovation congruence with the community college mission that explains why

cultural experiences offered by change agencies are far more readily adopted by community colleges. Community colleges understand that gaining a cultural understanding of various regions and countries of the world are important skills for a future automotive employee who might be sent to Mexico to train local workers in new auto paint processes. In addition, community college administrators understand that the open-to-public forums of cultural events can provide small business owners, who are one of many community college stakeholders, an opportunity to engage visitors from Asia in conversation about environmental issues related to manufacturing in their home lands.

Innovation congruence with mission is crucial to the adoption decision and therefore, how an interorganizational relationship agency goes about promoting an innovation to its member organizations gains importance. Exposure to an innovation through mass communiqués is not an effective channel of communication. College administrators and faculty need to determine the relative advantage of an innovation for either their college or for their personal benefit before making the adoption decision. Novel and complex innovations benefit from promotion by interpersonal communication strategies rather than by mediated communication strategies. To decrease the perception of complexity while increasing the perceptions of relative advantage and compatibility, a change agency should use promotion strategies based on interpersonal communication. Strategies such as inviting key members to small discussion groups to design an innovation's implementation strategy, personally calling faculty members who have attended previous agency events to invite them to take part in the new experience, and sponsoring visits by agency staff members and community college representatives to the other campuses should prove to be effective approaches for promoting an innovation.

Change agencies and agents would find greater adoption of proposed innovations by utilizing the principles of personalized selling rather than relying on letters of invitation.

Maintaining clarity of institutional mission is crucial. A community college achieves this mission clarity through alignment of its organizational communication structures to include any innovations that provide support for its institutional productivity. The adoption of an innovation by an organization is dependent upon the degree of relative advantage to the institution, and to assure that the innovation continues to provide relative advantage or enhancement of institutional productivity, the innovation must move from being transmitted through interpersonal communication channels into the formal organizational communication structure. If this does not happen, it poses a risk for the continuance of the innovation or in a more extreme case, for the organization. For example, adopted innovations can be discontinued when key personnel leave the organization or key administrators redefine the relative advantage of the innovation to the institution. When this occurs, the innovation is either not integrated into the formal organizational communication structure or it is no longer supported by the communication structures in place. Inadvertently, an organization can allow an innovation to develop at the fringes, and it becomes very successful but is never integrated into the formal communication structure of the college because the administration does not perceive its relative advantage. The innovation can achieve regional recognition, which leads to the innovation and the college becoming synonymous to the public. Should key personnel associated with the innovation leave the college without the development of a succession plan for the innovation, the innovation will likely die. At the demise of the innovation, the organization will find that its

reputation acquired through the successful innovation will gradually diminish and its stakeholders will be disgruntled. The organization can forestall these events by taking steps to bring the innovation into the formal organizational communication structures. Taking this action would help assure the succession of an innovative program.

For those community colleges wishing to adopt an innovation that will carry out portions of their institutional mission, it is suggested that they integrate monitoring systems into their operational plans and modify the organizational reward structures for those faculty or staff members who adopt the innovation. This action will assure that the organizational communication structures develop in such a way to promote greater productivity in achieving the institutional mission. By manipulating how the innovation's attributes are perceived, more consistent adoption throughout the college will occur.

It is important that members of community college faculties and administrations understand that each will view the purposes of innovations differently. This is not unusual, but it needs to be appreciated. Without understanding, there is an assumption that one group or the other does not value a particular innovation, which can result in the distortion of organizational communication structures, and consequently, productivity of the innovation is impacted.

Interorganizational relationship agencies cannot assume that representatives from member organizations function as agency change agents. The person serving in this role frames how he or she promotes an innovation at their college based on the perception of relative advantage provided to him or her by the interorganization relationship. The closer a representative perceives their ties to the agency, the greater their support will be

of an agency-promoted innovation; conversely, if a representative believes that the agency provides them with little relative advantage, they will be less likely to promote the innovation. By comparison, a change agent promotes the agency's innovation as it is framed. In the instance of institutional representatives to an interorganizational relationship agency, they serve both as an agent of the agency and an agent of his or her college. This role duality plus the perceived relative advantage of the agency, held by each representative, molds what the representative will promote as an innovation. This constitutes a subtle yet powerful distinction in roles.

Agencies that are formed through interorganizational relationships would do well to identify surrogate change agents early on and work closely with those so identified. The agency could then assist these agents to better understand how innovations can be communicated in ways that promote its relative advantage and decrease complexity while enhancing perceived compatibility with the institutions they serve. Sessions focused upon using personal selling techniques as a method of promoting innovations would be a beneficial interpersonal communication skills set for change agents to acquire. In addition, it would be advantageous for an agency to break more complex innovations into stepped processes for an organization to try before committing to full adoption. Trying small pieces of an innovation and being successful decreases the fear of utilizing organizational resources on a large, complex innovation that could be a failure. Assembling case studies of the innovation at work in various institutions could spark more interest in trying it. Gaining this understanding of how innovation attributes are perceived and used in organizational decision-making can lead agencies and identified agents to craft more suitable proposals, which are more likely to be adopted.

In summary, innovations must meet the test of relative advantage to an institutional mission. The promoting agency should strive to make the innovation congruent with the needs and goals of community colleges, which are designed to meet the changing expectations of a wide variety of institutional stakeholders. In addition, agencies need to clearly plan for reaching and training those who will serve as implementers of change in their colleges. Agencies need to promote curricula as other products (i.e., bread or cars) are, through the heightening of relative advantage to the adoption decision-makers and not through the use of rhetoric. Finally, community colleges need to pay particular attention to their organizational communication structures: Are they supporting the innovations that promote the institution's mission?

Limitations

As the case study progressed, several limitations surfaced. The timing of the study was less than optimal for several reasons. Typically, full-time faculty members at the three community college sites have a teaching load of 10 courses per academic year. Their availability for completing survey instruments or participating in interviews was limited. Surveys arrived as the spring term was ending and the second instrument distribution was during the first weeks of fall term; timing contributed to lower than expected return rates. The time period for interviews was fragmented; the first phase was mid-fall semester and the second was mid-spring semester. With interviews falling across an academic year, creation of the data base was stalled until all interviews were completed. There was a full calendar year between collection of the quantitative and qualitative data.

Upon reflection, it would have been more appropriate to conduct a longitudinal study with data collection points every few years rather than this retrospective study spanning a thirteen-year period. This time-span had implications for collecting data from many subjects, several key administrators and an international program coordinator. Efforts were made to contact faculty members who left for other institutions or for retirement. Tracking these subjects became difficult when home addresses were no longer current or a faculty member had moved between several colleges. Two presidents and vice presidents retired during the study's time-period. Only one of the retirees, the suburban academic vice president, was available for interviewing. One of the retired international program coordinators was interviewed; the other had returned to his country of origin. A narrower time-span for innovation adoption in future studies is advisable. In addition, it was impractical to conduct an in-depth study of the adoption of the first innovation, Fall Event. It was so institutionalized after thirteen years that subjects found it difficult to discern current perceptions from original ones.

As this study began, the political climate shifted. The state experienced budget shortfalls and state-aid to community colleges was decreased. As a result, many community college faculty, staff and administrative members were laid-off or terminated. There was some hostility from subjects when discussing the work of the college and there was a lack of interest in participating in a study about institutions that no longer employed the subject.

As a caveat to other investigators, it is critical to be mindful of the environmental and prior conditions (Rogers, 1995) when designing an organizational study. Much of

the success of the study will be dependent upon the researcher's understanding of these factors.

Need for Further Research

This study has surfaced several intriguing questions for future research. Foremost are questions about change agents. In general, change agents and the role that they play in organizational innovation adoption decisions is understudied, particularly, in interorganizational relationships. How are change agents identified by these types of agencies and what roles are assigned? Is there a linkage between perceived strength of agency affiliation at the time the innovation is being developed and promoted and with the continued adoption of an innovation by the agent's organization? Developing a case-study around the change agent as a new innovation is promoted would provide an informative overview of how the agent was identified and the perception of the agency held by this individual.

This case study used the five most common perceptions of innovation attributes (Howze and Redman, 1992; Johnson, 1993; Lindquist, 1979; Moore and Benbasat, 1991; Ostlund, 1974; Rogers, 1995; Svenkerud et al., 1998; Tornatzky and Klein, 1982): relative advantage, compatibility, complexity, visibility, and trialability as independent variables. Other researchers, most notably, Dearing and Meyer (1994) have found other attribute perceptions that influence the adoption decision. Are there additional characteristics to be discovered that may have importance to community colleges in their adoption decisions? This needs further investigation. Utilizing the case study methodology employed by Dearing and Meyer (1994) with an innovation being promoted to community colleges should help identify additional attributes if they exist.

The individual's adoption decision process is well studied and understood (Rogers, 1995). But are the same factors in play in an organization's decision-making? This study found that one's level within the organization shapes how the innovation is defined and the purposes it serves. Is it possible, or practical, to have a uniform definition and expectation of an innovation throughout the organization? Following an innovation as it is introduced in the organization may be a way to better understand the importance played by level within the organization. It would be interesting to design a quasi-experimental study that tracked two community colleges adopting the same innovation; one college's change agent, administrators, and faculty are schooled in a uniform definition of the innovation and the other not.

Innovation adoption decision-making in both interorganizational relationships and in community colleges is little understood. There are many fruitful areas for research that could build a body of literature that would lead to a greater understanding of this process and theoretically could improve the productivity of these organizations.

Appendix A

Perceptions of Three [expunged] Programs

PERCEPTIONS OF THREE [expunged] PROGRAMS

The following survey asks you to think back to when you and others in your community college were making decisions to either adopt or not adopt programs promoted by the [expunged]. Each of the three programs will be described and following each description will be several questions pertaining to how you remember perceiving the program as the college considered implementing it.

O FALL EVENT O

During academic years 1989/1990 and 1990/1991, grant funding was made available for community colleges to form a coalition to further international curricular development by establishing *Fall Event* at [expunged] member colleges. Funds were available to bring cultural events and scholarly presentations to member campuses, supply consultation assistance, and to provide curriculum development assistance to faculty.

o I did not participate in considering whether to implement the *Fall Event* program at our campus. If this is true, please skip to the next section, **SUMMER INSTITUTES, page 2.**

As you remember considering the decision in 1989-1991, whether to implement* Fall Event, *please mark the extent to which you agree or disagree with how you recall believing the program would impact the college:	*Strongly Disagree*	*Disagree*	*Unsure*	*Agree*	*Strongly Agree*
1. Learning to arrange a Fall Event will be easy for the college.	O	O	O	O	O
2. I believe I could communicate to others the consequences of starting a Fall Event.	O	O	O	O	O
3. Starting a Fall Event fits into the college's work style.	O	O	O	O	O
4. In my college, one will see Fall Event project outcomes in many classrooms.	O	O	O	O	O
5. *The Fall Event will not be very visible in my college*	O	O	O	O	O
6. I think that starting a Fall Event fits well with the way the college likes to work.	O	O	O	O	O
7. Overall, I believe that a Fall Event is easy to utilize.	O	O	O	O	O
8. Starting a Fall Event will enable the college to accomplish its curricular tasks more quickly.	O	O	O	O	O
9. Starting a Fall Event will improve the quality of work the college does.	O	O	O	O	O
10. Before deciding whether to start a Fall Event, the college will be able to properly try it out.	O	O	O	O	O

11. Starting a Fall Event will make it easier to do the work of the college.	O	O	O	O	O
12. *Starting a Fall Event will give the college greater control over its work.*	O	O	O	O	O
13. I would have difficulty explaining why starting a Fall Event may or may not be beneficial.	O	O	O	O	O
14. I would have no difficulty telling other about the results of starting a Fall Event.	O	O	O	O	O
15. The college will be permitted to start a Fall Event on a trial basis long enough to see what it can do.	O	O	O	O	O
16. Starting a Fall Event will enhance the effectiveness of the college's work.	O	O	O	O	O
17. I believe that it is easy to get a Fall Event to do what the college wants it to do.	O	O	O	O	O
18. Starting a Fall Event is compatible with all aspects of the college's work.	O	O	O	O	O
19. The results of starting a Fall Event are apparent to me.	O	O	O	O	O
20. The college's connection with a Fall Event is clear and understandable.	O	O	O	O	O

SUMMER INSTITUTES

During the academic years 1994 -1996, [expunged] offered Summer Institutes. The eight-day curriculum workshops were designed to assist faculty with developing focused international curriculum and to offer on-going assistance to insure that the curriculum would be piloted in the following year.

o I did not participate in considering whether our campus should take part in the *Summer Institutes* program. If this is true, please skip to the next section, **VISITING SCHOLAR, page 4.**

As you remember considering the decision 1994-1996, whether the college should participate in* Summer Institutes, *please mark the extent to which you agree or disagree with how you recall believing the program would impact the college:	*Strongly Disagree*	*Disagree*	*Unsure*	*Agree*	*Strongly Agree*
21. I believe I could communicate to others the consequences of participating in the Summer Institute programs.	O	O	O	O	O
22. Participating in the Summer Institute programs fits well with the way the college likes to work.	O	O	O	O	O
23. Participating in the Summer Institute programs will improve the quality of work the college does.	O	O	O	O	O
24. Participating in the Summer Institute programs will enable the college to accomplish curricular tasks more quickly.	O	O	O	O	O

25. *Participating in the Summer Institute programs is compatible with all aspects of the college's work.*	O	O	O	O	O
26. The college's interaction with the Summer Institute program is clear and understandable.	O	O	O	O	O
27. Participating in the Summer Institute programs fits into the college's work style.	O	O	O	O	O
28. The results of participating in Summer Institute programs are apparent to me.	O	O	O	O	O
29. I would have no difficulty telling others about the results of participating in Summer Institute programs.	O	O	O	O	O
30. The college will be permitted to participate in a Summer Institute on a trial basis long enough to see what it can do.	O	O	O	O	O
31. Participating in the Summer Institute programs will enhance the effectiveness of the college's work.	O	O	O	O	O
32. I believe that it is easy to get participation in the Summer Institute programs to do what the college wants done.	O	O	O	O	O
33. Participating in the Summer Institute programs will make it easier for the college to do its work.	O	O	O	O	O
34. Learning how to utilize participation in the Summer Institute program is easy for the college.	O	O	O	O	O
35. Overall, I believe that participating in Summer Institute program is easy.	O	O	O	O	O
36. Summer Institute program participants will not very visible in my college.	O	O	O	O	O
37. I would have difficulty explaining why participating in Summer Institute programs may or may not be beneficial.	O	O	O	O	O
38. In my college, one will see Summer Institute project outcomes in many classrooms.	O	O	O	O	O
39. Before deciding whether to participate in any Summer Institutes, the college will be able to properly try them out.	O	O	O	O	O
40. *Participating in the Summer Institute programs will give the college greater control over its work.*	O	O	O	O	O

VISITING SCHOLAR PROGRAM

During Academic Year 2001-2002, the [expunged] parent organization for [expunged] funded the Visiting Scholar Program. Postsecondary faculty members were invited to spend five days on the [expunged] campus to pursue areas of international curriculum interest. The scholarships covered all travel, room, board, consulting fees, and fees for special on-campus seminars and events.

o I did not participate in considering whether our campus should take part in the *Visiting Scholar* program. If this is true, please skip to the [expunged] AFFILIATION section, page 5.

As you remember considering the decision in 2001-2002, whether to implement **Visiting Scholars,** *please mark the extent to which you agree or disagree with how you recall believing the program would impact the college:*	*Strongly Disagree*	*Disagree*	*Unsure*	*Agree*	*Strongly Agree*
41. I would have no difficulty telling others about the results of participating in the Visiting Scholar Program.	O	O	O	O	O
42. Participating in the Visiting Scholar Program is compatible with all aspects of the college's work.	O	O	O	O	O
43. Participating in the Visiting Scholar Program fits into the college's work style.	O	O	O	O	O
44. Participating in the Visiting Scholar Program will improve the quality of work the college does.	O	O	O	O	O
45. *Participating in the Visiting Scholar Program will make it easier for the college to do its job.*	O	O	O	O	O
46. I believe that it is easy to get participation in the Visiting Scholar Program to do what the college wants done.	O	O	O	O	O
47. I think that participating in the Visiting Scholar Program fits well with the way the college likes to work.	O	O	O	O	O
48. I believe I could communicate to others the consequences of participating in the Visiting Scholar Program.	O	O	O	O	O
49. Participating in the Visiting Scholar Program will enhance the college's effectiveness.	O	O	O	O	O
50. Learning to utilize participation in the Visiting Scholar Program is easy for the college.	O	O	O	O	O
51. Overall, I believe that the Visiting Scholar Program is easy to participate in.	O	O	O	O	O
52. The college will be permitted to participate in the Visiting Scholar Program on a trial basis long enough to see what it can do.	O	O	O	O	O
53. Participating in the Visiting Scholar Program will enable the college to accomplish curricular tasks more quickly.	O	O	O	O	O
54. In my college, one will see Visiting Scholar Program project outcomes in many classrooms.	O	O	O	O	O
55. The results of participating in the Visiting Scholar Program are apparent to me.	O	O	O	O	O
56. Visiting Scholar Program participants will not be very visible in my college.	O	O	O	O	O

57. Before deciding whether to participate in the Visiting Scholar Program, the college will be able to properly try it out.	O	O	O	O	O
58. I would have difficulty explaining why participating in the Visiting Scholar Program may or may not be beneficial.	O	O	O	O	O
59. Participating in the Visiting Scholar Program will give the college greater control over its work.	O	O	O	O	O
60. *The college's interaction with the Visiting Scholar Program is clear and understandable.*	O	O	O	O	O

[expunged] AFFILIATION

Please rate the strength of your affiliation with the [expunged].	***Strongly Disagree***	***Disagree***	***Unsure***	***Agree***	***Strongly Agree***
61. I consider myself to be very closely associated with [expunged].	O	O	O	O	O

THANK YOU FOR YOUR PARTICIPATION.

Appendix B

Note of Explanation

A Note of Explanation

It has been brought to our attention that there is some confusion regarding organizational affiliation associated with the three programs forming the basis of this survey. Perhaps the following history will clarify the relationships:

- During the 1980's, there were many successful international education programs developed in [expunged] community colleges. Organizations such as [expunged] and [expunged] fostered many of these initiatives.

- The faculty and staff from the [expunged] at [expunged] joined their community college colleagues in [expunged] and [expunged] to seek ways to share expertise and programming for the promotion of international education.

- In 1989, [expunged] sought grant monies from the Kellogg Foundation to provide assistance to develop and enhance international programming in the state's higher education institutions. In response, the Foundation awarded funds to assist with coordinating and strengthening existing programs in addition to creating new programs in postsecondary institutions in [expunged].

- To receive and administer the funds, [expunged] created [expunged]. [Expunged] was a formal coalition of 16 community colleges and 5 four-year colleges guided and supported by [expunged] faculty and staff.

- The funds from this Kellogg grant and subsequent U.S. Department of Education grants were to be used not only for the development of new programs but to further strengthen existing international programs (such as Fall Event) in member colleges.

- By developing [expunged] as an interorganizational relationship with member colleges and existing specialized organizations (i.e., [expunged], [expunged]), [expunged] was better able to use grant monies to assist with building a coordinated international education effort statewide. Grant funds were available to [expunged] member institutions for bringing cultural events and scholarly presentations to campuses, for supplying a variety of consultative assistance, and for providing curriculum development assistance to faculty.

RELEVANCE TO THIS RESEARCH PROJECT:

We are only interested in learning what characteristics are important to faculty and administrators when considering new programs. We ask you to think back to when a program was being introduced whether by [expunged], [expunged], [expunged], or another organization and determine how its characteristics shaped your thinking about it. This research project does not attempt to study the effectiveness or influence of any of the programs or organizations; nor is it an attempt to measure the impact of grant monies.

If you believe that this explanation would influence how you answered any of the survey questions, please feel free to resubmit the enclosed questionnaire.

Appendix C

Table 9: Pearson Product Moment correlation of faculty responses about their perceptions of Innovation 2: Summer Institutes

Table 9: Pearson Product Moment correlation[1] of faculty responses about their perceptions of Innovation 2: Summer Institutes attributes.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
Q1	1.00	-0.54	*0.72	-0.45	-0.64	-0.25	0.44	-0.25	-0.15	0.57	0.18	-0.66	-0.43	0.00	-0.36	0.00	0.13	-0.30	-0.15	-0.19
Q2	-0.54	1.00	-0.25	0.79	0.21	0.59	0.54	*0.76	0.29	-0.16	0.17	0.41	0.43	0.41	-0.26	--	0.00	*0.78	-0.23	-0.18
Q3	*0.72	-0.25	1.00	-0.36	-0.21	-0.24	0.22	-0.16	0.24	0.55	0.00	-0.43	-0.18	0.04	-0.63	-0.38	0.29	-0.14	0.05	0.10
Q4	-0.45	0.79	-0.36	1.00	0.14	0.03	0.49	0.05	-0.07	0.19	0.53	0.61	0.78	*0.78	0.45	0.56	0.38	-0.25	0.29	-0.03
Q5	-0.64	0.21	-0.21	0.14	1.00	-0.45	-0.49	-0.05	-0.25	*-0.76	0.00	0.41	0.72	0.18	0.48	--	-0.12	0.25	0.72	-0.07
Q6	-0.25	0.59	-0.24	0.03	-0.45	1.00	0.14	0.69	0.63	0.20	-0.46	-0.16	-0.55	-0.38	-0.53	-0.32	0.03	0.56	*-0.86	0.24
Q7	0.44	0.54	0.22	0.49	-0.49	0.14	1.00	0.47	-0.20	0.43	0.44	0.08	0.11	0.69	-0.13	0.29	0.11	0.24	-0.18	-0.71
Q8	-0.25	*0.76	-0.16	0.05	-0.05	0.69	0.47	1.00	0.30	-0.23	-0.31	0.25	-0.35	0.00	-0.44	-0.41	-0.26	*0.90	-0.60	-0.38
Q9	-0.15	0.29	0.24	-0.07	-0.25	0.63	-0.20	0.30	1.00	0.52	-0.24	0.21	-0.43	-0.34	*-0.73	-0.22	-0.03	0.15	-0.56	0.56
Q10	0.57	-0.16	0.55	0.19	*-0.76	0.20	0.43	-0.23	0.52	1.00	0.42	-0.19	-0.29	0.05	-0.50	0.38	0.30	-0.48	-0.35	0.38
Q11	0.18	0.17	0.00	0.53	0.00	-0.46	0.44	-0.31	-0.24	0.42	1.00	0.67	0.56	*0.80	0.35	*0.91	-0.34	-0.64	0.35	-0.51
Q12	-0.66	0.41	-0.43	0.61	0.41	-0.16	0.08	0.25	0.21	-0.19	0.67	1.00	0.48	0.66	0.25	1.00	-0.74	0.00	0.16	-0.37
Q13	-0.43	0.43	-0.18	0.78	0.72	-0.55	0.11	-0.35	-0.43	-0.29	0.56	0.48	1.00	*0.81	*0.80	0.52	0.28	-0.33	*0.89	-0.04
Q14	0.00	0.41	0.04	*0.78	0.18	-0.38	0.69	0.00	-0.34	0.05	*0.80	0.66	*0.81	1.00	0.37	0.59	0.06	-0.21	0.48	-0.49
Q15	-0.36	-0.26	-0.63	0.45	0.48	-0.53	-0.13	-0.44	*-0.73	-0.50	0.35	0.25	*0.80	0.37	1.00	0.56	0.04	-0.40	0.66	-0.17
Q16	0.00	--	-0.38	0.56	--	-0.32	0.29	-0.41	-0.22	0.38	*0.91	1.00	0.52	0.59	0.56	1.00	-0.79	-0.80	0.25	-0.53
Q17	0.13	0.00	0.29	0.38	-0.12	0.03	0.11	-0.26	-0.03	0.30	-0.34	-0.74	0.28	0.06	0.04	-0.79	1.00	-0.23	0.23	0.55
Q18	-0.30	*0.78	-0.14	-0.25	0.25	0.56	0.24	*0.90	0.15	-0.48	-0.64	0.00	-0.33	-0.21	-0.40	-0.80	-0.23	1.00	-0.45	-0.34
Q19	-0.15	-0.23	0.05	0.29	0.72	*-0.86	-0.18	-0.60	-0.56	-0.35	0.35	0.16	*0.89	0.48	0.66	0.25	0.23	-0.45	1.00	-0.04
Q20	-0.19	-0.18	0.10	-0.03	-0.07	0.24	-0.71	-0.38	0.56	0.38	-0.51	-0.37	-0.04	-0.49	-0.17	-0.53	0.55	-0.34	-0.04	1.00

[1]Marked correlations are significant at $p < .05$

Appendix D

Table 10: Pearson Product Moment correlation of survey instrument scales

Table 10: Pearson Product Moment correlation[1] of survey instrument scales

	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5	Scale 6
Scale 1	~~1.00~~	0.07	0.26	0.41	0.27	0.13
Scale 2	0.07	~~1.00~~	0.08	-0.26	0.47	-0.70
Scale 3	0.26	0.08	~~1.00~~	-0.03	-0.39	0.04
Scale 4	0.41	-0.26	-0.03	~~1.00~~	-0.20	0.28
Scale 5	0.27	0.47	-0.39	-0.20	~~1.00~~	0.09
Scale 6	0.13	-0.70	0.04	0.28	0.09	~~1.00~~

[1]No correlation is significant at $p < .05$

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