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A Model of Effectiveness for Global Electronic Scholarship

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Abstract

Like all organizations jostling their way into a new environment, educational institutions find themselves performing multiple tasks that are measured by conflicting standards of effectiveness. Electronic scholarship is no exception. Using a competing values framework, this paper discusses standards of effectiveness for education and research in a global virtual context. The purpose is to illustrate the value choices embedded in decisions regarding electronic scholarship.

Introduction

Electronic scholarship is sweeping the educational landscape (Ives and Jarvenpaa, 1996). Holding joint educational exercises among globally dispersed universities is one such form of electronic scholarship (Knoll and Jarvenpaa, 1995). Effective structuring of these exercises can be likened to walking a tightrope because different sets of values must be balanced. Given the balancing act, what yardstick is appropriate for measuring effectiveness in this context?

This question is explored by first describing a framework useful for assessing organizational performance. Then the four models of effectiveness comprising the framework, that is, human relations, open systems, internal processing, and rational goals, are used to guide our discussion of structuring global virtual collaborations. The paper concludes with suggestions for ongoing forms of electronic scholarship.

HUMAN RELATIONS MODEL		<i>FLEXIBILITY</i>	OPEN SYSTEMS MODEL	
	Cohesion Quality Morale		Growth Adaptation Environmental Scanning	
<i>INTERNAL</i>				<i>EXTERNAL</i>
	Stability Internal Communication Internal Scanning		Goal Setting Productivity Profit	
INTERNAL PROCESSING MODEL		<i>CONTROL</i>	RATIONAL GOAL MODEL	

Figure 1: A Model of Effectiveness Adapted from Quinn and Rohrbaugh (1983)

Competing Values

To shed light on what it means to be effective, organizational researchers empirically derived a "competing values" model of effectiveness (Quinn and Rohrbaugh, 1983). According to this model, there are three important mechanisms by which an organization demonstrates its values: through its organizational structure, through the objects on which it focuses, and through the timing of its focus. More specifically, organizations vary as to how much they value control versus flexibility, internal versus external focus, and means versus ends (see Figure 1).

In terms of the first set of values, an organization may emphasize order and stability more than innovation and change. Given its stance on the second set of values, an organization may keep a closer watch on the organization's competitive position than on the needs of the people it employs. The view it has regarding

the third set of values may drive an organization to concentrate more on the way it does its work (the means) than on what it achieves by doing the work (the ends).

From these sets of values spring forth four models for analyzing organizational effectiveness: human relations, open systems, rational goal, and internal processing models. The opposing values encapsulated by these models represent the stuff of which organizational dilemmas are made. For instance, an organization judged effective from a human relations point of view may be judged ineffective from a rational goal point of view. The tug of war between U.S. legislatures and universities highlights one such dilemma. While from the human relations perspective tenure protects freedom of expression, from a rational goal perspective tenure appears to thwart productivity gains in the educational system.

In this paper, the four models of effectiveness will act as guides for exploring electronic scholarship in a global setting. During four global virtual collaborations conducted annually from 1993 to 1996, masters students from universities around the world collaborated over a period of six to eight weeks (Knoll and Jarvenpaa, 1995). Students worked in teams of five to six persons, each team member hailing from a different country. Tasks ranged from analyzing cases to creating product and business plans to prototyping ISWorld sites. The educational goals of the exercise were to learn how to collaborate with others in a virtual setting, to obtain international exposure by working with people from different countries, and to learn about the Internet. The research goals were to understand how virtual teams worked most effectively in a global context.

Figure 2 shows how the high-level goals map to the models of effectiveness. For each model of effectiveness, several means for achieving the desired ends are also shown in Figure 2. How some of these values compete with each other are described in the following section. For purposes of exposition, the cases highlighted are "outlier" data points and do not represent the population of teams as a whole. They serve simply to illustrate the extremes of the "competing values" continuum.

Human Relations Model

HUMAN RELATIONS MODEL		FLEXIBILITY	OPEN SYSTEMS MODEL
	Ends: Cohesion, morale, quality Means: Fair distribution of resources Culturally sensitive instruments Data privacy assurances Research permissions posted on web Voluntary participation	Ends: Global outreach Means: Diverse organizations Diverse capabilities Varying session schedules Fluctuating workgroups Varying participation incentives	
INTERNAL			EXTERNAL
	Ends: Virtual course delivery Means: Secure workgroup archives Accessible process guides Accessible content guides Timely exception processing Project coordination	Ends: Learning and research Means: Student participation Interesting tasks and research questions Access to data for learning and research Sound pedagogical and research methods Relevant populations	
INTERNAL PROCESSING MODEL		CONTROL	RATIONAL GOAL MODEL

Figure 2: A Model of Competing Values in Structuring Global Virtual Collaborations

From the human relations perspective, building cohesion and high morale purportedly results in effective development of human resources (Quinn and Rohrbaugh, 1983). From the students', professors', researchers', and practitioners' perspective, the global virtual collaborations were exciting and satisfying. Postcollaborative and postgraduation feedback attested to the value of the exercises: "I am performing the same type of virtual work in my new position!" Balancing human relations' needs with rational goal needs, however, is difficult in any context. Given the gossamer strands of cohesion linking students in a virtual context, it is important not to tip the balance too far towards satisfying rational goal criteria.

For instance, students for the most part accepted message archiving required for research purposes. Still, occasional grumbles could be heard. A few students referred to "Big Sister Knoll" or "is KK listening?" as a way of venting dissatisfaction. Ongoing reminders that messages were being archived for research purposes prompted a few team members to send private, non-archival messages to individual addresses rather than to team mailing lists. When a research instrument contained items about distrusting "foreign" students, some professors and students questioned the wisdom asking such questions in a global context. One student threatened to file a lawsuit because the research seemed to encourage divisiveness. In general, rational goal values may be less invasive when participation is made voluntary, and the basis and framework for evaluation are communicated clearly at the collaboration's outset.

Open Systems Model

From the open systems standpoint, flexibility and readiness lead to effective growth and resource acquisition. Based on the growth rates of global virtual participation, the collaborations have met these criteria of effectiveness. According to one student "It is always stimulating when you communicate with people all over the world." This growth comes with the usual benefits and costs of absorbing a wide range of participants, technologies, and educational contexts. Students learn in a setting more like the "real world" but both professors and students must flex more in a virtual context than in a traditional classroom setting.

For example, the variation in technical expertise shows in a student's remark, "You are a Goddess!!" when the coordinator simply extracted information for her from the team's archives. On the flip side of this technical coin, a professor expressed concern that his students bore the unfair burden of technical expertise when constructing prototype ISWorld web pages. In another case, fluctuating membership on teams due to staggered university schedules and different participation rates affected student satisfaction and research standards. Even organization names characterizes the diversity of open systems and the resulting need for flexibility. For instance, a student distrusted the researcher's intentions because of the religious affiliation of the university housing the ISWorld server. Overall, the wide variations in incentive systems across the open system of universities most influenced effectiveness judgments, as viewed from the other perspectives. Communicating clearly the flexibility needed to obtain the benefits from this form of electronic scholarship helps to bring competing values into balance.

Rational Goals Model

From this vantage point, planning, goal setting, and directing lead to effectiveness as gauged by productivity and efficiency. Collaborating in a global virtual context proved effective when measured by the number of teams who completed their tasks successfully and the quantity of research data gained. As usual, effectiveness from this perspective competes with standards of effectiveness in the other arenas.

For example, administering research tasks competes with the internal processing required for a stable collaboration, as well as with the students' resources available for learning. Furthermore, though creating teams that vary culturally is desirable for research purposes, this process interferes with cultural homogeneity needed for purposes of educational fairness. Finally, attempting to boost participation by distributing participation figures to professors showed the bias toward a rational "American" style model of quantitative management. As one professor stated "What is our policy? Should we inform students directly

about their activity rates i.e. show them that we have very specific information about their actions (Big Brother!)." Keeping in mind the conceptual biases brought to bear on goal setting and planning tasks may help to bring values into balance.

Internal Processing Model

Finally, internal communication and information management are the means for achieving effective stability. The collaborations could be judged effective given that a stable context allowed work to progress steadily over eight weeks despite significant external disruptions. The value of internal processing, however, competed with the values related to the other models of effectiveness.

For instance, maintaining message archives allowed organizational memory to be distributed to a team's fluctuating membership. The process of archiving, however, affected some team members' sense of privacy. For another case in point, restricted team lists ensured construct validity for research purposes but interfered with the "open systems" model of posting messages from any location. Finally, the intensive communication between teams and the coordinator, as well as between individuals and the coordinator, contributed to stability, as well as to openness and cohesion. However, attributions of leadership to the coordinator have implications for reaching conclusions about intra-team leadership in a research setting. Remaining alert to the trap of doing internal processing just for internal processing's sake may help to alleviate the drain on effectiveness in other domains.

Conclusion

In the future, the umbrella of global electronic scholarship could cover much more than teams of university students engaged in educational exercises only. In one case, establishing virtual relationships between students and their business mentors located around the globe would not only support learning objectives but also recruiting objectives. In another case, a virtual practicum might allow students working together from various countries to produce real-world products for global businesses. The values subscribed to by the institutions involved then should drive the measures of effectiveness by which the efforts are to be judged.

Gazing at electronic scholarship through the lens of the competing values model reminds us of the difficult choices that confront those designing such initiatives. By clarifying the aspects of effectiveness most valued in various situations, we can make informed decisions as to the structures and processes we want to implement in electronic scholarship. This paper does not encourage "analysis paralysis" but rather awareness of the conceptual biases we bring to the task of designing and implementing electronic scholarship.

References

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