

EDUCATOR ROLES OF THE CIO

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Abstract

One of the most persistent concerns for CIO's is the gap in understanding between the CIO's and top management. This gap in understanding can be closed by having the CIO take on the role of educator to the TMT, bringing the understanding of IS by the TMT to a higher level. The educational roles of facilitator and mentor are specifically looked at to address how the CIO can most effectively handle the constructing or maintenance of mental models.

Introduction

One of the most persistent concerns for CIO's is the gap in understanding between CIO's and top management (TMT). One way to alleviate this is for the CIO to take on the role of an educator (Rockart, Ball et al. 1982; Benjamin 1985; Feeny, Edwards et al. 1992; Stephens, Ledbetter et al. 1992; Ross and Feeny 2000; Preston 2003). While the role of educator for the CIO has been addressed many times, the importance of the educator role is not consistent. An example of this inconsistency would be Stephens et al (Stephens, Ledbetter et al. 1992) see it as taking 4% of the CIO's time but Ross and Feeny (2000) see the role of educator as not a part of the current web based era. Inconsistencies may stem from how the role of "education" is defined and, possibly more importantly, how this role is enacted.

The purpose of this work is to look at the CIO dealing with the TMT in the role of an educator and seeing if this has an effect on the perceived effectiveness of the CIO by the TMT. It will also help to clarify the role of educator for the CIO inside of the TMT.

This work will first discuss why the educator role is important in the organization. Next, the CIO as an educator is specifically addressed. A model of the CIO role of educator is proposed, and subsequently, a research proposal to test the model is presented.

Need for the Educator

There is a gap in understanding that exists between the CIO and the TMT. This gap comes from both sides of the relationship. From the CIO, an often-limited understanding of the business issues (Feeny, Edwards et al. 1992; Enns, Huff et al. 2003). For this side of the gap, the CIO will need to take on the role of the learner. This is an important half of the gap but will be left for latter research. From the TMT or from the CEO specifically, there is a limited understanding of how information systems (IS) can be used, especially used strategically (Gupta 1991; Armstrong and Sambamurthy 1999). The CIO can address this latter gap by taking on the role of an educator.

For the CIO or the other TMT members, they will need to learn either by extending their current mental models or creating new mental models (Vandenbosch and Higgins 1996). Extending a mental model, mental model maintenance, is done by building on or adjusting some current understanding (Vandenbosch and Higgins 1996). If an individual has a working knowledge of computers, they may extend this knowledge base by learning about new pieces of hardware. The same individual may also have some misconceptions about how the computer works and could undergo some mental model maintenance by “fixing” their misconceptions.

Mental model building is the structuring of new information (Vandenbosch and Higgins 1996). If we take the same individual that understands about computers, they may learn something that they see as completely different such as thermodynamics. While there may be some pieces of information that could be used in both mental models, thermodynamics would be a new model.

For the TMT, they may have some understanding of the information systems. They would need to undergo mental model maintenance to have a better understanding to help bridge the gap. If the TMT member does not have an understanding of the information systems, they would need to build a new model.

Educational Role of the CIO

Mintzberg included educator when he first defined managerial roles (Mintzberg 1973; Mintzberg 1990; Mintzberg 1994). The specific role of the CIO was then addressed in 1982 and there was confirmation that the role of the educator was an important part of the CIO’s job (Rockart, Ball et al. 1982). The role of the CIO has matured with time and was again examined in 1985. At this point, the educator as a “gatekeeper” as opposed to an “owner” emerged, or, in other words, the CIO was to give the TMT access to information as opposed to holding this information to themselves (Benjamin 1985).

In examining the relationship between CEO and CIO Feeny et al. found that the role of “educator” was one of the ideal attributes that the CIO can have (Feeny, Edwards et al. 1992). But attributes that helped define an excellent relationship with the CEO had only indirect educator type roles: “Integrates IT with Business planning” and “Promotes IT as agent of business transformation”.

Later, Ross and Feeny looked at the roles of the CIO over three eras: mainframe era, distributed era and the web-based era (Ross and Feeny 2000). They argue that one of the key ways that the CIO could influence the TMT during the distributed era was to assume the role of educator. During the web era they identified the role of educator as important but only to subordinates.

While the role of educator for the CIO has been identified as important, it has been inconsistently defined as to how it is important and how it can be used effectively. These somewhat inconsistent findings give us the opportunity to look at the role of educator for the CIO in more depth. For us to better understand what is happening with the role of “educator” in the position of the CIO, it may be better to look at the individual activities that make up the role and see which ones lead to some shared understanding by the parties involved.

P1: The more effective the CIO is perceived by members of the TMT in performing his/her educator role the higher the CIO’s perceived effectiveness.

Educational Activities – Empowering vs. Facilitating

Education by the CIO to the TMT should lead to greater strategic alignment (Enns, Huff et al. 2003). With the changing nature and the wide scope of IT, TMT members will need to build new mental models about IT or undergo mental model maintenance in order to use IT in a strategically effective manner. Dissemination of requisite information should come from the CIO. If the dissemination of information is handled effectively, the TMT should have some shared understanding or shared mental models of IT, which would then increase the strategic alignment in the TMT and therefore impact the performance of the firm. This gives us the view in Figure 1. However, this model is not very useful without further defining the constructs.

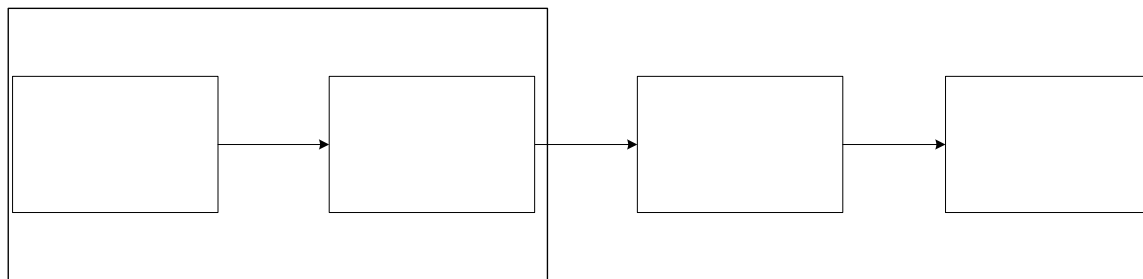


Figure 1. Conceptual Model

The conceptual framework, shown in table 1, is derived from work related to coaching and facilitating behaviors in managers (Ellinger and Bostrom 1999). They found two basic classes of educational types: facilitating and empowering. While they were first identified in learning organizations from a manager to a subordinate, these two classes should still hold for lateral educational behaviors. Facilitating activities were identified as behaviors that “promoted new levels of understanding and new perspectives, and offered guidance and support...” (Ellinger, Watkins et al. 1999). Empowering activities were identified as behaviors that “give more power and authority to” others (Ellinger, Watkins et al. 1999). Identified in table 1 are the empowering and facilitating activities that were identified by Ellinger and Bostrom (Ellinger and Bostrom 1999).

Facilitating Educational Activities	Empowering Educational Activities
Providing feedback Soliciting feedback from others. Working it out together – talking it through. Creating and promoting a learning environment. Setting goals and expectations – fitting into the big picture. Stepping into other to shift perspectives. Broadening other’s perspectives – getting them to see things differently. Using analogies, scenarios, and examples. Engaging outsiders to facilitated learning.	Question framing to encourage the thinking through of issues. Being a resource – removing obstacles. Leaving ownership with others. Holding back – not providing the answers.

CIO
Educational Activities

Table 1.

Extending Figure 1 to incorporate the concept of facilitating and empowering activities yields figure 2. The model is reduced to the focus of this study.

Focus of Current Study

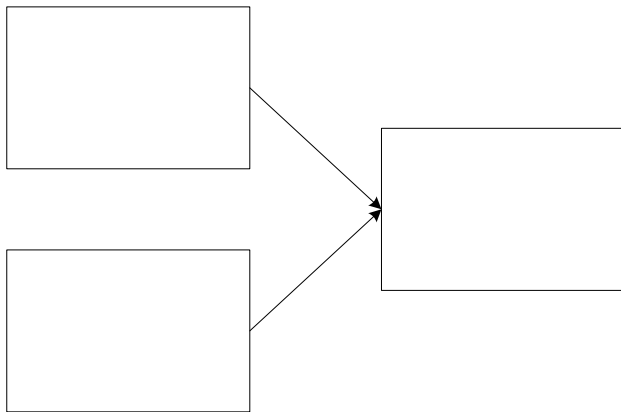


Figure 2.

CIO Empowering Educational Activities

Increased TMT Understanding of IT as seen in the models can be broken down further to mental model building and mental model maintenance giving us Figure 3 as a new conceptual model.

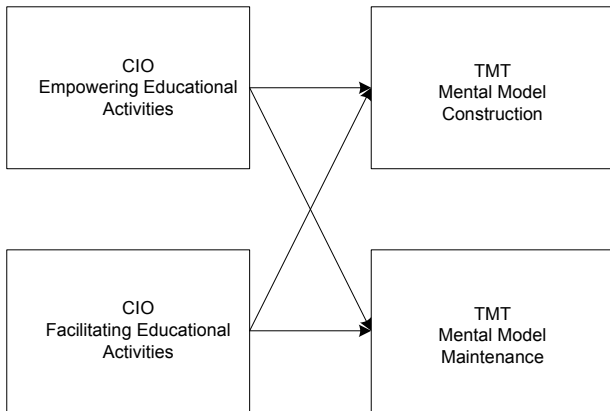


Figure 3

CIO Facilitating Educational Activities

Facilitating activities are not only initiated by the instructor/teacher but the whole process is managed by the instructor/teacher (see examples in table 2). These behaviors are behaviorally grounded through the work of Ellinger and Bostrom (Ellinger and Bostrom 1999) and then contextualized here for the CIO in relation to the TMT. These behaviors are consistent with an instructor who assumes the learner has no prior knowledge of the subject area and would need to construct a new mental model. If the instructor/teacher uses facilitating behaviors in a situation where the learner already holds a mental model, the learner will not be learning while the instructor/teacher covers material they already have used to construct their present model. More specifically, if the CIO takes on the role of educator for a TMT member in an area where that member has no prior knowledge, the learner would build new mental models. Because the TMT member would have no knowledge in the area of this new knowledge it is hypothesized:

H1: Facilitating educational activities are more important determination of mental model building than empowering educational activities.

Empowering activities put the focus on the learner. The learner is in charge of the construction of new mental models or the maintenance of established ones and the educator only gives guidance to the learner. This could be in part because they do not have all the information related to the mental model that is being constructed. Were the TMT member looking to build off knowledge they had to better understand a situation, the learner would be in charge of the learning situation. If the CIO uses empowering activities as they take on the role of educator, the TMT member would be constructing knowledge only with some guidance from the CIO. It is then hypothesized that:

H2: Empowering educational activities are more important determination of mental model maintenance than facilitating educational activities.

Facilitating		
F1	Providing feedback to others	The CIO would provide feedback as to how the others were learning. Ex. The CIO to other members of the TMT “You seem to understand what is going on with CRM”
F2	Soliciting feedback from others	The CIO would solicit feedback from other members of the TMT as to how well he/she was transferring the information. Ex. The CIO to other members of the TMT “Do you understand what I’m saying about data mining?”
F3	Working it out together – talking it through:	The CIO would work through problems with other TMT members to come up with solutions. Ex. CIO would work through specific problems with other TMT members so they can see the process of discovery.
F4	Creating and promoting a learning environment	Organize formal and informal meetings and activities that promote learning. Ex. CIO would schedule a training session on CRM.
F5	Setting and communicating expectations – fitting into the big picture	The CIO would set the agenda for how the learning was to take place. Ex. CIO would set up a training program for some new information system to bring the TMT up to speed.
F6	Stepping into other to shift perspectives	The CIO would think of how they felt in the place of someone else in the TMT and encouraging others to do the same. Ex. The CIO would imagine how they felt if they were the CFO and had not had the understanding of the CIO so as to see where to go next with a presentation.
F7	Broadening others’ perspectives – getting them to see things differently	The CIO would encourage others to see other perspectives and providing other prospective. Ex. The CIO to other members of the TMT “Put yourself in the shoes of the CFO, how would this impact the organization and the CFO specifically?”
F8	Using analogies, scenarios, and examples	The CIO would build off understanding that others already had to help in the understanding of new concepts or ideas. Ex. The CIO to other members of the TMT “Think of ERP as a one stop shop for all of your data needs.”
F9	Engaging outsiders to facilitate learning	The CIO would bring in people from outside of the TMT to help facilitate learning. Ex. The CIO might bring in someone from another company that the TMT members respect that have understanding in an area that the TMT members need help.
Empowering		
E1	Question framing to encourage the thinking through of issues	The CIO would respond by asking thought provoking questions. This would be to encourage the thinking through of solutions. Ex. The CIO to other members of the TMT, “What do you think that CRM could do for your area? How would it negatively impact you?”
E2	Being a resource – removing obstacles	The CIO would stand as a solution provider when called upon. Ex. The TMT might turn to the CIO to offer a solution for a specific business problem.
E3	Leaving ownership with others	The CIO would help with projects but would not assume leadership for tasks from others. Ex. The CIO would act in an advisory role for a CRM project in

		marketing but would not move the project under his control.
E4	Holding back – not providing the answers	The CIO would not immediately provide answers to questions so as to promote the solutions/decisions of others. Ex. The CIO might recognize that the CRM system in place might be able to handle the business question that the TMT faces but would wait in hopes that another TMT member might recognize it.

Methodology

To look at effective CIO Effective CIO educational activities an instrument will be developed from the educational example behaviors identified in Table 3. Respondents will rate, first how often each one of the behaviors is used now and then how often they would like to see it used. The absolute difference between the two would yield a raw measure of performance or effectiveness. This measure would then be translated into a 1 to 7 scale where 1 would be very low performing and 7 being very high performing. To compliment this measure of effectiveness, a measure of “Shared Mental Models”, developed by David Preston (Preston 2003). This survey is two fold: one for the TMT member and one for the CIO. This yields the measurement model in Figure 5.

In order to measure if the TMT member underwent mental model maintenance or mental model construction, a survey will need to be developed gauging their initial understanding of the topic and the resulting understanding. This would be based on critical incidents on the part of the TMT member. Two surveys will need to be developed. One will be given to the CIO and will be a self-report of their educational activities along with the perceived educational outcomes as it relates to another TMT member. The second survey will need to go to a matched TMT member. This second survey will address, again, the educational activities, the perceived educational outcomes, mental model construction or maintenance, of those activities, and then how well these activities were received.

The surveys will need to be administered to matched pairs in organizations where the CIO is part of the TMT.

Once data has been collected, cluster analysis will need to be done to make sure the facilitating and moderating activities constructs still hold for lateral education.

Discussion

This study should open the door to greater understanding of the educator role of the CIO inside of the TMT. The development and maintenance of mental models gives understanding to shared mental models but the actualization of the development and maintenance is critical for research to progress.

Future Research

Once the behaviors that impact the building and maintenance of mental models have been identified, they can then be individually looked at to pinpoint when and where they are most appropriate.

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