

Factors that Hinder Innovation in Capacity Development of Education Managers

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1.0 Introduction

Researchers classify innovation as two separate set of activities viz exploration and exploitation. Benner & Tushman (2002) and Jansen (2005) differentiate between 'exploitative Innovations' which involve 'improvements in existing components and architectures and build on the existing technological trajectory' and 'exploratory innovations' which involve 'a shift to a different technological trajectory'. In addition to this way of classification, authors have also indicated another dimension to distinguish between these two activities. Coombs (1996) suggested two sides of R&D activities; Investment mode where these activities are concerned with developing technological capabilities of organizations, and harvesting mode where R&D works with other functions of the organization to exploit special services for customers.

Recently, He and Wong (2004) mention, an explorative innovation strategy to contain 'technological innovation activities targeting new product- market domains and 'exploitative innovation strategy' to contain 'technological innovation activities for ameliorating existing product-market. Authors of the strategic management describe exploration, in terms of competence building (Sanchez et al., 1996) or competence definition (Floyd & lane, 2000), and exploitation, in terms of competence leveraging (Sanchez et al., 1996) or competence deployment (Floyd & Lane, 2000).

Cavone et al (2000) indicates key characteristics of experimental programmes is a continuous search for new technological solutions and a learning process aiming to enhance the firm's knowledge base and exploitation programme is to create value through current activities and to innovate by exploiting the skills embedded in a firm's human resource and technical systems. Some authors relate these two activities as development and implementation stage of the innovation. First stage is characterized by exploration activities such as risk taking, searching for alternatives (Duncan, 1976), and discovery (Cheng & Van De Ven, 1996), while second stage is characterized by exploitation activities such as testing (Cheng & Van De Ven, 1996), refining and implementing (Duncan, 1976) the innovation. This distinction between experimental and exploitation activities is conceptually different from the traditional classification of R&D activities in research (basic or applied) and product development (Cavone et al, 2000).

Key Words: Innovation, Capacity development, Education managers

2.0 Literature background

2.1 Conflict between exploration and exploitation activities

Both exploitation and exploration are crucial for ongoing operations of organizations and organizational change (Crossan et al. 1999).

However, Christensen (1997) suggested that due to the disruptive nature of the technology; experimenting units must be completely separated from exploiting units. In the Stage models of innovation, (Kanter, 1988) shows that the mix of activities required during the innovation process which varies greatly from stage to stage so as innovative behaviour which has been discussed until now idea generating (Bask 1991) extends to a broad range of other types of behaviour which combine to result the final innovative outcome. Despite the strategic management thinkers endorse ambivalent capabilities for an organizational excellence, organizational stimulants for exploration and exploitation are of such a conflicting nature that possibility of their co-existence at single space and time is quite perplexed. Both the activities are separated on the basis of location, time and structure within organization.

Separation of exploration and exploitation by location can be found in studies on 'structural ambidexterity' (Benner & Tushman, 2003; O'Reilly & Tushman, 2004). Ambidextrous organizational forms are 'composed of highly differentiated but weakly integrated sub-units' (Benner & Tushman, 2003). While the exploration units are small and decentralized with loose cultures and processes, the exploitation units are larger and more centralized with tight cultures and processes (Benner & Tushman, 2003). Both exploitation and exploration involve a trade-off, because firms with limited available resources may not be able to afford to exploit and explore simultaneously.

Such a trade-off reflects a 'key dilemma' for organizations that aim to enhance both 'adaptation to exploit present opportunities' and their 'adaptability to exploit future opportunities' at the same time (Isobe, 2004).

Duncan (1976) proposed a model for designing organizations for initiating and implementing innovations. The initiation stage of the innovation process has an organizational structure featured by a high degree of complexity, low formalization, and low Centralization. As initiation and implementation follow each other sequentially, Duncan (1976) suggests that organizations should change their organization structure correspondingly overtime to match the changes. A review of the studies linking national culture and various innovative activities (Shane 1992, 1993, Herbig and Miller 1992, Kedia, Keller and Julian 1992, Nakata and Siva Kumar, 1996) suggests that certain cultural characteristics may have a greater propensity to support the varied innovatory activities. Kedia et al. (1992) clearly indicate that the managers should consider locating foreign R&D units in countries where national cultures that promote high R&D productivity. Units located in these countries would tend to outperform others. Shane (1992) concluded that some cultures have a comparative advantage in inventive activity that leads them to develop new technologies, ideas, and products.

Nakata and Sivakumar (1996) take note that the possibility of some cultures being more adept than others in one phase of the new product development process, are more effective choices for that phase. Present study poses the research question about the different factors of organization culture as drivers of exploratory and exploitative innovation types.

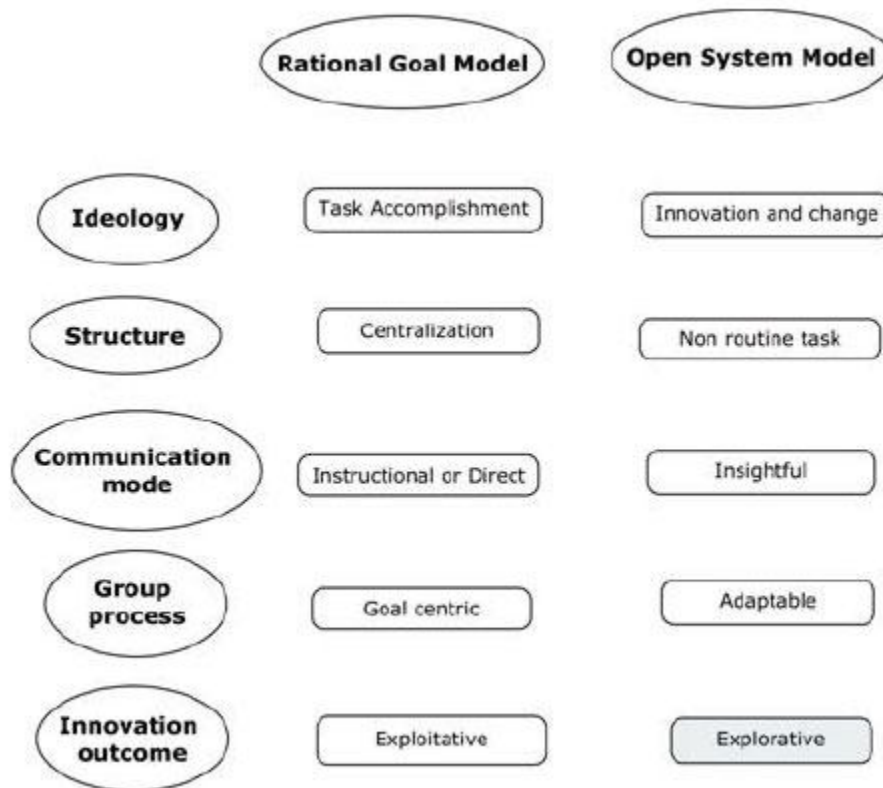


Diagram - I: Different models of organization factors

2.2 Innovation, creativity and culture

Innovation is affected by variety of contexts. A review of research on organizational innovation (Damanpour, 1991), identified factors which affect the management of innovation: type, stage and scope of innovation. Pavitt (1991) took this note that different sectors e.g. scale intensive and science intensive have different priorities and characters. Likewise different stage in organization life cycle (Utterback, 1994) may affect the type of innovation for example new technology industry may be more involved in experimental innovation and matured industry players may be involved in exploitative innovation. Lundvell (1990) indicates that culture of the countries due to their differentials in institutions, policy supportive to the type of innovation may affect the nature of innovation.

It has been supported by the research that a country like US has been advancing in the exploratory innovation and Asian country like Japan has been quite successful in the exploitative innovation. As explained by the Waterman et al. (1990), productive organization change is not simply a matter of structure though structure is important, it is also not simply as the interaction between strategy and structure, though strategy is critical too, it is infact the relationship between strategy, structure, system, style, skill and staff and something called super -ordinate goals. Within the organization, structure manifests along multiple dimensions including centralization of authority, hierarchy of influence and degree of role specification (Cooke and Szumal, 2000).

These reasons may be prevalent where change of the structure constitutes a necessary but not sufficient lever for the cultural change (Cummings and Worley 1998). Hofstead (1991) takes note that organization culture has acquired the status similar to strategy, structure and control. A literature review (Read, 2000) of current research on the determinants of innovation indicate that the most important determinant identified for supporting creativity and innovative culture in the organization was management support for innovation and an innovative culture. Martins and Terblanche (2003) found in their study that vision and mission are strategic determinants of organizational culture which influences innovation. Tushman and O'Reilly (1997) believed that organization culture is the soul of the organization innovation.

Hofstede (1997) discussed between national culture dimensions and the management practice in detail. Deshpande et al. (1993) linked culture types to innovativeness. Using a synthesis of over 100 previous studies in organizational behaviour, sociology and anthropology, they defined four generic culture types: market culture, adhocracy culture, clan culture and hierarchical culture. Jaeger (1986) reported while commenting on the Hofstede's four dimensions of the culture that person in every society carry around mental programmes that guide their behaviour. He explains further that these programmes are conditioned in to members of given cultural groups by their common socialization and life experiences. Amabile (1988) explains that creativity requires a cognitive-perceptual style characterized by the ability to break mental set and explore new cognitive pathways. Under strong external pressures to complete a task, the individual is less likely to explore new pathways or suspend judgment. Rather he or she is likely to search for a solution that is adequate for the task at hand.

With external pressure, productivity on tasks for which solutions are known may be enhanced, but the discovery of new solutions will be hindered. Exploratory and exploitative innovation can also be linked to the outcome of the convergent and divergent line of thinking. Convergent thinking tends to move toward a single solution to a problem and involves the generation of multiple ideas that are of the same general category (Mayer, 1992; Guilford, 1956). On the contrary, divergent thinking involves the generation of many ideas that are qualitatively different from one another. Divergent thinking is widely considered to be an important antecedent to creativity because creative solutions are defined as unique or original in nature (Amabile, 1983). As Amabile (1983) explains creativity is "A novel and appropriate, useful, correct, or valuable response to the task at hand and the task is heuristic rather than algorithmic." and the creative process is the interrelationship of three elements: person, task, and organization (Kao, 1991).

It appears from the above thoughts that creativity or exploration is very much individualistic but dependent on the contextual factors. To flourish novelty, one needs outside support as well as certain self attributes. Roe (1963) found that Openness to experience, observance, tolerance of ambiguity, independent, needing autonomy, self-reliance willingness to take calculated risks, and persistence are the attributes required for the creative behaviour in the organization. In addition factors like Sensitivity to problems, fluency, flexibility, originality, and responsiveness to feelings, motivation, and freedom from the fear of failure (Raudsepp, 1983) very much affect the inventive behaviour.

2.3 Rational goal model verses Open systems model

Rational goal model is based on Barley and Kunda's (1992) system rationalism ideology. Scott (1992) views organization as rational system which attains productivity and efficiency by goal setting and planning. He included three theories viz contingency theory (Burns and Stalker, 1961), agency theory (Alchian and Demsetz, 1972) and transaction cost analysis (Ouchi, 1980). This ideology is based on the task achievement and the terms usually applied for this organization is driven, goal oriented, achievers and focused (Zammuto et al, 2000). This organizational structure appears to be characterized in exploitative form of the innovation, because these organizations are driven by the goals.

They have to constantly serve the demands of their focused markets. They usually involve in incremental innovations. Leadership in this type of organization provides suitable direction and initiation required for making maximum performance out of their employees. Creative achievements defined through their novelty (Shalley, Gilson, and Blum, 2000) are supported by an open organizational culture. Open system model of the organization challenges the assumptions of the rational goal model. This model focuses on informal co-ordination and control system. Interpersonal relation in this type of organization is characterized by trust, high employee morale, leader's benevolence to subordinates and low level of conflict. The term used for this type of organization is innovative, aggressive, adaptable and entrepreneurial ((Zammuto et al, 2000). This model seems to be best fit for the exploratory units of the organization.

<p>Small power distance societies Hierarchy means inequality of roles, established for convenience Subordinates expected to be consulted Ideal boss is resourceful democrat</p>	<p>Large power distance societies Hierarchy means an existential inequality Subordinates expected to be told what to do Ideal boss is benevolent autocrat (good father)</p>
<p>Collectivist society Value standards differ for in-groups and out-groups : particularism</p>	<p>Individualist society Same value system applies to all Other people seen as potential resources Task prevail over relationship Calculative model of employee-employer relationships</p>
<p>Feminine societies Assertiveness ridiculed Undersell yourself Stress on life quality Intuition</p>	<p>Masculine societies Assertiveness appreciated Oversell yourself Stress on careers Decisiveness</p>
<p>Weak uncertainty avoidance societies Dislike of rules-written and unwritten Less formalization and standardization Tolerance of deviance persons and ideas</p>	<p>Strong uncertainty avoidance societies Emotional need for rules-written or unwritten More formalization and standardization Intolerance of deviant persons and ideas</p>

Table-1: Relating national culture dimensions with management Practice
 Source: Adapted from Hofstede (1997)

3.0 Methodology

The study adopted the descriptive research design. This approach is also called the case study method and it involves studying the cause-effect relationship between two or more variables (Schindler & Cooper 2011). The decision to choose a descriptive approach was advised by the notion that it enables the researcher to develop a clear understanding of the study phenomena before embarking on the actual collection of data (Saunders, Lewis, & Thornhill 2003).

3.1 Data Analysis

A content analysis and descriptive analysis were employed. The content analysis was used to analyze the respondents' views factors that hinder innovation in capacity development of education managers. The data was then coded which enabled the responses to be grouped into categories. Descriptive statistics was used mainly to summarize the data. This included percentages and frequencies.

A Lickert scale and the use of Statistical Package for Social Sciences (SPSS version 12.0) were employed. Tables, Pie charts and other graphs were used as appropriate to present the data collected for ease of understanding and analysis. Measures of central tendency were also be applied (mean, median, mode and percentages) for quantitative variables.

4.0 Results

Regression analysis

The researcher conducted a multiple regression analysis. This was done to test relationship among variables (independent) on the capacity development of education managers. The statistical package for social sciences (SPSS) was applied to code, enter and compute the measurements of the multiple regressions for the study. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (capacity development) that is explained by all the three independent

Table 2: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.890a	.793	.783	.36563

The significance value is .012^a which is less than 0.05 thus the model is statistically significant in predicting the factors that hinder innovation in capacity development. The F critical at 5% level

of significance were 3.23. Since F calculated is greater than the F critical (value = 8.538), this shows that the overall model was significant.

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.979	4	11.745	8.538	.012 ^a
	Residual	12.299	96	.134		
	Total	59.278	100			

4.1 Discussion

Successful efforts to promote capacity development therefore require attention not only to skills and organizational procedures, but also to issues of incentives and governance. Capacity development initiatives almost always take place in a particular organizational setting, where there will be a particular incentive structure deserving attention. However, the broader process of institutional transformation or stagnation in a country may be no less important as a source of the behavioral incentives and disincentives that affect capacity.

Capacity development is critical not only to the public sector, but also to private firms and to non profit private organisations and associations. The focus of this paper is on public-sector capacity, including the way it influences and is influenced by the wider economic, political and social context. However, lessons from private sector experience are drawn upon where relevant.

4.2 Conclusion

The study concludes that a culture which supports creativity consolidates the platform for the innovation, be it management innovation or product innovation. The route of innovation is the extensively held and shared cultural norms in the organization which actively promote in the generation of the new ideas and doing new way of implementing the work. He further adds on that an organization doesn't need to have very many strongly held values. The implementation stage of the innovation process, however, reflects an organizational structure featured by a low degree of complexity, high formalization, and higher centralization.

The study further concludes that successful efforts to promote capacity development therefore require attention not only to skills and organizational procedures, but also to issues of incentives and governance. Capacity development initiatives almost always take place in a particular organizational setting, where there will be a particular incentive structure deserving attention. However, the broader process of institutional transformation or stagnation in a country may be no less important as a source of the behavioral incentives and disincentives that affect capacity

Finally the study concludes that enabling environment influences the behaviour of organisations and individuals in large part by means of the incentives it creates. Whether or not an organisation is able to achieve its purposes depends not just on whether it is adequately resourced but on the incentives generated by the way it is resourced under prevailing rules. Organisations or networks of organisations can be viewed as “open systems”, which are in constant interaction with elements of their context. “The context provides incentives to the organisation(s), stimulating them to act in certain manners. Some incentives foster productivity, growth and capacity development, others foster passivity, decline or even closure”.

4.2 Recommendations

The study recommends that successful efforts to promote capacity development require attention not only to skills and organizational procedures, but also to issues of incentives and governance. Capacity development initiatives almost always take place in a particular organizational setting, where there will be a particular incentive structure deserving attention. However, the broader process of institutional transformation or stagnation in a country may be no less important as a source of the behavioral incentives and disincentives that affect capacity.

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