The Impact of Creativity Training on Strategic Thinking

Abstract

There is little research on how to develop strategic thinking and whilst there is no agreed definition of strategic thinking, its development in managers is considered to be important. A crucial element of strategic thinking is creativity and the impact of creativity training on strategic thinking has not been widely studied. Undergraduate students were assigned to either a test group that received creativity training or a control group. Strategies formulated by these students were assessed for creativity using the creative product semantic scale and the results of the assessment statistically tested. The findings do not generally support the hypothesis that creativity training results in more creative strategies but there is a significant difference for resource based strategies. Implications for practice and suggestions for further research are identified.

Keywords

Creativity training, strategic thinking, strategy formulation

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Introduction

The development of strategic thinking has been identified as a major problem facing organisations (Bonn, 2001) and the development strategic thinking is considered to be important (Mason, 1986; Liedtka, 1998). Indeed strategic thinking is suggested as a core competency (Bonn, 2001). However there are three complications for organisations considering developing the strategic thinking capabilities of its managers. First despite the importance attached to developing strategic thinking there is no agreed definition of strategic thinking in the literature (Pellegrino and Carbo, 2001), although attempts have been made to identify what factors contribute to successful strategic thinking (Linkow, 1999). Second a lack of agreement over the extent to which strategic planning and strategic thinking should feature in the strategic management of an organisation. Modern strategic management is considered to involve balancing both strategic thinking and strategic management (O'Shannassy, 2003) and the two are considered to be complementary (Mintzberg, 1994; Graetz, 2002). Third there is little research on how to develop strategic thinking (Linkow, 1999; Bonn, 2001). This research aims to circumvent the first two of these complications by focusing on the impact of creativity training since there is a consensus in the strategy literature that creativity is an essential element of both strategic thinking and strategic planning. In doing this it aims to address the third complication by providing empirical research on the development of strategic thinking.

Creativity in Strategy

Strategic planning and strategic thinking can be aided by the gathering and analysis of data in an environment that is uncertain (Daft and Lengel, 1986) since such analysis is likely to reduce uncertainty. However rational-logical techniques of this type may be of limited value in an environment that is equivocal (Daft and Weick, 1984). An equivocal environment is unanalysable and under such conditions

> "The key is to construct, coerce, or enact a reasonable interpretation that makes previous action sensible and suggests some next steps" (Daft and Weick, 1984).

There is, therefore, a role for more creative techniques to aid strategic planning and strategic thinking. Creativity is identified as an important part of the strategic planning process (Steiner, Kunin et al., 1983; Wheatley, Anthony et al., 1991) and Porter (1987) whilst emphasising the importance of analysis and assessment, acknowledges that

> "Even with an ideal planning process, strategic thinking still requires the creative acts of synthesis and choice." (p28).

Creativity is considered to be central to strategic thinking (Howard, 1989; Mintzberg, 1994) and thinking creatively in strategic terms has been suggested as a source of organisational and national competitiveness (Raimond, 1996). Thus whilst there may be discussion about the relative importance of strategic planning and strategic thinking in the strategic management of an organisation, an essential element of both appears to be the need for creativity. This holds true even though there is no agreed definition of strategic thinking since creativity is consistently considered to be an element of strategic thinking.

Wheatley, Anthony et al (1991) recommend that strategic planners be selected with creativity in mind and training in creativity techniques is recommended for strategists (Wheatley, Anthony et al., 1991; Higgins, 1996) with scenario techniques being emphasised (Millett, 1988; Bood and Postma, 1997). A variety of techniques have been developed to improve creative thinking and when creative abilities are cultivated significant positive results are found (Parnes and Brundle, 1967; Torrance, 1972; Mansfield, Busse et al., 1978; Rose and Lin, 1984). Creativity training often emphasises the importance of generating and considering multiple solutions which itself tends to increase the quality of the final solution (Schwenk, 1984). In contending that managers should be trained to be more creative Hogarth (1981) claims that

> "one of the biggest deficiencies in choice behaviour arises from failing to be sufficiently imaginative about both the possible alternatives at one's disposal and the various events that could occur in the future" (p65).

Arguably this is particularly important for strategic managers as previous experience leads managers to search for solutions in problem spaces close to where they found previous solutions (Cyert and March, 1963). However although

> "The most successful firms are notable in employing imagination to define a new position, or find new value in whatever starting position they have" (Porter, 1991),

creativity and imagination in strategy and strategic decision making has not been widely studied (Sethia, 1989). As Bonn (2001) importantly identifies

> "The question of whether training can enhance the strategic thinking ability of senior managers is difficult to answer due to the lack of research in this area." (p69).

Indeed "little is known about how to develop strategic thinking capacity" (Linkow, 1999) and studies on the impact of creativity training on strategic thinking have not featured in the strategy literature.

Methodology

This research aims to make a contribution to closing this gap in the strategy literature by assessing whether training individuals in creativity techniques results in more creative strategies and hence develops strategic thinking. This leads to the following hypothesis:

"Individuals trained in creativity techniques will formulate more creative strategies than individuals who have not received such training"

Sample Selection

To address this hypothesis final year undergraduate students studying business management at Manchester Metropolitan University were asked to formulate strategies. The test group received training in creativity techniques whilst the control group received a similar period of instruction in activities unrelated to creativity. The members of both groups were chosen at random. This random selection was intended to mitigate against the affects of moderating factors such as the innate creativity of individuals (Wierenga and van Bruggen, 1998) on the creative output.

The Creative Output

All students studied a unit in strategic management and were asked to formulate one resource based strategy and one environment based strategy for a case study organisation. These two types of strategy were chosen to represent two fundamental perspectives evident in the strategy literature. One being the environmental fit view where "adapting to a changing environment is crucial for a firm" (Jacobson, 1992). This view leads to environment based strategies with an organisation striving to achieve competitive advantage by lower cost, differentiation or some combination of the two (Hill, 1988). A second perspective is the resource based view where organisational resources and competences are crucial considerations (Penrose, 1959; Grant, 1991). This view leads to resource based strategies. The strategies formulated by students and submitted in a written report were the creative output measured in the research.

Measuring Creative Output

Measuring creativity by the objective analysis of creative output involves the difficulty of defining an objective standard against which to test the creativity of the output and has found little application (Amabile, 1983). Subjective analysis of creative output often relies on a panel of expert judges to assess the creativity of the output using an agreed definition of what represents creative output in the particular context (Jackson and Messick, 1980; Sobel and Rothenberg, 1980).

The instrument employed to judge creative output in this research was the revised creative product semantic scale(O'Quin and Besemer, 1989). The creative product semantic scale was originally conceived as an instrument for judging the creativity of products. Its application has been extended to include the measurement of creative output where less tangible artefacts are involved, for example marketing programs(Andrews and Smith, 1996). This instrument consists of three dimensions: Novelty; Resolution; and Elaboration and Synthesis with each dimension having several subscales (appendix 1). For the purpose of this research the definitions of these dimensions were:

Novelty - the extent of newness of the strategy in terms of the number and extent of new processes, new technologies, new products and concepts. The newness of the strategy in both the existing sector and other sectors. The potential effect of the strategy on future strategies for this and other organisations.

Resolution - the degree to which the strategy fits or meets the needs of the situation.

Elaboration and synthesis - the degree to which the strategy combines elements into a refined, developed and coherent statement.

The environment and resource based strategies were judged against the subscales comprising the three dimensions (appendix 1) by the author on a 1 to 5 Likert type scale.

Findings

The data were tested for internal reliability and gave the values shown in table I. The scores obtained for Elaboration and Synthesis were close to the minimum value of 0.7 suggested by Nunnaly (1978) were so are discarded.

Table I. Cronbach alpha values		
	Trained	Not-trained
Novelty	0.95	0.97
Resolution	0.94	0.87
Elaboration and Synthesis	0.67	0.72

The remaining data were tested for differences between the two groups using the method of Mann-Whitney (Huber and Wagner-Dobler, 2003). Because of the rejection of the Elaboration and Synthesis data from the scale it was not possible to calculate an overall creativity score and so the two remaining dimensions, Novelty and Resolution, were analysed independently. The results of this difference testing are shown in table II.

Table II: Difference testing results			
Novelty			
	All cases (33 trained, 37 not trained)	**Resource based** (17 trained, 18 not trained)	**Environment based** (16 trained, 19 not trained)
Number of cases	70	35	35
Trained mean rank	38.68	21.35	18.38
Not trained mean rank	32.66	14.83	17.68
Mann-Whitney U	505	96	146
Significance	**0.108**	**0.031**	**0.429**
Resolution			
	All cases (33 trained, 37 not trained)	**Resource based** (17 trained, 18 not trained)	**Environment based** (16 trained, 19 not trained)
Number of cases	70	35	35
Trained mean rank	33.42	16.88	17.22
Not trained mean rank	37.35	19.06	18.66
Mann-Whitney U	542	134	140
Significance	**0.212**	**0.270**	**0.344**

Discussion

In general the differences found between the test and control groups were insignificant and there is no overall support for the hypothesis:

"Individuals trained in creativity techniques will formulate more creative strategies than individuals who have not received such training"

However there does appear to be a statistically significant difference in the novelty score for resource based strategies. This may be explained on the basis that resource based strategies have a greater inherent degree of novelty since they require the leverage of resources to create new opportunities rather than merely the allocation of resources. Environment based strategies call for a fit with the environment, which may inherently require less novelty. Thus creativity training may have an impact where an inherently more novel (resource based) strategy is called for and less so where an inherently less novel (environment based) strategy is needed.

These findings would suggest that creativity training does not result in the formulation of more creative strategies which appears to be at odds with findings regarding creativity training in general (Parnes and Brundle, 1967; Torrance, 1972; Mansfield, Busse et al., 1978; Rose and Lin, 1984). Four principle reasons can be offered for this apparent contradiction. First the creative product semantic scale used as a measure of creative output may not be entirely appropriate for this purpose. The scale was developed for assessing the creativity of products and may not be appropriate in its current form for application in this type of research. Second where such measures of creative output are used it is common to have more than one judge and in this case only the author has scored the strategies for creativity. The employment of a judging panel rather than a single judge may have increased the reliability of the measurement process. Third the period of time from creativity training to the submission of strategies was several weeks and this provided opportunity for cross fertilisation of ideas between the two groups. Fourth the transfer of training between contexts is often identified as difficult (Baldwin and Ford, 1988). The creativity training produced more creative outputs in the context in which it occurred but this creative ability may have failed to transfer between contexts.

Conclusions

The analysis of the data gathered in this research indicates that training in creativity techniques does not result in the formulation of more creative strategies although there may be greater creativity in resource based strategies, where greater novelty is required. This is in contrast to more general findings associated with creativity training. Weaknesses in the method employed may explain these findings. This research has, however, identified and explored an area in the strategy literature which has not previously been examined in any depth and is worthy of further research. In doing so it has employed an established data gathering instrument, the creative product semantic scale, in a unique fashion and further research could involve the development and validation of a modified creative product semantic scale, perhaps the creative strategy semantic scale.

Despite the lack of positive findings this research does have potential implications for practice. Although the undergraduate students in this study have limited experience of organisations, training managers in creativity techniques may not result in more creative strategies and by extension may not develop their strategic thinking. It is worth noting however that this research has taken the individual as the unit of analysis and in the majority of organisations the formulation of strategies is likely to be a group process involving "structures, processes and systems" (Bonn, 2001). One argument for the use of scenarios to generate more creative strategies (Millett, 1988; Bood and Postma, 1997) is the incorporation of some of these group processes. The use of what is effectively a laboratory setting could be extended to a field setting with practising managers using either individuals or groups as the unit of analysis.

Appendix 1 - The Creative Product Semantic Scale Showing Subscales

Novelty	***Resolution***	***Elaboration & Synthesis***
Original	***Valuable***	***Organic***
Over used - Fresh	Worthless - Valuable	Disordered - Ordered
Predictable - Novel	Important - Unimportant	Arranged - Disarranged
Usual - Unusual	Significant - Insignificant	Organised - Disorganised
Unique - Ordinary	Inessential - Essential	Formless - Formed
Original - Conventional	Unnecessary - Necessary	Incomplete - Complete
Surprising	***Logical***	***Elegant***
Stale - Surprising	Illogical - Logical	Graceful - Awkward
Customary - Surprising	Makes sense - Senseless	Repelling - Charming
Astonishing - Commonplace	Irrelevant - Relevant	Coarse - Elegant
Shocking - Old fashioned	Appropriate - Inappropriate	Attractive - Unattractive
Astounding - Common	Adequate - Inadequate	Refined - Busy
Germinal	***Useful***	***Complex***
Warmed over - Trendsetting	Ineffective - Effective	Intricate - Straightforward
Revolutionary - Average	Functional - Non functional	Simple - Complex
Radical - Old hat	Operable - Inoperable	Plain - Ornate
Uninfluential - Influential	Useless - Useful	Complicated - Uncomplicated
Pioneering - Unprogressive	Workable - Unworkable	Boring - Interesting
		Understandable
		Meaningful - Meaningless
		Mystifying - Understandable
		Intelligible - Unintelligible
		Clear - Ambiguous
		Unexplained - Self explanatory
		Well crafted
		Skilful - Bungling
		Well made - Botched
		Crude - Well crafted
		Meticulous - Sloppy
		Careless - Careful

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