Business Simulations and the Rôle of the Manager

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Abstract

This paper examines some of the experience of using business simulations, for management teaching, in an academic environment. It is particularly concerned with simulations which promote group and collaborative working, and which encourage students to review their interaction within the group. Using this experience, and examining the nature of managers' work in business, it discusses the extension of these principles to in-service management training. In the business context, the emphasis on group work translates to an emphasis on enabling managers to recognise and use their individual skills, and personalities, to the best effect.

Management training, especially in the UK, has long been regarded as a luxury, only to be indulged in where money and time are plentiful. To encourage the use of simulations in business, some ideas for evaluation of their effectiveness in training are also discussed.

Business Simulations and the Rôle of the Manager

1Background and Intention

1.1Experience of Business Simulations

Since the 1991-2 academic year, City University Business School (CUBS) has used a series of tools and business simulations, based on computer networks, in the teaching of business students at both undergraduate and postgraduate level (Rich, 1992). The design and scope of these simulations is continually evolving in the light of student responses, the overall structure of the degree courses, the technology available, and current views on management learning.

These simulations were introduced initially in response to a demand from students for more experiential learning, especially in the core computing course taken by MBA students who had not elected to specialise in information technology (IT). While the original simulation (called Trent Engineering) did provide practical experience of using computers, and particularly electronic mail, there were two non-technical objectives:

•By asking students to make strategic decisions about the future of IT within the case, it encouraged them to see IT in terms of 'soft' organisational factors, not 'hard' technical factors

•By using the network to monitor the discussion processes among groups, and by formulating problems so that they were susceptible to group analysis, the simulation set out to give students practice in group work.

1.2Extension to Business Applications

These objectives can be extended to in-service training of managers in business. In the academic application at CUBS, members of groups were encouraged to discover what their most effective individual contributions were. In business, managers have different styles; their abilities and personalities influence their own responses to a particular situation. As, for students, the use of the simulation highlighted the individual group rôles, for managers, such a simulation will highlight individual strengths and styles.

In this paper, the underlying hypothesis can be summarised as:

•Business simulations can contribute to a business's management training by helping managers to recognise their most suitable team rôles, and work effectively within those rôles.

1.3Relevant Research

In assessing the potential for simulations in business it is appropriate to draw on four particular fields of research:

•Use of simulations, and computer communication in education. While much of the literature on this concentrates on computer conferencing (CMC) the principles may be extended to electronic mail

•Management training and learning within organisations. This includes the reasons to train, or not to train, and in particular learning to deal with technology in organisations

•Psychometrics, personality types, and the corresponding management styles. This extends to work on the nature of managerial work and research on different team rôles
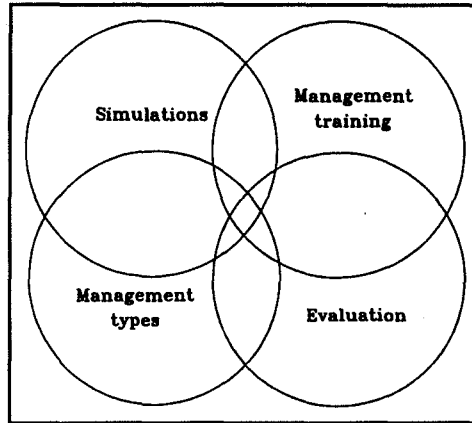
•Educational research into techniques for evaluating the effectiveness of different types of learning

One of these different influences is reflected in each of the remaining sections of this paper

2 Trent Engineering and Other Simulations

2.1 Use of Simulations

Trent Engineering is a simulation run over one term, of ten weeks, for MBA students. Although the information flow about the organisation is predominantly in one direction, from the university to the students, and the students have only a minimal influence on the outcome of the simulation, Trent uses a number of techniques to involve students and to maintain their interest throughout the term:

•An initial (paper) description of the case is distributed at the start of term, but additional information is provided in stages throughout the term by electronic mail

•An element of tension is built up from one mail message to another

•While electronic mail is used as an adjunct to conventional teaching, with students who are based at the university, it does allow students from around the world to be involved in the simulation.

Wolfe (1993) surveys the development of simulations as a teaching tool. He notes that, in general, the US is more active in their use than other countries, and academic uses are more highly developed than those in business. However, there is an increasing trend to the use of decision support systems (DSSs) as a basis for games - and business implementations of DSSs are proliferating. Using a DSS normally implies that a simulation is qualitative (as is Trent Engineering), and the emergence of simulations based on DSSs is a sign of a move away from solely quantitative simulations. Qualitative methods arouse a lot of interest, in management research, at present (Easterby-Smith et al, 1991), another pointer to the value of qualitative techniques in management.

Experience at CUBS suggests that while quantitative simulations, put in a broad management context that encourages students to take a holistic view of a problem, are extremely valuable, there are two related dangers. Participants can treat the simulation as they might treat a video game, pursuing one goal single-mindedly and learning about the mechanics of the game itself to achieve this goal, and they can view a business purely in terms of the financial success of failure represented by success or failure in a quantitative game.

2.2 Success Factors for Simulations

Thurman (1993) takes a cognitive psychologist's view of business simulations, and identifies a number of criteria for a successful simulation. Among these are:

•A combination of clear goals (so that learning objectives are understood) and uncertain outcomes (to maintain interest)

•Motivational scoring: a clear approach to scoring which encourages participants to work effectively

•Recognition of participants' mental models of a business process.

Johnson (1991) uses the experience of the Open University to derive some pragmatic pointers to success in non-traditional learning materials. These include the importance of a prototyping approach, attention being given to producing material of a high visual quality, and tight planning and control of the development phase. It is worth noting that the Open Business School's 'Effective Manager' course has become accepted by many organisations in the UK as an important part of their management training programmes.

At CUBS the principal measures of the success of the Trent case study have been anonymous students questionnaires, and directed questions about the realism of the case and the effectiveness of group work (Rich, 1994). Generally the scores given by students to simulations have been rather lower than those given to good lectures, apparently reflecting a suspicion of novel methods of learning.

3 Management Training

3.1 Background and Objectives

Management trainers have often had a difficult task, especially in Britain. This reflects several factors:

•pressure on managers to spend time being directly and visibly productive

•lack of clarity about what managers need to do, and what skills they most need to be trained in

•a belief that the best manager is one well qualified for the tasks performed by his or her subordinates (with the manager of a football team as perhaps the most compelling example)

•a perception of training organisations in business as part of a personnel function with purely administrative aims.

Mick Silver (1991) quotes 23% of the managers who he interviewed about reasons for not training managers as saying that they were unable to spare the time; it is interesting that all of these put this as their most important reason even where they cited other reasons as well.

What is management training for? Silver's evidence suggests that managers, so far, have been more interested in functional skills than general skills, and when asked about general skills have talked in terms of vague personal characteristics, and not about abilities at working in groups or alongside colleagues. With his co-authors, he includes stories both of successful management training and of very successful 'amateurs' who entered management by accident.

So the most important factor in promoting training is convincing managers of its worth, and after that emphasising skills beyond the limited functions taught in the past. This leads to a need to evaluate training, and to use effective techniques (Jones and Woodcock, 1985). Of the basic approaches to training, that most appropriate to the use of simulations, is to promote inductive learning: a progression from doing things to discussion and then learning from the discussion.

3.2 Training and Organisational Change

Hostility to the personnel function is undoubtedly one reason for suspicion of training. But this presupposes that training is purely a function to be 'bolted on' to managers' everyday work.

Peter Senge (1990), whose work is rooted in system dynamics, talks about a 'learning organisation' where learning is an integral part of everybody's work. The representation of an organisation as a system lends itself both to the system itself being able to learn, and to the use of simulations - microworlds in system dynamics parlance -for learning. As IT becomes more prevalent in organisations, the importance of building a business model increases; Daniels (1994) sees building such a model and an 'information map' as an essential component in formulating an IT strategy, and simulations are useful in drawing information maps.

Throughout business there is, in the 1990s, a trend to flatter organisations, more varied jobs, to at least a broader understanding of each of the various rôles within the organisation. To be effective in this environment, training must foster a broader view of the organisation than that created by purely functional courses.

3.3 Technology and Communication

A principal limitation of the Trent simulation used at CUBS was its reliance on pure text communication. As a lean medium, it provides little extraneous information (Trevino et al, 1990) and so is most suited to simple, unequivocal, messages. But a simulation conducive to group work needs equivocal, finely balanced, decisions which students need to discuss within their groups before agreeing on a course of action. These are best communicated with a richer medium, and in Trent the richness was added to the electronic mail by using videotapes and conventional lectures as well.

Conferencing tools are now available, such as Lotus Notes, which combine interaction with the use of graphics and variations of formats, though there is still a trade-off between the ability to include extraneous information in a message and the ability to send it to many different destinations. Standards covering (for example) the Internet are based on the most limited functions able to provide useful communication.

In business, the most familiar uses of IT are the mainframe for clerical work, and the personal computer as a manager's tool. The widespread network is a new and exciting tool for many. But this network has an impact on methods of communication - possibly even a move away from established measures of proficiency with words. Patsy Rodenburg (1993) laments the decline of oracy (fluency with the spoken word) not only as an individual ability, but as an attribute to be respected and valued in society.

Any qualitative business simulation places a requirement on its participants to communicate, to describe to others how they reached their decisions, to ensure that their objectives are clear. And a simulation based on group work has the extra dimension that there must be effective communication within the group for an effective decision to be arrived at in the first place.

4 Management Styles and Personalities

4.1 Management Types and Rôles

Ambiguity about managers' tasks (and a consequential belief that they must be in the grasp of anybody with a certain level of intelligence) is one of the reasons for resistance to management training. Various definitions of managerial work exist, notably Mintzberg's (1973) framework which divides into interpersonal, informational, and decisional rôles.

Although managers are often perceived as solitary figures, with sole responsibility for a business's fortunes resting on their ability to make decisions, in practice most managerial work is based on groups - even where that group is the main board of a company. Meredith Belbin (1981) wrote about the results of research into how different managers worked in teams, using a simulation to observe teams' success. While this was neither a computer-based simulation, nor one concentrating on accurately reproducing the feel of a business (called Teamopoly, it used some of the materials and ideas of the board game Monopoly) it did vindicate the value of a simulation as a way of observing a business process.

Two aspects of Belbin's work are particularly relevant:

•Belbin was concerned with attributes of his team members, and used questionnaires to determine a profile of each one, instead of looking at the rôles to which each was assigned

•The team member who attracts most interest in Belbin's writing is the 'Plant', a creative, individualistic character rich in ideas and imagination but sometimes needing firm management to ensure that these ideas could be applied.

Belbin did measure success or failure in terms of financial outcomes, albeit in the slightly artificial environment created by a game of Monopoly. In addition to the team rôles, he classified his participants as stable or anxious, and extrovert or introvert. It is interesting that Belbin's work encourages different team members to use their individuality, and to find a way of working which best suits their own personalities.

4.2 Psychometric Measures

In the game of Teamopoly, the players were categorised by using a questionnaire to find out about their aptitudes and preferences. These draw on the psychometric view of personality (Kline, 1993) which leads to the use of tests to find out about individuals. In designing such tests there are always assumptions about the nature of personality and the different factors within it.

Most psychometric work converges on the existence of five main factors (the 'big five'). Several classifications exist: Romney and Bynner (1992) use:

•Extroversion
•Agreeableness
•Conscientiousness
•Emotional stability
•Culture.

Within these there are apparent paradoxes, such as people who are open but not talkative, or trustworthy but untidy. The outgoing person who says 'I'm really a shy person' is usually saying that, though they are talkative, they are not as open as might appear. These relative subtleties are described by second order factors.

Philosophically, psychometrics recognise the existence of traits and the variation in different personalities. Romney and Bynner observe that psychometric models do imply the ability to change. While this might appear paradoxical in a field concerned with measurement, the context is one of changing specific factors, not making everybody into an identical personality.

4.3Personality and Stress

Historically working long and hard has usually been regarded as a good thing for managers to do, especially during the 1980s, and is usually equated with being conscientious.

But there are three obvious bad reasons for working long hours, which Douglas LaBier (1986) touches on in his analysis of stress at work:

•bad organisation of one's own time
•snobbery; a need to be seen by others - or even oneself - to be a hard worker
•escape from an unhappy home life.

In LaBier's chapter 4 there are possible examples of all these. Joe, one of his depressives, seems to work hard to impress. Mel, the unimaginative but determined plodder, seems a case of snobbery who needs to work hard to convince himself of his work, as though hours put in behind a desk compensate for a shortfall in imagination.

LaBier's work draws on the categorisation of managers by Maccoby (1977), but helps to allay fears of pigeonholing because it is so dedicated to individualism; a theme running through the book is that people are stressed because they feel obliged to conform to this new, and destructive, normalcy. It is interesting to link it to historic ideas on patterns of work. Taylor's view of scientific management, which prevailed in the early twentieth century and reflect, for example, Henry Ford's early production lines, are strongly depersonalised. People are regarded as machines with fixed capabilities, whatever their individual characteristics. In manufacturing, quality circles, job enrichment, and so on all suggest that Taylor's ideas are thoroughly discredited. But areas of office work, especially in the IT industry, still take a remarkably mechanistic, stereotyped, view of individual capabilities.

As he uses some of the language of psychotherapy, LaBier writes mostly about people who are troubled by their work or by its relationship with the rest of their life. There is a theme in LaBier's therapeutic efforts of people who think they are happy, because they have built themselves into working stereotypes, but still suffer from the turmoil inside. And in most offices there is enough destructive cynicism, at least, to represent a monumental waste of effort.

4.4Simulations and Groups

The Trent simulation used at CUBS placed a strong emphasis on group work,and the ability to work as a group was seen as something that MBA students had to leave their course with. To this end it is one of several group exercises during the year that the MBA course runs. Considerable tensions have been observed as groups form, and as students form and leave groups.

For 1993/4 the MBA course has been restructured with a greater amount of group work concurrent with the Trent simulation (this is a consequence and not an objective). It means that many groups have, during the year, divided the course activities between different members and, in effect, made the Trent exercise the responsibility of one or two members. While this reduces the amount of group interaction, and impairs the students' opportunities to learn about collaborative decision making processes, it is a rational decision which it would be unreasonable to berate the groups for.
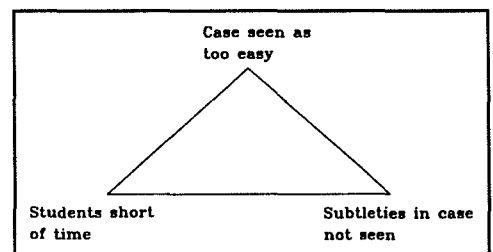
As the workload on groups has increased, some tensions have been introduced. While most of the feedback to staff has been favourable and constructive, some students find the Trent case insufficiently challenging, but at the same time find themselves short of time in which to work on it. And because of the shortage of time, and the lack of group discussion, the case often looks easy because the subtleties built into it, especially in the messages sent to groups as the case runs, are overlooked by students.

Two influences are at work here: group structure and communication. Newman and Newman (1993) examine two reasons for failure which can occur, in their case using CMC. Maintenance failure is analogous to a breakdown in a group's internal discussion; in the case cited it was characterised by a discussion where there was a lot of argument, but most of it bickering at the expense of reasoned debate. Performance failure is a failure to communicate anything to participants, again in the case cited not a lack of communication so much as an ambiguity in messages. Ironically the ambiguity was exacerbated by the use of 'smiley' symbols to express emotion.

To foster group work effectively, then a simulation must ensure that communication is clear and comprehensive, and that the environment is appropriate for groups to form and discuss matters effectively.

5 Evaluation

5.1 Weaknesses of Assessment

Conventional wisdom in management training is that it should not be combined with assessment; to do so introduces a threat to managers who feel inhibited during the training session, and introduces an ambiguity in the purpose of the training. However training is difficult to justify to most managers, and some method for evaluating its effectiveness is essential if its contribution to business can be recognised.

Educational research distinguishes between looking at a student's progress, before and after taking a course, and looking at absolute achievement (Cohen and Manion, 1989). Given the variation of experience and background, the approach of measuring progress seems most appropriate for evaluating management training.

It is a characteristic of many business simulations (not of Trent) that students have an idea of their success or otherwise in the rôles of individual managers. There are few grounds to suggest, though, that those who achieve the greatest success, especially in quantitative simulations, also learn the most. Miller and Leroux-Demers (1992) look at management as a clinical activity and identify various ways in which managers can measure benefits: salary increases, perceived promotion, and so on. They also look at the external validity of simulation results, explored by Wolfe and Roberts (1986) who observed a weak link between success in a game and success in a subsequent career.

5.2 Forecasting as a Tool

One appealing way of measuring a manager's success is to look at forecasting accuracy (Teach, 1993). While there is no consensus on absolute measures of success, forecasting is always a valuable ability for managers and accuracy can be tested both within a simulation and in real life.

Forecasting also forces managers to question the reason for changes in the fortunes of a business, so an emphasis on forecasting fosters an emphasis on managers' analytical skills. Because it can be applied in a business (outside a course) before and after a programme of training it is also appropriate to measuring progress. If used to evaluate the effectiveness of a simulation for learning in business, it is best used outside the simulation itself.

There is no reason for forecasting to be limited to quantitative measures. In a simulation which promotes group work there should be scope for developing tools to forecast elements of group behaviour.

6Conclusion

A key to corporate success should be recognising people's personalities and encouraging people to make the best of their own abilities. It could be argued that one prerequisite for this is being aware of one's own weaknesses, as well as one's strengths, and having the personal security to work around the weaknesses. A second prerequisite is a career structure that does not restrict success to people who fit a particular mould: observation suggests that British senior managers remain very homogeneous in personality and background.

One of the buzz-words of the 1990s is 'empowerment'. There can be few better ways of empowering people than building a management framework that takes advantage of their own abilities.

Management training (in-service) covers a wide spectrum from activities close to 'pure' education, to the almost evangelical. Some of the pseudo-religious work is widely discredited. But perhaps there is a danger, of a more subtle form of evangelism, in other courses because they actually just try to push managers towards LaBier's negative normalcy.

Business simulations have a place in devising courses that promote the rôle of the individual. But to achieve this they have to be designed effectively for group work. and have to be promoted in a way that encourages their use within business. If that is done, they fit well with current beliefs about management structures and organisational learning.

References

Belbin, R M: Management teams: Why They Succeed or Fail. London, Heinemann, 1981.
Cohen, L, and L Manion: Research Methods in Education. London, Routledge, 1989.
Daniels, N C: Information Technology: The Management Challenge. London, Addison-Wesley 1994.
Easterby-Smith, M, R Thorpe and A Lowe: Management Research. London, Sage, 1991.
Johnson J: Computers in Edication: Principles from Practice. International Journal of Computers in Adult Education and Training 2(1) 7-15. 1991.
Jones J and M Woodcock: Manual of Management Development. Aldershot, Gower, 1985.
Kline, P: Personality: The Psychometric View. London, Routledge, 1993.
LaBier D: Modern Madness. Menlo Park, CA. Addison-Wesley, 1986.
Maccoby M: The Gamesman. New York. Secker and Warburg, 1977.
Miller R and T Leroux-Demers: Business Simulations: Validity and Effectiveness. Simulation/Games for Learning. 22 (4) 261-285. 1992.
Mintzberg H: The Nature of Managerial Work. New York, McGraw-Hill, 1973.
Newman J and R Newman: Two Failures in CMC. Instructional Science, 21 (1) 29-43. 1993.
Rich M: The Use of Electronic Mail and Conferencing Systems in Teaching Management Students. CUBS (City University Business School) Working Paper, 1992.
Rich M: Building Computer Supported Group Work into an MBA Programme. International Journal of Computers in Adult Education and Training (forthcoming), 1994.
Rodenburg, P: The Need for Words. London, Methuen 1993.
Romney D, and J Bynner: The Structure of Personal Characteristics. Westport, CN. Praeger, 1992.
Senge P: The Fifth Discipline. London. Century Business, 1990.
Silver M: Competent to Manage. London, Routledge, 1991.
Teach R D: Forecasting Accuracy. Simulation and Gaming 24(4) 476-489. 1993
Thurman, R A: Instructional Simulation from a Cognitive Psychology Viewpoint. Educatior . Technology Research and Development 41(4) 75-89. 1993.

Trevino L, R Daft and R Lengel: Understanding Managers' Media Choices: A Symbolic Interactionist Perspective, in Fulk and Steinfield: Organizations and Communication Technology. Newbury Park, CA. Sage, 1990.

Wolfe J: Business Teaching Games. Simulation and Gaming 24(4) 446-463. 1993.

Wolfe J and C Roberts. The External Validity of a Business Game. Simulation and Games 17 (1) 45-49. 1986