

NTU (Nanyang Technological University) Library as a Learning Organisation

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With the advent of the Internet and info-communication technologies, academic libraries all over the world have been undergoing rapid changes to take advantage of new technology to meet the information needs of their users. However, the provision of technologies such as digital resources is only part of the management puzzle. The fostering of a learning culture for staff and students is equally important. The Nanyang Technological University (NTU) Library in Singapore had been in the process of developing resources and services in order to better serve the university community since its inception in 1981. The researchers were

curious to find out if the NTU library met the criteria of a learning organisation. This study concludes that the library had a majority of the characteristics characterising learning organisations. New mindsets had to be cultivated and greater trust fostered amongst the employees to leverage the library's knowledge assets. Individuals had to be rewarded based on their ability to collaborate, champion learning and share knowledge. The managers had to take on new roles to empower their staff to do their best work. Such changes were necessary in order to actualise the goal of becoming a world-class academic library.

Introduction

The concept of the learning organisation can be somewhat vague as the definition of the phrase "learning organisation" can be subjective and perhaps even misleading. For example, some may have thought of learning organisations as institutions involved in the business of education, presumably where lots of learning takes place!

In this paper, we attempt to define and clarify the learning organisation concept using fifteen characteristics. These characteristics were gathered from a literature review and highlighted by prominent researchers and authors in the field such as Peter Senge (1991), Rosabeth Kanter (1995) and Charles Handy (1995) as critical success factors in any learning organisation. We have extrapolated these characteristics to serve as an indicator, a measure or benchmark that could help interested organisations determine the extent of its organi-

sational learning capabilities, evaluate itself and bridge perceived gaps.

The Nanyang Technological University's (NTU) Library was identified as a suitable organisation that was within the scope for this research project. The library was a fairly small enterprise with 65 employees. The NTU with its library was established in 1981 as a technological institute but achieved full university status in 1991. The library's history was characterised by one of continual improvement and it had made modest progress over the years, keeping pace with the university's efforts towards becoming an organisation of world class renown.

The researchers were curious to know if the library was a learning organisation and if its success was attributed to it being one. The case study would provide a good test-bed for researchers to investigate the feasibility of using the fifteen characteristics based on the learning organisation

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concepts for assessment purposes. It was most fortunate that the library's management took an interest in the study and researchers obtained the full cooperation of the library employees to participate in this research study.

Research objectives

The research objectives were to:

1. Assess the extent of the library being a learning organisation based on the fifteen characteristics.
2. Identify the strengths and weaknesses of the library based on the findings.
3. Explore and recommend solutions in collaboration with experienced librarians.

What is a learning organisation?

The concept of the learning organisation was made popular by MIT's management guru, Peter Senge in 1991 in his best selling book – *The Fifth Element: The Art and Practice of the Learning Organisation*. Over the years, the learning organisation as a concept has become of interest to academics, researchers and business organisations. Many researchers agree that embracing the learning organisation concept can be the success formula for organisations to thrive in the midst of increasing competition and rapid change. Some have associated the learning organisation concept as another management fad, for example like business process reengineering (BPR) or total quality management (TQM), which were fashionable and much touted at one time but gradually faded into oblivion. Peter Senge agrees that the business environment and consequently management strategies will always change but the concept of the learning organisation will remain a core value of successful business organisations (Senge 1994).

The concept of the learning organisation seems illusive. It could be that the learning organisation is characterised by continual renewal and change. It is a journey without a destination. Pedler (1995) proposes that the learning organisation is one that "facilitated the learning of all its members and continuously transformed itself". Rowley (1997) and Senge (1994) described the learning organisation as the characterising of both individual and group (organisational) learning that led to transformation.

It appears that the definition of the learning organisation is manifold and can at best describe a philosophical idea. Attempts to define it in absolute terms seem inadequate. For this research work, researchers have quantified the learning organisation concept into fifteen characteristics that will perhaps reduce vagueness and give some indication as to what a learning organisation is.

Relevance of the learning organisation to academic libraries

The advent and rapid developments of information technologies and the proliferation of the World Wide Web in the last decade has brought about a tsunami of change that have compelled libraries to utilise these new technologies to improve services or risk obsolescence. The learning organisation concept would help librarians adapt and cope with rapid changes brought about by technological advances. It would reduce complacency; bring on a new shift of paradigm towards continuous learning, improvement and innovation.

The Internet and digital technologies have revolutionised the expectations and ways in which people access information. There is greater ease of access to information than ever before. Information can now be downloaded from the Web, printed, archived and made portable at the stroke of a keyboard button or a mouse click. The kinds of information that people would consult librarians or libraries for are now obtainable from the Web at digital speed. The relentless technological advancements would bring on more efficient and intelligent search engines that would make searchers simpler.

According to Professor Peter Brophy (2000), there was a need for academic libraries to become learning organisations because,

- The staff-student ratio has worsened. Students are expected to do more independent work with less direct supervision.
- Libraries would have to be better equipped to cope with 'independent learning places' requirements.
- There was a need to train librarians to perform roles of advisors or tutors to address student information needs
- There was a greater need for libraries to support distance learning or part-time learning for mature students.

He noted also that there were many factors causing uncertainties for libraries. These included wider educational changes, reorganisations as a result of convergence between library and IT services, rapid technological innovation, shortage of funds, lack of institutional strategic direction, role changes, erosion of professional identity, deficiencies in staff training and the obligation to support user's information needs.

Characteristics of learning organisations

A total of fifteen characteristics (Shared Vision; Participatory Management; Training; Learning Attitudes; Experimental & Forgiving Climate; Open Communication & Dialogue; Trust and Togetherness; Teamwork; Employee Empowerment; Knowledge Management Infrastructure; Fun and Rewarding; Leadership; Customer Relationships; Adaptability; Bureaucracy) were identified from the literature review of successful learning organisations and were used to assess the extent of the library being a learning organisation.

1) A shared vision and participatory management style

It is clear from the literature review that learning organisations have a vision that permeated the entire organisation and employees were committed to. This shared vision is the result of a participatory management style that sought and respected the opinions and aspirations of employees at all levels (Senge 1994).

2) Training opportunities

Learning organisations believe in investing in their employees' professional and personal development. They send them for training regularly and encourage them to develop life long learning habits. There was emphasis in learning at the whole organisation level and not just at the individual level (Pedler et al. 1995).

3) Learning attitudes

Learning organisations are characterised by employees who are highly motivated towards learning and development. They thrive in a forgiving environment where mistakes are viewed as op-

portunities for learning (Handy 1995). Such an environment encourages experimentation and curiosity amongst the employees that often lead to innovation, better products and services.

4) Team working, trust, communication and forgiving climate

Most employees in learning organisations do their work in teams. They believe that members become more cohesive and that creative ideas are more forthcoming with teams than individuals. Coupling with an environment of trust and togetherness that fosters a culture of open communication, learning and sharing amongst the employees, the group dynamics created will be enormous (Handy 1995 and Ryan 1995).

5) Employee empowerment

Learning organisations believe in empowering their employees to do their jobs (Lei et al. 1999). They recognise and value their employees as assets that will do their best jobs when they are entrusted rather than assigned with work (Daniels 1994).

6) Knowledge management infrastructure

With the acquisition, learning and sharing of valuable information and knowledge, there is a need to have an effective knowledge management infrastructure. The organisation has to be able to harness and utilise these resources into a cohesive whole to become truly effective (Rowley 2000).

7) Leadership

Learning organisations are characterised by competent and transformational leaders. These leaders take on new roles as counsellors, mentors, coaches and facilitators rather than authoritarian bosses (Rolls 1995). They focus on inspiring their subordinates to do their best work and encourage them to learn and think creatively.

8) Fun and rewarding work

Employees in learning organisations tend to describe their work environment as fun and rewarding (Kanter 1995). There is greater emphasis on rewarding employees based on the overall

performance of the organisation rather than on individual efforts to encourage collaborative behaviours (Lei et al. 1999).

9) *Customer relationships*

Most learning organisations are customer orientated (Rolls 1995). They understand the importance of their customers and make efforts to satisfy them. Learning organisations are highly adaptable. They envisioned the need to continually improve and change to remain competitive, relevant to the industry and their customers.

10) *Adaptable and non-bureaucratic structure*

Finally most learning organisations tend to be organic and not bureaucratic. Olorunsola (2000), Nauratil (1989), Bundy and Wasserman (1968), Lynch (1979) and Usherwood (1980) have all reported on the ill effects of bureaucracies on library organisations.

Research methodology

In conducting the research, both a questionnaire survey and interviews were used to assess the library's learning characteristics. The results derived from the survey provided the quantitative results for data analysis. The qualitative approach of interviews provided greater flexibility to probe, interact, clarify and seek solutions.

Targeted sample

To assess the characteristics of the library organisation, employees from all levels in the hierarchy were encouraged to take part in the survey. These employees would have a clearer perspective of the culture, internal practices, shortcomings and other details transparent to external parties. They were knowledgeable and likely to give good and pragmatic solutions. They had a stake in this study because any improvements recommended through this research work served their interests and the rest of the university's community.

Encouraging participation at all levels in the hierarchy ensured that all perspectives were accounted for and made for a more accurate survey. All participants were assured of anonymity to maximise freedom of expression.

Questionnaire design

The questionnaire comprised of forty-seven questions (Appendix A is a sample of the questionnaire). The fifteen characteristics assessed each had three questions. These questions were derived intuitively but focussed on the concepts of each characteristic, to verify its absence or presence within the organisation. Participants were asked to evaluate each characteristic by circling a number from the Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) that best described their opinion. Numbers 1 and 2 would be broadly categorised as "Disagree" and numbers 4 and 5 as "Agree" for research analysis. A learning organisation would have a majority, if not all, of these characteristics.

Data collection process

The researchers wrote an official request to the Chief Librarian of the Library to seek permission to carry out the study. The Chief Librarian was very supportive and approval was readily given. Prior to the distribution of the questionnaire, the researcher briefed the management about the research work.

The library has a total of 65 employees working in various departments, namely Acquisitions, Cataloguing, Circulation, Media Resources, Resources and Serials. A total of 55 questionnaires were distributed through the library's heads of department, reaching 85% of the library's employees. Participants were given up to a week to complete the 15-minute survey. A total of 48 questionnaires were duly completed and returned, constituting a 74% response rating. Seven interviews were conducted with management staff soon after the data were consolidated and analysed.

Findings

The characteristics that were present in the library were: a strong customer orientation; high adaptability to change; positive learning attitudes, curiosity and experimentation; staff empowerment; positive attitudes towards team working; training and development opportunities; togetherness; open communication; and dialogue. These were considered the strengths of the Library as a learning organisation.

The employees were keen to serve their customers and understood the importance of providing good services that satisfied their information needs. More could be done to encourage feedback and interaction with the customers who were mostly professors and students from the university. They could tap onto this large pool of intelligent users to improve the library's services.

The library employees were highly adaptable, comfortable with change and understood the need to change constantly to improve. A large percentage of the employees were keen learners, curious and experimental. They constantly sought better ways to do their jobs. Most perceived themselves as being entrusted and empowered to do their jobs with minimum supervision. The employees had cultivated positive professional working relationships with one another and the work environment was harmonious. They were able to communicate with one another openly.

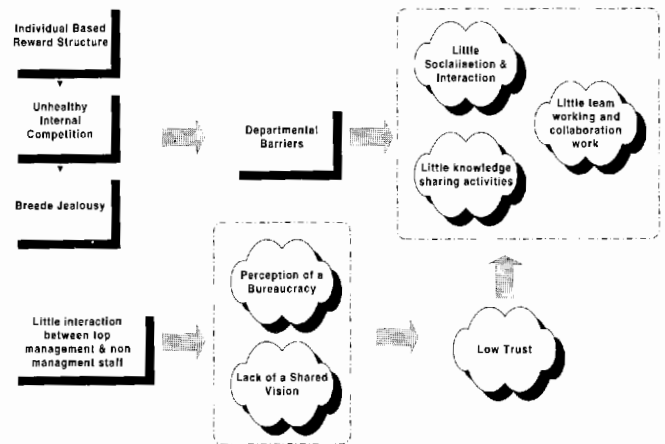
The library organisation was weak on a shared vision, perceived bureaucracy, employee participation, team working, rewards, trust, a knowledge-sharing culture, leadership and a forgiving climate.

The lack of a shared vision and little interaction between the top management and non-management had probably contributed to a perception that the library was bureaucratic. Most employees were not actively participating in organisational matters and preferred to work within their job scopes.

Most employees perceived themselves as working independently instead of in teams. The appraisal and reward system had focused on individual performance that led to internal competition rather than collaboration. Departmentalisation had further segregated the employees. Collectively, these became impediments to the culture of knowledge-sharing, collective learning, collaboration and trust. Interactions amongst employees were mostly formal and work related. Most employees were focussed on work and had placed little emphasis on building social relationships and fostering trust.

Trust however could be crucial for knowledge transfer and sharing. The success of most knowledge management initiatives depended on it. Employees had to trust one another before they would be willing to impart their knowledge to others and only then could the organisation progress from individual to group learning.

Figure 1: Information Environment Model



The Library would be better off if it rewarded those that learned continuously, fostered trust, shared knowledge and collaborated. Together with a shared vision, it could remove departmental barriers and facilitate greater staff interactivity at all levels.

Managers should focus less on authoritarian leadership styles. Instead they should empower their employees to do their best work. They would take on new and interchangeable roles as facilitators, mentors, coaches and stewards to promote the culture of knowledge-sharing, collective learning and collaboration.

Employees should be encouraged to form communities of practices and take advantage of the knowledge portal (iGEMs) to discuss, brainstorm, share and seek solutions collectively to problems. Members of the existing Work Improvement Teams (WITs) should be grouped together based on identical skill sets and a shared interest.

There was a need to evaluate and filter the staff suggestions from the Staff Suggestion Scheme (SSS). Only high quality suggestions or solutions and non-trivialities should be stored on the staff suggestion repository. The objective would be to convert this repository into the university's best practices repository where staff could consult to obtain solutions to problems. The knowledge in the SSS repository had to be mapped and put into proper context. It had to be categorised and equipped with a search engine that would retrieve relevant documents quickly.

Figure 1 shows a diagram depicting the causes and effects of the problems identified in this study.

It was noted that although the employees had curious minds, and were willing to experiment and learn, blame was apportioned if a mistake was made. A forgiving environment was necessary to allow employees to learn from mistakes and to view them as learning opportunities. Such a shift of paradigm could be used as a catalyst for improvement. Making mistakes was a natural part of learning.

Proposed recommendations for improvement

It was necessary for the library to continue to develop their strengths. The proposed recommendations for improvements have been done in consultation with the management.

1) Having a shared vision and value propositions

The library management understood the value of having a shared vision and that it was desirable to involve their employees to share their aspirations. They conceded that in drafting up the vision, this aspect had been overlooked since vision statements were usually done solely by Chief Executive Officers (CEO). The finding had indicated the need for greater staff involvement and perhaps for the visions to be redrafted. Managers could begin by encouraging their employees at all levels to express their aspirations and draft a vision statement which could perhaps be forwarded to the Deputy or Chief Librarian for further refinement.

Ideally the vision statements should bind the whole organisation towards common objectives, encourage employees to collaborate and give them a sense of purpose in the organisation. The vision statements could perhaps emphasise its desire to become a learning organisation and also define the value propositions of the organisation (O'Dell & Grayson 1998). Perhaps a good value proposition of the library was to satisfy continually, the information needs of the community.

Once the vision statement has been finalised it was important for the managers to rally their employees around the vision, explaining to them and making them conscious of the library's aspiration as they go about doing their jobs. The shared vision should foster a greater sense of belonging and trust amongst the employees as they sought to collaborate rather than to compete. The

shared vision would give them a holistic or helicopter view of the organisation, how they fitted in and contributed to the whole organisation, not just within their departments.

2) A culture of sharing and active staff participation

It was noted that it was difficult to change the culture and mindsets of employees to readily share knowledge or be proactive in the participation of organisational matters. The managers would have to take on new and interchangeable leadership roles of becoming mentors, facilitators and coaches instead of bosses. It was important to encourage their subordinates to participate, to engage them and continually consult with them. The formation of communities of interest and having a shared vision that emphasised a renewed culture of sharing and collaboration could help although it would take time.

It was pointed out that Asians tend to be more conservative, were more likely to keep to themselves and were shy. It had to do with the family upbringing, the education system and society. Top management were optimistic that these could change provided the employees made the conscious effort to do so. It was noted that the Chinese educated employees were less confident in the use of English and shunned opportunities to express their views. It was suggested that these employees should be given more exposure to interact with the library users to build their confidence and improve their interpersonal skills.

3) Pro-collaboration rewards

The appraisal and reward system had placed greater emphasis on the performance of the individual rather than on collaboration. It was likely that it promoted competition amongst the employees but this eventually led to rivalry and the unwillingness to share knowledge or experiences. Employees were fearful that sharing too much could make them redundant and give their colleagues an edge over them.

The researcher noted that rewards and appraisals had placed greater emphasis on the individual's performance than on collaborative qualities like team working. It had resulted in internal competition that caused the employees

to become less collaborative and more competitive. The departmentalisation had further fuelled this segregation and the formation of cliques had hampered knowledge sharing, collective learning and collaboration work.

The researcher is of the view that placing greater premium on collaboration rather than competition would better serve the library community. It would have fostered trust and promoted greater interactivity and knowledge sharing between the departments. The emphasis on continuous learning for improvement, cultivating a culture of active sharing and staff participation would be more effective than progress forced upon by competition. It was therefore important to modify the appraisal and reward employees based on their abilities to learn, share knowledge and collaborate. Rewards should especially be given to those who play an active role in championing learning and knowledge sharing. The employees must be made to see that hoarding of knowledge would not be as rewarding as sharing and collaborating. These are the qualities that would truly leverage the library's assets and add value to the organisation. The library employees are well aware of the adverse effects that unhealthy competition had on the library organisation.

The researcher suggests that bonuses be pegged to the value propositions of the organisation. If the library did well, all employees would gain. But if it did not, then all employees would collectively feel the pinch. These would motivate the employees to work towards the good of the whole organisation than for individual good. Apart from monetary rewards, employees could be rewarded in many other ways. For example, managers used praise to show appreciation for their employees' good performance. Empowering employees, giving them greater autonomy to do their jobs and expressing interest in their professional development can make employees feel rewarded too. Consulting, interacting and mentoring them would make them feel valued by the organisation and foster a greater sense of belonging that would make for rewarding work.

It might be a good idea too for employees to be appraised openly. The purpose would be to increase the transparency and allow employees to know where they had done well and where they had not. It would also be fair for the employees to appraise their managers because good manag-

ers worked towards satisfying their subordinates, their "internal customers". Managers would get direct feedback on their leadership and strive to become better managers. Managers should be evaluated not just on their abilities to accomplish goals but how well they had functioned as coaches, mentors and facilitators. They should be evaluated on how well they had functioned as knowledge stewards and champions for advocating a learning and knowledge sharing culture.

4) Leaders as mentors, facilitators and coaches

In addition to being able to accomplish work tasks, managers had to take on new and interchangeable roles as mentors, facilitators and coaches. The challenge to the managers would be to move away from the authoritarian, command and control management styles. The manager's new focus would be to bring out the best in their staffs by fostering trust and empowering them to do their jobs. They would play an active and crucial role to promote a learning and knowledge sharing culture amongst the employees. Managers had to exercise their discretion, play the differing roles and be willing to adjust their leadership styles according to the situation. Where possible, they should constantly improve their leadership abilities by staying abreast of new management practices, attending courses, seminars etc.

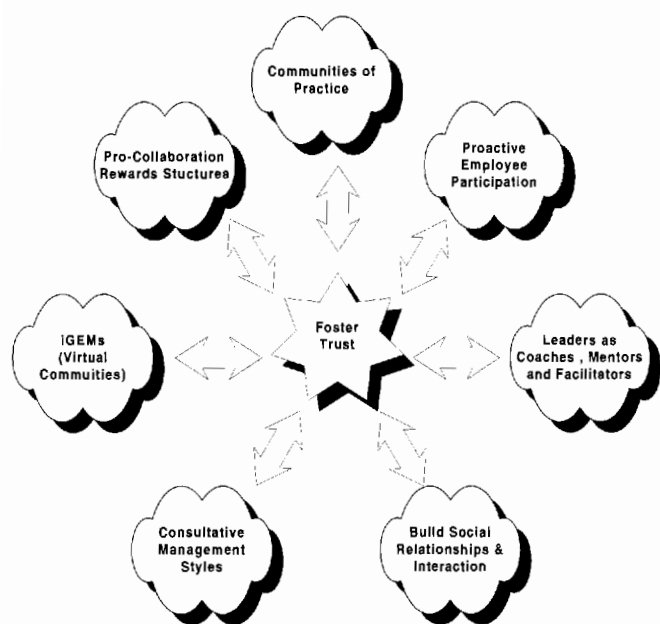
5) Foster and build trust

The element of trust was a personal and delicate one because it involved the human emotion. It took time to foster trust amongst the employees. But trust was necessary for knowledge transfer and group based learning.

It was also noted that meetings were usually task oriented, objective and formal. Perhaps having meetings that appealed to the human side of building social relationships would go a long way as well. They could have regular shared lunches and organise more social and fun filled activities to build cohesion and interact. It was noted that the tension and stress at the workplace could inhibit interaction. Employees needed a conducive atmosphere, one away from the office in order to develop social relationships.

It does appear very contradictory from the findings that the staffs were able to communicate

Figure 2: Recommended Solutions That Foster Trust.



freely and yet did not develop trust. It is a difficult issue to address but perhaps fostering a shared vision, promoting collaboration rather than competition, breaking down the departmental barriers and increased informal interaction opportunities could help. Trust is about building people relationships.

6) *Communities of Practices (COPs)*

The formation of communities of practice is similar to the WITs teams that have already been formed in the library. COPs entailed employees with the same professional skills and shared interests to come together with the intention to share knowledge and solve problems collectively (Wenger 1999). The employees should take advantage of iGEMs to form virtual communities and discussion groups to promote the culture of continuous learning, knowledge sharing and collaboration.

7) *Knowledge management*

It was observed that there was a lack of awareness of what KM was and few were conscious that some activities they were doing could be related to KM. Some examples include WITs and SSS which most of the library staff were already actively involved.

The Staff Suggestion Scheme (SSS) and Work Improvement Team (WITs) was a government initiative in 1981 to promote productivity amongst workers. Civil servants were encouraged to think and make constructive suggestions to improve their workplace. Management would review these suggestions and reward workers who made good suggestions that raised productivity, reduce cost or wastage.

WIT was an adaptation from the Japanese Quality Control Circle. Basically, it is a task force consisting of a small group of (4 to 5) employees from the same work group who would meet up regularly to solve a work related problem. They would brainstorm collectively for solutions, gather statistics to measure the effectiveness of solutions implemented and eventually make a recommendation to top management in the form of a report and presentation.

The library had not procured any KM tools although the iGEMs information portal could be a good start to encourage knowledge sharing and dissemination throughout the university. iGEMs is a Web based information portal that evolved from GEMs, the library's online catalogue. iGEMs is presently the gateway not just to the library's but the entire university's information resource. Patrons now have the convenience of a centralised and up to date access. The portal allows patrons to customise their information seeking profile and request automatic alerts only to news information that are of relevance. They may interact or share knowledge with others in the community through an online forum facility.

Knowledge had to be shared and there had to be socialisation for effective tacit to tacit knowledge between the employees (Nonaka and Takeuchi 1995). The impact from isolated pockets of individual learning would not be as strong as collective learning.

The WITs and SSS could be regarded as KM activities. These have promoted team working, problem solving and knowledge sharing. It was noted that the SSS had become "too extreme" with poor quality suggestions being accepted. There was a need to tighten the filtering mechanism to build a high quality SSS knowledge base or a repository of best practices. The contents in the SSS repository had to be mapped and put into context with a more powerful search engine to produce rele-

vant retrievals. The knowledge base could be categorised to leverage its use.

In addition to using iGEMs (knowledge portal) for knowledge sharing, it was more important for the library to first cultivate the culture of continuous learning, knowledge sharing and collaboration. Only then would the KM Tools procured become effective. Figure 2 depicts the recommendations for improvement and illustrates the need to foster trust.

Conclusion

The study showed that the NTU library had nine out of the fifteen characteristics that characterised successful learning organisations.

Study limitations

The main participants for this study were the library employees. The researcher had noted that most participants would naturally like to report favourably on their organisation. However, when it came to the limitations or shortcomings of the organisation most chose to remain neutral. This resulted in some characteristics having inconclusive findings. The researcher had therefore to infer and surmise some of the findings, which had little support from quantitative results.

The questionnaire had been extended to employees at all levels i.e. the management, professional and non-professional employees, but interviews were confined to the managers. Interviewing the non-management employees as well could have broadened the perspectives and provided more insights to this study. It was noted that not making distinctions between the perceptions of the management, middle management and non-management employees in the survey could have affected the analysis of this work.

The researcher notes that the characteristics used in the questionnaire for the purpose of evaluating the library, as a learning organisation was not exhaustive. The underlying assumption that all the characteristics were of equal importance may be flawed since in reality some characteristics could be more important than others for the organisation to succeed.

The research work had achieved its objectives. The 15 characteristics used to assess the NTU li-

brary, as a learning organisation was successful. It had helped the management identify the organisation's strengths and weaknesses. These insights have brought about greater awareness and fresh perspectives amongst the management and employees towards the learning organisation ideals. Finally, it should be noted that the learning organisation is a journey and not a destination. Just as there is no end to learning so it is for the learning organisation!

References (including uncited literature consulted in the literature review)

- Appelbaum, S.H. and Gallagher, J. 2000. The competitive advantage of organizational learning. *Journal of Workplace Learning* 12(2): 40–56.
- Appelbaum, S.H. and Reichart, W. 1997. How to measure an organization's learning ability: a learning orientation: part 1. *Journal of Workplace Learning* 9(7): 225–239.
- Avolio, B.J., Waldman, D.A. and Yammarino, F.J. 1991. Leading in the 1990s: the four Is of transformational leadership. *Journal of European Industrial Training* 14(4): 9–16.
- Brophy, P. 2000. *The academic library*. London: Library Association Publishing.
- Bundy, M.L. and Wasserman, P. 1968. Professionalism reconsidered. *College and Research Libraries* 29: 5–26.
- Cairns, H. 1998. Global trends in executive development. *Journal of Workplace Learning* 10(1): 39–45.
- Chawla, S. and Renesch, J. 1995. *Learning organizations: Developing cultures for tomorrow's workplace*. Portland, Oregon: Productive Press Inc.
- Coad, A.F. and Berry, A.J. 1998. Transformational leadership and learning organisation. *Leadership & Organization Development Journal* 19(3): 164–172.
- Daniels, S. (1994). The learning organisation. *Work Study Journal* 43(8): n.p.
- Edwards, C. and Walton, G. 2000. Change and conflict in the academic library. *Library Management* 21(1): n.p.
- Gardiner, P. and Whiting, P. 1997. Success factors in learning organisations: An empirical study. *Industrial and Commercial Training* 29(2): n.p.
- Geus, D.A. 1997. The living company. *Harvard Business Review* (March/April): 51.
- Gibson, R. 1999. *Rethinking the future*. London: Nicholas Brealey Publishing Limited.
- Griego, O.V.; Geroy, G.D. and Wright, P.C. 2000. Predictors of learning organisations: A human resource development practitioner's perspective. *The Learning Organisation* 7(1): n.p.

- Henderson, S. 1997. Black swans don't fly double loops: the limits of the learning organization. *The Learning Organization* 4(3): 99–105.
- Hill, R. 1996. A measure of the learning organization. *Industrial and Commercial Training* 28(1): n.p.
- Ho, S.K.M. 1999. Total learning organisation. *The Learning Organization* 6(3): 116–120.
- Iles, P.A. 1992. Centres of excellence? Assessment and development centres, managerial competence and human resource strategies. *British Journal of Management* 3(2): 79–90.
- Iles, P. 1994. Developing learning environments: Challenges for theory, research and practice. *Journal of European Industrial Training* 18(3): 3–9.
- Lavagnino, M.B. 1999. Librarians and information technologies: More alike than different? Interviews with CIOs. *Library Hi Tech*: 17(1): n.p.
- Lei, D.; Slocum, J.W. and Pitts, R.A. 1999. Designing organizations for competitive advantage: The power of unlearning and learning. *Organisational dynamics*: 24–38.
- Lynch, B.P. 1979. Libraries as bureaucracies. *Library Trends* 27(3): 267.
- Masino, G. 1999. Information technology and dilemmas in organizational learning. *Journal of Organizational Change Management* 12(5): 360–376.
- Moingeon, B. and Edmondson, A. 1996. *Organizational learning and competitive advantage*. London: Sage Publications Ltd.
- Morey, D. and Frangioso, T. 1998. Aligning an organization for learning: The six principles of effective learning. *Journal of Knowledge Management* 1(4): 308–314.
- National Computer Board 1992. *IT 2000 report – a vision of an intelligent island*. NCB Singapore.
- Nauratil, M.J. 1989. *The alienated librarian*. New York: Greenwood Press.
- Nonaka, I. and Takeuchi, H. 1995. *The knowledge creating company*. New York: Oxford University Press Inc.
- O'Dell, C. and Grayson, C.J. 1998. *If only we knew what we know – the transfer of internal knowledge and best practice*. New York: The Free Press.
- Olorunsola, R. 2000. Libraries as bureaucracies: The viewpoints of librarians. *Library Management* 21(1): n.p.
- Pedler, M. 1995. A guide to the learning organization. *Industrial and Commercial Training* 27(4): 21–25.
- Pedler, M., Burgoyne, J. and Boydell, T. 1991. *The learning company: A strategy for sustainable development*. Maidenhead: McGraw-Hill.
- Revens, R. 1987. *The learning organisation*. London: Association for Management and Education Development.
- Rowley, J. 2000. From learning organisation to knowledge entrepreneur. *Journal of Knowledge Management* 4(1): 7–15.
- Senge, P.M. 1994. *The fifth discipline: The art and practice of the learning organisation*. London: Currency Doubleday Inc.
- Senge, P.M. and Sterman, J.D. 1992. Systems thinking and organisational learning. *European Journal of Operational Research*: 59.
- Smith, K.D. and Taylor, W.G.K. 2000. The learning organisation ideal in civil service organisations: Deriving a measure. *Quality Assurance in Education* 7(4): n.p.
- Strat, R. 1989. Organisational learning – the key to management innovation. *Sloan Management Review* 30(3): n.p.
- Talja, S. 1999. Analyzing qualitative interview data: The discourse analytic method. *Library & Information Science Research* 21(4): 459–477.
- Tomkins, K. 1995. Case Study – big mac's lifetime learning. *Management Development Review* 8(1): 11–15.
- Usherwood, R.C. 1980. Professional values in a bureaucratic structure. *Library Review* 29: 9.
- Wenger, E. 1999. Communities of practice – the key to knowledge strategy. *Knowledge Directions*: 48–63.
- White, M.G. 1994. Creativity and the learning culture. *The Learning Organisation* 1(1): n.p.

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Appendix A: Questionnaire



Questionnaire
NTU Library as a Learning Organisation
 (Last updated on 20th Feb 2001)

Background

This survey forms part of my dissertation work to measure the extent of the NTU Libraries being learning organisations. If you have any queries, please contact,
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Please answer the following questions honestly and truthfully.
 The questionnaire consists of 47 questions and takes about 12 minutes to complete. All participants' responses will be anonymous and kept with strict confidence. Thank you.

1. Kindly put a '√' in the provided that best describes your opinion.

I am an employee from

- Library 1 Library 2 NIE Library

2. My position in the organisation is at a level of

- Senior Management Middle Management Non-Management

Kindly circle the number that best describes your opinion.

<i>Shared Vision</i>		Strongly Agree		Strongly Disagree		
3.	I share my organisation's goals and values.	5	4	3	2	1
4.	These shared values help us work more closely and better.	5	4	3	2	1
5.	These shared values help me know the part I play in the organisation and my contributions.	5	4	3	2	1

<i>Participatory Management</i>		Strongly Agree		Strongly Disagree		
6.	Management welcomes our active participation in the formulation of policies, visions, values and goals of the organisation.	5	4	3	2	1
7.	Management believes in consultation and seeking consensus from employees for best results.	5	4	3	2	1
8.	Management or my superiors are willing to listen to diverse views and opinions.	5	4	3	2	1

<i>Training</i>		Strongly Agree		Strongly Disagree		
9.	My organisation sends me for skills upgrading or training regularly.	5	4	3	2	1
10.	Management never impose training upon me and I only attend courses that interest me.	5	4	3	2	1
11.	The training I undergo is effective and relevant to my work	5	4	3	2	1

<i>Learning Attitudes</i>		Strongly Agree		Strongly Disagree		
12.	I am a believer in life long learning and I strive constantly to develop myself professionally.	5	4	3	2	1
13.	I perceive my job as continually having the opportunities for learning and enrichment.	5	4	3	2	1
14.	I often think of new and creative ways to improve my work.	5	4	3	2	1

<i>Experimental & Forgiving Climate</i>		Strongly Agree		Strongly Disagree		
15.	I learn from experimentation and even from mistakes.	5	4	3	2	1
16.	When mistakes are made, management and colleagues <u>do not</u> emphasise apportioning blame. They regard these mistakes as opportunities to learning.	5	4	3	2	1
17.	I am curious, willing to experiment and take a risk with good ideas.	5	4	3	2	1

<i>Open Communication & Dialogue</i>		Strongly Agree		Strongly Disagree		
18.	My colleagues and I often talk through issues and problems encountered in the course of our work.	5	4	3	2	1
19.	My work place is characterised by an unselfish sharing and communication of working knowledge and experiences.	5	4	3	2	1
20.	Communication with my superiors and colleagues are informal and I can approach them freely for help or when in doubt.	5	4	3	2	1

<i>Trust and Togetherness</i>		Strongly Agree		Strongly Disagree		
21.	I trust management and my colleagues and I know they trust me.	5	4	3	2	1
22.	I have complete confidence in my colleagues' abilities to give me the support that I need.	5	4	3	2	1
23.	I have excellent working relationships with my colleagues	5	4	3	2	1

<i>Teamwork</i>		Strongly Agree			Strongly Disagree	
24.	I value teamwork. It creates bonding and synergy among us.	5	4	3	2	1
25.	We do our jobs in teams.	5	4	3	2	1
26.	Management allows our teams to act autonomously i.e. with little direct supervision.	5	4	3	2	1

<i>Employee Empowerment</i>		Strongly Agree			Strongly Disagree	
27.	I have a free hand in most areas of my job as long as my actions are in line with the organisation's goals and values.	5	4	3	2	1
28.	I enjoy being empowered and accountable for the work that I do and decisions that I make.	5	4	3	2	1
29.	I do my job with minimum supervision mostly.	5	4	3	2	1

<i>Knowledge Management Infrastructure</i>		Strongly Agree			Strongly Disagree	
30.	I have easy access to knowledge repositories or 'best practices' to help me do my job better.	5	4	3	2	1
31.	There is the extensive use of Information Technology e.g. Intranets, Emails, Forums etc. to leverage knowledge sharing and dissemination amongst the employees.	5	4	3	2	1
32.	There are clear policies and guidelines from management to support knowledge sharing initiatives.	5	4	3	2	1

<i>Fun and Rewarding</i>		Strongly Agree			Strongly Disagree	
33.	The work I do is fun and enjoyable.	5	4	3	2	1
34.	I am motivated to perform well in my job because management appreciates, recognises and rewards my efforts.	5	4	3	2	1
35.	Management emphasise more, on rewards for collective (organisational) performance than on individual performance.	5	4	3	2	1

<i>Leadership</i>		Strongly Agree			Strongly Disagree	
36.	My superior(s) pay attention to my personal needs, is encouraging and concern with my professional development.	5	4	3	2	1
37.	My superior(s) are effective in inspiring and communicating to me the organisation's goals, work tasks and schedules.	5	4	3	2	1
38.	I regard my superior(s) as coaches or mentors.	5	4	3	2	1

<i>Customer Relationships</i>		Strongly Agree		Strongly Disagree		
39.	We always strive to satisfy our customers by providing better services and responding enthusiastically.	5	4	3	2	1
40.	We value our customer's feedback because they help us improve our services.	5	4	3	2	1
41.	I feel good whenever I see a satisfied customer.	5	4	3	2	1

<i>Adaptability</i>		Strongly Agree		Strongly Disagree		
42.	Management has mostly been able to anticipate the changing needs of our customers and effect the necessary changes to meet these needs.	5	4	3	2	1
43.	I welcome change because it improves our work and services.	5	4	3	2	1
44.	I am comfortable with the pace of change that is taking place within the organisation.	5	4	3	2	1

<i>Bureaucracy</i>		Strongly Agree		Strongly Disagree		
45.	The organisation is <u>not</u> characterised by a formalised hierarchy with many layers of management.	5	4	3	2	1
46.	Flexible directives and procedures are in place. There is <u>no</u> "red tape" to slow down efficiency and work tasks.	5	4	3	2	1
47.	Communication is <u>not</u> just top down. Subordinates have full autonomy to make decisions and act.	5	4	3	2	1

--- Thank you! ---