Organizational - Level Training Needs Analysis (TNA): Findings from the Top 1000 Companies in Malaysia

Hishamuddin bin Md.Som
Roland Yeow Theng Nam
Faculty of Management and Human Resource Development, Universiti Teknologi Malaysia

ABSTRACT

In theory, TNA needs to be approached systematically and formally by following certain steps. Needs at organizational level should first be analyzed, followed by operational (job) and individual analysis. However, some of the previous researches on TNA in the West showed that approaches to training were often conducted informally and unsystematically with most organizations relying heavily on top management judgments to make training decisions such as types of training to invest in and which employees to receive training. Due to various cultural and national differences, findings from the above studies may not reflect similar descriptions regarding TNA practiced in South East Asia specifically among organizations in Malaysia. The objective of this study is thus to provide empirical evidence on organizational-level TNA techniques used and to examine whether there exist a gap between its theory and practice. A set of questionnaire was developed and randomly mailed to 278 companies of the top 1000 companies in which 84 (30.3%) responded. Findings of this study show that to a certain extent, all TNA techniques at organizational level were used by the organizations. The most popular technique was SWOT analysis followed by organizational scanning. It also indicated that to a certain extent the organizations' TNA practices were somewhat in line with what training / TNA scholars and theorists propose.
Keywords: Organizational-level TNA, TNA technique, Malaysia, Malaysia, Top 1000 companies

INTRODUCTION

Employees are said to be the most valuable assets in an organization, and that an organization is only as good as its people. Only through them can organizations achieve their objectives. It is therefore important that employees possess the necessary skills, knowledge and abilities (SKAs) in order that organizations achieve their goals and remain competitive and successful.

A formal approach for organizations to update employees' acquisition of job-related SKAs is by training. From a human capital theory perspective, training is investment rather than consumption. Research claimed that training is an important factor that could facilitate a firm's expansion, develop its potentials and enhance its profitability (Cosh, *et al*, 1998). Tung-Chun (2001) also agreed that educated and well-trained employees are a prerequisite for an organization's competitive advantage. In order for organizations to enjoy the returns on training investment, the training itself must first be approached systematically. Systematic means that there are certain steps that organizations need to take in training and developing their employees. These steps begin with an identification of training needs, designing and developing an appropriate training to serve the needs, implementing the training according to plan, and evaluating the training program to determine whether the original needs have been achieved. These steps are more popularly known as the 'training cycle' and a lot of training scholars agree that these steps are necessary to ensure training effectiveness (eg. Blanchard and Thacker, 2003; Goldstein and Ford, 2002; and Noe, 2005).

Many organizations unfortunately fail to acknowledge the importance of the TNA step in practice. Some of the previous researches showed that approaches to training were often conducted informally and unsystematically with most organizations relying heavily on top management judgments to make training decisions such as types of training to invest in and which employees to receive training (Mahler and Monroe 1952, cited in Moore and Dutton, 1978; Erffmeyer, *et al,* 1991; Amos-Wilson, 1996; Agnaia, 1996; and Elbadri, 2001). Evidence also showed that training

conducted in organizations was often not strategic, as training needs were not properly assessed to determine how such needs contributed to the overall strategic objectives of the organizations (Amos-Wilson, 1996; and O'Driscoll and Taylor, 1992).

Among the steps in the training cycle, training needs analysis (TNA) can be considered the most important phase in ensuring the effectiveness of the planned training. This statement is made based on the heavy emphasis placed by many training theorists on this phase, who agree that TNA must precede any type of training intervention (eg. Goldstein and Ford, 2002; Salas and Canon-Bowers, 2001; Palmer, 1999; Taylor and O'Driscoll, 1998; Reid and Barrington, 1997; Nelson *et al*, 1995; Reay, 1994; O'Driscoll and Taylor, 1992; Wright and Geroy, 1992; Ostroff and Ford, 1989; Boydell, 1976; and McGehee and Thayer, 1961). This opinion may be attributed to the fact that TNA not only ensures that investments in training by organizations pays, but also as the first stage in the training cycle, minimizes errors possibly made in the training programs (Elbadri, 2001). Tung-Chun (2001) further emphasized the significance of this step, stating that there is a considerable relationship between TNA and training effectiveness.

In theory, TNA needs to be approached systematically and formally by following certain steps. Needs at organizational level should first be analyzed, followed by operational (job) and individual analysis. Needs at each level can be identified by carrying out certain techniques such as the Balanced Scorecard (organizational level), task analysis (operational level) and performance review (individual level). Many organizations fail to acknowledge the importance of the TNA step in their training interventions (Mahler and Monroe 1952 in Moore and Dutton, 1978; Erffmeyer *et al*, 1991; Amos-Wilson, 1996; Agnaia, 1996; and Elbadri, 2001). They spend money on training without proper analysis of how such training could help their strategic needs. There was also evidence that training conducted in organizations was often not strategic, as the training needs were not properly assessed to determine how such needs contributed to the overall strategic objectives of the organizations (Amos-Wilson, 1996; and O'Driscoll and Taylor, 1992). It is also not uncommon for individuals without the proper or relevant qualification to be put in charge of training and developing organizational workforces. Individuals considered to be competent in the field of training by virtue of their qualification background needs to continuously update their knowledge to avoid being guided by outmoded TNA theories (Dubin, 1976).

Existing literature on TNA shows that most studies were done overseas. Due to various cultural and national differences, findings from the above studies may not reflect similar descriptions regarding TNA practiced in South East Asia specifically among organizations in Malaysia. There were quite similar studies conducted in Malaysia (for example Poon and Rozhan, 2000; Rozhan, 1998; and Zakaria and Rozhan, 1993). However, the scopes of these research were not specific to TNA and that the organizations used in their study were limited to a certain manufacturing and service sectors. Thus the objective of this study is two folds : (a) to provide empirical evidence on the TNA techniques used at organizational level (b) to examine whether there exist a gap between the theory and practice of TNA specifically at the organizational level.

REVIEW OF RELATED LITERATURE

Overall definitions of TNA offered by many authors indicate clearly that TNA is done so that training developed by organizations will enable them to achieve their strategic objectives. The definition by Ferdinand (1988) states that TNA is a *"rational process by which an organization determines how to develop or acquire the human skills it needs in order to achieve its business objectives"* (in Chiu, *et al*, 1999). Another author, Brown (2002) defined training needs assessment as *"an ongoing process of gathering data to determine what training needs exist so that training can be developed to help the organization accomplish its objectives"* (p. 565). Both definitions obviously show that the purpose of TNA is to ensure that objectives of each training are aligned with the ultimate objectives of the sponsoring organizations.

Daniels (2003) claimed that a lot of organizations' investments in training failed to return and suggested that this was probably due to the organizations' failure to connect training efforts with their goals and strategies. Mistakes such as this could have been minimized if training practitioners were aware of the importance of TNA. TNA, if done properly, will force practitioners to determine the potential contribution of every training program to the achievement of organizational objectives. If practitioners failed to see the linkage, it could mean that the trainings were actually based

on 'wants' rather than true 'needs'. Some organizations are even unsure of their own mission and this would affect their whole business operation, including training and developing their workforce. If TNA was conducted, practitioners would be forced to specify the organization's ultimate objectives. Only after this was predetermined, could all training efforts be put to work towards the objectives.

The strategic nature of TNA can also be based on the way in which the famous tripartite-level of TNA is structured. In order for training to be able to contribute to the achievement of organizational objectives, TNA must first examine the context of the organization, and this is known as Organizational Analysis. In the first level of analysis, needs analysts will have to examine all components of the organization. The three steps involved in this level include specification of goals, determination of training climate and identification of external and legal constraints that would affect training efforts (Goldstein and Ford, 2002). Only after this level is analyzed can the other two levels (job analysis and individual analysis) be conducted. In other words, organizational analysis provides a guide to determining what training is needed and to whom it should be offered to enable the organization to achieve its objectives.

According to McGehee and Thayer (1961), organizational analysis involved determining where within an organization training emphases could and should be placed. In order to do this, organizational objectives, human resources, efficiency indices and climate were analyzed. According to Noe (2005), organizational analysis also involves the consideration of strategic company directions; of whether managers, peers and employees support training activity; of what training resources (budget, time, expertise for training) are available. Various sources of data can be referred as indicators of training needs. In 1978, Moore and Dutton produced an article accumulating numerous TNA data sources. They categorized these sources according to the tripartite-level of analysis. Some of these sources are shown in the table 1.

Common techniques that can be used at organizational-level analysis are organizational scanning, SWOT (acronym for strengths, weaknesses, opportunities and threats) analysis, PEST (acronym for political, economic, social and technological) analysis and balanced scorecard. Organizational (or environmental) scanning is a management process of acquiring and using information about events, trends, and relationships in an organization's external environment to assist the management in planning the organization's future course of action (Aguilar, 1967 and Choo, 2001).

Table 1: Sources of TNA Data at Organizational Level (Moore and Dutton, 1978: 532 – 45).

Data Sources Recommended	Training Need Implications
1. Organizational Goals and Objectives	Where training emphasis can and should be placed. These provide normative standards of both direction and expected impact which can highlight deviations from objectives and performance problems.
2. Manpower / Labor Inventory	Where training is needed to fill gaps caused by retirement, turnover, age, etc. This provides an important demographic data base regarding possible scope of training needs.
3. Skills Inventory	Number of employees in each skill group, knowledge and skill levels, training time per job, etc. This provides an estimate of the magnitude of specific training needs. Useful in cost benefit analysis of training projects.
4. Organizational Climate Indices (examples: labor-management data, grievances, turnover, absenteeism, suggestions, productivity, accidents, short-term sickness, observation of employee behavior, attitude surveys, and customer complaints)	These 'quality of working life' indicators at the organization level may help focus on problems that have training components.
5. Analysis of Efficiency Indices (examples: costs of labor, costs of materials, quality of product, late deliveries, and repairs)	Cost accounting concepts may represent ratio between actual performance and desired or standard performance.
6. Changes in System or Sub-system	New or changed equipment may present training problem.
7. Management Requests or Management Interrogation	One of the most common techniques of training needs determination.

Organizations scan the environment in order to understand the external forces of change so that they may develop effective responses to secure or improve their position in the future. Organizational scanning constitutes a primary mode of organizational learning which includes both looking at information (viewing) and looking for information (searching).

Four styles of scanning that can be used are: undirected viewing, conditioned viewing, informal search, and formal search (Aguilar, 1967). Organizational scanning can also take place at multiple levels of detail. At high-order levels, scanning looks at the total environment, and at low-order levels, it focuses on specific areas and analyses them in detail. The use of this technique to analyze training needs at organizational level was mentioned in Chiu, *et al* (1999). As a result of the scanning, organizations could be provided with a lot of possible training (and non-training) needs for responding to changes in the external environment. Research evidence claimed that this technique was linked with improved organizational performance (examples: Newgren, *et al*, 1984; Dollinger, 1984; West, 1988; and Murphy, 1987). The Balanced Scorecard was developed by Kaplan and Norton in 1996 and is considered to be one of the most important instruments used to measure business performance (Marr and Schiuma, 2003). The technique involved measuring organizational performance based on four balanced perspectives: financial, customers, internal business processes, and learning and growth. Kaplan and Norton claimed that the technique enabled organizations to combine financial measures of their past performance with measures of future financial performance to help them remain competitive. The Balanced Scorecard can be used to clarify and gain consensus about strategy, communicate strategy throughout the organization, align departmental and personal goals to the strategy, link strategic objectives to long-term targets and annual budgets, identify and align strategic initiatives, perform periodic and systematic strategic reviews, and obtain feedback to learn about and improve strategy. Results of implementing this technique provide organizations with plenty of training as well as non-training needs. SWOT analysis is a technique based upon a simple matrix, with strengths and weaknesses described in the two top squares and opportunities and threats (OT) in the bottom two squares. It can provide information that is helpful in matching organizational resources and capabilities to the competitive environment in which it operates (Craig, 1994). Organizations are required to identify the strengths, weaknesses, opportunities and threats concerning their organizations. Examples of strengths include strong brand names, patents and a good reputation among customers. Weaknesses, that is those that can hinder organizations from achieving their objectives such as lack of access to the best natural resources and high cost structure. Opportunities to overcome weaknesses are then identified and examples are unfulfilled customer needs or removal of international trade barriers. And lastly, threats to a firm can exist in the form of changes to its external environment, for example, shifts of consumer tastes, emergence of substitute products or new regulations. SWOT analysis helps firms identify strategies and measures to address their needs. PEST (or sometimes known as PESTLE -Legal and Environmental) is a technique used to analyze organizational macro-environmental factors (Mullins, 1999). Political factors are government regulations and legal issues under which organizations must operate. Examples are tax policy, employment laws, government ownership of industry and attitude to monopolies and competition. Economic factors affect the purchasing power of potential consumers and a firm's cost of capital. Examples are inflation rates, interests rates and economic growth. Social factors are demographic and cultural aspects of a firm's external macro-environment. These factors affect the needs of customers and size of potential markets. Examples of social factors are population growth rate, health consciousness and attitudes towards work and leisure. Technological factors can lower barriers to entry, reduce minimum efficiency production levels, and influence outsourcing decisions. Examples are R & D activity, rate of technological change, and new patents or products. Information derived from PEST analysis can identify opportunities and threats in the SWOT analysis matrix.

All of these techniques were not originally developed for TNA purposes and were more commonly associated as tools in the field of strategic management. However, the use of these techniques to identify organizational training needs were mentioned and / or discussed by several authors like Chiu, *et al* (1999) and Craig (1994).

There is also a discussion regarding whether training conducted in organizations is in line with the organizations' strategic missions. Amos-Wilson (1996) concluded that there was a mismatch between the NGOs' overall strategic needs and the type of training that was actually delivered to the staff. O'Driscoll and Taylor (1992) found a weak relationship between TNA practiced in the organizations in New Zealand and their strategic objectives. Gray, et al

(1997) found mixed evidence regarding whether the government agencies they studied differentiated between training 'needs' and training 'wants'; and whether the data gathering methods they adopted produced clear, relevant and specific data on performance discrepancies.

And, although Poon and Rozhan (2000) reported positive findings regarding TNA practice of companies in manufacturing and service industries in Malaysia, they expressed caution regarding this finding. The companies focused mainly on past performance data sources and did not examine the business environments in their TNA thus calling into question the strategic nature of their training / TNA efforts.

There are a few criteria normally considered when choosing data collection techniques, and suggestions made by Steadham (1980) or Brown (2002) can be used as references. For example, Steadham (1980, in Ulschak, 1993) reviewed criteria normally considered by organizations in choosing data gathering methods in TNA, which include: resources (time, money, people) availability in the organization, health of the organization, persons to be involved, desired outcomes, extent to which needs are already known, decision-makers' preference, time lag between collection / action, degree of reliability and validity needed, confidentiality and training needs analysts' favourite method. Elbadri (2001) study indicated that relevancy and quantifiable data obtained, incumbent involvement, cost, time and ease of use were found as the most critical criteria in selecting TNA methods for companies regardless of size or industry. Brown (2002) suggested considering the following when choosing which technique to use: nature of the problem, budget, and perception towards TNA in organization, staff availability, and timeframe. The relevance and importance of each criterion depends on the organization itself and the purpose of a particular TNA.

METHODOLOGY

The structured questionnaire employed in the study were adapted and modified from previous studies by O'Driscoll and Taylor (1992); Agnaia (1996); Gray, *et al* (1997) and Elbadri (2001). General TNA literatures were also referred for guidelines to develop items that were not covered in the studies mentioned earlier. A draft of the questionnaire was also reviewed by a consultant / trainer experienced in the TNA field. Comments from them were used as guidelines to improve the instrument. It was then addressed to the Human Resource Director / Manager or key person involved in making TNA decisions with a cover letter attached explaining the purposes of the study. In order to ease reply, self-addressed and stamped envelopes were also sent together with the questionnaires. As poor response rate is a common fear in conducting research, therefore, a small token was given to the samples as complimentary gifts as well as holding a lucky draw contest. Respondents could also receive a free summary of the study findings by contacting the researchers.

The population of the study was drawn from the directory of *Malaysia 1000* that listed the top 1000 companies. They were chosen because they were the top performing companies based on their business performance such as turnover, profits, total assets, shareholders' funds, profit margin, return on capital, return on shareholders' funds, absolute increase in sales, absolute increase in profits, and percentage increase in profits. This information was important to the study because literature showed that training tended to be neglected in small companies (Westhead and Storey, 1997 in Tung-Chun, 2001) and one of the reasons why training was not done systematically was due to financial constraints. Since the top 1000 companies were considered successful, it was assumed that they would tend to be more committed towards training and development activities compared to less successful companies. Selection of population to be studied was, therefore, crucial in this research as focusing on the 'wrong' population would not provide useful nor much information regarding TNA practices. The second reason was due to the diversity of the characteristics of the companies, covering various industries, sectors, states, origins of parent company and length of operation. This would provide a comprehensive picture regarding TNA practices in different companies. Finally, they were chosen based on the belief widely stated in the training literature that training and developing employees is one of the factors that could enhance organizations' profitability (Cosh, *et al*, 1998 and Tung-Chun, 2001). As the companies selected in the study were the most profitable in Malaysia, theoretically, their TNA practices should be systematic and formal. Whether or not this is the case can only be answered by the results of the study.

Out of the total population of 1000 companies, 27% (278) companies were randomly selected based on Krejcie and Morgan's (1970; in Sekaran, 1992) sampling table. All questionnaires were mailed and respondents were given three weeks to complete and return the questionnaires. Due to the slow response, the deadline to return the questionnaire was extended in order to allow the respondents to participate in the study. 84 questionnaires were returned which is equivalent to 30.3 per cent. This amount is considered acceptable according to Sekaran (1992) and Diamantopoulos and Schlegelmilch (1997). The analysis of data was carried out using SPSS (Statistical Package for Social Science) for Window.

RESULTS

As shown in Table 1.0, parent companies of the respondents are predominantly local companies (50.0%). Japanese companies make up the second biggest group with 22.6% followed by other firms (10.7%).
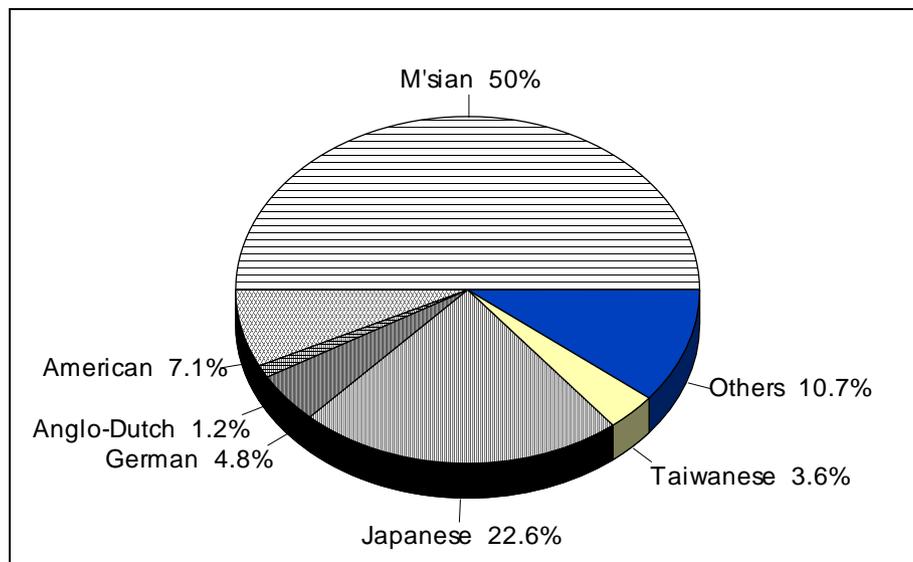

Figure 1. Respondents by Nationality of Parent Company

The firms were also asked whether they had a specific unit in charge of handling training-related matters. This could be in the form of human resource departments / sections or training units. A positive response was gathered as the majority of the firms answered 'yes' (85.7%), while the rest answered 'no' to the question. Those without a specific unit mentioned units like administration or quality control sections that were responsible for handling their staff training matters. In addition, 66.7% of the respondents informed that they had attended course(s) on how to conduct TNA. The majority of respondents possessed qualifications relevant to their fields of practice such as Human Resource Management (HRM)/Human Resource Development (HRD).

Table 2: TNA techniques and sources of data at Organizational Level

Techniques		1 N	2 R	3 S	4 F	5 A
SWOT analysis	F	3	5	14	42	14
	%	3.6	6.0	16.7	50.0	16.7
organizational scanning	f	3	7	21	38	8
	%	3.6	8.3	25.0	45.2	9.5
balanced scorecard	f	13	8	20	25	9
	%	15.5	9.5	23.8	29.8	10.7
PEST analysis	f	18	15	25	16	1
	%	21.4	17.9	29.8	19.0	1.2

Sources of Data		1 N	2 R	3 S	4 F	5 A
organizational goals and objectives	*f*	0	1	6	33	42
	%	0.0	1.2	7.1	39.3	50.0
skills inventory	*f*	0	2	12	48	21
	%	0.0	2.4	14.3	57.1	25.0
analysis of efficiency indices (eg. product quality, customer complaints)	*f*	0	1	18	39	21
	%	0.0	1.2	21.4	46.4	25.0
management request / mandate	*f*	0	1	18	46	15
	%	0.0	1.2	21.4	54.8	17.9
current trends in industry	*f*	1	6	16	34	22
	%	1.2	7.1	19.0	40.5	26.2
changes in system or sub-system	*f*	2	4	18	40	16
	%	2.4	4.8	21.4	47.6	19.0
organizational climate indices (eg. turnover, absenteeism, accidents, etc.)	*f*	2	3	22	35	17
	%	2.4	3.6	26.2	41.7	20.2
manpower inventory	*f*	1	3	26	38	10
	%	1.2	3.6	31.0	45.2	11.9
competitor's training practices	*f*	5	14	35	19	2
	%	6.0	16.7	41.7	22.6	2.4

As shown in table 2.0, compared to the other techniques to analyze training needs at organizational level, SWOT analysis followed by organizational scanning was the most widely used by the organizations. Only 50.0% or less of the organizations frequently used the TNA techniques which implies that they probably did not analyze training needs at organizational level often enough or were just not very familiar with the techniques. The result also revealed that the most important source of data the organizations referred to when conducting organizational-level TNA was their organizational goals and objectives. This is then followed by other techniques such as skills inventory, management request/mandate and analysis of efficiency indices which is used by more than 70% of the respondents.

Table 3: Criteria Considered in the Selection of Data Collection Techniques

Criteria		1 N	2 R	3 S	4 F	5 A
desired outcomes	*f*	0	5	15	25	34
	%	0.0	6.0	17.9	29.8	40.5
organizational culture and values	*f*	0	1	16	37	26
	%	0.0	1.2	19.0	44.0	31.0
cost-effectiveness	*f*	2	2	14	38	23
	%	2.4	2.4	16.7	45.2	27.4
persons to be involved	*f*	2	1	19	37	17
	%	2.4	1.2	22.6	44.0	20.2
time required	*f*	2	2	22	34	19
	%	2.4	2.4	26.2	40.5	22.6
degree of reliability and validity required	*f*	1	6	16	36	16
	%	1.2	7.1	19.0	42.9	19.0
top management preference	*f*	2	9	17	32	17
	%	2.4	10.7	20.2	38.1	20.2
facilities available	*f*	3	8	17	35	15
	%	3.6	9.5	20.2	41.7	17.9
ease of use	*f*	2	8	22	33	11
	%	2.4	9.5	26.2	39.3	13.1
availability and expertise of HR staff	*f*	5	3	26	31	12
	%	6.0	3.6	31.0	36.9	14.3
employees' acceptance	*f*	4	7	32	25	6
	%	4.8	8.3	38.1	29.8	7.1
confidentiality	*f*	5	13	23	25	9
	%	6.0	15.5	27.4	29.8	10.7
sample size	*f*	6	13	25	23	7
	%	7.1	15.5	29.8	27.4	8.3

Table 3.0 shows that the most important criteria considered by most of the organizations were organizational culture and values, cost effectiveness and desired outcomes. However, if looking at the number of respondents who chose option 'always', the desired outcome from a TNA activity was regarded as the most important criteria for them in choosing data collection methods (70.3%).

Table 4: Mann-Whitney U test between TNA techniques and presence of training units

Techniques	Mann-Whitney U	Z	Asymp.Sig. (2-tailed)
Organizational Level			
organizational scanning	357.500	-.086	.931
balanced scorecard	307.500	-.689	.491
SWOT analysis	**221.500**	**-2.313**	**.021**
PEST analysis	344.000	-.124	.901

After performing Mann-Whitney U test, it was discovered as shown in table 4.0 that the presence of training units and without one differ significantly with respect to the types of TNA techniques namely SWOT analysis (μ =221.500, $p<0.05$). In this analysis, it appears that the adoption of SWOT analysis is significantly higher with the presence of training unit than those without one. However, employing Kruskal-Wallis test, there were no significant differences by respondents' nationality (after collapsing nationality cells as "Malaysian' and 'non-Malaysian") in terms of the types of TNA techniques used ($p>0.05$).

DISCUSSION AND CONCLUSION

This study was originally triggered by one question. Did the top 1000 corporate companies in Malaysia involved in the study conduct TNA at the organizational level prior to their training efforts? Results of the study found that the organizations claimed they did perform some kind of analysis. A second question emerged. Were their approaches to TNA theoretical? To answer this, the study had examined many aspects of the TNA practices of organizations such as techniques employed and their sources of data, as well as the criteria used in the selection of these techniques.

The result of this study shows that to a certain extent, all techniques were used by the organisations. The most popular technique was SWOT analysis followed by organizational scanning. Nevertheless, the rest of the organizational level techniques listed in the questionnaire were rarely used by the organizations which implies that they probably did not analyze training needs at organizational level often enough or they were just not very familiar with the techniques. The study also indicated that there were no significant differences in the usage of TNA techniques by nationality of parent company. It also suggests that organizations with a training unit were more likely to use SWOT analysis.

All of the criteria in choosing data collection methods as suggested by Steadham (1980) and Brown (2002) were, to a certain extent, considered by the organizations in this study. However, the two most important criteria considered by them were desired outcomes and organizational culture and values. In order of importance, the remaining criteria considered by the organizations were: cost-effectiveness, persons to be involved, time required degree of reliability and validity required facilities available, ease of use, availability and expertise of HR staff, employees' acceptance, confidentiality and size of sample.

Three distinct similarities of findings can be seen when comparing the top seven criteria considered important by organizations in three studies, namely Elbadri (2001), Gray, (1997) and this study. First, choice of data collection method was based primarily on whether the method could provide the relevant and desired data. Second, the chosen method had to fit into the organizational cultures and be accepted by its people. Third, as profit-oriented entities, words like efficiency and effectiveness are important and that is probably why the methods chosen had to be practical in terms of the cost, time, energy and ease of use.

Respondents were asked to rate the extent to which they had referred to several sources of data as compiled by Moore and Dutton (1977). In performing TNA at organizational level, the majority of organizations claimed they referred to their organizational goals and objectives as the main data source. The next two most referred sources were

skills inventories, and analysis of efficiency indices. Competitors' training practices and current trends in industry were not as often referred to as thought. It is assumed from this finding that the organizations paid enough attention to ensuring that their training efforts were in line with their strategic objectives. A few similarities and differences can be found when comparing these findings to Erffmeyer, *et al's* (1991) study. First, organizational goals and efficiency indicators were considered important organizational level data sources in both studies. However, findings of the present study are probably more encouraging as Erffmeyer, *et al* found management judgment the most important source of data which could suggest an informal TNA approach. The findings of the study also suggest that training conducted in these organizations was parallel with their strategic missions and objectives unlike earlier studies in the West by Amos-Wilson (1996) and O'Driscoll and Taylor (1992).

Overall, the study reported that to a certain extent the organizations' TNA practices were somewhat in line with what training / TNA scholars and theorists proposed. There is evidence of systematic procedures present in the organizations for selecting training participants with involvement of multiple parties. In addition, they also adopted some formal data collection methods and techniques to analyze their training needs although the types that they used were probably less sophisticated and involved minimal analysis. This may be due to the fact that more than half of the respondents had attended courses on how to conduct TNA and that they possessed qualifications relevant to the field of HRM/HRD.

REFERENCES

Agnaia, A.A. (1996). Assessment of management training needs and selection for training: The case of Libyan Companies. *International Journal of Manpower*. 17(3), 31 – 51.

Aguilar, F.J. (1967). *Scanning the business environment*. New York: MacMillan Co.

Amos-Wilson, P. (1996). Management training in UK NGOs: A small survey. *Journal of European Industrial Training*. 20(1), 15 – 19.

Blanchard P.N and Thacker J.W. (2003). Effective training: *Systems, strategies, and practices*, 2nd Ed. New Jersey: Pearson Prentice Hall.

Boydell, T. H. (1976). *A guide to the identification of training needs*, 2nd Ed. London: British Association for Commercial and Industrial Education (BACIE).

Brown, J. (2002). Training needs assessment: A must for developing an effective training program. *Public Personnel Management*. 31(4), 569 - 79.

Chiu, W, Thompson, D, Mak, W.M, and Lo, K.L. (1999). Re-thinking training needs analysis: A proposed framework for literature review. *Personnel Review*. 28(½), 77 – 90.

Choo, Chun Wei (October 2001). Environmental scanning as information seeking and organizational learning. *Information Research*. 7(1).

Cosh, A., Duncan, J. and Hughes, A. (1998). Investing in training and small firm growth and survival: an empirical analysis for the UK 1987 – 1997. *DFEE Research Report RR36*. London: HMSO.

Craig, M. (1994). *Analysing learning* needs. Hampshire: Gower.

Daniels, S. (2003). Employee training: A strategic approach to better returns on investment. *The Journal of Business Strategy*. 24(5), 39 – 42.

Diamantopoulos, A. and Schlegelmilch, B.B (1997). *Taking the fear out of data analysis*. London: The Dryden Press.

Direktori Syarikat Terunggul Malaysia / Malaysian Top Corporate Directory (2003).

Dubin, R. (1976). Theory Building in Applied Areas, in Dunnette, M D (ed) Handbook of Industrial and Organizational Psychology. Chicago, Rand McNally College Publishing Company, 17 - 39.

Elbadri, A.N.A (2001). Training practices of polish companies: An appraisal and agenda for improvement. *Journal of European Industrial Training*. 25(2), 69 – 79.

Erffmeyer, R.C, Russ, K.R and Hair, J.F.Jr. (1991). Needs assessment and evaluation in sales-training programs. Journal *of Personal Selling and Sales Management*. 11(1), 17 – 31.

Goldstein I.L and Ford J.K. (2002). *Training in organizations*, 4th Ed. Belmont: Wadsworth.

Gray, G.R. (1997). Training Practices in State Government Agencies. *Public Personnel Management*. 26(2), 187 – 202.

Marr, B. and Schiuma, G. (2003). Business Performance Measurement – Past, Present and Future. *Management Decision*. 41(8), 680 – 687.

McGehee, W. and Thayer, P.W. (1961). *Training in business and industry*. New York: John Wiley, and SonsInc.

Moore, M.L. and Dutton, P. (1978). Training needs analysis: Review and critique. *Academy of Management Review,* 532 – 545.

Mullins, L.J. (1999). *Management and Organisational Behaviour*, 5th Ed. London: Prentice Hall.

Murphy, M.F. (1987). *Environmental scanning: A case study in higher education*. Athens, GA: University of Georgia. Ed.D thesis.

Nelson, R R, Whitener, E.M. and Philcox, H.H. (1995). The assessment of end-user training and needs, association for computing machinery: Communications of the ACM. 38(7), 27.

Newgren, K.E, Rasher, A.A and LaRoe, M.E. (1984). *An empirical investigation of the relationship between environmental assessment and corporate performance*. Proceedings Paper – 44th Annual Meeting of the Academy of Management, August 12 – 15 1984, at Washington, DC.

Noe, R.A. (2005). *Employee Training and Development*. 3rd Ed. Singapore: McGraw Hill.

O'Driscoll, M.P. dan Taylor, P.J. (1992). Congruence between theory and practice in management training needs analysis. *The International Journal of Human Resource Management*. 3(3): 593 – 603.

Ostroff, C. and Ford, J.K. (1989). Assessing training needs: Critical levels of analysis, in Goldstein, I L & Associates (Eds). *Training and Development in Organizations*. San Francisco: Jossey-Bass Publishers, 25 – 62.

Palmer, R. (1999). Evaluation and assessment, in Wilson, J (Ed) *Human resource development: Learning and training for individuals and organizations*. London: Kogan Page, 117 – 36.

Poon, J.M.L and Rozhan, O. (2000). Management training and development practices of Malaysian organizations. *Malaysian Management Review*, 77-84.

Reay, D (1994). *Identifying training needs: Finding out what people need to know and why*. London: Kogan Page.

Reid, M.A and Barrington, H. (1997). *Training interventions: Managing employee development*. 5th Edn. London: Institute of Personnel and Development.

Rozhan, Othman. (1998). Human resource management practice of service organizations. *Journal of Asia-Pacific Business*. 2(3): 65 - 80.

Salas, E and Canon-Bowers, J.A. (2001). The science of training: A decade of progress. *Annual Review Psychology*. 52, 471 – 499.

Sekaran, U. (1992). *Research methods for business: A skill-building approach*. 2nd Ed. New York: John Wiley & Sons, Inc.

Steadham, S.V. (1980). Learning to select a needs assessment strategy. *Training and Development Journal*. 30, 55 – 61.

Taylor, P.J and O'Driscoll, M.P. (1998). A new integrated framework for training needs analysis. *Human Resource Management Journal*. 8(2), 29 – 50.

Tung-Chun Huang (2001). The relation of training practices and organizational performance in small and medium size enterprises. *Education & Training*. 43(8/9), 437 – 444.

West, J.J. (1988). *Strategy, environmental scanning, and their effect upon firm performance: An exploratory study of the food service industry*. Blacksburg, VA: Virginia Polytechnic Institute and State University. PhD thesis.

Wright, P.C and Geroy, G.D. (1992). Needs analysis theory and the effectiveness of large-scale government-sponsored training programmes: A case study. *The Journal of Management Development*. 11(5), 16.

Zakaria Ismail and Rozhan Othman. (1993). Human resource development practices in the manufacturing sector in Malaysia: An empirical assessment, in Nordin Muhamad and Arawati Agus (Eds.), *Challenges of Industrialization and Globalization of Business: Towards the Twenty-first Century*, Penerbit UKM, Bangi Malaysia, 58 – 68.