

EMPOWERMENT IN SOUTH AFRICA AND THE EDUCATIONAL ASPECT OF THE BASHO

Ludwig Martin¹ and David Root²

¹ *Department of the Built Environment, Cape Peninsula University of Technology, PO Box 652, Cape Town, 8000, South Africa*

² *Department Construction Management and Economics, University of Cape Town, Private Bag, Rondebosch, 7700, South Africa*

Addressing the legacy of Apartheid, South Africa is currently in a stage of economic transformation. Previously disadvantaged individuals (PDIs) are now seeking opportunities in the 'first economy'. However, and particularly prominent in the construction sector, these young companies often fail to develop into meaningful business entities. This is thought to be due to a general lack of knowledge and skills which are needed to survive in a competitive formal economic environment. The policies of the country encourage established and PDI owned emerging companies to work together. Thus an opportunity for learning and knowledge transfers within these collaborations arises. The adequate context of such transfers of knowledge is known to be crucial. The cognitive distance between the sender and receiver, demarcating the context, is of particular importance. A survey amongst key site staff was conducted. The focus of the survey was to explore the types and levels of formal education amongst key site staff. Combined with existing literature on the cultural differences between 'Blacks' and 'Whites' in South Africa, the knowledge of the educational levels allowed the researchers to assess and describe aspects of the cognitive distance existing between these parties. Differences in educational levels and training exist, translating in cognitive distances hindering knowledge transfer. These findings enable the researchers to formulate better models for knowledge transfers between these parties, taking the existing cognitive distance of parties into account.

Keywords: cognitive distance, emerging contractors, survey.

INTRODUCTION

More than a decade after South Africa's first fully enfranchised democratic elections and the abolition of Apartheid, South African society and its industries have yet to be transformed. The long history of disadvantage experienced by the non-white racial groups has impacted on the socio-economic circumstances of these groups. Coupled with an education system based on race (South Africa, 1953), which was designed only to educate the black labour force to the minimum level required of a compliant labour force for the 'white-owned' economy (Christie, 1982), it has left a major skills vacuum within the South African economy (Lawless, 2005), leaving the economy struggling to maintain its momentum of growth. With South Africa facing a major backlog of housing and general infrastructure, both public as well as private demand on building and construction services is high, adding to pressures on the construction sector.

¹ martinl@cput.ac.za

A high failure rate and non-performance amongst Previously Disadvantaged Individual (PDI) owned and managed construction companies are often reported on (van Wyk, 2003). Factors for failure of these entities are reported to include unprofitable tender prices (CIDB, 2004), technical difficulties (Sebake, 2005), poor management (Cattell, 1994; Forrest, 2006), fronting (CIDB, 2005), and the abuse of PDI subcontractors by established firms. It can, however, be argued that these factors are rather symptoms of lack of knowledge.

The University of Cape Town together with the Cape Peninsula University of Technology is developing a model of the transfer mechanisms of knowledge and skills between established and emerging contractors. The starting point for this project is the assumption, based on published literature (e.g. Carrillo, 1996) that, if entities collaborate, they learn. In this particular context a high degree of learning by the emerging partner is expected and the transfer mechanisms for this learning are the main focus of the study. However when considering classical learning models the context of knowledge transfers or learning needs to be addressed (Levitt, 1988; Nonaka, 1991). It is thus a prerequisite to understand the characteristics of the South African construction sector and the nature of the collaborations between emerging and established entities in particular in the view of organizational learning experienced by the junior partner.

One aspect highlighted throughout organizational learning literature is ‘absorptive capacity’ Cohen & Levinthal (1990). Egbu and Botterill (2001) in their study of knowledge management practices within surveying firms noted that the ‘lack of absorptive capacity of the receiver [of knowledge] is a potential obstacle...’. Other authors are concerned about the antecedent of the learner (Simonin, 1999). Together with the notion of the experience held and the theory of transferring knowledge the ‘cognitive distance’ (Nootboom, 1999) or ‘cognitive level’ (Lam, 2000; Fiol, 1985) between parties is further thought to play a role. The survey conducted by the researchers explores one aspect defining the context of the learning, namely the educational levels and experience of interacting personnel, with the purpose to sketch the cognitive distance between parties. An understanding of this is needed in order to develop suitable transfer mechanisms of knowledge and skills later in the project.

THE LEARNING MODEL

Traditionally, organizational learning is heavily guided by literature on quality management (Levitt and March 1988). Authors generally agree that the context of learning is of particular importance (Dodgson 1993); and that learning must be seen in a context (Argote and Ingram 2000) and needs a platform. Levitt & March (1988) focus on the ‘ecology of learning’, with a view of a competitive environment and interactions within this environment. Nonaka and Konno (1998) developed the concept of the ‘Ba’, the place where the actual learning takes place. This they argue must be seen in an even wider context, the Basho. The Basho is the place where entities or individuals meet and interact, the bigger place – similar to the ecology of learning introduced by Levitt & March. The SECI learning model of Nonaka & Konno (1998) is directly based on the concept of Ba and Basho. While the actual stages in learning or knowledge creation, namely; Socialization, Externalization, Combination, and Internalization (SECI), are thought to happen in their respective Ba; the place where people or entities meet in order to start the SECI spiral, is the Basho.

Nonakas’ knowledge creation model, which he acknowledges closely relates to and incorporates the concept of ‘double loop learning’ (Argyris 1977), describes the SECI

stages. As the Ba are the places for interaction between parties leading to knowledge creation, these interactions must be scrutinized in order to determine factors influencing the success of the interactions in terms of knowledge creation. In all four stages of the SECI model it is individuals who are the main actors.

The Socialization stage sees these individuals experiencing ideas, values etc. 'Physical proximity' (Nonaka and Konno 1998) with another party is of essence for such experiences. However the learning individual will experience this socialization in different ways, depending on the individuals' status, existing stock (Szulanski 1996) or antecedent. Thus individuals will learn differently as well as different content. The stage of Externalizations sees one party to transform tacit knowledge into explicit knowledge. This can be via telling anecdotes or sharing views on (personal) events. The content of these anecdotes or the interpretation of events are again ought to be influenced by the tellers personal level of experience or education. Also to what detail such 'discoveries' are shared could depend on the educational level of the teller. In the Combination stage the now forming explicit and told knowledge is captured and thus made explicit. Typically some form of documentation is drawn up capturing the 'discoveries'. Yet the meaning and value of written documentation ought to be differ between parties. Terminology used could be interpreted differently if the writers level of writing is not geared to wards the readers' level of literacy or professional knowledge (jargon). The last stage of the learning spiral is Internalization, where the learning party makes the explicit knowledge their own. Often the explicit, documented knowledge is absorbed into the organization or the individual, making this new knowledge and a new 'norm'. New working patterns, based on what was learned, are also entrenched into organizations. If further interaction or socialization occurs, another spiral can start with new knowledge being created and added to individuals or entities, which have now changed their existing stock and will thus learn differently and different things.

Through the SECI model it is evident that the level of experience, skills and knowledge on which the interacting persons act ought to play a role in the way knowledge is created and transferred. In particular the different meaning people ascribe to events, based on their personal experience, will play a role on successful learning. The cognitive distance (Nootboom 1999) between interacting parties is thus one aspect to consider when designing models for improved knowledge transfers.

COGNITIVE DISTANCE AND EDUCATION

Nootboom (1999) argues that a cognitive distance between sender and receiver is required for any learning to take place, but that the distance has an optimum defined by the degree of novelty of a thought for the learner and the existence of common grounds (communicability) to base the thought on. Thus, the concept of cognitive distance has to consider characteristics other than education levels such as culture, precedence and use of language. Shared 'cognitive frames' and 'heuristics' (Egbu, 2001) are key for successful learning and transfer of knowledge. Arguably the educational level and experience held by the respective interacting parties is a dominant characteristic of the cognitive distance between parties. Specifically, the educational level of individuals meeting each other is deemed to be important for mutual efficient understanding, i.e. communicability and will thus influence the processes in the respective Ba.

In South Africa the cultural aspect can be equated with race. Due to their different experiences, racial groups in South Africa have distinct differences in their cultures

(Booyesen, 2000). Yet race in itself does not solely determine business habits or ways of interacting with others. The level of education and achieved learning is deemed to be more influential on learning patterns than other aspects of cognitive distance.

DESIGN

A broad-based survey amongst contractors in the Western Cape was conducted. One sub-set were key personal, i.e. owners, of emerging contractors. The contacted emerging contractors were registered with the CIDB Contractor register in the lowest two grades for building works, and surveyed using a computer assisted telephonic interview technique during two weeks in November 2007. The questionnaire comprised two sections; one section dealt with background information on the respondents and their companies whilst the second dealt with the respondents' educational background and experience. The population of the first sub-set was 1258 contractors; for this survey the sample size was 142 (11%).

The second sub-set comprised key site staff of major established contractors operating in the Western Cape defined as individuals with daily interaction with other contractual parties (e.g. Joint Venture partners, main contractors or subcontractors) – individuals who can be expected to participate in knowledge transfers as senders. The population size of this second sub-set is unknown. The sample size was smaller than the first sub-set as it was assumed that the educational levels amongst key site staff working for established contractors would be more homogeneous due to similar career entry routes and experiences. Five graduate student interviewers were trained in basic interviewing techniques, based on an administered questionnaire. The interviewers collected data amongst identified key site staff during pre-arranged site visits. Prior to the interviews the interviewers re-assured themselves that the targets individuals were in fact in contact with other contractual parties on a daily basis and the consent of the respective Contracts Managers were asked for prior to conducting the interviews. The sample was drawn from 5 companies operating the Western Cape, with three companies also featuring on a national and international level.

USE OF NATIONAL QUALIFICATIONS FRAMEWORK FOR ANALYSIS

The analysis of the individual profiles is largely descriptive. Age, training and education were the main data of concern. Based on this data profiles were categorized in the 8 levels of the National Qualifications Framework (NQF) outlined in Table 1.

Table 1: National Qualification Framework (after: SAQA (1998))

Education & Training Band	Level	Typical qualifications – Level descriptors
Higher	8	Master Degrees, Doctorates
	7	Honours Degrees, Professional Qualifications
	6	National & Higher Diplomas, National First Degrees
	5	National Certificates, National Diplomas
Further	2 to 4	National Certificates
General	1	National Certificates, Grade 9, Adult Basic Education

This educational framework provided the basis for the researchers to analyse the differences and communalities (cognitive distance) between the two sub-sets.

PROFILES OF KEY PERSONNEL AND DIFFERENCES

Responses and positions within company

A total of 142 contractors of the emerging contractors sub-set were contacted all of whom were the registered owners of the companies. In approximately 20 % of the cases interviewers were unable to successfully contact the contractors. The overall response rate, excluding unavailable cases and unwilling participants, was 75% (Table 2). By targeting the owners of these companies, it is argued that the findings will reflect the learning process experienced by these companies – or rather their key staff members: the owners.

Table 2: Emerging contractors - response rate

CIDB Designation	Contacted	Not available	Refused participation	Participated
1	82	16 (19.5%)	3 (3.6%)	63 (76.8%)
2	60	12 (20.0%)	4 (6.6%)	44 (73.3%)
Total	142	28 (19.7%)	7 (4.9%)	107 (75.3%)

A total of 41 individuals working for established companies were targeted and data on their educational background collected. By enquiring about the respective positions of the interviewees it was ensured that the interviewees were company staff who frequently interacted with contractual partners such as foremen, quantity surveyors, engineers, managers, site agents, and a Health & Safety officer. All occupied positions within Contracts which put them in a senior level to those of other parties.

Race

All the selected companies from the CIDB register were listed as ‘Emerging’ contractors defined as companies owned and managed by Blacks / Previously Disadvantages Individuals (PDIs) (CIDB, 2008). However the racial make up of the established contractors’ personnel included of a high number of white South Africans (Table 3). Racial differences have been shown to contribute to the cognitive distance between the parties (Booyesen, 2000). The cultural aspect of cognitive distance thus ought not be neglected. Ongoing racial tensions within South African society certainly do not assist in a better understanding of each other although approaches to overcome cultural differences can be developed (English, 2002).

Table 3: Established contractors' personnel - race mix

Race	Counts	Percent	Cumulative Percent
Black	10	24.4	24.4
Coloured	14	34.1	58.5
Foreign	2	4.9	63.4
White	15	36.6	100.0
Total	41	100.0	

Size of companies

The average size of emerging companies and mode of the sample, in terms of employees, was 10, ranging from no employees (8 cases) to 200 employees (1 case, and an exception) with a standard deviation of 21. Under the Small Business Amendment Act (South Africa, 2003) the bulk of the companies thus falls in the category of ‘very small’ companies, according to employee numbers.

The established companies were drawn from a sample comprising companies active at super-regional to international levels. Although the sizes of the companies in terms of employee numbers were not known all can be considered large, well established firms.

Age of respondents

As an indication of experience of the respondents, the age of the respondents was captured. The emerging contractors sub-set had an average age of 41 years with a range from 20 to 60 years with a normal distribution within age bands (Table 4).

Table 4: Age of respondents

Age	Emerging counts	Established Counts
Younger than 20	0	0
20 – 30	10 (9.3%)	19 (46.3%)
31 - 40	39 (36.4%)	12 (29.3%)
41 - 50	39 (36.4%)	6 (14.6%)
51 - 60	16 (14.9%)	3 (7.3%)
Older than 60	0	1 (2.4%)
Non disclosure	3 (2.8%)	-
Total	107 (100%)	41 (100%)

In comparison, the average age of the established contractor sub-set was 34 years, substantially lower than the emerging contractors' sample. The range within this sub-set was between 20 to 66 years of age. A positively skewed distribution of the ages was also observed (Table 4) which may reflect sample selection. The graduate student interviewers targeted the respondents and may possibly have aimed at the youngest generation of site staff first. However, seeing that the respondents were key personnel interacting frequently with other contractual parties, the factor of young staff interacting with older owners needs to be borne in mind, as the willingness to learn from juniors might not be given.

Schooling

The school exit levels of the owners sub-set of the respondents varied. A total of 56% had Matric/Standard 10. Matric on the NQF is at level 2. The lowest reported schooling level was Standard 3. A Standard 9 school leaving certificate equals NQF level 1 (14% of the sample). A total of 29.9% of the respondents ended their formal schooling career prior to completing Standard 9 (Table 5). No correlation between the age of the respondent and their schooling level was established.

Table 5: Formal schooling completed

School exit level	Emerging Counts	Established Counts
Standard 5 and less	8 (7.5%)	-
Standard 6	6 (5.6%)	-
Standard 7	7 (6.5%)	1 (2.4%)
Standard 8	11 (10.3%)	4 (9.8%)
Standard 9	15 (14.0%)	3 (7.35)
Standard 10	60 (56.1%)	33 (80.5%)
Total	107 (100.0%)	41 (100%)

School exit levels amongst personnel from established companies were more consistent (Table 5) with 80% having completed Standard 10. Only 12% of the respondents had not completed Standard 9 as compared to 30% of the owners.

Further and higher education

Amongst the emerging contractors various career paths following school were observed. However, post school education of the respondents followed a similar pattern to their schooling level. A high number of respondents without any further education was noted (36.4%) although the education level ranged from short courses – some resulting in certificates – through to cognate Honours Degrees (NQF level 7). Only five respondents (4.6%) explicitly stated they were qualified tradesmen. A trade qualification – although discontinued due to a change in legislation – combined on-the-job training (apprenticeship) with structured college classes, and is equivalent to NQF level 3. However, a further 30% of the respondents stated they have attended college courses, mostly equivalent to the level of tradesmen. This implies that many respondents did not complete their trade test, but have completed the required college study. These respondents were categorized on the lower or on the same NQF level as their peers who possessed trade certificates, depending on the actual level of courses taken. Table 6 shows the highest qualification levels achieved by the respondents.

Table 6: Highest qualifications

Typical NQF level	Emerging			Established		
	Counts	Percent	Cumulative Percent	Counts	Percent	Cumulative Percent
0	32	29.9	29.9	2	4.9	4.9
1	5	4.7	34.6	1	2.4	7.3
2	39	36.4	71.0	5	12.2	19.5
3	11	10.3	81.3	7	17.1	36.6
4	1	0.9	82.2	3	7.3	43.9
5	4	3.7	86.0	0	0	43.9
6	8	7.5	93.5	5	12.2	56.1
7	7	6.5	100.0	18	43.9	100.0
Total	107	100.0		41	100%	

A high number of respondents with at NQF level 2 was observed. This is in line with observations by Egbeonu and McCutcheon (2008). The respondents educational background can thus be best described as mostly lying in the lower part of the Further Education and Training Band (NQF level 2 – 4) with a high number in the General Education Band (Level 1) and few in the Higher Education Band (level 5 and higher). The bulk of these respondents have attended short courses, with two-thirds of these courses attended focusing on administrative (e.g. project management) rather than technical (e.g. plumbing) matters. The durations of these short courses varied, although approximately 70% of the courses were said to be longer than 10 days.

In contrast the sub-set of individuals working for established companies showed different trends. Of the surveyed sample, 56% attended Technikons / Universities of Technology or Universities and graduated with either National Diplomas (5 cases – 12.2%) or Bachelor degrees (18 cases – 43.9%). All these qualifications are considered to be on or above NQF level 6 – well in the Higher Education Band of the NQF (Table 6). In terms of numbers Staff with University diplomas or degrees (23 in total or 56.1%) were followed by Tradesmen (7 in total or 17.1%).

LIMITATIONS

The categorization of some reported educational levels into the existing NQF proved to be difficult. The educational landscape in South Africa has seen many changes over the last decade with many ‘older’ qualifications discontinued or replaced by other

qualifications. Thus some of the educational qualifications were difficult to assess in terms of the currently existing NQF. However the analysis was supplemented with information pertaining to the most frequently mentioned qualifications. This led to a better understanding of the reported qualifications and to a better overall description of the surveyed sample in terms of level of education held. Furthermore it is acknowledged that experience and non-formal learning was not surveyed explicitly as such and is thus not dealt with in this analysis. It is acknowledged that reported education levels, with its fuzziness due to the above mentioned problems of categorization, are just one aspect of the cognitive parameters.

CONCLUSIONS

To address the wrongs of the past, the South African government is attracting companies owned by PDIs into the construction industry. However the failure rate amongst these emerging contractors is observed to be high and is attributed to a lack of knowledge and experience. Knowledge transfer from established to emerging companies, within contractual arrangements, could assist the development of the latter. These parties meet in the Basho (Nonaka, 1998). However, knowledge transfer happens most optimally with an adequate cognitive distance between sender and receiver (Nooteboom, 1999). This distance is defined by various parameters of which educational background and experience are two. In this survey a substantive difference in age distributions of actors typically interacting with each other at site level is noted. However here it appears that the supposed learner may often be older than the teacher. This, in itself, depending on the cultural background and acceptance of juniors as persons of 'respect', may raise obstacles to the efficient transfer of knowledge. The schooling levels of the two sub-sets differed greatly and was also reflected in the levels of attained technical qualifications with untrained emerging contractors on one side and highly trained established contractor staff on the other. Noting that the educational level attained might reflect the ability to comprehend basic business tasks, e.g. interpretation of drawings (Gamble, 2001), this distance in educational level may encroach on the efficient communication between parties. Yet this communication gives life to the various Ba in a learning model.

The cognitive distance of interacting parties in itself can not be truly measured, however a classification of qualifications gives an overview on existing differences and assist the further development of knowledge transfer mechanisms. Modes to overcome the evident cognitive distance using the right mix of media of communication (Fong, 2006) have to be developed, as a sustainable development of the smaller emerging contractors will positively contribute to true empowerment of the owners and employees of these companies.

REFERENCES

- Argote, L and Ingram, P (2000) Knowledge transfer: A basis for competitive advantage in firms. *Organizational Behaviour and Human Decision Processes*, **82**(1), 150-69.
- Argyris, C (1977) Double loop learning in organizations. *Harvard Business Review*, **55**(5), 115-25.
- Booyesen, L (2000) Cultural differences between African black and white managers in South Africa. In: Southern Africa Institute of Management Scientists (Ed.), *Twelfth annual conference: Africa's Century: Challenges for Management and Leadership*, 31 October-2 November, Midrand.

- Carrillo, P (1996) Technology transfer on joint venture projects in developing countries. *Construction Management and Economics*, **14**, 45-54.
- Cattell, K S (1994) *Small black builders in South Africa*, Unpublished MPhil Thesis, Department of Construction Economics and Management, University of Cape Town.
- Christie, P and Collins, C (1982) Bantu education: Apartheid ideology or labour reproduction? *Comparative Education*, **18**(1), 59-75.
- CIDB (2004) *South African construction industry status report*, Pretoria: CIDB.
- CIDB (cited 2008) *The register of contractors*. [Available online from <http://www.CIDB.org.za/registers/registerofcontractors.aspx#EmergingStatus>.]
- CIDB and CETA (2005) *Working paper: towards sustainable contractor development*, Midrand: CIDB.
- Cohen, W M and Levinthal, D A (1990) Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, **35**, 128-52.
- Dodgson, M (1993) Organizational learning: A review of some literatures. *Organization Studies*, **14**(3), 375-94.
- Egbeonu, E and McCutcheon, R T (2008) Guideline for improved relationship between learning contractor and site supervisors in the expanded public works programme's contractor learnership programme. In: Verster, J J P and Marx, H P (Eds.), *5th Post Graduate Conference on Construction Industry Development*, 16-18 March 2008, Bloemfontein. CIDB.
- Egbu, C and Botterill, K (2001) *Knowledge management and intellectual capital: Benefits for project based industries*. In: COBRA, Glasgow: RICS.
- English, J (2002) Managing cultural differences to improve industrial efficiency. *Building Research & Information*, **30**(3), 196-204.
- Fiol, M C and Lyles, M A (1985) Organizational learning. *Academy of Management Review*, **10**(4), 803-13.
- Fong, P S-W and Chu, L (2006) Exploratory study of knowledge sharing in contracting companies: A sociotechnical perspective. *Journal of construction engineering and management*, **132**(9), 928-39.
- Forrest, P L and Osborn, H B (2006) Training and mentoring of emerging contractors: lessons to be learnt. In: *3rd IRF/SARF Regional Conference for Africa*, 9-11 September 2006, Durban.
- Gamble, J (2001) Modelling the invisible: The pedagogy of craft apprenticeship. *Studies in Continuing Education*, **23**(2), 185-200.
- Lam, A (2000) Tacit knowledge, organizational learning and societal institutions: An integrated framework. *Organization Studies*, **21**(3), 487-513.
- Lawless, A (2005) *Numbers & needs: Addressing imbalances in the civil engineering profession*. 1 ed. Halfway House: SAICE.
- Levitt, B and March, J G (1988) Organizational learning. *Annual Review of Sociology*, **14**, 319-40.
- Nonaka, I (1991) The knowledge-creating company. *Harvard Business Review*, **69**(6), 96-104.
- Nonaka, I and Konno, N (1998) The concept of *Ba*: Building a foundation for knowledge creation. *California Management Review*, **40**(3), 40-54.
- Nooteboom, B (1999) Innovation, learning and industrial organisation. *Cambridge Journal of Economics*, **23**(2), 127-50.

- SAQA (1998) *Regulations under the South African Qualifications Act, 1995 (Act No. 58 of 1995) - r 452*. In: 18787, G N, Ed.: South Africa.
- Sebake, N and Sithole, B (2005) An investigation of performance of emerging contractors in the Thuba Makote pilot programme affecting the timeous completion of works. In: Talukhaba, a A, Akindele, O A and Appiah-Baiden, J (Eds.), *3rd Postgraduate Conference Construction Industry Development*, Johannesburg. CIDB, 79-90.
- Simonin, B L (1999) Ambiguity and the process of knowledge transfer in strategic alliances. *Strategic Management Journal*, **20**(7), 595-623.
- South Africa (1953) *Bantu Education Act, No 47 of 1953*. In: Government Gazette, 22.
- South Africa (2003) *National Small Business Amendment Act, No 26 of 2003*. In: Government Gazette, 10.
- Szulanski, G (1996) Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Journal*, **17**(Winter Special Issue), 27-43.
- van Wyk, L (2003) *A review of the South African construction industry: part 1: Economic, regulatory and public sector capacity influences on the construction industry*, Pretoria: CSIR (Boutek).