

Faculty of Cognitive Sciences and Human Development

Competency-based Training and Its Relationships with Training Effectiveness and Organisational Performance in the Oil and Gas Company in Malaysia

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Doctor of Philosophy
2021

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Competency-based Training and Its Relationships with Training Effectiveness and Organisational Performance in the Oil and Gas Company in Malaysia

Chong Thin Kiong

A thesis submitted

In fulfilment of the requirements for the Degree of Doctor of Philosophy

(Human Resource Development)

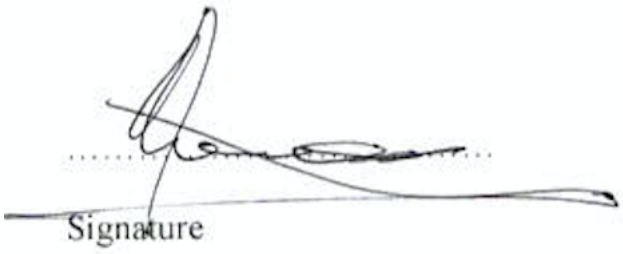
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UNIVERSITI MALAYSIA SARAWAK
2021

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DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Malaysia Sarawak. Except where due acknowledgements have been made, the work is that of the author alone. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.



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ACKNOWLEDGEMENT

I would like to acknowledge and thank my supervisor, Professor Dr Haji Rusli b Haji Ahmad, for his patience, guidance and continuing support throughout the entire PhD programme. Additionally, I would like to thank my Proposal Defence Panel, comprising Professor Dr. Haji Rusli Bin Ahmad, Dr. Philip Nuli Anding and Associate Professor Dr. Hasbee Bin Usop, for their time and very constructive feedbacks provided.

I also greatly appreciate the support of the oil and gas company for granting me permission to conduct the research study on site, and allowing me access to its employees. I thank the human resource manager, departmental managers, operators, technicians and their superiors who have participated in this research for their time, effort, honest responses and assistance in collecting empirical data.

Finally, I would like to thank and dedicate this work to my wife and children for their unwavering love and support.

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ABSTRACT

The purpose of this research is to determine the relationships between competency-based training (CBT) and training effectiveness in terms of the training outcomes of reaction, learning, behaviour and organisational results of the Kirkpatrick's evaluation model (Kirkpatrick & Kirkpatrick, 2006) and the determinants of organisational performance in terms of productivity, organisational commitment and job satisfaction in the context of the oil and gas company in Malaysia, an emergent economy. A research design based on the Saunders Research Onion (Saunders, Lewis & Thornhill, 2012) was applied for this study. A mixed methodology was used. Data were collected, through close-ended and open-ended survey questionnaires, from employees and their managers working in the oil and gas company in Malaysia. The sampling techniques employed were systematic sampling and purposive sampling. Pearson's product-moment correlation analysis was applied to test the hypotheses using SPSS version 23 based on 297 usable responses of the employees to the close-ended questionnaire while content analysis was applied to manually analyse the 14 usable responses of the managers to the open-ended questionnaire. The findings suggest that CBT has a positive significant relationship with the training outcomes of reaction, learning, behaviour and results of the Kirkpatrick's model and with organisational performance in terms of productivity, organisational commitment and job satisfaction. The results of the qualitative analysis lend support and reinforce the results of the quantitative study. The empirical analysis indicates that CBT which measured its relationship with the training outcomes is effective and add value to organisational performance. Therefore, it is vital for the company to focus on these critical areas in order to improve their performance. In addition, the findings in this study contributed to the knowledge, theories and practices of

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CBT with training effectiveness and organisational performance and also have implications for individual worker, team or group and the organisation. Future research directions include conducting similar research in other companies in the oil and gas industry in Malaysia; studying the mediating role of factors in the relationship between CBT and performance; employing the longitudinal research design to determine the direction and magnitude of causal relationships between the constructs under study.

Keywords: Training, competency-based training, training effectiveness, evaluation, relationship, organisational performance.

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Latihan Berasaskan Kecekapan dan Hubungan antara Keberkesanan Latihan dan Prestasi Organisasi

ABSTRAK

Tujuan penyelidikan ini adalah untuk menentukan hubungan antara latihan berdasarkan kecekapan (competency-based training – CBT) dan keberkesanan latihan dari segi hasil latihan: reaksi, pembelajaran, tingkah laku dan hasil organisasi berdasarkan model penilaian Kirkpatrick (Kirkpatrick & Kirkpatrick, 2006) dan penentu prestasi organisasi dari segi produktiviti, komitmen organisasi dan kepuasan kerja dalam konteks syarikat minyak dan gas di Malaysia. Reka bentuk kajian berdasarkan "Saunders Research Onion" (Saunders, Lewis & Thornhill, 2012) digunakan untuk kajian ini. Metodologi campuran digunakan. Data dikumpulkan melalui soal selidik tinjauan tertutup dan terbuka, daripada pekerja dan pengurus yang bekerja di syarikat minyak dan gas di Malaysia. Teknik pensampelan yang digunakan ialah teknik pensampelan sistematik dan teknik pensampelan bertujuan. Analisis korelasi produk-momen Pearson (Pearson's product-moment correlation analysis) diaplikasikan untuk menguji hipotesis menggunakan SPSS versi 23 berdasarkan 297 tindak balas pekerja yang boleh digunakan dari soal selidik tertutup sementara analisis kandungan digunakan untuk menganalisis secara manual 14 tindak balas pengurus melalui soal selidik terbuka. Hasil kajian menunjukkan bahawa CBT mempunyai hubungan yang signifikan dan positif dengan hasil latihan: reaksi, pembelajaran, tingkah laku dan hasil dengan prestasi organisasi dari segi produktiviti, komitmen organisasi dan kepuasan kerja. Hasil analisis kualitatif memberi sokongan dan pengukuhan kepada hasil kajian kuantitatif. Analisis empirikal menunjukkan bahawa CBT yang mengukur hubungannya dengan hasil latihan adalah berkesan dan memberi nilai tambah kepada prestasi organisasi. Oleh itu, sangat penting bagi syarikat untuk memberi

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tumpuan kepada bidang kritikal ini untuk meningkatkan prestasi mereka. Di samping itu, penemuan dalam kajian ini menyumbang kepada pengetahuan, teori dan amalan CBT dengan keberkesanan latihan dan prestasi organisasi dan juga mempunyai implikasi kepada individu pekerja, pasukan atau kumpulan dan organisasi. Penyelidik masa depan dicadang menjalankan penyelidikan serupa di syarikat lain dalam industri minyak dan gas di Malaysia; mengkaji peranan faktor perantaraan dalam hubungan antara CBT dan prestasi; menggunakan reka bentuk penyelidikan membujur untuk menentukan arah dan besarnya hubungan kausal di antara konstruk yang dikaji.

***Kata kunci**: Latihan, latihan berasaskan kecekapan, keberkesanan latihan, penilaian, hubungan, prestasi organisasi.*

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LIST OF ABBREVIATIONS

DACUM	Developing a Curriculum
DV	Dependent Variable
CBT	Competency-based Training
DSD	Department of Skills Development
EFA	Exploratory Factor Analysis
GNP	Gross National Product
HR	Human Resource
HRD	Human Resource Development
HRM	Human Resource Management
IV	Independent Variable
KMO	Kaiser-Meyer-Olkin of Sampling Adequacy
KSA	Knowledge, Skills and Attitudes
MNC	Multinational Companies
NKEA	National Key Economic Areas
NOSS	National Occupational Skill Standard
RBV	Resource-based View of the Firm
SHRM	Strategic Human Resource Management
SPSS	Statistical Package for the Social Sciences
TVET	Technical and Vocational Education and Training
YAB	Yang Ahmat Berhormat (The Right Honourable)

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CHAPTER 1

INTRODUCTION

1.1 Chapter Overview

This study is concerned with competency-based training (CBT) and its relationships with training effectiveness and organisational performance in an oil and gas company in Malaysia. It evaluates effectiveness of CBT using the Kirkpatrick's evaluation model and determines the relationship of CBT with organisational performance in the contexts of an oil and gas company in Malaysia. This chapter describes a brief background of the research and provides the necessary context for the research problem. Specifically, it explores the background of the study, problem statement, research objectives, research questions, research hypotheses, conceptual framework, significance of the study and the scope of study. The definition of terms most pertinent to this study and a chapter summary are also provided at the end of the chapter. This chapter is important as it provides a roadmap that sets the scene and tone for the thesis and guides the direction of this study.

1.2 Background of Study

Rapid changes in the economic environment have created enormous pressures on business and industry to become more competitive. In respond to the competitive environment, businesses have attempted to improve productivity and other key drivers of corporate profitability. The key to improved or sustained performance is to be found in the strategic development and application of the organisation's human talent. An effective and competitive human resource (HR) thus provides the foundation for organisations to face the pressures and challenges of the environment. Without a highly skilled talent base that is able to rapidly respond creatively to economic changes, and is centred on developing and

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utilising competencies, organisations are unlikely to succeed. The success of an organisation depends on how the organisation makes the most of human competencies (Tripathi & Agrawal, 2014).

People and their collective skills, abilities and experience, coupled with their ability to deploy these in the interests of the employing organisation, are recognized as making a significant contribution to organisational success and also constituting a significant source of competitive advantage (Armstrong & Baron, 2002; O'riordon, 2017). The competent workforce is acknowledged to be the most important differentiator of an organisation's success (Akbar & Akbar, 2012). In today's competitive environment, it has become crucial for every organisation to retain competent employees for survival (Tripathi & Agrawal, 2014). The performance of its HR is a critical enabling factor that influences the potential of an organisation to achieve its objectives. Successful organisations must therefore provide learning and development opportunities and foster an environment conducive to learning and nurturing talent that would enable the full potential of their HR to be realised.

In a business world that is changing very rapidly, the workforce must continually enhance or develop new knowledge, skills, and attitudes (KSA) in order to adapt to changing technological and environmental demands to remain viable (Tan, Hall & Boyce, 2003; Salas, Weaver, & Shuffler, 2012). Training is the classic mechanism for such skill enhancement (Tan et al., 2003; Salas et al., 2012). The overriding objective for organisations to invest in training is to develop capabilities that employees will effectively transfer to their job, improving performance (Grossman & Salas, 2011; Zumrah, Boyce & Fein, 2013).

Training has been variously defined in the literature (Bell et al., 2017; Dipboye, 2018). It has been defined, for example, as the systematic acquisition and development of

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the KSA required by employees to adequately perform a job or task and to improve performance (Tharenou et al., 2007; Kraiger, Passmore, dos Santos & Malvezzi, 2015). Buckley and Caple (2009) perceive training as a planned and systematic process designed to assist an individual to raise competence or learn new KSA to adequately perform a task or job or to improve performance. As for Armstrong and Taylors (2014), training is the practice of equipping employees with KSA, with the aim of building organisational capabilities and increasing organisational performance. In the case CBT, it is training based on competencies. It is a method of training which, according to Cleary (2015), is outcome-based and assesses learners' attainment of competencies determining whether learners demonstrate their ability to effectively perform something. A related term to CBT is "competency" which refers to the description of a set of measurable knowledge, skills, abilities, and attitudes that could be attained by learners (Rothwell & Graber, 2010; Koenen, Dochy, & Berghmans, 2015).

Despite divergent views about the definition or purpose of training, scholars seem to point to the fact that training and development initiatives are meant to raise competencies with the aim to achieving organisational objectives (e.g., Ogedegbe, 2014; Anderson, 2015) such as creating competitive advantage (e.g., Salas et al., 2012; Noe, Clarke & Klein, 2014) and improving organisational performance (e.g., Tharenou et al., 2007; Maimunah, 2008; Kraiger et al., 2015; Tan & Omar, 2017; Garavan, McCarthy, Lai, Murphy, Sheehan & Carbery, 2020; Mdhlalose, 2020). This captures the core elements of what training is meant to provide, irrespective of the training approaches used, including the competency-based approach.

In Malaysia, the technical vocational education and training (TVET) system is based on CBT principles (NVTC, 1997; 2001). The Department of Skills Development

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(DSD) is responsible for managing, coordinating and promoting skills training and career development programmes based on skills competencies for all types of skills sectors in Malaysia, including the oil and gas sector. For CBT implementation, National Occupational Skills Standards (NOSS) are developed where the learning outcomes to be achieved are stipulated in the task profiles which include performance standards to be met at the end of the training. A NOSS is defined as a specification of the competencies expected of a skilled worker who is gainfully employed in Malaysia for an occupational area, level and pathway to achieve the competencies. It covers the KSA and employability skills needed by an individual in order to succeed at the workplace. NOSS are developed by industry experts in Malaysia based on the needs of the industry and is utilised as the main basis for the implementation of Malaysian Skills Certification System in which the performance of existing industry workers and trainees are assessed to award the Malaysian Skills Certificate. This provides an approach to the design and implementation of TVET where opportunities are offered for a much closer cooperation between the training function and industry, business and the professions making it relevant to actual industry's needs (Biemans, Nieuwenhuis, Poell, Muller & Wesselink, 2004).

CBT is implemented by many and varied providers via TVET programmes from the existing 29 skills sectors, including the oil and gas sector. They have to register with DSD. Implementation may either be by industry-based training using the National Duel Training System (NDTS) where theoretical training is conducted at the DSD accredited training centres (20-30%) and the practical training conducted at the workplace (70-80%) or by full-time training programme conducted at DSD's accredited centres for specific fields and skill levels that have been accredited. This is used to bring together the gap between learning in educational settings and future workplace performance, which represents a

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challenge for institutions of higher and further education (Sluijsmans, Prins, & Martens, 2006). The TVET will play a pivotal role in providing the skills-based workforce required for economic transformation in the country. In Malaysia, approximately 10 percent of students enrol in upper secondary technical and vocational streams, more than 100,000 school leavers join the labour market annually, after 11 years of formal schooling without pursuing further education or training (Pang, 2011; Ismail & Hassan, 2013). The market for TVET is great. Consequently, there is a huge opportunity for TVET providers to attract school leavers and college graduates without employable skills (due to mismatch of skills) to take up TVET.

As Malaysia moves forwards in its quest to achieve economic goals, TVET has one of the biggest roles to play in ensuring that Malaysia reaches developed nation status by 2020 as underlined in Vision 2020 (Zakaria, 2015) and now, according to Aziz (2019), by the Shared Prosperity Vision 2030, a new economic model proposed by the then Prime Minister, YAB Tun Dr Mahathir Mohamad, to replace Vision 2020 (which is considered to have failed to push Malaysia towards developed nation status) that advocates shared prosperity, with a target to provide a decent standard of living for all Malaysians by 2030 regardless of economic class, race, and geographic location. The achievement of this vision needs well skilled and qualified HR. The implications on human resource development (HRD) would be enormous and therefore the TVET and skills training system has a very significant role to play to provide the relevant knowledgeable and competent workforce for the country's economic future (Tenth MP, 2010). Kao (2019) reported that the Prime Minster emphasised the importance of skills development as well as TVET in the coming years in realising Vision 2030 and there would be more priority towards TVET in the national budget allocation.

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The oil and gas industry is the backbone of the Malaysian economy. It is of strategic importance to Malaysia. Whatever happens in the industry would reverberate throughout the entire economy. The oil and gas sector made significant contribution to the nation's economy in terms of gross national product (GNP). As such, the oil and gas sector has been identified as one of the 12 National Key Economic Areas (NKEA) under the Economic Transformation Programme. The economy would, thus, require a larger workforce. With the introduction of the NKEA, demand for labour is expected to grow tremendously. By 2020 (2010 – 2020), an additional 3.3 million jobs would be created, of which 1.3 million (40%) would be TVET-related (Ismail & Abiddin, 2014; MPCC, 2016). NKEA targets the oil and gas sector to achieve an annual growth of 5% between 2010 and 2020. In doing so, the NKEA is expected to deliver RM131.4 billion GNP impact and consequently, create an additional 52,300 jobs within the sector (ETP, 2012; PwC, 2012; MPCC, 2016). According to information from the Department of Statistics Malaysia, the value added of oil and natural gas in 2017 registered at RM107.7 billion (2015: RM92.3 billion) averaging about 20% of the Malaysia's GNP for those years despite prolonged oil price slump and oversupply in the global crude market. In order to leverage on the potential of the oil and gas industry, the Malaysian Government places strong emphasis on undertaking initiatives to enhance skills training in partnership with the industry.

There are a few local and international operators involved in the oil and gas industry in Malaysia. Petroliam Nasional Berhad (PETRONAS) is the main local operator. Besides PETRONAS, there is also a large pool of other oil and gas players in Malaysia, comprising international oil companies, independents, services and manufacturing companies. The international oil and gas companies which play a significant role in oil and gas industry in Malaysia include Murphy, Exxon, Shell, Hess and Talisman. Having

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established themselves in Malaysia for many years, these companies provide a whole range of services, technologies as well as investments to support the continuing growth of the oil and gas industry in Malaysia. These companies do not have common platform for training and developing their people. While a few companies implemented CBT, others have their own schemes for developing people.

Organisations are implementing CBT as it helps to prioritise training expenditures and achieve results (Rothwell & Graber, 2010). The CBT is perceived to produce skilful and productive employees with the relevant workplace competencies, thus meeting the skills requirements of the employers (Rothwell & Graber, 2010). Any mismatch of employable skills may be avoided. There are, however, several issues pertaining to CBT implementation via TVET that need to be addressed on a holistic basis as they would impact on the implementation of current and future TVET in Malaysia. In this regard, a comprehensive set of initiatives have been developed encompassing, (a) rebranding TVET to improve the image and public acceptance or confidence of TVET as a good alternative qualification to the traditional education stream qualification; (b) rationalising, streamlining and improving the TVET sector in terms of its provision, quality, operating model and funding structure; (c) scaling up private skills training provision in order to develop a more vibrant TVET industry in Malaysia and (d) upgrading the professionalism of the instructors to become more skilful and competent (Pang, 2011; Majundar, 2011; Ismail & Abiddin, 2014) and (e) increasing the capacity of the various training providers to accommodate for the anticipated increase of trainees. Consequently, the national TVET system requires to be transformed in terms of its efficiency, quality and performance in order to equip the country's workforce with the competencies required for a competitive and knowledge-based economy.

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Organisations that invest in training expect improvement in their employees' knowledge and skills which are instrumental in improving organisational performance (Dolezalek, 2005; Tharenou et al., 2007; Kraiger et al., 2015). As there is little research available on the effectiveness of CBT (MacGraw & Peoples, 1996; Burnett, Clarke & Nielsen, 1998; Markus et al., 2005; Al-Mannaee & Ryan, 2018), the researcher would be using related prior research studies based on traditional training to illustrate the training-organisational performance relationship. In this case, improvement in performance arising from effective training would be reflected in the organisational outcomes or performance such as productivity (Konings & Vanormelingen, 2015; Daniel, 2018; Khan & Abdullah, 2019); organisational commitment (Bashir & Choi, 2015; Riyanto, Yanti & Ali, 2017; Ahmad, Danish, Ali, Shahid, Khan & Nadeem, 2019; Sittisom, 2020), and job satisfaction (Okechukwu, 2017; Lai, 2018; Lei, Basit & Hassab, 2018; Fuzi & Yuzi Fuzi, 2019; Kanapathipillai & Azam, 2020). In this study, productivity, organisational commitment and job satisfaction are selected to represent the domain of organisational performance (the basis of selection is explained in Chapter 2).

With respect to the relationship between competencies and organisational effectiveness or performance, there are competency-related studies such as competency-based performance management on organisational management (Shet, Patil & Chandawarkar, 2019), managerial competencies on organisational performance (Hawi, Alkhodary & Hashem, 2015), teacher competence and commitment on performance (Siri, Supartha, Sukaatmadja & Rahyuda, 2020), core competencies on organisational commitment (Katawneh & Osman, 2014), training and competency on organisational commitment and competencies on job satisfaction (Sani, Yozgat & Cakarel, 2016).

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Training is a key factor related to the achievement of organisational objectives (Katou & Budhwar, 2006; Ogedegbe, 2014). In order to achieve the organisational objectives, the training must be effective. Training would be effective and produce positive outcomes or achieve objectives only if it is well planned, organised and implemented (Kirkpatrick & Kirkpatrick, 2006; McArdle, 2015), relevant and based on properly identified employee and organisational needs (Buckley & Caple, 2009), effectively designed and delivered (Kozlowski & Bell, 2007; Miller, 2013; McArdle, 2015), and the trained workers are permitted to employ their skills at work as real learning happens when applied in the workplace (Bear, Thomson, Morrison, Vickers, Paradise, 2008; Blume, Ford, Baldwin, & Huang, 2010; Thiran, 2012). Training evaluation is carried out to determine whether training has been effective. Effectiveness of training can be reflected in the training outcomes of Kirkpatrick's four-level training evaluation model (Kirkpatrick & Kirkpatrick, 2006). The four levels of training effectiveness are trainees' reaction, learning, behaviour and results criteria (Kirkpatrick & Kirkpatrick, 2006). Kirkpatrick and Kirkpatrick's (2006) evaluation model has been extensively used to assess impact of training. Previous evaluation on training effectiveness (of traditional training) based on levels of training effectiveness of Kirkpatrick's Model (Kirkpatrick & Kirkpatrick, 2006) include evidence from Pakistan (e.g., Rafiq (2015), Taiwan (e.g., Zahro & Wu, 2016), Iran (e.g., Dorri, Akbari & Sedeh, 2016; Heydari, Taghva, Amini, & Delavari, 2019), Tanzania (Tefurukwa & Lutengano, 2015), Australia (Briggs, Hayes & Kukharvea, 2014; Craig, Hall & Phillips, 2016) and Malaysia (e.g., Zain, Khalid & Nurudin, 2016; Embi, Neo & Neo, 2017).

In this study, CBT is examined to determine its relationship with training effectiveness based on the training outcomes of the Kirkpatrick's model (Kirkpatrick & Kirkpatrick, 2006) of training evaluation and on organisational performance in terms of

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productivity, organisational commitment and job satisfaction and in the contexts of the oil and gas company in Malaysia. Numerous studies have explored on traditional training effectiveness (Alvarez et al., 2004, Al-Mannaee & Ryan, 2018) but the effectiveness of CBT are less well researched (MacGraw & Peoples, 1996; Burnett, Clarke & Nielsen, 1998; Markus et al., 2005; Al-Mannaee & Ryan, 2018). Indeed, the researcher also finds in his search little information available in the literature regarding CBT and its relationships with the levels of training effectiveness and organisational performance. In this context, while the researcher endeavours to find available literature on CBT and its relationships with training effectiveness and organisational performance, he would also review empirical literature on related studies in traditional training and competency models effectiveness for this study.

1.3 Problem Statement

Arising from literature review, gaps have been noted in the relevant theoretical, empirical, methodological and practical literature with respect to training, CBT, training effectiveness, organisational performance and the prevailing context that influence training. They are now described below and for which this study would address.

Irrespective of the training approaches, the training and development initiatives are meant to raise competencies with the aim to improving organisational performance (e.g., Tharenou et al., 2007; Maimunah, 2008; Kraiger et al., 2015; Tan & Omar, 2017; Garavan, et al., 2020; Mdhlalose, 2020). The training-organisational performance relationship are supported by evidence from previous studies which relate to traditional training in various different contexts. While numerous studies have explored on traditional training effectiveness (Alvarez et al., 2004; Al-Mannaee & Ryan, 2018), the effectiveness of CBT are less well researched (MacGraw & Peoples, 1996; Burnett, Clarke & Nielsen, 1998;

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Markus et al., 2005; Al-Mannaee & Ryan, 2018). A gap on this area therefore exists in the training literature about which a novel study to link CBT to organisational performance is justified.

In the same vein, the links of training to the separate constructs of productivity (Konings & Vanormelingen, 2015; Daniel, 2018); organisational commitment (Bashir & Choi, 2015; Riyanto et al., 2017; Ahmad et al., 2019; Sittisom, 2020), and job satisfaction (Okechukwu, 2017; Lai, 2018; Lei et al., 2018; Fuzi & Yuzi Fuzi, 2019; Kanapathipillai & Azam, 2020) also relate to traditional training. A separate gap exists on these areas in the training literature about which a study is required to establish or confirm separately the relationship between CBT and productivity, organisational commitment and job satisfaction.

Kirkpatrick and Kirkpatrick's evaluation model has been extensively used to assess effectiveness of training, for example, training in public organisations (Zain et al., 2016)) and blended learning (Embi et al., 2017) in Malaysia; learning development (Briggs et al., 2014) and interprofessional learning (Craig et al., 2016) in Australia. More examples of previous evaluation on training effectiveness of traditional training include airline's industry related in-house training (Rafiq, 2015) and integration courses in the police sector (Manzoor & Zia-ud-Din, 2019) in Pakistan; environment protection education in the tourism industry (e.g., Zahro & Wu, 2016) in Taiwan; and in-service training of cardiopulmonary resuscitation for nurses (Dorri et al., 2016), and new teaching and learning methods workshop (Heydari et al., 2019) in Iran. However, these evidences pertaining to training effectiveness again relate to traditional training.

Despite the numerous prior studies which have been conducted on training effectiveness and organisational performance in various contexts as noted above, relatively little prior studies has so far been undertaken in the contexts of the oil and gas industry in

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Malaysia to investigate the effectiveness of training or the relationships of such training with particular reference to the training outcomes of the Kirkpatrick Model and with organisational performance in terms of productivity, organisational commitment and job satisfaction. Similarly, as there is little information available in the training literature regarding the evaluation of competency training models (MacGraw & Peoples, 1996; Burnett, Clarke & Nielsen, 1998; Markus et al., 2005; Al-Mannaee & Ryan, 2018), particularly using the Kirkpatrick's model (Kirkpatrick & Kirkpatrick, 2006), a gap thus exists in the training literature in this area of strategic importance in Malaysia.

The research gaps as identified above from literature review represent the challenges for which this study attempts to address.

1.4 Research Objectives

The objectives for this research can be categorized into general objectives and specific objectives.

1.4.1 General Objectives

The general objective of the study is to determine the relationships that exist between CBT and its training effectiveness and organisational performance.

1.4.2 Specific Objectives

The specific objectives relating to the relationships between CBT and training effectiveness are as follow:

i. To determine the significant relationship between CBT and trainees' reaction.

ii. To determine the significant relationship between CBT and trainees' learning.

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iii. To determine the significant relationship between CBT and trainees' behaviour change.

iv. To determine the significant relationship between CBT and organisational results.

The specific objectives aimed at determining the relationships that exist between CBT and overall organisational performance are as follow:

v. To determine the significant relationship between CBT and productivity.

vi. To determine the significant relationship between CBT and organisational commitment.

vii. To determine the significant relationship between CBT and job satisfaction.

1.5 Research Questions

The research questions established around the research objectives for this study are as follow:

i. How does CBT influence trainees' reaction?

ii. How do you believe that the trainees have learned new competency (KSA) as a result of the CBT? What evidence do you have for this?

iii. What behavioural changes have you observed in the job performance of the trainees as a result of the CBT?

iv. What is the relationship between CBT and business results?

v. What is the relationship between CBT and productivity?

vi. How committed are the trainees to the organisation?

vii. How satisfied would you say the trainees are with their job?

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1.6 Conceptual Framework

The conceptual framework provides a simple and holistic view of the inter-relationships between CBT and its effectiveness and overall organisational performance. In this study, the conceptual framework as depicted in Figure 1.1 is based on review of the relevant training literature. This framework suggests that CBT is the independent variable (IV) and the levels of effectiveness of training are based on Kirkpatrick & Kirkpatrick (2006), namely, reaction, learning, behaviour and results and organisational performance in terms of productivity, organisational commitment and job satisfaction, are dependent variables (DV).

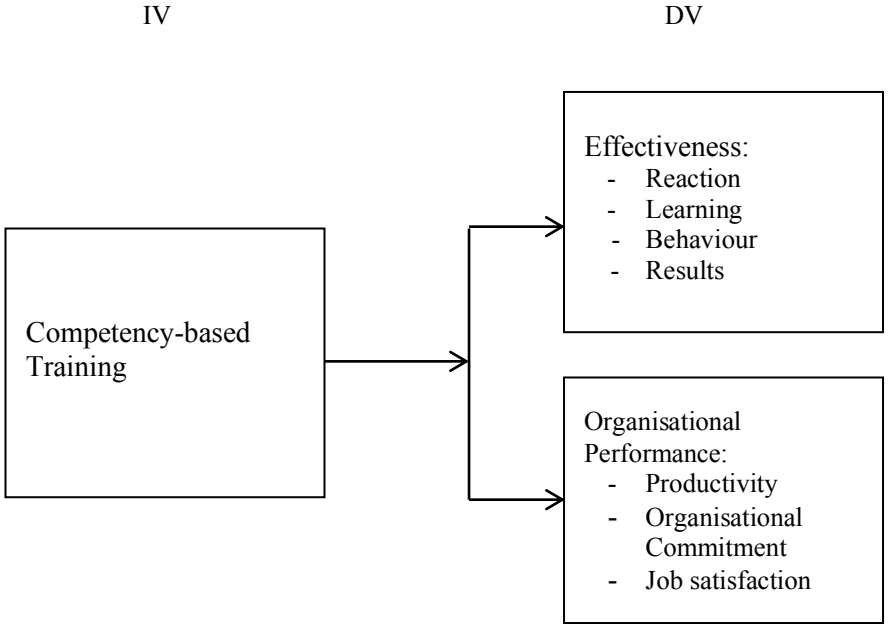


Figure 1.1: Conceptual Framework for the study of CBT and its relationships with training effectiveness and organisational performance.

The conceptual framework predicted that there are significant relationships between CBT and its levels of effectiveness measured in terms of trainees' reactions, learning, behaviour and results supporting this study using Kirkpatrick four-level of

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evaluation model (Kirkpatrick & Kirkpatrick, 2006). It also predicted that significant relationships exist between CBT and organisational performance measured in terms of productivity, organisational commitment and job satisfaction. It shows that CBT leads to and has a direct effect on organisational performance. The variables and their associated predicted relationships are described in Chapter 2 on literature review.

1.7 Research Hypotheses

The literature review provides the basis for several hypotheses that predict significant relationships between the construct of CBT (independent variable) and the constructs of training effectiveness and organisational performance (dependent variables). Alternative hypotheses are used due to the strong theoretical and empirical support that predicated the positive relationship between the variables under study. Based on the conceptual framework, the alternative hypotheses established around the general objective relating to the relationships between CBT and training effectiveness are as follow:

i. Ha1: CBT has a significant relationship with trainees' reaction.
ii. Ha2: CBT has a significant relationship with trainees' learning.
iii. Ha3: CBT has a significant relationship with trainees' behaviour change.
iv. Ha4: CBT has a significant relationship with organisational results.

Similarly, the alternative hypotheses established around the general objective relating to the relationships between CBT and organisational performance are as follow:

v. Ha5: CBT has a significant relationship with productivity.
vi. Ha6: CBT has a significant relationship with organisational commitment.
vii. Ha7: CBT has a significant relationship with job satisfaction.

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1.8 Significance of the Study

This research is significant in terms of its theoretical, empirical, methodological, and practical contributions to the existing body of research knowledge in the relevant training literature in the contexts of the oil and gas industry in Malaysia. The results of the study may be of benefit to the management and HRM personnel of the company where the study is undertaken. They may also be useful for students, researchers, academics, policy makers and practitioners or industry planners.

1.8.1 Theoretical Significance

In terms of theoretical significance, this study has the potential to contribute to the literature in several aspects. This study examined the relationships between the CBT model on training outcomes of Kirkpatrick's evaluation model and on organisational performance from the perspectives of the perceptions of the trainees and of their superiors. Prior studies that have investigated the relationships of training with the four levels of Kirkpatrick's evaluation model namely, reaction, learning, behaviour and results (e.g., Homklin, Takahashi & Kriengkrai, 2013; Briggs et al., 2014; Abdulghani, Shaik, Al-Drees, Irshad, Khalil, Alhaqwi & Isnani, 2014; Tefurukwa & Lutengano, 2015; Rafiq, 2015; Dorri et al., 2016; Zain et al., 2016; Embi et al., 2017; Heydari et al, 2019;) and on organisational performance (e.g., Tharenou et al., 2007; Maimunah, 2008; Kraiger et al., 2015; Tan & Omar, 2017; Garavan et al., 2020; Mdhlalose, 2020) were based on traditional training. As there is little information available in the training literature regarding the evaluation of competency training models (MacGraw & Peoples, 1996; Burnett et al., 1998; Markus et al., 2005; Al-Mannaee & Ryan, 2018), CBT is used for the investigation purpose which may be the first time such a concept is being tested empirically in the oil and gas industry in Malaysia. It provides insight into CBT and contributes to advancing understanding about

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training effectiveness at all the four levels of effectiveness, that is at the reaction, learning, behavioural change and organisational result levels (of the Kirkpatrick four levels of evaluation model). The knowledge on the effectiveness of CBT is reflected by the relation between CBT and the four training outcomes of Kirkpatrick's evaluation model: reaction, learning, behaviour and results. This fills the gap in the training literature of the body of knowledge and theory of CBT and its effectiveness in terms of reaction, learning, behaviour and results based on the Kirkpatrick's mode (Kirkpatrick & Kirkpatrick, 2006).

This study also contributes to enhanced understanding of the relationships between CBT and organisational performance. It adds knowledge and theory on such relationships linking CBT to improved business results and in shaping employee attitudes. In this case, the effectiveness of training is reflected in organisational performance with particular reference to productivity, organisational commitment and job satisfaction. As such, this study contributes specifically to the knowledge and theory on the separate relationships between CBT and productivity; organisational commitment and job satisfaction. This fills the gap in the training literature of the body of knowledge in CBT and organisational performance in terms of productivity, organisational commitment and job satisfaction in the oil and gas company in Malaysia.

1.8.2 Empirical Significance

This study provides empirical evidence on the relationships between CBT and the training outcomes of Kirkpatrick's model and on organisational performance in terms of productivity, organisational commitment and job satisfaction. As there is little information available in the training literature regarding the evaluation of competency training models (MacGraw & Peoples, 1996; Burnett et al., 1998; Markus et al., 2005; Al-Mannaee & Ryan,

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2018), this study provided the remedy for the gap to be filled by empirically testing such relationships.

The large volume of research in the area of training and its relationships with organisational performance has largely been concentrated in traditional training. In order to effectively and pragmatically investigate and confirm that CBT, similar to the traditional training, and organisational performance are related, testing the data using real data obtained from site to confirm the relationships in the context of the oil and gas industry in Malaysia. Thus, this study contributes to fill the empirical gap in these areas of the training literature. The empirical findings would also extend the external validity of previous research findings on business organisations in other countries or contexts beside the oil and gas industry in Malaysia.

1.8.3 Methodological Significance

Due to the lack of prior research in this study area, i.e., CBT in the oil and gas industry in Malaysia, a two part research design is proposed for this study. The first part consists of a literature review which is undertaken to explore and identify a suitable conceptual framework for this study. This conceptual framework depicts the relationships between CBT and the training outcomes of the Kirkpatrick's evaluation model and with organisational performance in terms of productivity, organisational commitment and job satisfaction. The second part comprises a methodological strategy used to address the research questions guided by the research onion (Saunders, Lewis & Thornhill, 2012) where the layers of an onion from the outer most layer to the inner core is used as a metaphor to describe systematically the general steps of the research process to achieve research objectives. These layers are the important aspects to be considered in determining the research methodology for the research study.

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The focus of this study is on CBT and its relationships with training effectiveness and organisational performance using data collected from one single oil and gas company. A mixed methodology where the researcher combines elements of quantitative and qualitative research techniques, methods and approaches for the broad purpose of understanding and corroborating into a single study (Johnson & Onwuegbuzie, 2004; Creswell, 2012). A survey strategy is employed for the study. Primary data is collected using close-ended and open-ended questionnaires respectively from the selected employees and their superiors to test the hypotheses and answer the research questions. Data from close-ended and open-ended questionnaires are analysed using correlational analysis and qualitative content analysis respectively. The methodological insight employed in this study would contribute to the body of research knowledge in the training literature which may be of methodological significance and interests to students, researchers, academics, policy makers and practitioners or industry planners.

1.8.4 Practical Significance

This study provides important practical evidence to the management of business organisations particularly those in the oil and gas industry in Malaysia on CBT, its relationship with training effectiveness and organisational performance. In the practical perspective, the findings of this study may be of interest to the management of the company where the study is undertaken, policy makers and practitioners alike. This study would be useful, for example, to the company management to conduct evaluation of training at all four levels of the Kirkpatrick's model and to help streamline and improve, where necessary, on their training programmes, which will result in yielding positive result towards organisational performance. The findings of this study can also assist management to achieve the planned outcomes more effectively and efficiently at the organisational level. It

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would also be useful to the HR practitioners in helping them to design their HR practices and formulate HRM plans within a strategic condition at the micro or macro organisational level in order to improve organisational performance.

The knowledge gained from the study could assist industry planners and policy makers to better understand the effect of training on the training outcomes of reaction, learning, behaviour and results of the Kirkpatrick evaluation model and on organisational performance. This can help make better or improved plans and policies accordingly at the organisational level. This can also assist them to make improved decisions pertaining to planning, developing and implementing CBT systems to achieve the planned outcomes more effectively and efficiently at the organisational level. In turn, it can lead industry planners and policy makers to the development and implementation of improved plans and policies at the state or national level relating generally to TVET and particularly CBT systems.

1.9 Scope of the Study

The focus of this study is on CBT and its relationships with training effectiveness and organisational performance using data collected from one single oil and gas company. The study is undertaken in a single company as there is no intention to compare and contrast the results with other companies. The company, which has requested anonymity, is located in Bintulu, Malaysia and has implemented CBT and assessment for its non-executive technical employees for several years. It is chosen for study as it is an industry champion and the leading company in the oil and gas industry in Malaysia. It has also made significant contributions to the nation's economy in terms of gross national products (GNP). The study is of a cross-sectional design guided primarily by the research onion (Sauders et al., 2012). A mixed methodology of quantitative and qualitative studies with a survey strategy is

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employed for the study. Primary data is collected using close-ended and open-ended questionnaires and they are analysed using correlational analysis and qualitative content analysis respectively.

For the purpose of this study, oil and gas comprises crude oil and natural gas which are defined as follow:

（1） Crude oil is a mixture of hydrocarbons that exists as a liquid in natural underground reservoirs and remains a liquid when brought to the surface. It consists of a complex mixture of hydrocarbons of various molecular weights, together with other organic compounds.

（2） Natural gas is an odourless and colourless gas consisting primarily of methane. Natural gas is often informally referred to simply as gas, especially when compared to other energy sources such as oil or coal. Gas can be found on its own or be associated with oil.

（3） Liquefied Natural gas (LNG) is natural gas which has been changed to its liquid form for ease of storage or transport. It takes up about 1/600th the volume of natural gas in the gaseous state.

There are many activities involved in the oil and gas industry including oil and gas exploring, drilling, developing, completing, producing, field gathering, storing, transporting, refining, distributing, and other supporting activities of the petroleum products. In the case of the company under study, it is involved in treatment, processing, liquefaction, storage and transportation of products. As such, there is quite a considerable number of non-executive technical employees employed by the company for which CBT is applicable.

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1. 10 Definition of Key Terms

Key terms as used in this study were explained and operationalized as described below.

1.10.1 Competency-based Training (CBT)

CBT is defined as an approach to vocational education and training that places emphasis on what a person can do in the workplace as a result of completing a programme of training or based on workplace experience and learning (ICVET, 2009; TAFE, Queensland, 2009). Robbinson and Misko (2003) also perceive CBT as training which develops the KSA required to achieve competency standards.

In this study, CBT is operationised as a method of training which is outcome-based and assesses learners' attainment of competencies determining whether learners demonstrate their ability to effectively do something, adopting Cleary's (2015) definition.

This term is used interchangeably with the related term "training" in many areas in this study, especially in the literature review chapter where there are relatively little prior studies investigating the effectiveness of CBT models or the relationship of such training with organisational performance (MacGraw & Peoples, 1996; Burnett et al., 1998; Markus et al., 2005; Al-Mannaee & Ryan, 2018).

1.10.2 Reaction

The first level (Level 1) of the Kirkpatrick's evaluation model is reaction. Reaction is a measure of participants' initial reactions to the training but it is not a measure of actual learning. This level of evaluation focuses on the trainees' perceptions of the usefulness (utility reaction) of a particular training programme and their satisfaction with the training programme (affective reaction) and which Kirkpatrick referred to as a measure of customer satisfaction (Kirkpatrick & Kirkpatrick, 2006).

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In this study, this level of evaluation focuses on the participants' perceptions of the usefulness (utility reaction) and their satisfaction (affective reaction) with the training programme, adopting Kirkpatrick and Kirkpatrick's (2006) definition.

1.10.3 Learning

Kirkpatrick's second level (Level 2) is Learning. Learning is defined as the acquisition of knowledge, behavioural change, skills and attitudes (Knowles & Saxberg, 1988*)*. This level measures the amount of learning/information in terms of increased knowledge, improved skills, changed attitudes and other relevant competencies that trainees learned in the training programmes (Kirkpatrick & Kirkpatrick, 2006).

In this study, learning is the amount of learning/information in terms of increased knowledge, improved skills, changed attitudes and other relevant competencies that trainees learned as a result of training activities, adopting Kirkpatrick and Kirkpatrick's (2006) definition.

1.10.4 Behaviour

The third evaluation level (Level 3) is the behaviour outcomes. This refers to the change of behaviour after a trainee attended a training programme (Kirkpatrick & Kirkpatrick, 2006). This level evaluates how far the trainees have changed their behaviour, based on the training they received. It is a measure of the amount of material learned that participants actually applied on the job or transferable to the workplace to reflect positive changes in behaviour and job performance.

In this study, Kirkpatrick and Kirkpatrick's (2006) definition on behaviour change is adopted. The behaviour or behaviour change after attending a CBT programme include changes in behaviour relating to sharing information, teamwork, preventing and handling

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defects, safety at work, attitude toward job, attitude toward co-workers, and attitude toward management.

1.10.5 Organisational Result

The last level (Level 4) of the Kirkpatrick's evaluation model is result or impact to the organisation. Organisational impact or results can be defined as the final organisation wide results that occurred because the participants attended the training programme (Kirkpatrick & Kirkpatrick, 2006). This level of evaluation measures the business impact of training or value to the organisation. It is a measure of whether the application of training is achieving results for the organisation.

Kirkpatrick and Kirkpatrick's (2006) definition on organisational result is adopted for this study. Organisational results in this study refer to the targeted performance benchmarks of quantity of production (productivity), quality of work (efficiency), safety, housekeeping, employee attitudes, and employee morale evaluated in terms of organisation wide results.

1.10.6 Productivity

Productivity is the effective use of innovation and resources to increase the value-added content of products and services (HKPC, 2013). It is the measure of how specified resources are managed to accomplish timely objectives as stated in terms of quantity and quality (Stevenson, 1999). Rogers (1998) perceives productivity as the ratio of output to input for a specific production situation. As for Baines (1997), he perceives productivity as the application of the various resources (inputs) of an organisation, industry, or country, in order to achieve certain planned and desired results (outputs).

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Productivity is operationally defined as the application of the various resources in order to achieve certain planned and desired results, adopting Baines's (1997) definition for this study.

1.10.7 Organisational Commitment

Organisational commitment is defined as an emotional attachment to the organisation or an obligation of staying in it (Meyer, Allen & Smith, 1993). Bateman and Strasser (1984) define it as being multidimensional in nature, involving an employee's loyalty to the organisation, willingness to exert effort on behalf of the organisation, degree of goal and value congruency with the organisation, and desire to maintain membership. As for Steers (1977), he perceives organisational commitment as the relative strength of an individual's identification with and involvement in a particular organisation. In the case of Mowday, Porter and Steers (1982), they perceive organisational commitment as the belief of an employee in the goals and values of an organisation and the aspiration to stay with that organisation.

Organisational commitment is operationally defined as being multidimensional in nature, involving an employee's loyalty to the organisation, willingness to exert effort on behalf of the organisation, degree of goal and value congruency with the organisation, and desire to maintain membership, adopting Bateman and Strasser's (1984) definition for this study.

1.10.8 Job Satisfaction

Job satisfaction is defined as the pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences as achieving or facilitating the achievement of one's job value (Locke 1976; Weiss 2002). It is the extent to which employees are happy or content with their jobs and work environment (Heathfield, 2013).

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As for Armstrong (2006), he perceives job satisfaction as the emotional attitudes and feelings people have about their work and this adopted for this study. In this study, only general and global satisfaction of employees towards their jobs are considered.

1.11 Chapter Summary

This first chapter is concerned with an introduction to CBT and its relationships with training effectiveness and organisational performance in the oil and gas company in Malaysia. It describes a brief background of the research and provides the necessary context for the research problem. Specifically, this chapter gave an explanation on the background of the study, problem statement, research objectives, conceptual framework, research hypotheses, significance of study, scope of the study, definition of terms, together with a chapter summary. Having provided an introduction on the research topic, providing a roadmap that sets the scene and tone for the thesis and guides the direction of this study, it is now time to review the important literature relevant to this study in Chapter 2.

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CHAPTER 2

LITERATURE REVIEW

2.1 Chapter Overview

This chapter reviews the literature relating to the research focus of this study, that is, CBT and its relationships with training effectiveness and organisational performance. It reviews the related literature that addresses the conceptual framework and empirical research relevant to this study to uncover the gaps. The important concepts, theories and methodologies of each construct and the current status of the relationships between key concepts in the hypothesised models as well as the variables, both independent and dependent variables, are reviewed. These concepts would guide the analysis of the findings drawn from the field. Specifically, the extant literature relevant to this study examined include training, CBT, training transfer, training effectiveness, training evaluation, Kirkpatrick evaluation model, organisational performance and effects of CBT on organisational performance, productivity, organisation commitment and job satisfaction. This chapter is important as it reviews past studies, models and supporting theories relevant to the conceptual framework and hypotheses of the study so that the research question and methodology can be better understood.

2.2 Human Resource Development (HRD)

The term human resources (HR) can be divided into agementagement (HRM) and human resource development (HRD) (Swanson & Holton, 2001). HRD encompasses the sub-fields of organisational development, career development, and training and development as an organisation's investment in the learning of its people for the purpose of improving performance (Swanson & Holton, 2001; Vinesh, 2014). It is the framework for helping employees develop their KSA, which in turn improves an organisation's

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effectiveness (Heathfield, 2020). Nowadays, HRD is considered as the key to higher productivity, better relations and greater profitability for any organisation (Vasantham, 2015).

The purpose of HRD is to enhance individual performance and improve organisational effectiveness and productivity (Tabibi. Khan, Nasiripour, Vahdat & Hessamet, 2011). HRD helps organisations develop their workforce through employee training and career development which improves organisational effectiveness and performance. It may include many different opportunities, activities, and employee benefits, such as: performance management and development, employee coaching, mentoring, succession planning, organisational development. The focus of all aspects of HRD is on developing a superior workforce so that the organisational and its individual employees can accomplish the goals of their job roles.

HRD for an organisation refers to its focus on improving the KSA and other talents of their employees. It is the integrated use of training, organisation, and career development efforts to improve individual, group, and organisational effectiveness. It is a process of developing skills, competencies, knowledge, and attitudes of people in an organisation. The people become HR only when they are competent to perform organisational activities.

2.3 Training

Training is one of the significant processes in the HRM function in organisations and it plays an important role in the effectiveness of organisations and to the experiences of people at work. Organisations employing people need to train and develop them. Most organisations are cognisant of this requirement and invest effort and other resources in training and development. Training is a very important tool for the organisation to improvise the performance of all the personnel for organisational growth and success. An employee

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will become more effective and productive if he is trained well. Organisation can develop and improve the quality of the current employees by providing effective training and development. Training is extremely important not only to increase performance but also to give a reason to do something and inspire employees by letting them know how important their jobs are and giving them all the information they need to perform those jobs.

Effective training programmes help in building a supportive and conducive learning environment for the workforce and at the same time help them deal effectively with foreseeable challenges easily and in time (Gunter, 2011). Training and development initiatives are provided by organisations to raise competencies of their employees with the aim to achieving organisational objectives (e.g., Ogedegbe, 2014; Anderson, 2015) such as creating competitive advantage (e.g., Salas et al., 2012; Noe et al., 2014) and improving organisational performance (e.g., Tharenou et al., 2007; Maimunah, 2008; Kraiger et al., 2015; Tan & Omar, 2017; Garavan et al., 2020; Mdhlalose, 2020). This captures the core elements of what training is meant to provide, irrespective of the training approaches employed. Hence, training is an activity of crucial importance in building a competent workforce who is capable of producing high quality work and achieving overall organisational objectives and goals (Falola, Osibanjo & Ojo, 2014). Beside contributing to enhance organisational performance, training and development are also a means for employers to address their employees' needs (Mathis & Jackson, 2004). Scholars and practitioners alike have increasingly recognised the impact of training and development on organisational performance (Niazi, 2011; Ongori & Nzonzo, 2011; Jain & Moreno, 2015; Meyer et al., 2016; Moullin, 2017).

The success of a training program is evaluated in terms of the end result or the increase in the work ability, skill or competency in the trainee. For any training programme

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to be successful, it is very essential to follow a systematic process which consists of assessment, development, delivery and evaluation. The process of training begins with the training needs assessment or training needs analysis stage undertaken at three levels, the job, the individual and the organisational analysis. The aim of this assessment stage is to find out whether or not training is required. If there is a need to conduct the training, the next step is to determine competency or skills gaps and the appropriate training intervention required. The training intervention is essentially decided in terms of KSA, the combination of which is known as competency.

Training is of little use if it does not create value for an organisation. However, if training is conducted according to the needs of the organisation or business, it can be of great value. Maimunah (2008), for example, points out that if training is properly conducted, a number of positive outcomes can be expected and nasty problems can be avoided. According to her, it is generally held that the benefits of training outweigh its costs, even when those advantages cannot be evaluated all in financial terms (Maimunah, 2008). Effective training would not only equip employees with most of the knowledge and skills needed to accomplish jobs, it would also help to achieve overall organisational objectives (Ogedegbe, 2014; Anderson, 2015) or organisational performance (Tharenous et al., 2007; Kraiger et al., 2015).

Once the training needs analysis is complete, the next stage is that of development. This stage involves the development of content and the training material. Right from designing the appropriate environment to deciding the various tools, everything is taken care of in the development stage. Factors like time and venue of delivery are also decided. On completion of the development stage, it is then time to deliver or conduct the training. There are various factors that determine the process of delivery like the participant

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demographics, the training intervention, the individual style of the trainer and so on. This brings in a lot of diversity to the training programmes but the primary objective is to ensure that the trainees can benefit from the experience.

Evaluation is the last stage in the training process and it is important from the perspective of evaluation of the effectiveness of training. It is aimed at analysing whether or not the training has been effective in achieving the objective, bridging the competency gap, changing the attitude, developing new skills, achieving organisational goals and so on. Optimizing training resources and achieving training effectiveness are important organisational goals. Training is effective to the extent that it directly contributes to the objectives or outcomes central to organisational effectiveness. Time and emphasis should be put on planning and implementation of the training programme to ensure its effectiveness in achieving training objectives and organisational goals (Kirkpatrick & Kirkpatrick, 2006; 2007).

Since the ultimate goal of any training programmes is to increase employees' job performance (Kontoghiorghes, 2004; Baldwin, Ford & Blume, 2009), it is important for employees to transfer what they had learned to the workplace (Bear et al., 2008; Blume et al., 2010; Thiran, 2012). Training is considered successful only when employees effectively practise the training on the job (Bear et al., 2008; Blume et al., 2010; Thiran, 2012). Training effectiveness can be reflected in the training outcomes of trainees' reaction, learning, behaviour change and results criteria (Kirkpatrick & Kirkpatrick, 2006; 2007).

There are various ways in which the effectiveness of training programs can be evaluated. The most popular and effective tool for evaluation of training is the Kirkpatrick Model of Evaluation (Kirkpatrick & Kirkpatrick, 2006). In order for the evaluation to be effective, both the criteria and design for training program, is decided so that there is no

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discrepancy and the participants are able to evaluate the benefits effectively for themselves. The evaluation is made on the basis of participant reaction to the training, their learning and the change in behaviour. This feedback is then reused in the first step training needs analysis for making future training more effective.

2.3.1 Defining Training

Training is defined in different ways in the literature (Bell et al., 2017; Dipboye, 2018) with some definitions emphasising current knowledge, skill and ability needs and others focusing on future needs. Dennis and Griffin (2005) perceive training as the planned attempts by an organisation to facilitate employee learning of job-related knowledge, skills and behaviours. Training can also mean any effort initiated by an organisation to foster learning among its members (Snell & Bohlander, 2007). For Aguinus and Kraiger (2009), training and development is a systematic approach to developing and enhancing employee KSA for the purpose of increasing organisational effectiveness. In the case of Rao (2011), training is perceived as the act of increasing the knowledge and skills of employees while doing the job. It actually involves teaching and learning of specific job-related skills and behaviours.

Training, however, can also be defined as consisting of both 'training and development' with the former focused on KSA required for the current job role and the latter focusing on KSA required for a future role (Garavan, 1995; Kraiger et al., 2015). The future component is conceptualised as development. Training in its narrower sense is sponsored by the organisation because it is assumed to have immediate organisational benefits whereas development may be sponsored by the organisation but, it may also be initiated by employees and without recognition or awareness by the organisation. Sitzmann and Weinhardt (2018) argue that the vast majority of training in organisations focuses on

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what they describe as hard skills or the development of KSA that are directly applicable to the job. Tharenou et al. (2007) in their meta-analysis of training focused primarily on these hard skills components and excluded soft skill or development programmes. They defined training as the systematic acquisition and development of the KSA required by employees to adequately perform a job or task and to improve performance (Tharenou et al., 2007). This definition incorporates training that focuses on the development of generic or soft skills as well as training that take place in the classroom and on-the job (Salas et al., 2012) focusing on development of hard or skills that are immediately applicable to the job. Recent studies of the training-organisational performance relationship have included training that focuses on enhancing employees' soft skills (Kim & Ployhart, 2014) and training that enhances both current and future KSA (Berk & Kase, 2010; Kim & Ployhart, 2014).

In the case CBT, it is training based on competencies. It is a method of training which, according to Cleary (2015), is outcome-based and assesses learners' attainment of competencies determining whether learners demonstrate their ability to effectively perform something. A related term to CBT is "competency" which refers to the description of a set of measurable knowledge, skills, abilities, and attitudes that could be attained by learners (Rothwell & Graber, 2010; Koenen, Dochy, & Berghmans, 2015). Competencies lie at the core of successful performers so it is important to understand that the analysis of high-achieving talent is one way to identify competencies that allow success over others (Rothwell & Graber, 2010).

2.3.2 On-the-job and Off-the-job Training

Training consists of formal on-the-job and off-the-job structured activities focused on the development of KSA for current and future job roles (Tharenou et al., 2007; Kim & Ployhart, 2014). These activities have become widespread HRM practices in organisations

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worldwide (Hughes, Zajac, Woods, & Salas, 2019). Through investment in structured training, organisations enhance employee and organisational human capital, which in turn contribute to better organisational performance (Tharenou et al., 2007; Jiang, Lepak, Hu, & Baer, 2012).

There are two methods through which employees can improve their knowledge and skills. One is through formal training off-the job and the other is through on-the-job experiences (Friday & Chibundu, 2017; Vasanthi & Basariya, 2019). On the job training is very important since real learning takes place only when one practices what they have learned. It is, however, also equally important in gaining knowledge through off-the-job or classroom learning. Learning becomes fruitful only when theory is combined with practice. Therefore, on the job methods can be balanced with classroom or off-the-job methods training methods.

On-the-job training is the common method of training in which a trainee is placed on a specific job and taught the skills and knowledge necessary to perform it at the workplace. This training method is a flexible method and it is a less expensive method. Under this mode of training, the trainee is highly motivated and encouraged to learn. On-the-job training is easy to arrange and manage and it simplifies the process of adapting to the new workplace. On-the-job training methods include the following (Friday & Chibundu, 2017; Vasanthi & Basariya, 2019).

1. Job rotation

   This training method involves movement of trainee from one job to another to gain knowledge and experience from different job assignments. Rotation not only makes a person well acquainted with different jobs, but it also

alleviates boredom and allows the trainee to develop rapport with a number of people.

2. Coaching

   Coaching is a one-to-one training. It helps in quickly identifying the weak areas and tries to focus on them. It also offers the benefit of transferring theory learning into practice. Under this method, the trainee is placed under a particular supervisor whose role is to act as a coach in training and provides feedback to the trainee.

3. Job Instructions

   This step-by-step training where by the trainer or coach explains the way of doing the jobs to the trainee and in case of mistakes, corrects the trainee.

4. Committee Assignments

   A group of trainees are asked to solve a given organisational problem by discussing the problem. This helps to improve team work.

5. Understudy

   In this method, a superior gives training to a subordinate as his understudy. The subordinate learns through experience and observation by participating in handling day to day problems. The usual basic rationale for this type of training is to prepare the subordinate for assuming the full responsibilities and duties.

6. Internship Training

   Under this method, instructions through theoretical and practical aspects are provided to the trainees. It is usual for a report of the major activities together with reflections on the learning points to be submitted for evaluation of progress.

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Off-the-job training is the training method wherein the employees learn their job roles away from the actual workplace. This method is provided in order to have the overall balanced development of employees by combing theory with practice. The following are some of the off-the-job techniques (Friday & Chibundu, 2017; Vasanthi & Basariya, 2019).

1. Case Study Method

   Usually case study deals with any problem confronted by a business which can be solved by an employee. The trainee is given an opportunity to analyse the case and come out with all possible solutions. This method can enhance analytic and critical thinking of an employee,

2. Incident Method

   Incidents are prepared on the basis of actual situations which happened in different organisations and each employee in the training group is asked to make decisions as if it is a real-life situation. The entire group then discusses the incident and takes decisions related to the incident on the basis of individual and group decisions.

3. Role Play

   In this case, a problem situation is simulated asking the employee to assume the role of a particular person in the situation. The participant interacts with other participants assuming different roles. The whole play is recorded and trainee gets an opportunity to examine their own performance.

4. In-basket method

   The employees are given information about an imaginary company, its activities and products, HR employed and all data related to the firm. The trainee has to make notes, delegate tasks and prepare schedules within a specified time.

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This can develop situational judgments and quick decision-making skills of employees.

5. Lectures

   Lectures can be very much helpful in explaining the concepts and principles very clearly. This is a suitable method when the numbers of trainees are quite large and face to face interaction is very much possible.

6. Simulation

   Under this method, an imaginary situation is created and trainees are asked to act on it.

7. Conferences

   A meeting of several people to discuss any subject is called conference. Each participant contributes by analysing and discussing various issues related to the subject. Everyone can express their own view point.

Effective on-the-job training enhances the technical practical skills of the employees and the off-the-job training makes the employees learn theoretical knowledge (Mahadevan & Yap, 2019). The basic differences between on-the-job and off-the-job training are indicated in Table 2.1. Irrespective the methods of training, the aim of both on-the-job training and off-the-job training is to enhance the performance of employees and organisations (Almohaimmeed, 2017). Previous studies conducted by various researchers where on-the-job training and off-the-job training were used as independent variables and employee performance or organisational performance as the dependent variables showed that training have significant positive relationship with employee and organisational performance (Falola et al., 2014; Shafini, Syamimi, Amalina, Rapidah & Sakina, 2016; Shafiq & Hamza, 2017; Mahadevan & Yap, 2019).

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Table 2.1: Differences between on-the-job training and off-the-job training.

No	On-the-job training	Off-the-job training
1	Impart training while employees at workplace performing the job	Training of employees outside the job location
2	It has a practical approach	Training is basically theoretical.
3	Involves hands-on experience of trainees	Hands-on experience of trainees not involved
4	Involves learning by doing the relevant task	Involves learning by acquiring knowledge
5	No work disruption as training and production go hand in hand	Work is affected as training is done away from workplace
6	Provided by experienced employees	Provided by experts
7	Less expensive than off the job training	Relatively more expensive
8	Appropriate for manufacturing environments	Suitable for non-manufacturing entities

2.4 Competency

The word competency was first discussed by David McClelland in the early 1970s and he described it as the characteristics underlying superior performance or as significant predictors of employee performance and success (McClelland, 1976). In the case of Boyatzis (1982), he defined competency as the underlying characteristics of an individual which are casually related to effective performance. Mulder (2007) defined competency as a professional's generic capability consisting of the integrated set of KSA of a person. Similarly, Bhardwaj and Punia (2013) concurred with this definition when he referred to

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competency as a mix of knowledge and skills that are needed for an effective performance. Hellriegel and Slocum (2011) identified employee's ethical competency, self-competency, diversity competencies, across cultures competency, communication competency, team competency and change competency as the seven key competencies that affect the behaviour of individuals, teams and effectiveness of an organisation.

Recently, competencies of workers are described as the vital instrument for improving HRD and organisational performance that concentrate on individual's performance (Salleh, Aziz, Shaladin & Muhammad, 2013). Competency has been referred to as a set of measurable knowledge, skills, abilities, and attitudes that could be attained by learners allowing them to successfully perform a task or an activity within a specific function or job (Rothwell & Graber, 2010; Koenen et al., 2015). Competencies, therefore, lie at the core of successful performers so it is important to understand that the analysis of high-achieving talent is one way to identify competencies that allow success over others (Rothwell & Graber, 2010). Competencies can also be categorised as functional competencies, personal competencies, and business competencies. Functional competencies are applicable technical knowledge or skills that are needed for a particular field or profession. The second group of competencies is personal competencies, which are individual attitudes and skills required to maintain professional relationships and personally develop and learn. The final group of competencies is business competencies wherein individuals have the ability to view problems or situations of the business.

Competencies can be broken down into helpful categories to better understand the type of information that might be included. In the case of the oil and gas company under study, they break competencies into soft competencies covering core competencies and leadership competencies, functional competencies and multitasking competencies. Soft

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competencies include core competencies and leadership competencies. Core competencies include the baseline skills required by the organisation for all employees which depend on the values, philosophy and goals of each organisation, but it can include basic requirements like communication skills or teamwork. Most jobs in the company under study require a basic element of being able to work with other people to some degree as well. The goals of the organisation are reflected in broad competencies that reflect the strength and uniqueness of the organisation. Leadership competencies are often used for supervisory and management related roles, although can be applied to any job position that requires an employee to lead others. They include leadership skills and behaviours like decision-making abilities. Functional competencies are job-specific skills and behaviours that are unique for each role. They should describe what behaviours or skills that need to be performed in order for the employee to be a top performer in their position.

Another type of competencies for the population under study is multitasking competencies. Multitasking is a human behaviour that allows people to handle multiple tasks simultaneously or alternate multiple task switches (Gopher, Armony & Greenspan, 2000; Lee & Taatgen, 2002). In this context, the employees are trained in tasks specified as not a core task of another trade or discipline. Operators, for example, are trained to perform minor maintenance work while an electrical electrician is trained to do some instrument maintenance work. Successful organisations have strategic capabilities that set them apart from their competition. This relates to competencies because, collectively, in order for an organisation to excel at capabilities like innovation, low cost, and service, they need to possess certain competencies to thrive in these areas (Rothwell & Graber, 2010).

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2..4.1 Competency Models

A competency model is a framework for defining the skill and knowledge requirements of a job (Mark, Bennett, Gibson & Alliger, 2012; Brannick, 2020). It is a collection of competencies that jointly define successful job performance. Competency models are widely used for defining performance success and assessing competencies for each individual job within organisations in both hard and soft skills. The model is applied to recruitment practices, talent management, training including CBT, performance assessment and so on. In the case of job analysis, it is a systematic process of discovery aimed at understanding what people do at work (Sidney, 1998). It may be directed primarily at the work itself or the worker attributes or it may be directed at both. Job analysis also provides the foundation for many HR applications, including personnel recruiting and selection, training, compensation, performance management, and many others (Sidney, 1998). In the educational and job training contexts, job analysis and competency modelling may be very similar.

Competency modelling has two distinct meanings (Mark et al., 2020). One such meaning concerns broad personal attributes that apply across many jobs within an organisation. Organisational-competency models tend to be more focused on organisational goals and attributes that distinguish superior from average workers, and thus provide value or competitive advantage to the organisation (Brannick, 2020). Job analysis tends to be more focused on the individual job and the behaviours it requires for successful performance (Sidney, 1998; Brannick, 2020). Both job analysis and competency modelling relate to individual differences (skills or proficiencies) valued by the individual and by the organisation (Brannick, 2020).

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The other meaning of competency is the capacity to apply skill and knowledge in a real-life situation (Mark et al., 2012; Brannick, 2020). They begin with breaking down a task into a series of steps and analysing what the trainee must know and do in order to complete each step successfully. They end with a determination of whether the trainee can complete the series of steps independently well enough to be labeled competent or successful. This is the most crucial stage in job analysis or competency mapping employing the DACUM methodology. In this stage, the job that the employee needs to perform is critically analysed and this is broken down into four stages. This stage can also include a competency-based questionnaire to find out: tasks the employee needs to perform, behaviors that he or she need to demonstrate to achieve these tasks, behavioral indicators that would lead us to ascertain that these behaviors are being demonstrated and defining proficiency for each behaviour.

Using competency models in training and development ensures that they are focused on the relevant KSA that affect job performance of the employees. They also help employees to assess their current level of performance and be aware of the competencies needed to improve their effectiveness (Eubanks, Marshall, & O'Driscoll, 1990). Employees are aware of what is required of them and become proactive with regard to their own training or learning (Lucia & Lepsinger, 1999). They ensure that the training and development efforts are aligned with the company's vision, mission, values, and strategies. This means that the competencies in the competency model not only support an employee's effectiveness on the job but also support the company's strategic goals.

Rapid changes in technology and demanding forces of globalization created new discourses into curriculum development to bridge the link between curriculum with teaching, assessment and the work environment. In order to sustain in the knowledge-based economy

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and demand of the job market, the development and application of skill standards derived from the curricula of CBT is required. In this era of creative and flexible learning, employers are increasingly demanding analytical thinking, communication and entrepreneurial skills (World Bank, 2007). Both technical and core competencies have become increasingly valuable in the rapidly changing labour market that requires employees to adapt to new development in technology and work operations. Adaptation of a more innovative view of learning that emphasizes on active intellectual engagement, participation and discovery, rather than passive absorption and reproduction of facts is crucially important. This reform requires redesign, review and implementation of new curricula and academic programmes that would transform the teaching and learning process. Effective reform or innovation in TVET also requires high level support from educators, industry, government, prospective students and other relevant stakeholders. Such innovation must be customised to fit the nation's stage of development, political system, social structure, economic capacities, history and cultural system (OECD, 2004). CBT is one major teaching and learning approach that is believed to have a strong potential to increase skill levels, reduce unemployment rate, increase productivity and to achieve international competitiveness (Smith & Blake, 2005). It also requires development of competencies for each discipline and subsequently of the means of measurement and performance of assessment. CBT curriculum has thus become necessary because of the increasing number of students passing out from institutions of higher education are without the requisite employable skills to work in the real-world environment.

2.4.2 CBT Models

CBT models are derived from curriculum models. A model of curriculum is simply a convenient way of explaining the different processes of curriculum development, which

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include the objectives, the content, methods and evaluation. Wheeler (1971) defined a curriculum as the planned experiences offered to the learner under the guidance of the school.

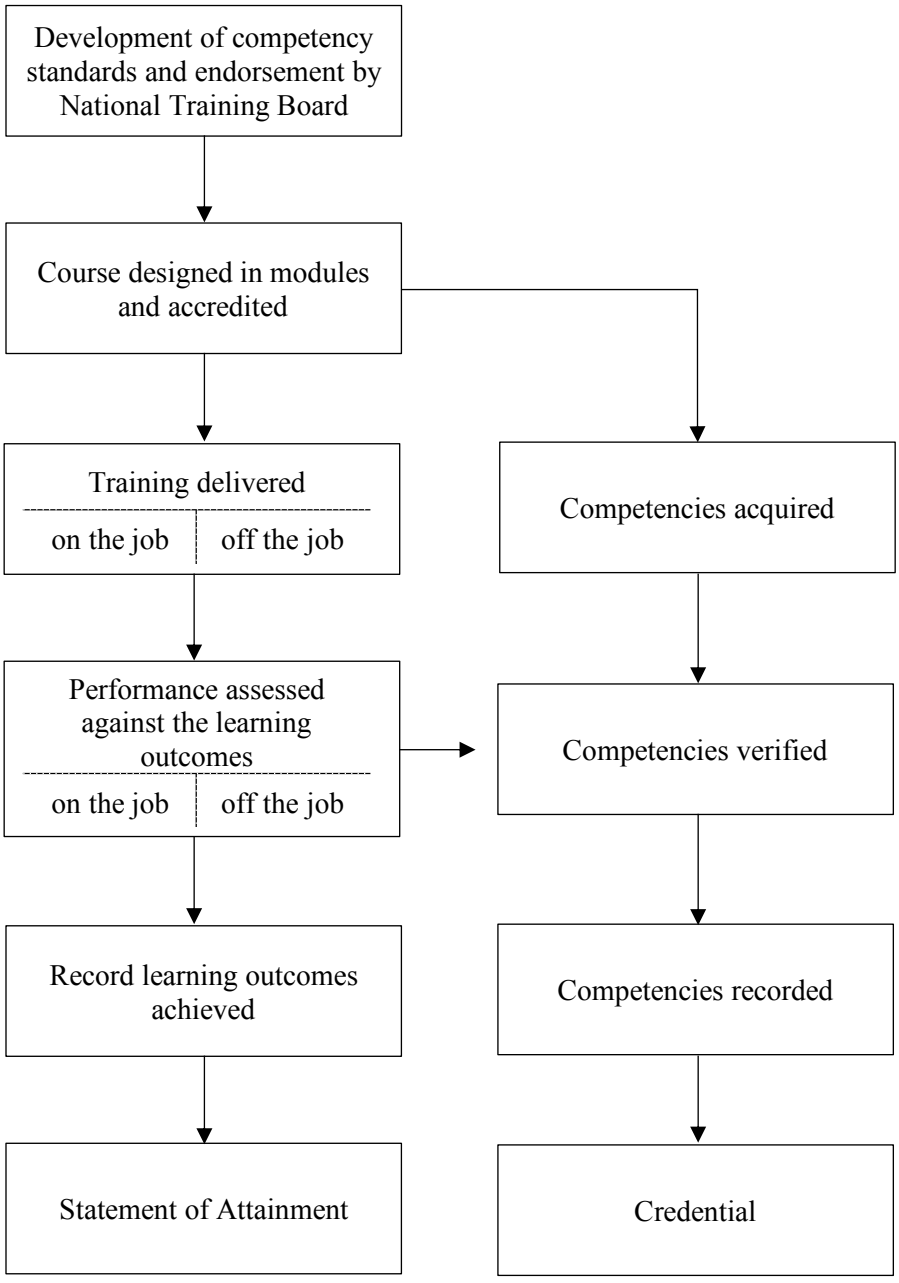


Figure 2.1: Flow chart depicting the traditional CBT curriculum model
Source**:** adapted from Brown (1994), p.7

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Curriculum development involves the selection of objectives, content, learning experiences as well as organizing and evaluating these experiences to determine the extent to which they are effective in achieving stated objectives. The process of planning a curriculum involves different considerations as well as approaches (models). Figure 2.1 is adapted from the curriculum model that is being used in Australia for all accredited training courses, which according to Brown (1994) is competency-based. Various other curriculum models have been proposed by different curriculum theorists and authors a few of which the researcher has examined to attempt to understand them. They include models developed by Tyler (1949), Nicholls and Nicholls (1972), Giles et al. (1942), Walker (1971), Taba (1962) and Wheeler (1967). The researcher posits that these curriculum models are also competency-based.

Having examined these models, the researcher found that there are both similarities and differences between them. There are also advantages and disadvantages about them. All the curriculum models have components of process, planning, implementation and evaluation. They are all named after the educators or theorists who developed them. The intent of all these models is to serve educational purposes with the structure of a curriculum. They can be developed into a structure that can be adapted to the needs of different contexts or conditions.

While these models have the same intent, they still pursue or approach education or training from different perspectives. While Tyler's model is objective, Taba's model is interactive, Wheeler's is cyclical and Walker's is a naturalistic or descriptive model, et cetera. Tyler's is deductive and works from a basis of scientific management with a preference for educational administrators developing the curriculum and having teachers implementing it, while Taba's model is inductive, encouraging significant amount of inputs

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from teachers in creating the curriculum because they are the ones interacting on daily basis with students. Tyler and Giles presented four-step models while Wheeler, Nicholls and Nicholls, presented five-step and Taba presented seven-step models. Basic characteristics are summarised in Table 2.2.

Table 2.2: Curriculum models and their characteristics.

No	Curriculum models	Type	No of steps	Steps
1	Ralph Tyles (1949)	Linear & logical model	4	1. Determine the school's purposes (aka objectives) 2. Identify educational experiences related to purpose 3. Organize the experiences 4. Evaluate the purposes
2	Hilda Taba's (1962)	Linear models	7	1. Diagnosis of needs. 2. Formulation of objectives. 3. Selection of content. 4. Organisation of content. 5. Selection of learning experiences. 6. Organisation of learning experiences 7. Evaluation and means of evaluation.
3	Wheeler DK (1967)	Cyclic and continuous process	5	1. Selection of aims, goals and objectives 2. Selection of learning experiences 3. Selection of content 4. Organisation and integration of learning experiences and content 5. Evaluation
4	Nicholls & Nicholls (1972)	Cyclic & continuous	5	1. Situation 2. Objectives 3. Content 4. Methods 5. Evaluation
5	Gills et al., (1942)	Interdependence of functions	4	1. Selection of aims, goals and objectives 2. Selection of learning experiences and content 3. Organisation of experiences 4. Evaluation of learning outcomes
6	Walker's (1972)	Dynamic models; it can start with any element and proceed in any order.	3	1. Platform that provides the benefits or principles, ideas to guide developers 2. Deliberation process, the process making decision from available alternatives between stakeholders 3. Design the organisation and structure of the curriculum

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Organisations may use any number of steps they consider suitable or adequate for a structure that is explicably satisfactory enough for the organisation. Tyler and Giles made no distinction between the content and learning experience, considering them as one item, but Taba, Wheeler and Nicholls and Nicholls separated them. While others laid emphasis on the organisation of learning experiences, Nicholls and Nicholls emphasized the situation. The curriculum development process is a continuous one because the curriculum is serving a dynamic society. It cannot effectively help the society meet its needs if the curriculum does not move with the changing society. This is the reason for it to be continually reviewed to ensure that it contains those elements that can help achieve the educational goals of the society.

In this study, following review of the curriculum models, the Australian curriculum model is selected for adaptation as a CBT model because it has the advantage of being flexible. It is responsive to needs and relevant to the users. The model is simple and easy to use as it employs familiar terminologies. The dynamic nature of the model makes it possible for adoptions and adaptations, when and where necessary, provided that by doing so there is a useful purpose to be served.

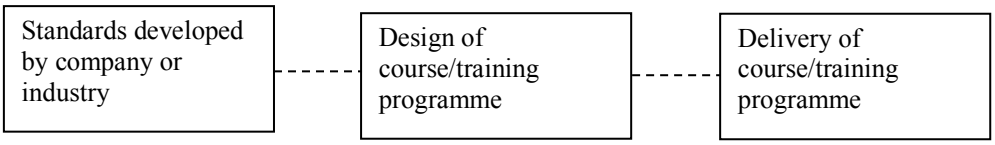


Figure 2.2: The Three Components of CBT
Source: adapted from Wheeler (1993), p.35

The flow chart depicting the CBT curriculum model (Figure 2.1) is summarised by Wheeler (1993) to link competency standards and delivery in a three-component framework similar to Figure 2.2 which Brown (1994) considered it simply as having three components

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of competency standards, curriculum/accreditation document and training delivery. In the context of the oil and gas company under study, the three components are described as competency standards, training design and training delivery.

2.4.2.1 Competency Standards

Competency standards are statement of competencies (KSA) required by workers to safely and effectively do a job (Fetcher, 1997a). A competency standard documents expected work performance outcomes, expected level of performance, knowledge that supports the delivery of work performance outcomes and work contexts under which the work performance outcomes are to be delivered (WSQ, 2015). As for Naidu, Standiwick and Frazer (2013), a competency standard is an industry-determined specification of performance, which sets out the KSA required to operate effectively in employment. The standards must reflect industry's current and future needs and should include problem solving, teamwork, communications, and the underlying skill and knowledge to enable competency to be demonstrated in new and unexpected situations. Competency standards relate to the job and are used to describe a job role or occupation. They describe what a person in a particular job is required to do and specify the standard to which this should be done. A competency standard states the minimum performance requirement to perform the particular task in the company or industry. These standards form the basis for the design and development of the curriculum, assessment and learning materials.

In the competency-based perspective, a CBT and assessment development process may be developed based on DACUM (Developing a Curriculum). DACUM is a unique, innovative occupational analysis method that can be applied to the development of CBT curricula and competency-based assessment. It is, according to Norton (1987), a very

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effective method of quickly determining, at relatively low cost, the competencies or tasks that must be performed by anyone employed in a given job or occupational area.

DACUM analysis which involves identifying the company's vision, mission, business strategies, and the company's core competencies, a job or occupational analysis and task analyses. Job analysis is also known as job profiling or competency mapping or profiling. It produces a job profile or competency map or DACUM chart containing the full list of duties and tasks to be done according to each trade or discipline. Task analysis generates task profiles of all the tasks or cluster of tasks in the job profile. It states what needs to get done and how well it is to be done (what is considered to be competent) for a particular task. The contents of a competency standard are derived from a task analysis which involves systematically breaking down each task into sequential operational steps and analysing other factors such as performance standards expected by industry, required knowledge, attitudes and safety requirements, decisions, cues, and errors involved and the tools, equipment, supplies, and materials needed for successful performance of the tasks to the defined standards. The standards provide the relevant foundation for developing a curriculum and related instructional materials. They are also the benchmarks against which assessments are made to ascertain competence for specific tasks.

There are no standards available for the oil and gas industry for now. Standards are prepared by the company's subject matter experts following the template provided by DSD. The standards and other relevant documents are approved by a corporate assurance body (centred at the headquarter of the group of companies).

2.4.2.2 Training Design

Training design is defined as the formulation of a plan or outline for training (Biech, 2005). Buckley and Caple (1990) perceive that the training design is a process which

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involves the translation of objectives and strategies into a balanced programme of instruction and learning. It is basically an outline of all the "what, where, who, when and how" details of the training for use by coordinators, curriculum developers, and coaches or trainers. If trainees are aware of the programme content, it can increase training motivation; if trainees are satisfied with the training material, their motivation for training transfer will increase (Gegenfurtner, Veermans, Festner & Gruber, 2009). Training design, therefore, has an effect on the transfer of learning and trainees' motivation (Burke & Hutchins, 2007; Blume et al., 2011).

The training programme design is the beginning of the training response. Training design or instructional design is the process of creating a blueprint for the development of instruction. Also similar to the competency standards above, the curriculum document is written following a specified format, using specified terms. The design process sets the stage for the development of a programme that produces results. The training design document specifies the learning outcomes. Associated with each of the learning outcomes is a series of assessment criteria. The curriculum document is written in terms of outcomes. The training programme is designed backwards from these outcomes and the assessment criteria. Learning outcomes which have a similar focus to one another are clustered together as modules.

Based on findings on training needs, specific learning objectives and assessment outcomes of the training and assessment programme are established. The learning objectives and assessment outcomes should match the competencies covered in the respective tasks. Training and assessment strategies, topics and activities that are most appropriate for the learners are determined. The training lesson plans and assessment plan are derived in line with proper sequencing of training and assessment content. Duration of the programme is

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specified and training resources such as media, facilities are identified and the requirements of trainers and assessors are confirmed. The design of training programme should also ensure that the training and competency requirements meet organisational and industry needs and that the programme is contextual to learners.

2.4.2.3 Training Delivery

Training delivery is defined as the way training is provided to learners to accomplish the objectives set (Fetcher, 1997a; Biech, 2005). It is when the coordination, assessment of learning needs, design, and development phases come together for the training to be delivered to trainees. In a CBT system, training delivery is the vehicle by which skills, knowledge and their application are conveyed in a way that ensures learners acquire the competencies specified for their industry, occupation or profession (VEETAC, 1993). Training delivery is thus the way training is provided to learners through flexible delivery systems and using a variety of different delivery and training methods. The training is to be conducted in a classroom, on-the-job, delivered using an electronic format or using some combination of methods.

Training delivery in its widest sense is used to include the many ways of recognising and acknowledging the achievement of learning outcomes. This allows for the inclusion of the achievement of specified learning outcomes not only of the particular training programme but also through other means such as through recognition of prior learning for formal industry training, work experience, and life experience. The recognition of prior learning would focus on the competencies a person has acquired as a result of both formal and informal training and experience but not how, when or where the learning occurred. Having successfully achieved the appropriate learning outcomes as a result of prior learning, the individual's training programme becomes that which is necessary to

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achieve the remaining learning outcomes. When the training and assessment design is finalized, course wares, learning materials, assessment instruments, assessment criteria, and marking schemes would be developed. The contents of the training and assessment materials would be guided by learning objectives and assessment outcomes laid out in the training and assessment design. Guides and instructions would be developed to provide clarity to trainers and assessors on the specifics of training delivery (including methods of delivery) and conduct of assessment. This ensures that training delivery and conduct of assessment is consistently implemented by trainers and assessors. Guides and instructions would also be provided to assist trainers and assessors to contextualise the training and assessment according to needs of the learners and the organisation in which he is employed. Selected, qualified trainers or coaches and assessors would deliver the programmes. They would be trained and briefed so that they are well prepared and well versed with the training and assessment programme before they deliver the training and conduct the assessment.

The training delivery is monitored and validated to ensure that trainers and assessors adhere to the programme design and achieve programme objectives. A system to actively obtain and analyse feedback from learners is to be set up to monitor and determine areas for improvement categorised according to training and assessment materials, training delivery, conduct of assessment, trainer/assessor performance and other aspects such as duration, facilities, and so on.

Brown (1994) posits that the three components in the model can be either tightly or loosely coupled to one another. He states that the competency standards are the basis for the design of the training course or programme but the course design does not have to be a literal interpretation or to be absolutely determined. This means that an opportunity exists for creative interjection in the interests of providing a better quality learning experience

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(Brown, 1994). Similarly, the coupling of the training delivery to the course design relies on training interpretation. The curriculum document specifies the learning outcomes to be achieved and the assessment criteria but it does not specify how these outcomes are actually going to be achieved. This also allows the trainees and the trainers or coaches involved in the learning process an opportunity for further inputs (Brown, 1994).

2.4.3 Concept of CBT

The success of organisations depends on the capabilities of their employees. It is of crucial importance to understand that the training and development of employee's KSA can translate into organisational growth. There are many generic, pre-packaged training options available to organisations, but they may not provide the best training option to contribute to the organisation's growth. The formal training programs do not necessarily provide employees with the skills required to succeed in the organisation. Success lies in training employees to meet the specific requirements of the organisation. If the employees are trained to meet organisation's performance management standards in a way that focuses on their skills needs, they will be better-equipped to support the growth of the organisation. This is the basic premise of CBT.

CBT is developed around the competency maps which are often referred to as competency profiles or skills profiles that have been identified for a specific job. In order to be assessed as competent in his or her job, a person must demonstrate the ability to perform the job's specific tasks. Competency mapping or profiling is the process of identifying the specific skills, knowledge, abilities, and behaviours required to operate effectively in a specific trade, profession, or job position customised specifically according to the organisation's needs encompassing professional, personal, and technical competencies.

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CBT is an industry and demand driven education and training programme based on well-defined industry generated standards in which KSA are specified in order to define, steer and help to achieve competence standards, mostly within a kind of national qualifications framework (Deissinger & Hellwig, 2011; Anane, 2013). These industry standards are the basis upon which the curriculum, assessment and learning materials are designed and developed. The focus of CBT programme is on the measure of the expected output of the trainee at the workplace as opposed to the theoretical knowledge acquired. It is a training programme which ensures that learners gain the necessary KSA or values to be successful in the working environment. It is primarily aimed at training people with the requisite skills and knowledge to meet industry specific standards rather than an individual's achievement relative to others in the group (Wolny, 1999).

Historically, the implementation of a modern CBT concept of education in the world began in the United State of America (USA) as part of efforts to reform teacher training education in the early 1960s (Brown, 1994; Hodges & Harris, 2012). Prior to that, application of scientific management to work roles and the development of mastery learning models had already been introduced into the vocational training models during the 1920s and 1930s (Brown, 1994). Studies have shown that the scope of CBT system expanded and broadened to include a wide range of variables in defining competence. Factors such as job competence, personal competence and meta-competence were therefore considered the definition and determination of core task and core assignment of CBT system (Cheetham & Chivers, 1996; LeDiest & Winterton, 2005). Countries such as Australia, United Kingdom, New Zealand and Canada have adopted and implemented the formal system of CBT into their educational system (Willmott, 2006; Hendry et al., 2007; Hodges, 2007; Parker & Walters, 2008; Gammie & Joyce, 2009). The relevance and quality of CBT system

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influenced the design and delivery of technical and vocational education across the globe and also led to many TVET reforms in some countries, including Malaysia. Many countries such as Britain, USA, New Zealand, Australia, Canada, Singapore and South Africa have also adopted CBT as an effective education and training system (JICA, 2001).

2.4.4 Characteristics of CBT

The most important characteristic of CBT is that it places more emphasis on the knowledge and skills acquired rather than the time spent. Under CBT system, the progress of trainees is by demonstrating their competence, which means they prove that they have mastered the knowledge and skills (termed competencies) required for a particular training, regardless of how long it takes. Norton (1987), Foyster (1990) and Delker (1990) have discussed extensively the key characteristics of CBT which are still relevant in the modern CBT concept. The following are some of the key characteristics of CBT programmes:

1. In CBT system, the required competencies in the field of study must be carefully selected,
2. Supporting theory is integrated with skill practice and the essential knowledge is learned to support the performance of skills,
3. Guided by industry or workplace standards, CBT is outputs based which are outcomes reflecting expectations from an employee in a specific job role.
4. CBT offers a more learner-centred, flexible approach where the learner becomes the focus of the curriculum and the teachers' role becomes one of facilitating learning to a specified level of competency or outcome through the most appropriate and effective means.
5. Detailed training materials are key to the competencies to be achieved and are designed to support the acquisition of knowledge and skills,

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6. Methods of instruction involve mastery learning, the premise that all participants can master the required knowledge or skill and the delivery of instruction is not time-based, provided sufficient time and appropriate training methods are used,
7. Participants' knowledge and skills are assessed as they enter the programme and those with satisfactory knowledge and skills may bypass education and training or competencies already attained,
8. Flexible training approaches including large group methods, small group activities and individual study are essential components, and
9. Satisfactory completion of training is based on achievement of all specified competencies.

A well-structured CBT system is designed to benefit both the employee and the employer. One of the benefits of the CBT system is that, it ensures that corporate training and professional development activities are cost effective, goal oriented and productive for the employer, it enables employees to be more proactive beyond their individual roles by learning additional skills that are valued by the organisation. CBT also improves communication between employees and management and also sets clear expectations for employees, enabling them to work effectively and make better decisions (Competency Group, 2016).

2.4.5 Differences between Traditional and CBT Models

The main difference between traditional training and CBT comes from the concept of the learning cycle. For example, a competency-based programme is based on measured clear outcome-based competences which reflect the expectations from the employee in a specific job role. In addition, as stated by Brunt (2007), competency programmes are

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learner-centered; encourage self-directed learning (Dubois, 1998; Dubois & Rothwell, 2004); have clear behavior indicators/competency statements for the competency clusters which focus on the outcomes; and are based on criterion-referenced evaluation/assessment methods. A criterion-reference is a standard of competency which is developed by the subject matter experts in the organisation. In this type of assessment, the employee is assessed in competencies (performance expectations at work) based on outcome-based evidence (standards) (Fletcher, 2000). The assessment is usually decided in a binary manner, either "competent" or "not yet competent", but it does not compare the employee's performance to that of others (Cydis, 2014). Not knowing the difference between the two training models could result in confusion among trainers or coaches because they think that competency-based programs are a system of training, rather than a system for assessing superior performance. They focus on the inputs or the processes instead of the outcomes. They believe erroneously that the method of designing competency-based programs could change. They think that the role of the trainer or coach has no place in competency-based programmes (Fletcher, 1997d).

While the learning of the program depends on the individual (self-learning), this does not mean that the role of the trainer or coach is diminished. It remains, but becomes more that of a facilitator or consultant. The trainer or coach can work with the employee's direct supervisor to identify the training needs and evaluate the program's effectiveness (Fletcher, 1997d). Table 2.3 shows some of the differences between a traditional training model and a CBT model (Al-Mannaee & Ryan, 2018).

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Table 2. 3: Comparison between traditional training and competency-based model (Based on Al-Mannaee & Ryan, 2018)

Element of comparison	Traditional training model (trainer-centred)	Competency-based model (learner-centred)
Purpose	To cover content that may or may not be part of the job role	To cover specific tasks included in the job role
Structure	Learning objectives that are set by the trainer	Competency clusters that are set by the company along with behaviour indicators
Professional levels	Training courses can be delivered for beginners, intermediate and advanced learners	Behaviour indicators are divided into beginners', elementary, intermediate, advanced and expert. This helps when comparing employees in different job roles
Delivery	A course given by a trainer from within the company or outsourced in a classroom or online	A competency model given to the employee who works on it at his/her own pace in order to meet specific objectives
Support for learning	Course instructor provides support to trainees during course period	Employees receive support from the coach and from other employees who have superior performance. Yet, the responsibility for learning is on the trainee him/herself (self-learning/development)
Assessment	Only at the end of the course to ensure understanding	Regular assessment during the programme period to ensure enhancement of performance
Requirements from the trainee	Course attendance	Competency portfolio and individual development plan
Outcomes	Certificate of completion	Trade qualifications.

2.5 Evaluation of Training Effectiveness

Training effectiveness is defined as a systematic process of collecting data and information to determine whether training has been effective (Goldstein & Ford, 2002) or achieving training objectives, organisational goals or performance. Bramley (2003) perceives training effectiveness as a measurement of observable changes in KSA after training has been conducted. As for Alvarez et al. (2004), training effectiveness is perceived as the variables that are likely to influence the outcomes of the training at different stages

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of the training process. According to Alvarez et al. (2004), training effectiveness focuses on the learning system as a whole thus providing a macro view of training outcomes whereas, training evaluation focuses only on the learning outcomes and therefore it provides a micro view of training results.

Training effectiveness is achieved when an employee is capable of showing performance up to the expectation of or standard required by the organisation. Through training, employees are exposed to information, new skills, or professional development opportunities (Elnaga & Imran, 2013). This is an opportunity given to employees to perform effectively by learning and preparing themselves for any changes that took place in the organisation, and the training that is centred on KSA required in the employment (Alipour, Salehi & Shahnavaz, 2009). Training is thus a planned intervention designed to enhance the determinants of job performance (Chiaburu & Tekleab, 2005) and training effectiveness is the antecedent that stimulates the outcomes at different stages of the training process (Alvarez et al., 2004).

While training effectiveness is a study of characteristics of the individual, training and organisational activities that affect the training processes, before, during and after training (Alvarez et al., 2004), training evaluation is a systematic process of assessing the outcomes of training programmes (King, King & Rothwell, 2001). Assessing training effectiveness is critical in determining if the training has been effective. Training evaluation is a systematic process of assessing the results or outcomes of training programmes (King et al., 2001). It determines the significance of the training, including the extent to which the training met the individual or organisational needs. As such, training evaluation can be seen as primarily focused upon the learning outcomes and how their measurement can be used to benefit the organisation (Alvarez et al., 2004). This definition indicates the requirements

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for collection of both descriptive and summative information which are available and equally present in any given training and development intervention. Kirkpatrick (Kirkpatrick & Kirkpatrick, 2006), however, referred to training evaluation as the evaluation of four levels, including reaction, learning, behavioural change and results to determine the overall effectiveness of training or lack thereof. He defined it as measuring changes in behaviour that occur as a result of training programmes. The actual evaluation model used in this study is based on Kirkpatrick and Kirkpatrick's (2006) four levels of evaluation model.

The primary purpose of evaluation is to assess the effectiveness of the training and to make good decisions about the use of organisational resources. Maimunah (2008), for example, states that the aim of evaluation is to improve the standard and effectiveness of the training programmes being offered. While the purpose of training is to change the behaviour, opinions, knowledge, or level of skill of employees, the purpose of evaluation is to determine whether these changes have taken place. Training evaluation data helps the organisation to determine whether training and subsequent reinforcement is accomplishing its goals and contributing to the organisational objectives. It also helps organisations decide how to adjust the training and other interventions for greater effectiveness. Evaluation is of crucial importance to organisational success and is essential if an organisation wants to continue to adapt and grow (Hale & Astolfi, 2015, p. 6). Evaluation can provide key data that allows organisations to make specific improvements benefiting not only the organisation but the employees as well.

Employee training and development is increasingly an important function of HRM as they help organisations to enhance their human talents and to gain a competitive advantage in the rapidly changing business world. As important as training is to businesses

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and organisations, so is evaluating the training. Training evaluations reveal important information to the business. They also uncover changes required to increase the effectiveness of the training programmes. When businesses and organisations have an effective training programme, it creates a competitive edge over the competition. With time and money in scarcity, it is crucial to create the most effective and cost-effective training programmes possible. The first step to creating better training programmes is the proper evaluation of training procedures. Many organisations are spending millions of Ringgit on training of their employees as they believe that it can contribute to human capital enhancement and organisational competitiveness. However, many of the training investments do not seem to have achieved the intended objectives in some organisations, because the training programmes are not properly designed and they are not linked to business strategy or the outcomes have not been properly evaluated (Pfau & Kay, 2002; Clinton & Laurence, 2005). It is, therefore, critically important for organisations to ensure that such investment achieves the intended individual and organisational objectives.

As with studies of traditional training (Indria, 2008), the competency model design affects the trainees' reaction to or satisfaction with the effectiveness of the training programme. The literature emphasized the importance of designing appropriate traditional training because its appropriateness has an impact on effectiveness (Alvarez et al., 2004). This same emphasis is assumed for the design of the competency-based approach. This means that when a competency-based model is designed, the designer has to ensure that the programme is aligned with the organisation's objectives. Designers of competency-based programmes have to identify the core competencies required not only at the organisational level but also at the job level (Mukherjee, 2011). This will help organisations to succeed against their competitors, giving them competitive advantage (Prahalad & Hamel, 1990).

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The content and material should be related or relevant to the job tasks required of the trainee to allow him to become a competent or superior performer (Mukherjee, 2011). If the programme is not designed properly, the transfer of training to the job could be affected (Holton, 1996; Yasin et al., 2013).

Evaluating a training programme is important for explaining why one and not another should be chosen and for showing how it contributes to the organisation's objectives (Kirkpatrick & Kirkpatrick, 2006). According to Phillips (1996), training evaluation can help managers to decide whether a training programme is meeting its goals, to identify its strengths and weaknesses for the purpose of future modification, calculate its cost-benefit ratio and establish a database so that top management can make training decisions. The implementation of a training programme such as a CBT is an intervention of change. It is an investment which may, in principle, be evaluated by an appropriate training evaluation model.

As training evaluation focuses exclusively on learning outcomes, it would give a micro view of training results (Alvarez et al., 2004). It is useful to include training evaluation as the part of the training process that assesses its effectiveness (Kirkpatrick, 1998). Although training evaluation may seem a challenging process, it is useful for improving training programmes and raising standards, which will lead to more effective programmes (Maimunah, 2008).

Many prior studies have been done on the relationship between training effectiveness and performance. DeMeuse, Hostager and O'Neill (2007), for instance, examined the effectiveness of workplace diversity training on employee performance. Their findings revealed that workplace diversity training had a positive impact on the employees and their performance. Haslinda and Mahyuddin (2009) investigated the effectiveness of

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training and development in the public sector. They found similar results as De Meuse et al. (2007), suggesting that training programmes conducted in the public sector helped the employees to contribute significantly to their organisation by applying the knowledge and skills learned in the training. There are other past studies relating to evaluation of related training effectiveness (e.g., Rafiq, 2015; Zahro & Wu, 2016; Zain et al., 2016; Embi et al., 2017; Heydari et al., 2019). Based on the empirical evidences found in these studies, the researchers admitted that it is important for each training programme to receive positive feedback from the participants with regards to satisfaction. If training programmes fail to show a reasonable return on the organisation's investment in time and money, the organisation concerned would probably discontinue investing more time and money in training in future programmes. Therefore, training evaluation is essential to ensure the effectiveness of a training programme.

2.6 Training Evaluation Models

Many evaluation models have been proposed in the literature for evaluation of training, some of which are listed in Table 2.4, to support implementation of training evaluation. The most popular and recognized of these training evaluation models is the Kirkpatrick's four levels of evaluation model (Griffin, 2010; Giangreco et al., 2010; Alan & Lisa, 2012). It was also said to be the preferred model for HRD researchers and practitioners, because it is simple and easy to understand (Noe et al., 2010; Griffin, 2010; Giangreco et al., 2010).

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Table 2.4: HRD Evaluation Models
Source: Adapted from Russ-Eft et al. (1997); Werner and DeSimone, (2009); Passmore and Velez (2012); Topno, (2012); Jamjoon and Al-Mudimigh (2011).

No	Model	Training Evaluation Criteria
1	Kirkpatrick (1959; 2006)	Four levels; Reaction, Learning, Job Behaviour, and Results.
2	Stufflebeam's CIPP model, (1983)	Four levels: Context, Input, Process, and Product (CIPP).
3	Brinkerhoff (1987)	Six Stages: Goal Setting, Programme Design, Programme Implementation, Immediate Outcomes, and Impacts and Worth.
4	Kraiger, Ford, & Salas, (1993)	Cognitive, skill-based, and affective.
5	Holton (1996)	Three levels: Learning, individual performance, and organisational results
6	Phillip (1996)	Five Levels: Reaction and Planned Action, Learning, Applied learning on the job, Business Results, Return on investment.
7	Warr, Bird & Rucham's (1970) CIRO model	Four levels: Context, inputs, reactions and outcomes (CIRO).
8	Kaufman & Keller's (1994)	Input and process, acquisition, application, organisation output and societal outcomes

However, many researchers, such as Stufflebeam (1983), Brinkerhoff (1987), Holton (1996), Kraiger, Ford and Salas (1993), Philips (1996), Warr, Bird and Rucham's (1970), and Kaufman and Keller (1994) criticized it. According to these researchers, Kirkpatrick's model contains weaknesses such as (1) there is low correlation between levels; (2) each level of training evaluation does not relate to the achievement of the training's objectives; (3) the model is too simple and is more like a taxonomy which misses other operational measures; and (4) the levels should not be posited as a hierarchy. Consequently, many researchers have suggested alternative models to explain training effectiveness. Based on criticisms of the Kirkpatrick model, various other models have been developed (e.g., Stuffleman, 1983; Brinkerhoff, 1987; Kraiger et al., 1993; Kaufman & Keller, 1994; Phillips,

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1996; Holton, 1996; Warr et al.,1970). A review is conducted on these selected evaluation models following which the Kirkpatrick's model (Kirkpatrick & Kirkpatrick, 2006) is also described.

2.6.1 Stufflebeam's Context, Input, Process and Product (CIPP) Model

Kirkpatrick's four-level model has little concern for the objectives, design, implementation and outcomes of the programme. Stufflebeam (1983) attempts to remedy the issue and proposes the context, input, process and product (CIPP) model as helpful for problem solving and implementing training. The context, input, process and product model has some of the same features as the context, input, reaction and outcome (CIRO) model (Roark, Kim & Mupinga, 2006). In the context stage, the measurable programme objectives are identified in order to determine if they are acceptable to organisations, society and culture, and to determine their significance. The input stage is concerned with assessing the content and the material used in the programme. The process stage is concerned with the application of the programme, and the input stage is concerned with planning. Finally, the product phase measures the agreement of the programme's results with its intended objectives (Brewer, 2007; Chang, 2010). Thus, multiple data collection methods are usually required to do a good evaluation study using the CIPP model, and each data set must be analysed using methods that are appropriate to the data and the evaluation questions being addressed (Frye & Hemmer, 2012). This framework allows evaluators to create questions for any programme (Hakan & Seval, 2011), making it a formative and summative evaluation that can be used in instructional processes (Harrison, 1993). Nevertheless, this model does not support evaluators because they are unable to respond to specific questions or issues (Zhang et al., 2011). These shortcomings gave rise to the development of other training evaluation models.

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2.6.2 Brinkerhoff's Six-Stage Model

The Kirkpatrick model has been criticised for failure to take into account of the training needs and to feed this into training design. As a result, Brinkerhoff (1987) developed the six-stage evaluation model covering goal setting, programme design, programme implementation, immediate outcomes, intermediate or usage outcomes and impacts and worth. Brinkerhoff's model is similar to Kirkpatrick's model (Bomberger, 2003; Phillips, 2003) but Brinkerhoff's model (1987) added two preliminary steps to Kirkpatrick's model to provide formative assessment of training needs and training design (Holton & Naquin, 2005).

In Brinkerhoff's model, stage 3 is similar to reaction level of Kirkpatrick's model, and stage 4 is similar to level 2, learning of Kirkpatrick's model, (Chang, 2010). Stage five measures the transfer of learning to the workplace, and stage six measures the programme's value to the organisation (Kumpikaite, 2007; Chang, 2010) which are the same as in level 3 behaviour and level 4 results in Kirkpatrick's four level model. Furthermore, all these six stages overlapped in some parts. In addition, as they are sequential, one level cannot be completed unless the previous one is done. This model, nevertheless, is only ideal for situations where the employer and the training organisers are able to work closely together, as it needs to be conducted before and after training (Passmore & Velez, 2012).

2.6.3 Kraiger, Ford and Salas's Model

Kirkpatrick's four-level model lacks the ability to offer reliable measurements at the levels of behaviour and results (Patterson & Hobley, 2003). Kraiger et al. (1993) propose that training evaluation consists of three learning outcomes, namely, cognitive, skill-based and affective outcomes. The cognitive outcome is based on the evaluation of verbal or declarative knowledge and knowledge of the organisation and effective cognitive strategies.

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Cognition is defined as a set of variables related to the quantity and type of knowledge and the relationship between knowledge elements (Kraiger et al., 1993). Skill-based outcomes are based on the measurement of task proficiency, while affective outcomes are based on evaluating the increase in motivation (Patterson & Hobley, 2003). These three learning outcomes relate to training goals, process strategies and performance criteria (Tamkin et al., 2002). The first two outcomes are similar to Kirkpatrick's first two levels, namely, reaction and learning. However, these levels in the Kraiger et al.'s 1993 model are not considered hierarchical (Patterson & Hobley, 2003).

Kraiger et al. (1993) believe that the measurement of knowledge gained from a training intervention is achieved by administering a test after the training programme; however, this test may be inadequate to measure learning acquired. Kraiger et al. (1993) suggest that the measurement of verbal knowledge may enable evaluators to differentiate between learners at higher levels on the cognitive spectrum. This model helps to identify situational and individual factors that predict the application of training and learning (Patterson & Hobley, 2003). Skill-based outcomes consist of skill compilation and automaticity. Affective outcomes include attitudinal outcomes and motivational outcomes involving disposition, self-efficacy and goal setting (Kraiger et al., 1993).

Although there are advantages for this model, it offers no guidance for determining the financial value or cost effectiveness of training. It also emphasises the effects of training on the individual attendee and neglects the effects of training on the organisation, while underplaying possible delays between training and on-the-job performance improvement. Finally, it provides little opportunity to collect and incorporate the subjective views of trainees or trainers for the evaluation (Beech & Leather, 2006).

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2.6.4 Holton's HRD Evaluation and Research Model

Kirkpatrick's four levels fail to take into account the factors on each level of evaluation. Therefore, Holton (1996) proposed the HRD evaluation and research model which consists of three primary training outcomes, namely, learning, individual performance and organisational results. The three outcomes of this model are similar to Levels 2, 3 and 4 of the Kirkpatrick's model. The difference is the missing outcome of reaction as the trainees' reaction should not be considered a primary outcome of training (Holton, 1996; 2005).

Holton (1996) suggests that a complex system of factors influence training outcomes which are not taken into account in Kirkpatrick's four levels. While Holton (1996) considers the influence of factors in only three training outcomes, namely, learning, individual performance and organisational results, it ignores the influence of factors on the reaction level which is the first level in Kirkpatrick's model. Instead, Holton's model is based on the hypothesis of trainability and the primary variables that affect this are ability, motivation and perceptions of the work environment (Noe, 1986). The primary moderating or mediating factors affecting learning outcomes are trainee reaction, motivation to learn, and ability to learn or cognitive ability. The primary mediating factors influencing individual performance outcomes are motivation to transfer knowledge, transfer conditions within the organisation and transfer design. Finally, the primary mediating factors influencing organisational results include links between the training and organisational goals, expected utility or payoff, and external events (Antos & Brueningm, 2006).

Nevertheless, Holton (2005) states that tools to assess variables in the Holton's model (1996) are not available. The tests constructed in these models are limited because of the shortage of effective measurement methods. The model is criticised for giving only a

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description of the order of influences on outcomes that happen in a single learning experience, but it does not consider any feedbacks (Kirwan & Birchall, 2006). In the same vein, Holton (1996) states that this model only explains a sequence of effects on the outcomes of individual learning and does not validate any feedbacks (Kirwan & Birchall, 2006). The identification of specific variables should be measured within each of the conceptual constructs, as identified by Holton (1996, 2005). Thus, there is a need for a more integrative and testable model (Holton, 1996).

2.6.5 Phillips Return on Investment Model

Kirkpatrick‘s four-level model fails to measure the benefits or economic value of a training programme. As such, Phillips (1996) developed a way to measure such contributions of training by adding a fifth level to Kirkpatrick‘s four levels called return on investment (ROI) and expanding Level 1 to include trainees‘ intentions to apply knowledge from the training programme to their workplaces. According to Phillips (1996), ROI refers to a ratio based in the monetary benefits in relation to the costs of the training (McKenna & Beech, 2014, p. 377).

Phillips (2005) argues that the ROI level provides worthwhile data and solid proof of payback for training expenditures by showing the monetary benefits of training through cost-benefit analyses (Lockwood, 2001; Chang, 2010). However, ROI is difficult to measure (Watkins et al., 1998). Russ-Eft and Preskill (2005) argue that defining ROI is a multifaceted and complex task within a complex system. The process of calculating ROI is more subjective than objective measurement and has not produced accurate measurements of training investments. In this instance, the net benefits of training are enmeshed with other organisational system variables and are hard to separate, despite the fact that calculated total training costs are easily attainable (Wang & Wilcox, 2006).

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2.6.6 Warr et al.' s Model

Kirkpatrick's four-level model fails to measure context and input before conducting training activities. Warr et al. (1970), therefore, propose the context, input, reaction and outcome (CIRO) model for evaluating managerial training in order to overcome the shortcoming of Kirkpatrick's model. The CIRO model analyses the context and possible input levels before measuring the reaction level (Tamkin et al., 2002; Brewer, 2007). The context level involves looking at the current operational situation to help determine the training needs and objectives. Input level involves information about possible training methods or techniques that can be used to select the best training intervention (Brewer, 2007). The reaction level in this model is similar to that of Kirkpatrick's model but it places greater emphasis on suggestions to help change the training programme's concern with participant views and suggestions. The outcome level looks at the results of the training and involves immediate, intermediate and ultimate outcomes that are similar to Kirkpatrick's levels of learning, behaviour and organisational results (Tamkin et al., 2002; Phillips, 2003; Brewer, 2007).

Although this model emphasises the objectives and availability of resources, it does not show how to conduct these measurements (Tzeng et al., 2007). It is conducted before and after the training intervention (Tennant et al., 2002). Furthermore, the ultimate evaluation outcome does not always need to be used, as suggested by Warr et al. (1970), while the current trend in the HRD field calls for evaluation at the results level (Chang, 2010). This suggests that the model needs further development in order to be effective.

2.6.7 Kaufman and Keller's model

Kirkpatrick's four-level model fails to incorporate the effect of training on society (Stokking, 1998). It is criticised as being incomplete and leading to a narrow focus on the

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evaluation of training alone (Watkins et al., 1998). In this case, Kaufman and Keller (1994) propose an extended version of Kirkpatrick‘s model, which includes value added to society and continued improvement, rather than a summative measurement (Watkins et al., 1998). Kaufman‘s levels of evaluation training model consists of five levels: (1) input and process, (2) acquisition, (3) application, (4) organisational output and (5) societal outcomes. This model expands Kirkpatrick‘s four levels by increasing the scope of the level of reaction to include enabling and reaction (input-process) and by adding a fifth level that measures societal outcomes and the impact of training on society (Russ-Eft et al., 1997). Kaufman et al. (1996) argue that by applying levels of evaluation outside of training allows other performance improvement interventions to be considered. Therefore, this model considers the internal and external results of training, which are linked to performance and organisational development (Passmore & Velez, 2012). Kaufman and Keller (1994) argue that Kirkpatrick‘s four-level model diminishes the effect of training on society and, thus, the value and worth of resources and methods. According to Kaufman et al. (1996) and Russ-Eft et al. (1997), the evaluation of societal outcomes and the expansion of the reaction level in Kirkpatrick‘s model determine whether trainees are satisfied with the training resources and methods used, whether useful results are achieved and whether the contributions of training to society are worthwhile.

At Level 1, the definition of reaction is expanded to include input and process, and there is a separation between input, which concerns the quality of the available organisational resources, and the acceptability and efficiency of the methods and resources used in a process (Kaufman et al., 1996; Watkins et al., 1998). Watkins et al. (1998) argue that this separation of input and process at Level 1 is highly useful for evaluators by providing decision makers with valuable information that is required to continuously

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improve organisational training and education efforts. Level 2 is acquisition and it measures and acquisition of competencies. Level 3 is the application of learned skills in the workplace and Level 4 is organisational output, measuring the output or contributions of the training to the organisation. Finally, Level 5 measures societal issues by evaluating society and client responsiveness, consequences and payoffs (Kaufman et al., 1996; Jamjoom & Al-Mudimigh, 2011). Stokking (1998), however, argues that some aspects of the extended version of Kirkpatrick‘s model are vague and suffer from a lack of clarity and that the model needs further adjustments. In this model, implementation, learning objectivities and their achievements are incorporated into Level 2 (acquisition) because they are viewed as indicators of the effectiveness of training and proper course implementation (Stokking, 1998). Furthermore, though Kaufman‘s model has a theoretical basis, it does not, however, offer much in terms of practical application (Topno, 2012). Therefore, this model provides the same amount of information as Kirkpatrick‘s four-level model because it does not take into account contextual factors.

2. 7 Kirkpatrick’s Four-level Evaluation Model

Based on training outcomes, Kirkpatrcik’s model (Kirkpatrick & Kirkpatrick, 2006) has provided a useful four level framework for evaluation of the impact of training programmes (e.g., Biech, 2005; Rue & Byars, 2007; Maimunah, 2008). It uses the trainee’s feedback regarding training, the acquisition of knowledge and skills, the application of learned skills and knowledge, and the effect of training on the organisation to indicate the effectiveness of training (Tracey, Hinkin, Tannenbaum & Mathieu, 2001). Kirkpatrick and Kirkpatrick (2006: p.17) provide the following three fundamental reasons why organisations must evaluate training:

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（1） Validate the contributions of training to the organisation's objectives and goals;

（2） Choose whether to prolong or terminate a training programme; and

（3） Attain figures on how to improve subsequent training programmes.

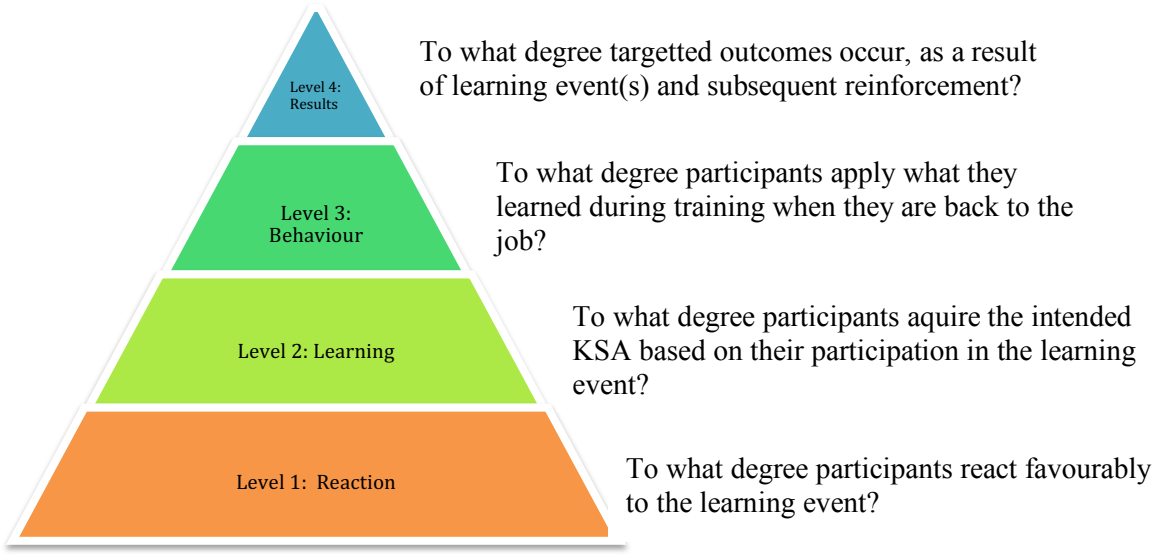


Figure 2.3: Kirkpatrick Four Levels of Training Evaluation
Source: Adapted from USOPM, (2011).

The four levels are: Level 1-Reaction, Level 2-Learning, Level 3-Behaviour, and Level 4-Results. This training evaluation model which delineates the four levels of training outcomes is represented in Figure 2.3.

The first level is reaction. This level of evaluation focuses on the trainees' perceptions of the usefulness (utility reaction) of a particular training programme and their satisfaction with the training programme (affective reaction) and which Kirkpatrick referred to as a measure of customer satisfaction (Kirkpatrick & Kirkpatrick, 2006). Utility reaction is used to measure employees' opinions about the importance of a particular training programme to their job, while affective reaction is used to measure how well employees

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like the trainer, delivery modes and contents of training (Goldstein & Ford, 2002; Salas, Tannenbaum, Kraiger & Smith-Jentsch, 2012). It is important to measure reaction because it helps us to understand how well the training was received by the trainees. It provides feedback to improve future training and also provides quantitative information to supervisors to establish performance for future training programmes (Alliger et al., 1997). A positive reaction would mean that trainees were happy and satisfied with the training programme and more likely to use the skills and knowledge. If the participants' reactions are negative, it will probably reduce the possibility of learning as they will not be motivated to learn (Kirkpatrick & Kirkpatrick, 2006).

Kirkpatrick's second level is Learning. Learning is defined as the acquisition of knowledge, behavioural change, skills and attitudes (Knowles & Saxberg, 1988*)*. This level measures the amount of learning/information in terms of increased knowledge, improved skills, changed attitudes and other relevant competencies that trainees learned in the training programmes (Kirkpatrick & Kirkpatrick, 2006). Learning can be measured in different ways depending on the objectives, and whether it is changes to KSA or opinion that we are interested to measure. It is important to measure this, because knowing what the trainees are learning and what they are not would help to improve future training and without accomplishing training objectives, no change of individual's behaviour would occur (Salas et al., 2012). Information obtained through this level of evaluation was used by trainers to consider possible modifications to their teaching practices; and review the alignment between the unit of study objectives and the teaching materials and learning experiences being offered.

The third evaluation level is the behaviour outcomes. This refers to the change of behaviour after an trainee attended a training programme (Kirkpatrick & Kirkpatrick, 2006).

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The behaviour outcomes address either the extent to which knowledge and skills gained in training are applied on the job or result in job-related performance (Bates, 2004). Evaluation takes place after training when the learners have returned to their jobs and is used to determine whether the skills are being used and how well that has been done. It can be evaluated by using survey or via interview the trainee and someone closely involved with him such as the immediate supervisor, peers and others who have knowledge about his behaviour (Kirpatrick & Kirkpatrick, 2006). The aim of using these data collection approaches is to examine whether the KSA learned from the training course have been transferred back to the job. Transfer of training is a recurring theme in HRD literature. The main goal of HRD is to ensure that employees perform their jobs effectively. In addition to learning and retraining new material, employees must also use it on the job to improve performance. The transfer of training content to the job situation is critically important to the success of the training efforts. Employees must use what he has learned on the job to improve performance

The last level of evaluation (Level 4) is results or value to the organisation. Results can be defined as the final results that occurred because the trainees attended the training programme (Kirkpatrick & Kirkpatrick, 2006). Level 4 outcomes are intended to provide some measure of the impact that training has had on the broader organisational goals and objectives (Bates, 2004). Typical organisational performance measures include productivity improvement, sales or revenue, and overall profitability (Aguinis & Kraiger, 2009). The objectives of training programmes need to be based on the organisation's objectives in order to maximise return on investment but it is rather difficult to assess the implication of training programmes to the organisation (Kirkpatrick & Kirkpatrick, 2006).

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According to Kirkpatrick, each level is essential and has an impact on the next level. By progressing through each of the levels, training evaluators can build a chain of evidence which links learning directly with organisational performance. The chain of evidence serves to unify the learning and business functions. With the right conditions for learning (level 1), it enables learning to take place (level 2); the learning taking place lays the foundation for the transfer of the learning to the workplace (level 3); and the application of learning in the workplace enables the desired changes in organisational performance to happen (level 4).

The ultimate intent of the four levels of evaluation was and is today to show the business value and worth of training. The effectiveness of any training endeavour can be measured using any outcome that an organisation deems relevant. The concept of different levels of evaluation helps us understand the measurement and evaluation process and minimises biased conclusions based on only one set of criteria (Biech, 2005). In the case of the Kirkpatrick's model, the data become more objective and meaningful to management as we progress from level 1 through to level 4. In addition, progressing through each level requires more work and more sophisticated data gathering techniques (Biech, 2005).

2.7.1 Criticism of Kirkpatrick's Model

Kirkpatrick's model has received criticisms from researchers. Holton (1996) commented that the Kirkpatrick's model merely created the taxonomies of training outcomes which are simply classification schemes instead of scientific models or theories. The model oversimplified the complex nature of training effectiveness in naturalistic settings (Salas et al., 2012). The model overlooked other important factors such as work environment and individual characteristics, which can affect training outcomes (Bates, 2004). The model assumes the existence of a causal linkage between the training outcomes

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of reaction, learning, behaviour and results which are not supported by many empirical studies (Alliger & Janak, 1989; Santos & Stuart, 2003; Kirkpatrick & Kirkpatrick, 2006). The levels represent a correlation such that positive reactions lead to greater learning, which produces greater transfer of knowledge and ultimately more positive organisational results (Bates, 2004). Kirkpatrick's model assumes the incremental importance of information that each level of evaluation provides data that is more important and informative than the last (Bates, 2004). This may lead to the perception among training evaluators that Level 4 would provide the most useful information about the effectiveness of the training programme.

2.7.2 Justification for Using Kirkpatrick's Model

Although the Kirkpatrick's four-level training evaluation model has been criticised, researchers generally agreed that it has contributed significantly to the understanding of training evaluation. The model was adopted for this research for several reasons. Donald Kirkpatrick's work has been highly influential since its initial publication in 1959 and continues to inform many modern-day theories of learning evaluation and to be accepted today using technology and creativity to maximize its benefits for the today's organisations. It has helped focus training evaluation practice on outcomes (Newstrom, 1995), fostered the recognition that single outcome measures cannot adequately reflect the complexity of organisational training programmes, and underscored the importance of examining multiple measures of training effectiveness (Bates, 2004). The model promoted awareness of the importance of thinking about and assessing training in business terms (Wang, 2003). The distinction between learning (level two) and behaviour (level three) has drawn increased attention to the importance of the learning transfer process in making training truly effective (Bates, 2004). The model has also served as a useful heuristic for training evaluators (Alliger

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& Janak, 1989) and has been the seed from which a number of other evaluation models germinated (Kaufman & Keller, 1994; Holton, 1996; Russ-Eft & Preskill, 2009).

Kirkpatrick's four-level of training evaluation model is the most popular and widely used approach to training evaluation in organisations (Holton, 1996; Alliger et al., 1997; Bates, 2004; Kirkpatrick, & Kirkpatrick, 2006; 2007). Kirkpatrick's four-level model is simple to use and is easily understood by HR practitioners designing evaluation tools (Robson & Mavin, 2014; Sachdeva, 2014). Although it is a simple, straightforward model, training administrators and professionals find it appealing. Leach and Liu (2003) also state that Kirkpatrick's model is the most popular method of representing training evaluation criteria because of its simple and practical approach. It has become well established within the training and development profession (Alliger & Janak, 1989; Holton, 1996; Bates, 2004). Its simplicity and basic approach have made it a widely used framework in contemporary research (Phillips, 1996; Elliott, Dawson & Edwards, 2009; Schmidt, 2009) and for evaluating training effectiveness (Bates, 2004; Galloway, 2005; Guerci et al., 2010; Al Yahya & Mat, 2013; Homklin et al., 2014).

The popularity of the Kirkpatrick's four-level model is also seen as a function of its potential for simplifying the complex process of training evaluation. The model emphasizes the need for training personnel to understand the training evaluation process in a systematic way. It has provided a system for tracking training outcomes and information that can be used as a basis for assessment by training personnel. The identification of behavioural change in learners, as well as its emphasis on the change in their abilities and their application of new knowledge to their jobs is one of the key strengths of Kirkpatrick's four-level model (Tennant et al., 2002). Another strength of Kirkpatrick's four-level model

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is that all four levels of the Kirkpatrick's training evaluation model may be useful for both formative and summative purposes.

Furthermore, Kirkpatrick's model sets out what is considered to be the key evaluation criteria to measure the effectiveness and efficiency of training programmes in order to identify weaknesses and improve future instruction programmes (Saks & Burke, 2012). The model also reports on the training outcomes, which help to determine whether a training programme should be continued or improved (Reio , Rocco, Smith & Chang, 2017). It is worth noting that Kirkpatrick's four-level model has gained immense significance in terms of achieving greater results and effectiveness for training evaluation (Kirkpatrick & Kirkpatrick, 2006). It is suitable to use the Kirkpatrick's four-level model to assess effectiveness of training as has been demonstrated by literature (e.g., Arthur, Bennett, Edens & Bell, 2003; Steensma & Groeneveld, 2010; Ezhilan, 2013). Therefore, this study uses the Kirkpatrick's four level model with the aims to evaluating the effect of CBT on training effectiveness as a key element of training evaluation.

2.8 Organisational Performance

Organisational performance which is also known as organisational effectiveness is a complex and multidimensional concept. It refers to the performance of a company as compared to its goals and objectives (Tomal & Jones, 2015). Cho and Dansereau (2010) also define it as the actual results or outputs of an organisation as measured against that organisation's planned outputs. The potential success of a business depends on its ability to effectively implement strategies to achieve institutional objectives (Randeree & Al Youha, 2009). Zhang et al. (2008) defined organisational performance as the extent of success to which the organisation reaches its aims. As for Biech (2005), organisational performance means results achieved following implementing the knowledge and skills that have been

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gained in training. This was regarded as a perception by employee or manager of improved employee output. This is because ordinarily, training should be able to enhance the employees' ability to perform better. The improved employee output, productivity, commitment, job satisfaction and so on would contribute to improved organisational performance.

The performance of any organisation depends on competencies (KSA) of its employees, including leaders, who are a key part of the organisation and work together in implementing strategies toward achieving the organisation's goals. Irrespective of the training approaches, the training and development initiatives are meant to raise competencies with the aim to improving organisational performance. The training-organisational performance relationship has been extensively used to assess training in organisations and it is supported by evidence from numerous previous studies including, for examples, Kraiger et al. (2015), Tan and Omar (2017), Garavan et al. (2020), Mdhlalose (2020), Konings and Vanormelingen (2015), Okechukwu (2017), and Kanapathipillai and Azam (2020). Organisational performance is the ultimate dependent variable that researchers can use to justify investment in training (Richard, Devinney, Yip, & Johnson, 2009).

In respect of measurement of organisational performance, it can be evaluated from several perspectives. The measures may be used in combination, selecting the ones that are relevant to their particular organisations. Richard et al. (2009) conceptualise organisational performance or effectiveness as a broader and more general construct that focuses on internal organisational performance in comparison to external organisational performance measures which focuses on accounting and financial metrics. Scholars operationalise organisational performance using objective and subjective ones or a combination of both.

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Objective measures may be more robust than the subjective measures but they may not be available or difficult to collect (Hult et al., 2008). The subjective measures including in some cases a composite index or as a single organisational performance item are popular method for assessing organisational performance amongst researchers (Ndofor & Priem, 2011; Camps & Luna-Arocas, 2012).

Researchers have used both financial and non-financial metrics to measure organisational performance. Financial performance in this context is linked to measures or indicators such as profits or returns on investments, returns on assets, returns on equity, sales or returns on sales, market share and productivity. Non-financial performance is related to indicators such as employee turnover, turnover intentions, absence of employees, commitment, job satisfaction, conflict, product and service quality and innovation. Dyer and Reeves, (1995), for example, stated that the non-financial measures include productivity, quality, efficiency and the attitudinal and behavioural measures such as commitment, intention to leave and job satisfaction. Striving to enhance HR outcomes would lead to favourable consequences for both financial and non-financial performance of the organisation in the longer term. Several variables constitute organisational performance, for example, business model effectiveness, efficiency, and outcomes (Boyatzis & Ratti, 2009; Ryan et al., 2009), et cetera.

Organisational performance may also be measured based on the three categories of HR-related outcomes, operational or organisational outcomes and financial performance dimensions as proposed by Dyer and Reeves (1995) and Tharenou et al. (2007). HR outcomes are proximal outcomes such as collective KSA, motivation, employee turnover, job satisfaction and organisational commitment (Dyer & Reeves, 1995). Operational outcomes are distal outcomes comprising labour productivity, innovation, customer service

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and customer retention (Jiang, Wang & Zhao 2012; Rauch & Hatak, 2016) and organisational outcomes such as job satisfaction, turnover, innovation, profitability, productivity, and many other factors (Nikandrou, Campos, Cunha & Papalexandris 2006). Financial outcomes comprise three categories: (a) financial performance, (b) product market performance and (c) shareholder return (Richard et al., 2009). The financial performance category comprises measures of profit, return on assets and return on investment. Product market performance comprises measures such as sales and market share and shareholder return includes measures such as total shareholder returns and economic value added. Dryer and Reeves (1995) proposed HR outcomes (turnover, absenteeism, job satisfaction), organisational outcomes (productivity, quality, service), financial accounting outcomes (ROA, profitability) and capital market outcomes (stock price, growth, returns) as the four possible measurement for organisational performance.

The researcher reviewed the model based on the three categories of measures proposed by Dyer and Reeves (1995) and Tharenou et al. (2007): HR-related, operational or organisational and financial performance dimensions. As the oil and gas company under study is a private company, financial accounting outcomes and capital market outcomes would not be available. After discussion with the HRD manager of the company, the organisational performance indicators adapted which are most appropriate to the company are productivity (organisational outcomes), organisational commitment and job satisfaction (HR outcomes).

2.9 Construct Elaborations and Hypotheses Development

This section provides explanation about the constructs under study as listed in the conceptual framework and development of hypotheses. The constructs on CBT and its

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relationships with training effectiveness and organisational performance are CBT, reaction, learning, behaviour, results, productivity, organisational commitment and job satisfaction.

2.9.1 CBT

CBT is a method of training which develops the KSA required to achieve competency. It is an approach to vocational education and training that places emphasis on what a person can do in the workplace as a result of completing training or based on workplace experience and learning (ICVET, 2009; TAFE, Queensland, 2009). CBT is a method of training which is outcome-based and assesses learners' attainment of competencies determining whether learners demonstrate their ability to effectively do something (Cleary, 2015). Robbinson and Misko (2003) also perceive CBT as training which develops the KSA required to achieve competency standards. It is a framework that focuses on the primary goal of defining the critical behaviours or desired performance characteristics needed for effective and superior individual and organisational performance. Although this has always been the implicit goal of the more traditional training frameworks, CBT makes this explicit by establishing observable and measurable metrics which learners are expected to accomplish.

CBT has, as its major aim, the development of a competent workforce. It emphasises what the individual can do in the workplace after completing a period of training. CBT differs from traditional training in that trainers now think in terms of outputs. These outputs are referred to as outcomes which reflect the expectations from the employee in a specific job role. These are explicit and serve as the foundation on which planning is based. They are guided by workplace standards. While the learning of the programme depends on the individual (self-learning), this does not mean that the role of the trainer or coach is diminished. It remains, but becomes more that of a facilitator or consultant. The trainer or

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coach guides the trainee to develop the needed competencies and can work with the employee's direct supervisor to identify the training needs and evaluate the programme's effectiveness (Fletcher, 1997b). It is individualised and trainee-centred whereby the trainee is the active player who generates the learning goals (in consultation with the trainer or facilitator) and is responsible for his or her own learning activities in terms of time and rate. This ensures active learning instead of passive learning.

In this study, CBT involves a three-component model of competency standards, training design and training delivery. A competency standard is an industry-determined specification of performance, which sets out the KSA required to operate effectively in employment (Naidu et al., 2013). A training design is a process which involves the translation of objectives and strategies into a balanced programme of instruction and learning (Buckley & Caple, 1990). Training delivery is thus the way training is provided to learners through flexible delivery systems and using a variety of different delivery and training methods which is in line with one of the components of the three components of CBT.

The significance of training and development in the enhancement of employee competencies and organisational development has been espoused by several authors (Cho et al., 2006; Thang & Buyens, 2010). Mackelprang et al. (2012) contend that training enhances employees' capabilities which are instrumental in improving overall organisational performance. These parallel findings of other authors who argue that training and development improves the competencies of a workforce which are contributory in enhancing general functioning (Cheng & Brown, 1998; Swanson, 2001; Barzegar & Farjad, 2011). Draganidis and Mentzas (2006) assert that employee competencies are a combination of tacit and explicit KSA that gives individuals the potential for effectiveness in task

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performance. Similarly, several other authors postulate that the enhancement and improvements of employee competencies are of crucial importance for organisational performance leading to enhanced employee functioning, greater efficiency and assist in creating essential competencies for organisations (Levenson et al., 2006; Bhardwaj & Punia, 2013; Kehoe and Wright, 2013). This is consistent with several other authors who found that improvements in employee competencies significantly enhance organisational performance in the following respect: organisational outcomes, financial outcomes and non-financial outcomes (Rose et al., 2006; Junaidah, 2008; Asree et al., 2010; Lockhart, 2013).

Previous studies on improvement in performance arising from effective training, irrespective of training methods, would be reflected in the organisational outcomes or performance such as productivity (Konings & Vanormelingen, 2015; Daniel, 2018; Khan & Abdullah, 2019); organisational commitment (Katawneh and Osman, 2014; Bashir & Choi, 2015; Riyanto et al., 2017; Ahmad et al., 2019; Sittisom, 2020), and job satisfaction (Okechukwu, 2017; Lai, 2018; Lei et al., 2018; Fuzi & Yuzi Fuzi, 2019; Kanapathipillai & Azam, 2020).

2.9.2 Reaction

Level one of Kirkpatrick's evaluation model is reaction. It focuses on the learners or participants' reactions or feelings to the training event. The reactions of learners can hold valuable insight into overall feelings toward training. Level one of Kirkpatrick's model can help in the identification of positive or negative feelings. Identifying positive reactions to training can be useful. This information will assist in the retention of learners' attendance. Detecting negative reactions or emotions is essential. Negative reactions may prevent learners from completing the training. The identification of both positive and negative

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reactions can help in organisational support through making modification to the training (Reio et al., 2017, p. 36). Reaction is level one of training effectiveness.

Kirkpatrick and Kirkpatrick's (2006) evaluation model has been extensively used to assess effectiveness of training. While numerous studies explored traditional training effectiveness (Alvarez et al., 2004; Al-Mannaee & Ryan, 2018), the effectiveness of CBT programs are less well researched. As there is little information available in the training literature regarding the evaluation of competency training models (MacGraw & Peoples, 1996; Burnett et al., 1998; Markus et al., 2005; Al-Mannaee & Ryan, 2018), prior studies in related traditional training is used as evidence that CBT is related to trainees' reaction. Such studies that have investigated the relationships of training with level one: reaction of Kirkpatrick's evaluation model include Homklin et al. (2013), Abdulghani et al. (2014), and Heydari et al. (2019). Based on the above discussion, the following hypothesis is proposed:

Ha1: CBT has a significant relationship with trainee' reaction.

2.9.3 Learning

Level two of Kirkpatrick's evaluation model pertains to content evaluation with regard to knowledge gained by learners as a result of the training (Reio et al., 2017, p. 36). This level, according to Kirkpatrick and Kirkpatrick (2016), assess the degree to which participants acquire the intended KSA, confidence, and commitment based on their participation in the training. The evaluation of learning is vital, as learning can lead to changes in behaviour (Kirkpatrick & Kirkpatrick, 2006, p. 50). Learning is the second level of training effectiveness.

Similar to level one, Kirkpatrick and Kirkpatrick's (2006) evaluation model has been extensively used to assess effectiveness of training. While numerous studies explored traditional training effectiveness (Alvarez et al., 2004; Al-Mannaee & Ryan, 2018), the

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effectiveness of CBT programs are less well researched. As there is little information available in the training literature regarding the evaluation of competency training models (MacGraw & Peoples, 1996; Burnett et al., 1998; Markus et al., 2005; Al-Mannaee & Ryan, 2018), prior studies in related to traditional training is used as evidence that CBT is related to trainees' learning. Such studies that have assessed level two of training effectiveness include training in public organisations *(*Zain et al., 2016) and blended learning (Embi et al., 2017) in Malaysia; learning development (Briggs et al., 2014), and interprofessional learning (Craig et al., 2016) in Australia. Based on the above discussion, the following hypothesis is proposed:

Ha2: CBT has a significant relationship with trainees' learning.

2.9.4 Behaviour

Level three, according to Jones, Fraser, and Randall (2018), is identified as the most important of the four levels because training alone will not generate changes in practice or outcomes (p. 498). Level three evaluates behaviour, or to what degree learners are able to transfer training content to job-specific context (Jones et al., 2018, p. 498). This level is crucial in evaluating learning transfer and the impact performance will have on the organisation. The goal of training is to improve performance, and implementing Kirkpatrick's levels of evaluation will provide the organisation with the data it needs to determine it. Training evaluation should assess the training outcomes and application of learned skills in the work place (Tracey et al., 1995; Kirkpatrick & Kirkpatrick, 2006). According to Grove and Ostroff (1991), transfer of learning is an indicator of how well the training relates to the job. It also determines the occurrence of behavioural change (Saks & Burke, 2012) and the extent of transfer of learning (Topno, 2012). In addition, Bartlett (2001) states that training evaluation helps to measure the improvement in performance and transfer

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of learned skills to the workplace in order to establish training effectiveness. Brinkerhoff (2006) assumes that if an employee shows positive change in their behaviour in the work place, then it means that the training was successful. Behaviour change is level three of training effectiveness.

Similar to levels one and two, prior studies in traditional training is used as evidence that CBT is related to trainees' behaviour change. Such studies that have assessed level three training effectiveness include airline industry related in-house training (Rafiq, 2015), integration courses in the police sector (Manzoor & Zia-ud-Din, 2019) in Pakistan; and environment protection education in the tourism industry (e.g., Zahro & Wu, 2016) in Taiwan. Based on the above discussion, the following hypothesis is proposed:

Ha3: CBT has a significant relationship with trainee's behaviour change.

2.9.5 Organisational Results

The highest level of Kirkpatrick's evaluation model is level four: results. Results indicate the extent to which targeted outcomes have been met (Jones et al., 2018, p. 499). At this level of evaluation, organisations are hoping to measure change (Reio et al., 2017, p. 37). Overall, following training intervention, the organisation is looking for a benefit. Training should lead to results, performance improvement and gains in knowledge. The use of Kirkpatrick's evaluation can determine the success and provide valuable data to modify training to increase the results. Organisational results is level four of training effectiveness.

Similar to levels one, two and three, prior studies in related traditional training is used as evidence that CBT is related to trainees' organisational results. Such studies that have assessed level four training effectiveness include training in public organisations (Zain et al., 2016), airline's industry related in-house training (Rafiq, 2015) and development and

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interprofessional learning (Craig et al., 2016). Based on the above discussion, the following hypothesis is proposed:

Ha4: CBT has a significant relationship with organisational results.

2.9.6 Productivity

Training is a crucial element that plays a vital role in increasing organisational productivity. It is a fundamental and effectual instrument in the successful accomplishment of the organisation's goals and objectives, resulting in higher productivity (Konings & Vanormelingen, 2015). Bartel (2004) states that effective training programmes and high productivity on the part of the employee are positively correlated. Training thus positively impacts productivity (Dearden et al., 2005; Choo & Bowley, 2007). Champathes (2006) advocates that well trained and developed employees are satisfied with their job and hence leads to an increase of the organisational productivity and profitability. This means that, for any organisation, training must be tailored towards enhancing performance and productivity.

Irrespective of the training approaches, the training and development initiatives are meant to raise competencies with the aim to improving organisational performance (e.g., Tharenou et al., 2007; Maimunah, 2008; Kraiger et al., 2015; Tan & Omar, 2017; Garavan et al., 2020; Mdhlalose, 2020). The training-organisational performance relationship are supported by evidence from previous studies, many of which relate to traditional training in various different contexts as the effectiveness of CBT are less well researched (MacGraw & Peoples, 1996; Burnett, Clarke & Nielsen, 1998; Markus et al., 2005; Al-Mannaee & Ryan, 2018). Previous studies linking training to productivity include Konings and Vanormelingen (2015), Daniel (2018) and Khan and Abdullah (2019). Based on the above discussion, the following hypothesis is proposed:

Ha5: CBT has a significant relationship with productivity.

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2.9.7 Organisational Commitment

In their meta-analytic study to understand organisational commitment, Choi, Oh and Colbert (2015) concluded that researchers and practitioners must focus on organisational commitment as the committed employee is considered to be a vital asset to any organisation. It has thus been argued that a highly committed employee is more eager to fulfil the goals of the organisation (Guest, 1987; Farndale, Hope-Hailey & Kelliher, 2011). In this context, organisations are encouraged to seek and retain employees with the characteristic of commitment as they are more likely to exhibit positive behaviour and are linked with many positive outcomes that influence job variables (Gong et al., 2009; Choi et al., 2015) such as job performance (Cooper-Hakim & Viswesvaran, 2005; Uraon, 2018).

Meyer and Allen (1991, 1997) identified three dimensions of organisational commitment, namely, affective, normative, and continuance commitment. Affective commitment denotes the employee's emotional attachment to the firm, while normative commitment represents the individual's sense of obligation to remain with the organisation, and continuance commitment denotes the individual's estimate of the cost of leaving the employer. Studies have shown that the three forms of commitment increased retention of employees and tied them to the organisation, with affective commitment considered to be most strongly related to job performance (Meyer et al., 2012). The most significant component of organisational commitment is affective commitment (Allen & Meyer, 1990; Uraon, 2018) which is usually adapted as a measure of organisational commitment because of its robust connection with organisational commitment that has been proven by many studies (Fabi, Lacoursiere & Raymond, 2015; Dhar, 2015; Nieves & Osorio, 2017; Uraon, 2018). Organisations seeking to achieve organisational goals through a variety of HR strategies and approaches of which, a commitment strategy may be an approach that

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attempts to develop psychological connections between the company and employee as a means of achieving individual and organisational goals (Arthur, 1994; Scholl, 2003). High level of employee commitment is achieved if training achieve learning outcomes and improves the performance, both on individual and organisational level (Ahmad & Bakar, 2003).

A number of other studies have been conducted which demonstrate that training provision leads to improvements in organisational commitment (e.g., Bulut & Culha, 2010; Newman, Thanacoody & Hui, 2011), confirming that training is positively and significantly related to organisational commitment. Several other studies indicated that there is a direct or indirect link between training and organisational commitment (Paul & Anantharaman, 2004; Owens, 2006; Sahinidis and Bouris, 2008). More recent studies which include Bashir and Choi (2015), Riyanto et al. (2017), Ahmad et al. (2019) and Sittisom (2020) reveal similar results. With respect to the relationship between core competencies and organisational commitment, Katawneh and Osman (2014) and Siri et al. (2020) found a direct relationship of core competencies with organisational commitment. Based on the above discussion, the following hypothesis is proposed:

Ha6: CBT has a significant relationship with organisational commitment.

2.9.8 Job Satisfaction

Job satisfaction has received widespread attention from researchers and professionals in recent decades (Saari & Judge, 2004; Vilela, González & Ferrín, 2008). Many studies have shown that job satisfaction is vital for organisations as it has a positive impact on a number of variables relating to individual and organisational performance (Nimalathasan & Lanka, 2010; Messersmith et al., 2012; Zhang & Morris, 2014; Gould-Williams et al., 2014; Vermeeren, Kuipers & Steijn, 2014). Consequently, if an organisation

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has more satisfied employees, opportunities to create more satisfied customers will increase (Ahmed & Rafiq, 2003; Vilela et al., 2008).

Job satisfaction is considered as a complex construct consisting of many aspects that overlap and intersect with a large number of variables at the individual and organisational levels (Rainey, 2009). It has been said to be a pleasurable or positive emotional state, resulting from the perception of one's job as fulfilling or allowing the fulfilment of one's important job values, providing these values are compatible with one's physical and psychological needs (Kumari & Thapliyal, 2017). It is the desirable or undesirable emotion that an employee has about the job (Latif, 2012; Sharma & Chandra, 2013; Varshney, 2019).

One of the functions of HR that helps in changing employee character is the support in terms of personal development by the management as it leads to employees' satisfaction (Maurer & Lippstreu, 2008; Cherif, 2020). In addition, it should be noted that training determines employees' satisfaction which improves productivity as well as reduces job dissatisfaction (Garcia-Bernal et al., 2005; Vasudevan, 2014; Tzafrir, 2016; Huang, 2019). In order for an organisation to achieve organisational performance, it must take the necessary steps that augment job satisfaction of employees (Latif, 2012; Fontova-Almato et al., 2020). One such measure is through training which boosted skills and abilities and leads to the job satisfaction of the employee (Vasudevan, 2014; Okechukwu, 2017; Lai, 2018; Lei et al., 2018; Fuzi & Yuzi Fuzi, 2019; Kanapathipillai & Azam, 2020). These previous studies relate to traditional training. Sani et al. (2016) found a positive relationship between competencies and job satisfaction. These findings suggest that firms which ignore training will not achieve an optimal level of employee's job satisfaction

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and might even encounter extreme dissatisfaction, low morale and eventually high turnover. Based on the above discussion, the following hypothesis is proposed:

Ha7: CBT has a significant relationship with job satisfaction.

2.10 Empirical Evidence Supporting Relationship between CBT and Training Effectiveness

Training is a key factor related to the achievement of organisational objectives (Katou & Budhwar, 2006; Ogedegbe, 2014). In order to achieve the organisational objectives, the training must be effective. Effectiveness of training can be reflected in the training outcomes of Kirkpatrick's four-level training evaluation model (Kirkpatrick & Kirkpatrick, 2006). The four levels of training effectiveness are trainees' reaction, learning, behaviour and results criteria (Kirkpatrick & Kirkpatrick, 2006). As there is little information available in the training literature regarding the evaluation of competency training models (MacGraw & Peoples, 1996; Burnett et al., 1998; Markus et al., 2005; Al-Mannaee & Ryan, 2018), prior studies in related studies relating to traditional training are used to provide support on effectiveness of CBT in terms of the levels of effectiveness of the Kirkpatrick's model (Kirkpatrick & Kirkpatrick, 2006).

2.10.1 CBT and Reaction, Learning, Behaviour and Results

CBT has a significant relationship with reaction, learning, behaviour and results. As there is little information available in the training literature regarding the evaluation of competency training models (MacGraw & Peoples, 1996; Burnett et al., 1998; Markus et al., 2005; Al-Mannaee & Ryan, 2018), a couple of prior studies are provided as empirical evidences for the relationship between CBT and reaction, learning, behaviour and organisational results, that is, in terms of the four levels of effectiveness of the Kirkpatrick's model (Kirkpatrick & Kirkpatrick, 2006).

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In Malaysia, Embi et al. (2017) conducted a case study to evaluate the multimedia-based blended learning environment based on three levels of Kirkpatrick's model. The participants were 31 university students selected through a convenience sample approach. Methodological triangulation was the principle of data collection used in which multiple sources of evidence were triangulated to provide insights into this study. Instruments used include surveys, interviews, questionnaires and pre- and post-tests that are guided by Kirkpatrick's model. The results revealed that students were positive with the learning environment. Students enjoyed learning with multimedia and motivated to learn as well as engaged in the environment. The tests showed significant difference in their learning. Students also perceived that they have transferred their learning from face-to-face lecture into problem-based learning and learning outcome.

Aryadoust (2017) conducted a study by adapting Levels 1 (reaction) and 2 (learning) of Kirkpatrick's model of training evaluation to evaluate learning outcomes of an English as a second language (ESL) paragraph writing course offered by a major Asian university. The study uses a combination of surveys and written tests administered at the beginning and end of the course. The survey evaluated changes in students' perception of their KSA and the writing tests measured their writing ability. The measured abilities were successively subjected to path modelling to evaluate Levels 1 and 2 of the model. The students reported that the module was enjoyable and useful and their self-perceived level of skills and knowledge developed across time alongside their writing scores.

Heydari et al. (2019) investigated the effect of a workshop on new teaching and learning methods among 48 health care staff in Iran. Participants learned new methods to teach in small groups, role-playing, brainstorming, question and answer, interactive lectures, team-based learning, classroom management and time management in the workshop. The

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teachers of these workshops were medical education experts working at the Education Development Centre of Shiraz University of Medical Sciences. The workshop was evaluated according to the first three levels of Kirkpatrick's model using two questionnaires and one checklist. The first level on participants' reaction to the training course was measured by a questionnaire while the second level of the was evaluated using pre-training and post-training tests. In order to assess whether the learning has been transferred to the workplace, an observational checklist was employed whereby two expert observers attended to the trainees and assessed them. The results indicated that the quality of the workshop was excellent and the trainees were completely satisfied with them; a significant improvement in the total scores of the tests before and after the intervention and the behaviour change two months after the training was significant across all of the dimensions in connection with the training.

Mahmood, Masrom and Muhammad (2017) conducted a study to determine the effectiveness of training using the Kirkpatrick four levels evaluation model at Technical Academy Telekom Malaysia. The scope of evaluation is confined to three levels which are trainee's satisfaction, trainee's learning and trainee's work performance at workplace. Quantitative method was applied in this study where self-administered questionnaires and pre- and post-training test questions were used as research instruments. A sample of 155 employees who attended the training is selected as respondents. From the results, it is found that the trainees were satisfied with the training and the level of trainee's learning was increased moderately after the training. There were also positive and significant relationship between knowledge and skills acquired with work performance. The study has a significant impact to the training evaluation practice at Technical Academy Telekom Malaysia.

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Rafiq (2015) conducted a qualitative study to evaluate the training effectiveness on airline industry soft skills training using Kirkpatrick model in Pakistan. The study is of a cross sectional design. For level one evaluation, informants who have attended their training recently were interviewed. In the case of levels 2, 3 and 4 evaluation, the informants are employees who have completed the same training respectively three months, six months and a year earlier in separate batches of 30 informants per group at each level of effectiveness. Primary data is collected through interviews from different batches representing different levels of the Kirkpatrick model. The results from the qualitative analysis indicated that reaction of the informants to the training were positive; they have learned and confidently applied airline industry soft skills and knowledge from the training; a positive consequence of the training is that most of the participants got promoted from their current designation with improvement in their salaries. Thus, it can be concluded that the soft skills training for employees of Pakistan International Airlines has been effective. By analysing each level individually, the soft skills training sessions were effective at each level.

Zahro and Wu 2016) investigated the effectiveness of environment protection education regarding handicraft manufacturing using recycled materials in the tourism industry among 65 employees in Eco Green Park in Taiwan. Experimental research with a quantitative questionnaire and performance assessment documents have been employed for the assessment. Descriptive analyses have been performed using SPSS. According to the researchers, the results showed that the trainees have reacted favourably to the training, gained additional knowledge and skills, applied knowledge and skills on handicraft manufacturing using recycled materials to the workplace as observed by the departmental

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head of the employees while their improved performance have been noticeable from doing work and supported by the performance assessment sheets before and after the training.

Dorri et al. (2016) conducted a study to assess the effectiveness of an in-service training of cardiopulmonary resuscitation (CPR) for nurses and nurse aides in Iran. 80 nurses and nurse's aides participated in the study. The in-service training was evaluated in reaction, learning, behaviour, and results level of the Kirkpatrick model. Data were collected through a questionnaire. For evaluating behaviour level, a 360° evaluation checklist for CPR was used. Behaviour was evaluated by supervisors, head nurses, CPR physician, and one colleague after three months. For evaluation of the fourth or results level, achieving strategic results was the chosen domain. Acceptable strategic results is the extent of achieving special and general goals of training course that had been agreed earlier by head nurses, supervisors and CPR physicians. The results of the study showed that the CPR in-service training has a favourable effect on all four levels of the Kirkpatrick model for nurses and nurse's aides.

Abdulghani et al. (2014) conducted a study to evaluate five research methodology workshops through assessing participants' satisfaction, knowledge and skills gain and impact on practices by the Kirkpatrick's evaluation model involving 116 participants. For this quantitative and qualitative evaluation, training feedback questionnaires, pre- and post-tests, learner development plan reports and behavioural surveys were employed. Results showed that the participants liked the programmes, their pre- and post- tests mean scores showed significant improvement of relevant basic knowledge and cognitive skills. As for the impact, results showed a significant number of participants started research and published their studies. The results from participants' performance revealed an overall positive feedback and participants reported transfer of training skills at their workplace. The

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course outcomes achievement and suggestions given for improvements offer insight into the program which were encouraging and very useful.

2.11 Empirical Evidence Supporting Relationship between CBT and Organisational Performance

Irrespective of the training approaches, the training and development initiatives are meant to improve organisational performance (e.g., Kraiger et al., 2015; Tan & Omar, 2017; Garavan et al., 2020; Mdhlalose, 2020). While numerous studies have explored on traditional training effectiveness (Alvarez et al., 2004; Al-Mannaee & Ryan, 2018), the effectiveness of CBT models are less well researched (MacGraw & Peoples, 1996; Burnett, Clarke & Nielsen, 1998; Markus et al., 2005; Al-Mannaee & Ryan, 2018). The training-organisational performance relationship is supported by evidence from previous studies which relate to competency training models wherever available but where necessary, related traditional training in various different contexts are also presented as evidences as well.

Hawi et al. (2015) explores the link between the managerial competencies and the organisational performance in a sample of 62 managers drawn from four big airlines in Jordan. The hypothesis was tested over a data set. Results showed that all the competencies (leadership, problem solving, strategic competency and customer focus) have a positive significant relationship with organizational performance in the airline sectors in Jordan. Specifically, organization's innovation was seen linked to the strategic competency, while client focus linked with the organisational competitive advantage.

Shet et al. (2019) conducted a study to explore the relationship between competency-based performance management and organisational effectiveness among 292 respondents based in India. It signifies the importance of developing competency-based performance concept in organisations. The study which is a unique attempt to test the

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relationship between competency-based performance management and organizational effectiveness limits the performance measurement concept using leadership competencies. The data are collected using structured questionnaire. Structural equation modeling technique was used for data analysis. The empirical results provide methods to accelerate the performance management initiatives based on a leadership competency model, which are necessary for building performance culture in the organisation. A positive relationship between competency-based superior performance and organisational effectiveness with productivity, adaptability and flexibility has been empirically confirmed using structural equation modeling.

Siri et al. (2020) examined and analysed the role of teacher competence and commitment in supporting their performance. The study was conducted on 277 professional teachers in Bali. Data collection is carried out by direct interview based on a questionnaire. The collected data is then processed by the SmartPLS 3.0 program. The results showed that teacher competence and commitment have a significantly positive effect on performance.

Mdhlalose (2020) evaluated the impact of training and development on organisational performance using a case study, literature review and statistics of the Department of Economic Development in the Gauteng Province, South Africa with 131 participants. The study employed descriptive and inferential statistics. The finding of the study indicates that training and development has a positive relationship with organizational performance.

Tan and Omar (2017) investigated on the relationship between training and organisational performance. The study was conducted for the hotel sector in Malaysia by using a sample of 110 respondents comprising managerial level employees in hotels in Kuala Terengganu. The convenient sampling technique was used for data collection and the

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analysis was performed to test the hypotheses using the SPSS software. A significant finding emerged whereby a positive relationship exists between training and organisational performance.

Garavan et al. (2020) conducted a moderated meta-analysis of the training and organisational performance relationship using 119 primary studies. They examined the moderating effects of quality versus quantity of training, time, institutional and organisational context factors in the relationship between training and organisational performance. The findings reveal that training is positively and directly related to organisational performance with no statistically significant difference between measures of training quality and quantity.

2.11.1 CBT and Productivity

Training is related to productivity. The training-productivity relationship is supported by evidence from previous studies (Konings & Vanormelingen, 2015; Daniel, 2018; Khan & Abdullah, 2019). The relationship which relate competency training models to productivity are used wherever available but where necessary, related traditional training are also presented as evidences as well.

Daniel (2018) conducted a study to investigate the effects of training on organisational productivity in Nigeria. The research attempts to find out the impact which training has on employee performance, the aggregate of which (individual performance) will culminate to organisational performance. The Data was collected through structured questionnaire from 304 respondents from three microfinance banks. Both descriptive and inferential techniques were used to test hypotheses. The study showed that employee training has significant effect on productivity.

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Khan and Abdullah (2019) investigated the effect of training and development on teachers' productivity in Kurdistan. A total of 58 teachers were selected and interviewed through questionnaire. Statistical software, SPSS version 16, was used for analysing the data. The study concludes that there is positive and strong relationship between training and development and productivity of the teachers.

Konings and Vanormelingen (2015) used firm level panel data of firm provided training to estimate its impact on productivity and wages. In this context, the strategy proposed by Ackerberg, Caves and Frazer (2006) for estimating production functions to control for the endogeneity of input factors and training is applied. Results showed that the productivity premium for a trained worker is estimated at 23%, while the wage premium of training is estimated at 12% providing support to positive relationship between training and productivity. Similarly, Masayuki (2019) explores the quantitative relationship between employer-provided training and productivity and wages among Japanese firms using firm-level panel data. The results indicate that training significantly contributes to the labour productivity of the firm; the estimated elasticity of productivity with respect to training stock is greater for service firms than for manufacturing firms; the elasticities of productivity and wages to training stock are similar in size. These results suggest that policies to promote firms' training investments have the potential to improve productivity and wages.

2.11.2 CBT and Organisational Commitment

Training is related to organisational commitment. The training-organisational commitment relationship is supported by evidence from previous studies (Bashir & Choi, 2015; Riyanto et al., 2017; Ahmad et al., 2019; Sittisom, 2020). The relationship which relate competency training models to organisational commitment are used wherever

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available but where necessary, related traditional training are also presented as evidences as well.

Katawneh and Osman (2014) conducted a study to identify the effect of core competencies (core of administrative functions and administrative roles of communication skills self-development) on improving organisational commitment in Mutah University in Jordan. A questionnaire was developed for data collection from 329 participants. SPSS version 16 was used to analyse the quantitative data. The finding of the study indicates that core competencies have an effect on improving organisational commitment.

Similarly, Kuhuparuw and Ferdinandus (2014) conducted a study to analyse the effect of training and competency on organisational commitment in Indonesia. The method applied is a survey among 60 employees of a bank. Multiple regression is employed to analyse the data. The results indicate that training and competency affect organisational commitment.

Bashir and Choi (2015) investigated the relationship between training and organisational commitment among academicians in Malaysia using the widely accepted theories of three-component model of organisational commitment and training-related variables. The study design is an associational descriptive research designed to identify the relationship between employees' training measured training variables (availability of or access to training) and employees' organisational commitment measured by three organisational commitment components (affective commitment, continuance commitment and normative commitment). Comprehensive sampling was used in a survey of 65 academic staff of a faculty in a public university in Malaysia. Findings revealed that a significant and positive relationship between the training-related variables and the affective and normative

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commitment components of the organisational commitment, while a non-significant relationship exists with continuance commitment.

2.11.3 CBT and Job Satisfaction

Training is related to job satisfaction. The training-job satisfaction relationship is supported by evidence from previous studies (Okechukwu, 2017; Lai, 2018; Lei et al., 2018; Fuzi & Yuzi Fuzi, 2019; Kanapathipillai & Azam, 2020). The relationship which relate competency training models to organisational commitment are used wherever available but where necessary, related traditional training are also presented as evidences as well.

Sani et al. (2016) conducted a study to determine if there is a relationship between competencies and job satisfaction of employees' perceptions. 207 employees working in banking, telecommunications, health care, aeronautical and food industries in Turkey were selected by convenient sampling method. Data were analysed using SPSS and tested through hierarchical regression analyses. Results show that perceptions of competency model relevance and fairness have a positive relationship with intrinsic and extrinsic job satisfaction.

Kanapathipillai and Azam (2020) conducted a study to determine if training impacts job performance and job satisfaction which are two crucial variables that leads to the survival and growth of the telecommunication company. A survey questionnaire is employed to collect data from 316 employees of three major telecommunication companies in Malaysia. The research utilised the quantitative methods to produce empirical outcomes and substantiate the answer of the research questions. The analysis shows that training is statistically significant and has a strong relationship with job performance and job satisfaction.

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Karimi and Nejad (2018) conducted a study on effect of organisational training on job satisfaction and individual performance of Ahwaz Oil Company employees. The study consisted 260 employees selected by stratified random sampling method. A standard questionnaire consisting of 61 items in which responses were based on the five-point Likert scale was used for data collection. Inferential tests such as normal test and path analysis were performed on the research data. The results of the research showed that organisational training have a positive and significant effect on employees' performance and job satisfaction.

Okechukwu (2017) explored on the influence of training and development, employee performance on job satisfaction among 73 academic and administrative staff of the School of Technology Management and Logistics in Universiti Utara Malaysia. Questionnaire with seven Likert scales was employed for data collection. Data were analysed using SPSS version 20. The results showed that training and development and employee performance positively influence job satisfaction, and there is a significant relationship between training and development, employee performance and job satisfaction.

2.12 Theories Supporting Conceptual Framework

There are several approaches of theorising HR practices such as CBT and organisational outcomes. The theories that can best explain CBT and its relationships with training effectiveness and organisational performance include RBV, universalistic perspective, human capital theory, social exchange theory and the norm of reciprocity, and motivation and social support.

2.12.1 Resource-based View of the Firm (RBV)

The RBV (Barney, 1991) of the firm starts from the concept that a firm’s performance is determined by the resources it has at its disposal. The resources are physical

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capital, human capital and organisational capital. The way these resources are used and configured enable the firm to perform and can provide a distinct competitive advantage that can be sustainable. RBV is a theoretical basis for HRM which was propounded by Penrose (1959) and developed into a more robust theory by Barney (1991). It is a widely accepted theoretical perspective in strategic management as a framework for explaining the conditions under which a firm may gain sustainable competitive advantage (Armstrong & Shimizu, 2007). Competitive advantage refers to the extent to which an organisation is capable of creating a defensible position over its competitors (McGinnis & Vallopra, 1999). It comprises capabilities that enable an organisation to differentiate itself from its competitors (Tracey, Vonderembse & Lim, 1999). Competitive advantage is not sustainable if other competitors are able to imitate or purchase the sources of the advantage (Barney, 1991; Collis & Montgomery, 1995). However, an organisation's long-term success is heavily dependent on its ability to create a defensible position in the industry (Porter (1985). This means that the organisation must gain sustainable competitive advantage in order to remain successful in the long-term.

Applying RBV theory (Barney, 1991), competitive advantage is achieved if a firm's resources are valuable, rare (or unique), and non-imitable and non-substitutable. Training can play a major part in ensuring that the firm's HR meet these criteria. The RBV is associated with the human capital theory which is concerned with how people in an organisation contribute their knowledge, skills and abilities to enhance organisational capability and the significance of that contribution. The RBV draws upon the resources and capabilities that reside within the organisation in order to develop sustainable competitive advantages. It is based on the understanding that the organisation possesses capabilities and skills in the form of its individual employees that are superior to those of its competitors

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which in turn being the factor accountable for its advantageous positioning in the market (Ramon, Fernando, Pedro & Shimon, 2000). Human capability is accordingly considered to be a resource that can provide a competitive advantage to the extent that HR practices produce skilled employees who provide value to the firm and have unique inimitable skills. Competitive advantage occurs only when there is a situation of resource heterogeneity and resource immobility. Resources of organisations that are valuable, rare (unique), inimitable and imperfectly substitutable are the main source of sustainable competitive advantage for sustained superior performance (Barney, 1991).

Many authors contend that HR may be a better source of core competencies thereby resulting in sustainable competitive advantage (e.g., Wright & McMahan, 1992; Snell, Youndt & Wright, 1996). They have argued that because the resources that have historically provided organisations with competitive advantage are not easily and rapidly imitated, the HR of the organisation may be an extremely important source of sustained competitive advantage. Barney (2001) argues that organisations must obtain sustained competitive advantage by implementing strategies that exploit their internal strengths, through responding to environmental opportunities, while neutralising external threats and avoiding internal weaknesses. Literature considers that training improves organisational performance by creating a workforce with extensive knowledge and skills (Tharenou et al., 2007; Ballesteros et al., 2012). The idea underlying this assumption is that training plays a key role in enhancing two of the main sources of competitive advantage for the firm: its human capital and its organisational knowledge (Subramaniam & Youndt, 2005; Lopez-Cabrales et al., 2006). The RBV of the firm and the knowledge perspective provide support for this idea. According to these perspectives, the main sources of competitive advantage for the firm are its intangible resources (Barney,1991). Among these, HR, in particular human KSA,

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are highlighted (Mueller, 1996; Barney & Wright 1998). Although all practices of personnel management are involved in the development of these resources, training is considered the main activity in getting qualified, flexible and well-prepared employees (MacDuffie & Kochan, 1995; Bae & Lawler, 2000; Velada & Caetano, 2007), that is, the firm's human capital which facilitates the creation of a sustainable competitive advantage and, therefore, improves firm performance (Giovanni & Massimiliano, 2007; Tharenou et al., 2007; Thang & Buyens, 2008).

Previous researchers have highlighted that organisations could develop sustained competitive advantage through management of scarce and valuable capability and resources (Barney, 1991). An organisation takes time to nurture and develop human capital in the form of knowledge, skills, abilities, motivation, attitude and interpersonal relationships thereby making it difficult for competitors to imitate (Becker & Gerhart, 1996). Pfeffer (1994) stressed that HR has been vital for a firm's sustained performance. Organisations are proactively pursing HR practices, including training or CBT, to capitalise on the strength of this vital asset for sustained competitive advantage in knowledge economies (MacDuffie, 1995). Lado and Wilson (1994) also argue that organisational competencies are heterogeneous, immobile and form the basis of sustained competitive advantage. A number of empirical studies have analysed the relationship between training and performance. In general, their findings show that training has a positive effect on organisational performance. Applying the RBV to training suggests that training can be viewed as an investment in human capital that provides employees with unique knowledge, skills and abilities that add value to the firm and enable the performance of activities required to achieve organisational goals, thus resulting in positive organisational-level outcomes or performance (Ostroff & Bowen, 2000; Garavan et al., 2020; Mdhlalose, 2020).

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2.12.2 Human Capital Theory

Human capital theory is concerned with how people in an organisation contribute their knowledge, skills and abilities to enhance organisational capability and the significance of that contribution. Human capital, according to human capital theory, is a subset of the global notion of capital. It is an asset, a stock of knowledge and experience accumulated by its holder throughout his life. According to Schultz (1961), both knowledge and skills are a form of capital. He defined human capital as a set of knowledge, skills, and abilities that are inherent and used by the individual. Becker (1964) affirms that tangible assets are not the only forms of capital. For him, education, medical care, and moral values are also examples of capital. More recently, Thomas et al. (2013, p3) define human capital as the people, their performance and their potential in the organisation. Dess and Picken's (2000) definition of human capital is much more expansive than others and crucially highlights that individuals can add to their knowledge base through learning.

Organisations need to be proactive in the way they exploit their resources, particularly those that are considered intellectual capital to achieve sustainable positive results (Vidotto et al., 2017). Although different taxonomies have been proposed to identify intellectual capital, they share the fact that human capital is part of the intellectual capital of the organisation (Scafarto, Ricci & Scafarto, 2016). When employees acquire new knowledge, the human capital value, the intellectual capital, and the market value of the business are enriched. Due to the importance of human capital, it is essential that a company improves the level of KSA of its employees (Vidotto et al., 2017) Therefore, an organisation can make investment decisions for employee development. All of this depends on people, and getting the best from people depends on understanding what motivates them to perform better (Salau, Falola, Ibidunni & Igbinoba, 2016).

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Human capital theory supports the importance of investing in training and employee development. Obviously, employees take advantage of these training opportunities to increase their employability and their market value. This situation reinforces the cost-benefit tensions that weigh on managers. Researchers have long understood that human capital, especially one's education and training, plays a key role in both employee and firm performance (Schultz,1961; Mincer,1974; Becker,1993). Becker's (1964) research was a milestone for employee development theory. Much of the contemporary literature on training and development finds a positive relationship with both individual performance (Jones et al., 2012, Bapna et al., 2013) and firm-level performance (Vidal-Salazar et al., 2012, Georgiadis & Pitelis, 2016). More specifically, studies have examined the impact of training on organisational performance (Tan & Omar, 2017; Shet et al., 2019; Mdhlalose, 2020; Garavan et al., 2020), productivity (Jones et al., 2012; Konings & Vanormelingen, 2015; Daniel, 2018; Khan &Abdullah, 2019; Siri et al., 2020), job satisfaction (Sani et al., 2016; Okechukwu, 2017; Kanapathipilla & Azam, 2020) and organisational commitment (Vidal-Salazar et al., 2012; Katawneh & Osman, 2014; Kuhuparuw & Ferdinanduo, 2014; Bashir & Choi, 2015).

2.12.3 Social Exchange and the Norm of Reciprocity

Social exchange theory (Blau,1964) and the norm of reciprocity (Gouldner, 1960) have been used by organisational researchers to describe motivations behind employee behaviours and attitudes towards their organisations (Settoon, Bennett & Liden, 1996). The theory suggests that social beings feel obliged to return flavours. Feelings of loyalty and commitment and discretionary effort are in some form a social reciprocation by employees to a good employer. Employees will reciprocate their contribution to the organisation if they perceive that the organisation has treated them well. It is connected with the concept of

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mutual gains (Kochan & Osterman,1994) which states that organisations can and should pursue employment policies that produce benefits for both employees and themselves.

The social exchange theory involves a series of interactions that are interdependent, contingent on the actions of the other partner in the social relationship, and generate obligations (Blau, 1964; Cropanzano & Mitchell, 2005). Feeling an obligation at work is important because it compels employees to repay favourable treatment received from their employers (Eisenberger, Armeli, Rexwinkel Lynch & Rhoades, 2001). According to the social exchange theory, individuals enter into a relationship with an organisation with a view to maximising the benefits they can derive from the relationship (Blau, 1964). It predicts that an employee will pay in kind what he receives from the organisation (Conway & Briner, 2005). A relationship based on social exchange requires the parties to trust each other (Blau, 1964).

Although obligations make up a relationship of exchange, the norm of reciprocity is the key mechanism that binds the parties to some sets of reciprocal obligations. The reciprocity norm is crucial to social exchanges as it determines and maintains the ongoing fulfilment of obligations and relationships as a whole. The idea that individuals should reciprocate is central to the social exchange theory and it stipulates that a social norm for reciprocity exist so that people should help those who have helped them and people should not hurt those who have helped them (Gouldner, 1960). A broad notion of reciprocity encompasses a feeling of an obligation to repay the favourable treatment. Eisenberger et al. (2001) defined employee' feeling of obligation as a prescriptive belief regarding whether one should care about the organisation's well-being and help the organisation to reach its goals. According to Aselage and Eisenberger (2003), the exchange, or reciprocation, in social relationships becomes stronger when both partners are willing to provide resources

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valuable to the other. While employees appreciate the beneficial treatment, employers seek loyalty and dedication from them (Eisenberger et al., 2001; Coyle-Shapiro & Shore, 2007).

The social exchange theory explains that the support from the organisation received by an employee creates an obligation to return this support in some way. In this context, employers are encouraged to invest in training for which employee's work behaviour is expected to change in terms of the skills mobilisation developed during training. This social exchange can result in employees' loyal commitment to the organisation, improved organisational civil behaviour, better job performance, and low quitting intention (Shore, Lois, Patricia & Kevin, 2009). Brum (2007) also states that training that achieves reciprocity in the employee will foster an individual's commitment to the organisation. Social exchange theory can be used to explain important relationship that exists between employees and their organisations. If employees perceive that their organisation considers them as a valuable asset, they may likely reciprocate this as a gesture towards assuming positive behaviour within the organisation. This is the basis on which the relationship between training and organisational outcomes such as productivity, organisational commitment and job satisfaction are explained.

2.12.4 Universalistic Perspective

The simplest approach to the analysis of HRM strategies is the universalistic perspective. The universalistic perspective posits a simple direct linear relationship between variables such as training and organisational performance, that can be extended to the entire population (Delery & Doty, 1996). Researchers can, therefore, identify best HR practices that, according to Becker and Gerhart (1996), are characterized by having demonstrated capacity to improve organisational performance and to be generalisable. The universalistic perspective of HR is also known as the "best practice" approach. It is based on the

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assumption that there is a set of best HR practices which can be used by any organisation irrespective of industry, size, workforce or product market and that adopting them will lead to positive outcomes or superior organisational performance (Armstrong & Baron, 2006). The universalistic or "best practice" approach argues that to outperform their competitors, organisations only need to be able to identify and implement best HR practices, irrespective of context (Boxall & Purcell, 2000). In another words, the relationship between a given dependent variable and an independent variable is universal across the population of organisations (Delery & Doty, 1996). They are universal in the sense that they are the best in any situation.

According to the universalistic perspective, some HR practices such as training are work practices that are believed to be linked to organisational effectiveness for all organisations that use them (Delery & Doty, 1996; Ostroff & Bowen, 2000). The basic premise of the universalistic perspective is that greater use of particular HR practices will result in better organisational performance. Researches in the universalistic perspective are micro analytical in nature and posit that some HR practices are always better than others and that all organisations should adopt these practices. Thus, according to the universalistic perspective, organisations that provide more extensive training will be more effective. This is, in effect, the primary perspective taken in most studies on training and organisation-level outcomes, in which training is predicted to have a positive relationship with organisational outcomes or performance.

The universalistic model has a large amount of empirical support. Delery and Doty (1996) found strong empirical support for the universalistic perspective for some of their hypothesised variables. The work of Huselid (1995) and Pfeffer (1998) have also found empirical evidence to support the best practices view. More recent studies which have

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examined the impact of training on organisational performance include Jones et al. (2012), Tan and Omar (2017), Shet et al. (2019), Mdhlalose (2020), Garavan et al. (2020) and Siri et al. (2020).

2.12.5 Motivation and Social Support

Motivation refers to the reasons or factors that encourage, or make people behave in a particular way (Bratton & Gold, 2012). It is the intrinsic and extrinsic elements that influence an individual to act in certain ways or take certain actions (Pinder, 2014; Nahavandi, Denhardt, Denhardt & Aristigueta, 2014). From this viewpoint, an individual can be affected by many different drivers such as a desire for an object, or basic needs such as food and water. Motivation is a force (either intrinsic or extrinsic) that makes people do what they do. This means individual motivation is influenced by both internal factors (including personal needs and expectations) and external factors (e.g., organisational training and development, reward and compensation) to satisfy an unsatisfied need and to achieve a certain goal. It is also a procedure that begins through a physiological or psychological need that stimulates a performance set by an objective.

In the context of HRD, motivation is critical to the organisational performance. The organisation can motivate their employees to work harder and be involved in achieving individual and organisational goals. McCloy and Wise (2002) showed that motivation is a tool to improve performance through learning. Success in the workplace is highly related to learning and how to motivate employees to learn (Argyris, 1991). Smith's (1994) study found that motivated employees are required if an organisation wishes to survive in a competitive market environment.

When employees are motivated towards their jobs, they are motivated to do more work. It is what makes people willing to put effort and energy into what they do. It is also

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seen as a goal directed behaviour that addresses issues which energises and direct behaviour towards the goal (Armstrong, 1996). These issues can be referred to as motivating factors, which give individual good feelings and raise their performance by influencing the will to work well. Individuals at work should be induced to keep on feeling or working well. On the one hand, it is important for the organisation to have a conducive and comfortable work environment for employees to work well while on the other, it is imperative for company management to show a sense of recognition of their employees. Workers need to feel that they are recognised, that their jobs help them achieve their aspirations and that there are prospects of advancement in terms of career. These are what have come to be known as the satisfiers, that is recognition, achievement and advancement (Herzberg, 1966).

Motivation of employees boosts the psychological contract between the employees and the organisation in that by showing employees that they are recognised, they tend to show commitment and loyalty to the organisation which can be translated into improved organisational performance. In this context, motivation remains a key factor in determining the psychological contract between employees and employers. Performance success depends on motivated individuals who become committed to the organisation's objectives. Motivating employees is about using different significant factors to influence them in the manner that makes them feel motivated to perform their tasks with their best effort, boost their productivity levels, or carry out their tasks at a high standard.

There are many reasons why organisations continually focus on motivating employees. The first reason is motivated employees tend to work with their best effort and do more than is required of them. This can help the organisation to increase its productivity. The second reason is motivated employees are likely to work effectively, get work done on time to a high quality and within budget. This can help the organisation minimise its

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operational cost and its labour cost and in turn increase its profitability. The third reason is that the level of staff turnover may to some extent be reduced if the staff is motivated to perform their tasks. Another reason why the organisation puts more effort into motivating employees is that an organisation with a motivated workforce introduces change easier than the organisation where its employees are demotivated (Nahavandi et al., 2014).

The goals of the organisation would be attained when employees' behaviour is directed by the force of motivation (Kinicki & Kreitner, 2006; Jones & George, 2008). The motivation in an organisation represents a real opportunity to sharpen the energies and guide employees towards achieving the set goals and to raise the levels of organisational performance (Kanfer, Chen & Pritchard, 2008). The training literature recognised that motivation plays a critical role in training transfer (Baldwin et al., 2009; Pham et al., 2010). Motivation has been measured in term of trainees' motivation in acquiring new KSA in training programmes (Holton, 2005; Baldwin et al., 2009). In order to ensure training programmes bring benefits to an organisation, it is necessary for trainees to possess motivation to learn training content and motivation to transfer the new learning onto the job (Holton, 2005; Chiaburu & Lindsay, 2008; Pham et al., 2010). It is important that trainees are willing to exert effort to acquire new KSA in training and interested to make use of what they have learned in the workplace to warrant training transfer.

While motivation to learn refers to employees' desire to attend, learn and participate in training programmes (Machin & Treloar, 2004; Ayres, 2005), motivation to transfer is employees' desire to apply what they learned from training onto the job (Holton et al., 2000). Nikandrou et al.'s (2009) qualitative study found that in cases where there was great motivation to learn but lack of motivation to transfer, no training transfer at work took place (p. 267). In fact, it is necessary for employees to gain new learning and transfer the

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learning back to the workplace. Even if trainees have the ability to learn and transfer the training content, they might fail to benefit from the training due to low motivation (Tsai & Tai, 2003; Tziner et al., 2007). Motivation, when used in the context of training has been shown exerting a significant effect on training transfer (e.g., Hutchins et al., 2013; Alvelos et al., 2015).

Employees are motivated by social support. In this study, social support refers to perceived organisational support (POS), supervisor support and peer support. Social support provides the motivation for them to learn and transfer learning via the concepts of motivation to learn/motivation to transfer. Thus, this study adapted the overall motivation of employees as a measure of the extent to which it contributes via perceived organisational support, supervisor support and peer support.

2.12.5.1 Perceived Organisational Support (POS)

POS is the extent to which a trainee perceives that the organisation provides assistance when facing problem, appreciates extra effort in performing a job, values his well-being, and forgives their honest mistakes (Eisenberger, Huntington, Hutchinson & Sowa, 1986). POS is closely associated with a person's general view on the degree to which an organisation supports his welfare as an employee (Chen et al., 2009). Employees also perceive support as the organisation's commitment to him (Eisenberger et al., 1986). Based on the notion of social exchange, employee's trade-off their loyalty and effort for tangible benefits they have received from their organisation (Armeli et al., 1998). On the assumption of mutuality, employees are expected to repay by putting more effort to enhance job performance when they received greater support from employers (Eisenberger et al., 1986; Schindler, 2012; Wei Tian et al., 2016). Kroth (2007) noted that the most effective way to encourage POS is through the provision of fairness since employees tend to think of fairness

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as discretionary. This in turn results in POS when management chooses to be fair to them. It lifts employees' self-esteem and that develop the perception that their organisation values them (Hussain, 2011).

In the training contexts, an organisation may signal its support by proposing and encouraging employees to attend training programmes (Battistelli, 2008). Organisations that emphasise on performance often provide due consideration for training and tend to offer employees with opportunities to experiment and apply newly acquired KSA to the job (Nikandrou et al., 2009). Evidences on studies have forwarded that POS is related to training transfer where employees who reported having POS are able to apply the KSA they learned in training to the workplace (Zumrah et al., 2012; Homklin, Takahashi & Techakanont, 2013; Lancaster & Di Milia, 2014). Attempts to find explanation of the intervening mechanisms between POS and training transfer found motivation to learn and/or motivation to transfer as the mediating variables that link the two constructs (Battistelli, 2008; Chiaburu et al., 2010). There is evidence that posited the direct effect of POS on motivation to learn and motivation to transfer training (Chiaburu et al., 2010; Zumrah et al., 2012; Gillet et al., 2013; Lancaster & Di Milia, 2014; Bossett & Bourgeis, 2015). The ability of the organisations to provide support in the context of training and development was able to motivate employees to acquired new KSA in training and motivate them to apply the training back in the workplace (Chiaburu et al., 2010). When employees perceived their organisation as caring, they had more motivation to make use of what they learned in the workplace.

2.12.5.2 Supervisor Support

Supervisor support is the extent to which a trainee's immediate superior encourages learning in training programmes, encourages the sharing of what had been learned from training, and helps in the application of the newly gained KAO on the job

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(Ayres, 2005; Chiaburu & Tekleab, 2005). Basically, training transfer is the ability to transfer the knowledge and skills learned in training programmes back to the workplace (Subedi, 2004). It is the ability of trainees to effectively apply, adapt and reproduce what they have learned from training programmes onto the job (Chiaburu & Tekleab, 2005; Chiaburu et al., 2010).

Supervisor support can be classified into emotional, instrumental, informational, and appraisal support. It is provided in different times related to training before, during, and after training (Grossman & Salas, 2011; Bhatti, Ali, Isa & Battour, 2014). The essence of emotional support is the role of supervisor to draw employees' attention to their own psychological immediacy and others, as well as to conditions of sincerity and trust (Nijman, 2004). Supervisors provide emotional support in terms of encouragement to attend and learn in training programmes (before training), provision of assurance that employees are capable to complete the training (during training), and reassure employees to apply newly acquired KSA to the job (after training) (Nijman, 2004; Merriam & Leahy, 2005; Switzer et al., 2005; Bhatti et al., 2014).

Instrumental support refers to the ability of supervisors to provide all the necessary practical assistance that can maximise training transfer (Nijman, 2004). This includes the role of supervisors to maximise the similarity between training programmes and workplace situations (Elangovan & Karakowsky, 1999; Wexley & Latham, 2001). Informational support refers to the extent to which supervisors provide useful information to trainees, which could assist them in using the learning at the workplace with the correct technique (Nijman, 2004).

Supervisor support in terms of appraisal refers to the degree to which supervisors provide appraisal to trainees during the transitional periods of achieving the training transfer

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(Nijman, 2004). Before training, supervisors can cue trainees that they are specifically chosen to attend training from a large group of workers, or promise rewards might be given to those who successfully completed the training and subsequently use the training at the workplace (Nijman, 2004). Similarly, during training, supervisors have the responsibility to monitor the attendance and attention in training programmes, while after training; it is possible for supervisors to recognise trainees' success in completing training programmes and give rewards for their successful application of training in the workplace (Saks & Belcourt 2006).

According to Baldwin and Ford (1988), supervisor support has been identified as the central element of workplace that could cultivate learning and transfer. Noe and Wilk (1993) demonstrated that those employees who are motivated to learn are more interested in improving themselves and furthermore, support from supervisors for such developmental activity had indeed enhanced this motivation. The encouragement to attend and apply training, identification of appropriate situations to apply training and guidance to apply training are among the numerous important elements of supervisor support that can affect learning and transfer (Switzer et al., 2005; Nijman et al., 2006; Hutchins, 2009). Prior studies on supervisor support that acknowledge that the most influential social support factor that affects training transfer include Ismail, Mohamed, Sulaiman and Sabhi (2011), Lancaster and Mila (2013), and Bhatti et al. (2013).

2.12.5.3 Peer Support

Workplace peers' support can influence training and training transfer in an organisation. Peer support refers to the support given by co-workers to encourage a trainee to attend training, to willingly give opinion on how to apply training, to willingly assist a trainee in applying new learning on the job, and to provide the necessary advice and co-

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operation to assist a trainee to apply newly acquired KSA on the job (Cromwell & Kolb, 2004; Baharim, 2008).

Peers provide critical functions for employees in mentoring, information exchange, and social support due to their more proximal relationship (Sias, 2005). In mentoring programmes, peers can act as mentors that could provide valuable work advices and information in order to complete the necessary task. The function of peers in information exchange largely relate to the discussion of work-related information or personal problems between peers and employees. The support from peers is a powerful source for reducing uncertainty and stress, which can improve wellbeing of employees and organisations (Sias, 2005).

In the context of training, trainees benefit from having supportive peers. In order to ensure anticipated training transfer, it is important for trainees to receive encouragement, opportunities, and endorsement from peers to apply training on the job (Chiaburu, 2010). Further, peer networking and information-sharing about training contents greatly enhance transfer (Hawley & Barnard, 2005). Because of the continuous flow of information and encouragement, peer support has been postulated to exert stronger influence on training transfer than the one coming from the organisation and supervisors (Chiaburu, 2010). Prior studies fully endorsed the importance of co-workers' support in fostering training transfer (Chiaburu, 2010; Novillo, 2015; Wei Tian et al., 2016).

2.13 Chapter Summary

This study reviewed extant literature relevant to the conceptual framework for this study, that is, CBT and its relationships with training effectiveness and organisational performance. Relevant past studies and the important concepts, models, and supporting theories of each construct and the current status of the relationships between key concepts

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in the hypothesised model as well as the variables, both independent and dependent variables, are reviewed. These concepts would guide the analysis of the findings drawn from the field. The topics reviewed included training, competency models, CBT, evaluation of training effectiveness, training and organisational-level performance: productivity, job satisfaction and organisational commitment. Several competency models were reviewed to select the one for CBT. Several training evaluation models including Kirkpatrick four level evaluation model were also presented to outline the extant studies on evaluation. The approaches used to explain HR practices and organisational-level outcomes, including universalistic perspective, human capital theory, RBV, social exchange and the norms of reciprocity, and motivation are also discussed. Having reviewed the relevant concepts, theories, models, and studies in the study, let us now look at Chapter 3 on research methodology.

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CHAPTER 3

METHODOLOGY

3.1 Chapter Overview

This chapter describes the methodology adopted by this study for data collection, analysis and interpretation to achieve its stipulated objectives. The research design or methodological strategy used to address the research questions is guided in a systematic approach by Saunders' research onion (Saunders, Lewis & Thornhill, 2012). This systematically defined research methodology using the research onion provides the basis for the completion of the research within specified scope, time and resources (Saunders et al., 2012). The topics discussed in this chapter include research design, research site, population and sampling, instruments or questionnaires, validity and reliability of instruments, trustworthiness of qualitative study, research ethics, data collection and analysis procedures. It ends with a chapter summary. This chapter is important as it provides the framework of the entire process of a research study required to systematically and objectively plan and implement strategies to collect and analyse the data and interpret the findings to provide meaningful solutions to the research objectives.

3.2 Research Design

A research design provides the framework to be used as a guide in collecting and analysing data of a study to arrive at a solution (Kumar, Talip & Ramayah, 2013). In this study, the research design is guided primarily by the research onion (Saunders et al., 2012) as depicted in Figure 3.1 where the peeling of layers of an onion from the outermost layer to the inner core (from layer 1 through to layer 6) is used as a metaphor to systematically describe the general steps of the research process to achieve research objectives. These

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layers are the important aspects to be considered in determining the research methodology for the research study. Accordingly, research philosophy, approach, strategy, choice, time horizon, and techniques and procedures are the layers involved. The research onion process has been selected for the purpose of this research as the layers indicate all the steps involved in the research process. It presents an unambiguous overall framework for the research by giving options in every step of the research process.

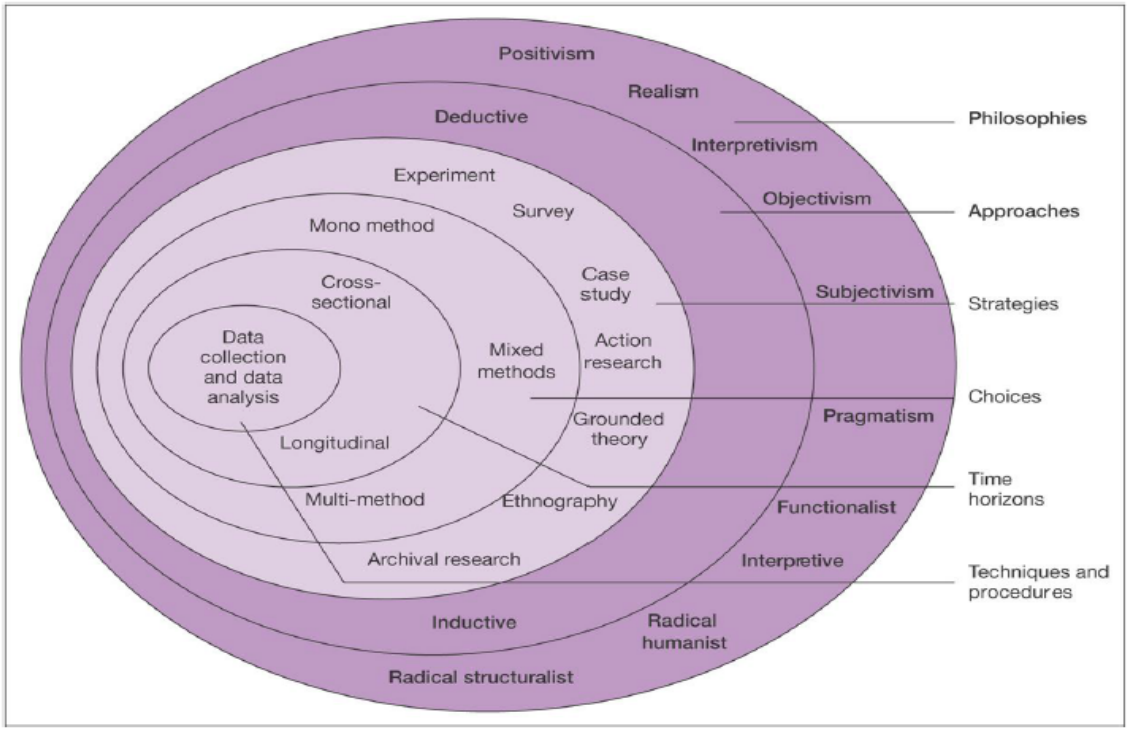


Figure 3.1: Research Onion
Source: (Saunders et al., 2012)

3.2.1 Research Philosophy

Layer 1 of the research process is research philosophy. A research philosophy is concerned with knowledge creation and its nature (Saunders et al., 2012). It provides the foundations for research and guides social scientists toward adopting appropriate strategies and methods to conduct research (Benton & Craib, 2001). The research philosophy is chosen based on the type of knowledge being investigated in the research (May, 2011).

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The predominant research philosophical stance for this study is positivism subordinated by interpretivism because the study is concerned with both testing existing theories on training effectiveness and organisational performance by empirical findings (positivism) and understanding the intentions, motivations and actions of the research subjects in complex business environments though the results thus obtained may not be suitable for generalization (interpretivism).

3.2.2 Research Approaches

Layer 2 of the research process is the research approaches. Deductive and inductive are two main approaches in research (DePoy & Gitlin, 2005; Saunders et al., 2012). A deductive approach is one in which existing theories are used as a starting point and tested by empirical findings while inductive approach is used by researchers to formulate a new theory starting with empirical data. In this study, the deductive approach is chosen for the quantitative and qualitative data since the purpose of the research is to test existing theories on CBT and its relationship with training effectiveness and organisational performance rather than to formulate any new theories based on quantitative data.

3.2.3 Research Strategies

Layer 3 is the research strategies. Having considered the research objectives and research questions, a survey strategy of using open-ended and close-ended questionnaires is chosen for this study. According to Saunders et al. (2012), such strategy is suitable for business and management research and provides a way to collect large amount of quantifiable data. With the application of probability sampling, surveys became a standard tool for empirical research in social sciences (Vehovar & Manfreda, 2008). A survey strategy is often associated with a deductive approach (Saunders et al., 2012) and it is a popular method of collecting primary data for research (MacDonald & Headlam, 2011) that

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relates to positivism. Survey strategy offers the researcher a highly economical way of collecting large amounts of data to address any given research topic or issue. This strategy can generate both information-rich and statistical data.

3.2.4 Methodical Choices

Layer 4 is the methodical choices. It determines the use of quantitative and qualitative methods or various mixtures of both. In this study, a mixed methodology research is chosen to collect and analyse data to achieve the research objectives. Under this methodology, the researcher combines elements of quantitative and qualitative research techniques, methods, approaches, concepts or language for the broad purpose of breadth and depth of understanding and corroboration into a single study (Johnson & Onwuegbuzie, 2004; Creswell, 2012).

The main focus of this study is quantitative in nature with the qualitative part lending it supports. The approach to integrate qualitative and quantitative methods is becoming more common and of emerging importance in research in recent years across the social sciences (Tashakkori & Teddlie, 2003) and it is increasingly recognized as valuable in providing detailed and comprehensive data. A mixed methods approach is used in order to capitalise on the respective strengths of each approach and at the same time to compensate the weaknesses of the two approaches (Brewer & Hunter, 1989; Punch, 2005; Bryman, 2012), helping better answer the research questions (Hayati, Karami & Slee, 2006) and enhancing the overall validity and reliability of results (Greene, Caracelli & Graham, 1989).

3.2.5 Time Horizons

Layer 5 is the time horizons. The design of the research is categorized as cross-sectional. It is based on its time dimension where all the information of variables is collected just once at a single point in time in order to collect a body of quantitative or qualitative

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data in connection with the variables which are then examined to detect patterns of association (Bryman, 2012). Cross-sectional design is very feasible for the time frame available to the researcher for the completion of this study as it has several key advantages for empirical studies (Sekaran, 2006; Cooper & Schindler, 2011). It is ideal for this study as it involves collecting a fairly large sample size (Easterby-Smith, Thorpe & Lowe, 2002; Collis & Hussey, 2009) with large amount of data to collect simultaneously in a short time (Sekaran, 2006; Bryman & Bell, 2007). It is regarded as relatively low cost and less time-consuming to conduct (Hussey & Hussey, 1997). Cross-sectional survey design is widely adopted in management research (Rogelberg, Fisher, Maynard, Hakel & Horvath, 2001).

3.2.6 Techniques and Procedures

Layer 6 is the final layer in the research onion that relates to the techniques and procedures taken for this research. The core of the methodology requires defining aspects of data collection such as choosing sample groups and developing questionnaire content, and analysis methods such as correlational analysis and content analysis. The primary data is collected using survey questionnaires: a close-ended questionnaire under the quantitative or positivist paradigm, and an open-ended questionnaire based on the qualitative or interpretivist paradigm. Survey questionnaires are employed because they suit the descriptive and correlative nature of the study (Bryman, 1988) and they also offer the researcher a highly economical way of collecting large amounts of data.

For data analysis, the quantitative data is analysed using correlational analysis, which is a numerical or statistical data analysis technique under the positivist paradigm to identify predictive relationships. Correctional design is applicable where there is supported evidence that a relationship exists between variables (Brink & Wood, 1998; Sekaran, 2006) as revealed by literature review. It is useful for describing a relationship between variables

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(Breakwell, Hammond & Fife-Schaw, 1995) such as the independent variable of CBT and the dependent variables of reaction, learning, behaviour, results, productivity, organizational commitment and job satisfaction.

As for the analysis of qualitative data, qualitative content analysis, which is a non-numerical data analysis technique under the interpretivist paradigm, is used. The qualitative data about the perception by each individual informant on the issues under study is analysed manually. It is a method which may be used to analyse written surveys, (Cooper & Schindler, 2011) and text (Neuman 2003; Powers & Knapp, 2006). Text-based responses to open-ended questions obtained from the informants are increasingly analysed with qualitative content analysis in order to answer the research question (Cooper and Schindler, 2011). Moreover, content analysis can be used on all types of written texts no matter where the material comes from, including, among others, open-ended questions (Donath, Winkler, Graessel & Luttenberger, 2011, as cited in Bengtsson (2016), as used in this study. Insch, Moore and Murphy (1997) suggest that content analysis can be used to complement previous quantitative research.

3.3 Research Site, Population, and Sampling

This section discusses about research site, population, and sampling.

3.3.1 Research Site

This study is conducted in one of the oil and gas companies that has implemented CBT for its employees for several years. There is little research on CBT and its relationship with training effectiveness and organisation performance particularly in the oil and gas industry in Malaysia. As such, the researcher has chosen this oil and gas company for the study. The study is undertaken in a single company as there is no intention to compare and contrast the results with other companies. The company, which has requested anonymity, is

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located in Bintulu, Malaysia. It is chosen for study as it is an industry champion and the leading company in the oil and gas industry in Malaysia. It has also made significant contributions to the nation's economy in terms of gross national products (GNP).

3.3.2 Population

There are two target population groups of employees and managers from whom data is collected to help answer the research questions, test hypotheses and evaluate outcomes. In this context, the manager is a staff member of the company at the middle or senior professional level with managerial responsibility for human and financial resources who oversees the delivery of programmatic results. These functions normally include section head, unit head and team leader. The manager is not only able to take or recommend tangible employment actions against an employee, but could also be able to direct about employee's routine work. An employee is an individual who was hired by the company to do a specific job. He is normally employed on a permanent basis in a position at the non-executive level. He reports to the manager.

The first target population group comprises 823 employees in the manufacturing plant who have attended CBT. They provide a relatively large amount of quantifiable data through close-ended questionnaire to determine the relationships between CBT and training effectiveness and organisational performance.

The second group consists of 64 executives who are managers of the first target group, all of whom have responsibility for the development of their staff. The informants from this group provide data regarding their perceptions of CBT and its relationship with training effectiveness and on organisational performance. They provide such data through responses to open-ended questions.

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3.3.3 Sampling

Sampling is the selection of a sample of the population comprising some members or subjects selected from it whose properties are studied to gain information about the whole (Sekaran, 2006). The purpose of sampling is to enable researchers to draw conclusions about populations from samples. Appropriately sized samples or representative samples are essential in order to infer with confidence that the samples estimated are reflective of the underlying population characteristics or parameters. A representative sample is important to provide the necessary data to achieve results, which are reliable, accurate and representative of the population and thus the conclusions and recommendations the researcher draws from those findings are valid. A mixed methodology is employed in this study which requires samples to be taken for (i) quantitative study and (ii) qualitative study.

3.3.4 Sampling for Quantitative Study

Quantitative methods typically depend on larger samples selected randomly (Patton, 1990). While Polit and Beck (2006) suggest that large samples are required to increase representativeness and reduce sampling error in quantitative studies, some experts consider the minimum sample size of 30 as a guideline for correlational research (Hatch & Lazaraton, 1991; Gay, 1996; Gay & Airasian, 2002). For any survey study, Champion (1981), Bailey (1987) and Burns and Grove (2001) also recommend a sample of at least 30 respondents as generally acceptable.

The sample size for the quantitative study is determined by using a simplified formula provided by Yamane (1967) for confidence level of 95% and precision level of 5%:

$$n = \frac{N}{1 + N(e^2)}$$

Where, n = sample size; N = Population size; and e = precision or desired margin of error which is assumed as precision level 5% and confidence level of 95% (Yamane, 1967). For

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the majority of management studies, researchers are satisfied to estimate the population's characteristics to be within plus or minus 3% to 5% (Sauders et al., 2012). By using Yamane's (1967) formula, the sample size for the employees group in this study where N = 823; e is precision level with p = 0.05 at 95% confidence level is thus:

$$n = 823/ (1 + 823 \times 0.05^2) = 269.$$

The number of respondents was increased to 300 to account for possible failure to respond from the participants. This number excludes respondents who had participated in the pilot study because as they have been exposed to an intervention, it is possible that they may respond to the questionnaire differently than those who have not answer the questionnaire previously (Van Teijlingen & Hundley, 2002).

A systematic sampling design which involves drawing every x^{th} element in the population starting with a randomly chosen element between 1 and N (Sekaran, 2006) is used to draw a random and statistically representative sample from the employees for the close-ended survey questionnaires. The systematic sampling procedure as adapted from Chua (2012) and Kumar (2014) is applied to ensure that each subject in the population has equal chance of being selected as a respondent.

The sampling method is convenient because it only select respondents based on a fixed multiple. The 300 respondents are identified from the name list of 823 employees together with their departments, locations and contacts provided by the HRD manager.

3.3.5 Sampling for Qualitative Study

Qualitative analysis does not necessarily require selection of a large number of respondents or random samples since its intent is not to generalize to a population, but to develop an in-depth exploration of a central phenomenon, which is best achieved by using purposeful sampling strategies (Patton, 1990; Merriam, 1998; Teddlie & Tashakkori, 2003).

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Non-probabilistic studies typically relied on the concept of data saturation for achieving an appropriate sample size (Guest, Bunce & Johnson, 2006). Under this concept, relevant cases are sampled until the point at which no more new information or themes are observed in the data. This point determines the sample size but it is highly subjective (Kumar, 2014). The idea of data saturation is helpful at the conceptual level but it provides little practical guidance for estimating sample sizes for robust research prior to data collection (Guest et al., 2006). Furthermore, the point at which data saturation is observed in the data may not be a simple matter to determine and it is also costly and time-consuming.

Qualitative inquiry typically focuses in depth on relatively small samples, even single cases (n = 1) (Patton, 1990; Mason, 2010). According to Mason (2010), frequencies are rarely important in qualitative research, as one occurrence of the data is potentially as useful as many in understanding the process behind a topic because qualitative research is concerned with meaning and not making generalized hypothetical statements. Crouch and McKenzie (2006) state that qualitative research based on a small number of cases would facilitate the researcher's close association with the respondents, and enhance the validity of fine-grained, in-depth inquiry in naturalistic settings.

The researcher has decided to use a sample size of six for the open-ended questionnaire (for a population of 64). This is in line with expert recommendations for different studies from literature that provide guidance for establishing sample size (Bernard, 2000; Crouch & McKenzie, 2006; Guest et al., 2006; Mason, 2010; Baker & Edwards, 2012). As the return rate for this type of mailed questionnaires, as is used for this study, is relatively low, typically 20-30% (Nederhof, 1985 cited in Christensen, Johnson & Turner, 2015), the number is increased to 25 to take account of possible non-response cases. This number excludes respondents who had participated in the pilot study as recommended by Van

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Teijlingen and Hundley, (2002).

The concept of purposive sampling is applied for selecting informants from managers to answer open-ended questionnaires. The logic and power of purposive sampling lies in selecting information-rich cases for study in-depth and whose study will illuminate the questions under study (Patton, 1990). Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research (Patton, 1990). This sampling procedure has the advantages of being simple, cheap, and easy to set up and is considered adequate when generalisability is not an issue (Merriam, 1998). The relevant list of names of 64 managers with their specific departments, locations and contacts as provided by the HRD manager is consulted and 24 of them are selected as informants for the qualitative study. In consultation with the HRD manager, the researcher decided to selected at least one respondent from each section/area of (a) operations, (b) laboratory; (c) mechanical, (d) electrical, and (e) instrument. The respondents are selected from different locations/areas, departments and functions in the study site to make random variations in the sample which, according to Patton (1990), substantially increase the credibility of the results.

3.4 Instrumentation

The data collection instruments used in this study consist of close-ended questionnaires, and open-ended questionnaires. The close-ended questionnaire is used as data collection instrument because it offers advantages in terms of costs, speed, sample size, time and communication and provides wider distribution to a large number of respondents and the subsequent reduction in distribution bias (Oppenheim, 2003). For Bowling (1997) and Taskhakkori and Teddlie (2003), questionnaires are usually relatively quick to complete, are relatively economical and are usually easy to analyse. It is a dependable method for

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collecting data (Alreck & Settle, 2004) and it offers greater anonymity and helps to increase the likelihood of obtaining accurate information especially in situations where sensitive questions are being asked (Kumar, 2014). People are generally more truthful while responding to the questionnaires regarding controversial issues in particular due to the fact that their responses are anonymous (Taskhakkori & Teddlie, 2003). Survey questionnaire is the most frequently used organisational research methodology (Rogelberg et al., 2001).

An open-ended and typically in-dept questionnaire is a qualitative questionnaire that elicits participant's account of meaning, experience or perceptions. It consists of a series of open-ended questions to be answered by all or a subset of the participants in a research study (Tashakkori & Teddlie, 2003). The open-ended questionnaire offers several advantages over the interview and focus group methods. As a general rule, open-ended questions are extremely useful for eliciting or seeking opinions, attitudes and perceptions (Kumar, 2014). It calls for a free response to the questions raised in the questionnaire in the respondent's own words and in as much details as possible (Morrow, Mood, Disch, & Kang, 2016). The open questions allow the respondents to provide a richer assortment of information which, according to Cohen, Manion and Morrison (2000), might contain the gems of information that otherwise might not have been caught in the questionnaire and puts the responsibility for ownership of the data much more firmly with the respondents. The text is considered as a rich source of data in qualitative studies (Burns & Grove, 2003). According to Strubert and Carpenter (1999), written narratives allow participants to think about what they wish to share.

3.4.1 Design of Close-ended Questionnaire

The close-ended questionnaire used in this study combines the demographic questions and ten different variables adapted for this research to collect from employees

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data relating to CBT and its relationship with training effectiveness (in terms of reaction, learning, behaviour and results of the Kirkpatrick's evaluation model) and with organisational performance (in terms of productivity, organisational commitment and job satisfaction). The items measuring each construct are adapted from instruments, some of which were validated in previous empirical studies, for use in this study. The evaluation model used to measure the effectiveness of traditional training and development programmes need to be modified to make them output based and become suitable for evaluating a competency-based model (Dubois & Rothwell, 2004). The present study, therefore, places emphases on the careful selection of items for the constructs to ensure, as far as is possible, they relate to the competency-based approach.

The variables are measured using five-point Likert scales. A five-point scale was selected as opposed to a binary scale, because the increased choices provided are likely to improve the reliability of the responses (Black, 1999). Furthermore, such a five-point rating scale is utilised because of its capacity to gain data on the extent of each employee's agreement with the statements (Kline, 1986). Likert scales are simple to construct, likely to produce a highly reliable scale, easy for respondents to read and complete, furnish consistent attitude assessment, adaptable to most measurement situations and easy to administer (Balasubramanian, 2012).

For instrument adaptation, a scale purification process which includes item analysis (based on Cronbach's Alpha) and item-total correlations were carried out (Churchill, 1979) after having conducted screening for the dataset. The purification of scales was conducted based on an evaluation of exploratory factor analysis (EFA) or factor analysis results, the assessment of the item analysis (Cronbach's Alpha) and item-total correlations (Lu, Lai & Cheng, 2007). In addition, an initial analysis was run to obtain

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eigenvalues for each factor together with other associated tests such as variance explained and scree plots tests also constitute as part of the scale adaptation process. The intent is to weed out unsatisfactory or problematic items to achieve unidimensionality in each of the constructs. Unidimensional means that a set of items can be explained by a single underlying construct (Hair et al., 2010). The procedure for assessing unidimensionality requires that the items are significantly associated with an underlying construct, and each item being associated with one, and only one, latent variable (O'Leary-Kelly &Vokurka, 1998).

The EFA is conducted on the item scores of the scales obtained from the pilot study data to determine the dimensionality of items measuring the particular construct (Abdul-Halim & Che-Ha, 2009). EFA is used to determine whether the items in the scales are associated with the identified factors, and which of them should be deleted from the measure on account of low factor loadings, problematic or unsatisfactory items, irrelevance or significant factor cross loadings and to find support for the assumption that the questionnaire is measuring a single construct or unidimensional (Green, Salkind & Akey, 2000). Similarly, Aiken (1996) also suggested that factor analysis or component analysis is used to identify the degree to which the items of the scales measure the same things. This assumption is supported if a factor analysis on a set of data points to a one-factor structure in line with the view that a Likert scale is developed by grouping items that are statistically tested to identify the degree to which they measure the same things (Aiken, 1996). Items that did not load well onto their corresponding constructs were dropped from further consideration (Churchill, 1979). The removal or deletion of items from factor analysis is done one at a time, with the smallest factor loading being removed first and each time after conducting a retest of factor analysis until the respective datasets point to unidimensional or a one-construct structure.

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Based on the pilot study results, any items perceived as ambiguous were eliminated. Except for four scales of competency standards, reaction, productivity and job satisfaction, all other six scales (training design, training delivery, learning, behaviour change, and organisational commitment) achieved a one-factor solution based on datasets collected during the pilot study. In the case of the four affected scales, the assumption that the scores of the items in each scale in the questionnaire measuring a single construct is supported only after removal of: two items from the competency standards scale, one item from the reaction construct, one item from the productivity construct and ten items from the job satisfaction construct due to significant factor cross loadings. In the process of developing the scales for this study, a total of fourteen items were removed which are shown in Appendix A. Details of the tests on item analysis, item-total correlation, construct validity, factor loading, eigenvalues and percentage of variance explained and the scree plots are provided in Appendix B.

3.4.2 Structure of Close-ended Questionnaire

The questionnaire comprises 11 sections with a total of 96 items, namely (i) respondent's characteristics (6 items); CBT comprising (ii) competency standards (8 items), (iii) training design (8 items), (iv) training delivery (11 items); (v) reaction (11 items); (vi) learning (6 items); (vii) behaviour change (7 items); (viii) results 6 items); (ix) productivity (14 items), (x) organisational commitments (9 items), and (xi) job satisfaction of the employees (10 items). The details of eleven sections is shown in Appendix C (structure of close-ended questionnaire) and they are described below.

Section 1: Respondent's characteristics. This demographic questionnaire is designed by the researcher to elicit demographic information of the participants and it

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included questions concerning the participant's gender, age, educational qualification, number of years served, current position in company and their trade groups.

Section 2: Competency standards; Section 3: Training design and Section 4: Training delivery. The domain of CBT is operationalized within a multidimensional framework adapted from the CBT curriculum model as described by Wheeler (1993) and Brown (1994) who considered it as comprising three components, namely (i) competency standards, (ii) training design, and (iii) training delivery. These three essential elements form the three constructs for the domain of CBT. Competency standard is a 10-items scale, training design an 8-item scale, and training delivery an 11-items scale. The items in each of these constructs are adapted based on review of literature on the CBT (Spady, 1977; Blank, 1982; Foyster, 1990; Brown, 1994; Fletcher, 1997b).

Section 5: Reaction. This questionnaire is used to measure the general reaction of the trainees towards the CBT programme they have attended. It is a measure akin to measuring customer satisfaction. If training is going to be effective, it is important that the trainees react favourably as this will motivate them to learn. An 11-item scale is adapted from Kirkpatrick and Kirkpatrick (2006; 2007) for use in this study.

Section 6: Learning. This questionnaire is used to measure participants' feeling about mastery of the training content that results in a change or improvement in KSA. It is important to measure learning because no change in behaviour can be expected unless learning objectives relating to knowledge, skills and behaviour change have been accomplished. A six-item scale is adapted from Kirkpatrick and Kirkpatrick (2006; 2007) by the researcher to suit the need of this study.

Section 7: Behaviour change. This questionnaire is used to measure behaviour change in this study. It is a seven-item scale of which four items (preventing defects; attitude

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toward job; attitude toward co-workers; and attitude toward management) are adapted from Kirkpatrick and Kirkpatrick (2006; 2007), while the other three items (sharing information, teamwork and safety at work) are developed by the researcher.

Section 8: Results. This questionnaire is used to measure organisational results in this study after attending training. It is a six-item scale which is adapted from Kirkpatrick and Kirkpatrick (2006; 2007) by the researcher to suit the need of evaluating a CBT programme for employees. The items are quantity of production (productivity), quality of work (efficiency), safety of plant operation, housekeeping, employee attitudes and employee morale.

Section 9: Productivity. This questionnaire which is adapted from McNeese-Smith (1995) comprises 14 items. The instrument was tested by Loke (2001) who reported that the Cronbach's alpha of 0.90 - 0.93 he obtained demonstrated an internal consistency.

Section 10: Organisational Commitment. This nine-item questionnaire is adapted from the short version of the Organisational Commitment Questionnaire designed by Mowday, Steers and Porter (1982) to identify respondents' organisational commitment. The instrument is widely used as a means to measure the degree of commitment an individual has toward his organisation. It has been consistently tested and shown to have high reliability and validity scores (Kacmar, Carlson & Brymer, 1999 as cited in Tayyab, 2007). Furthermore, researchers recommended the use of the short version of the questionnaire because the items focus on measuring only an attitudinal construct (Mathieu & Zajac, 1990; Meyer & Allen, 1991) rather than behavioural intent (Commercias & Fournier 2001, cited in Tayyab, 2007).

Section 11: Job satisfaction. This 10-item questionnaire is adapted from the short version of the Minnesota satisfaction questionnaire (MSQ) developed by Weiss, Davis,

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England and Lofquist (1967). The MSQ is suitable for a wide variety of research applications as it has been widely studied and validated (Fields, 2002).

3.4.3 Design of Open-ended Questionnaire

This open-ended questionnaire is developed for this research to collect from managers of the employees, comprehensive data relating to CBT and its relationship with training effectiveness and organisational performance. The questions are influenced by or derived from literature reviews: Effectiveness - reaction, learning, behaviour and results (Kirkpatrick and Kirkpatrick 2006; 2007; USOPM, 2011).); Organisational performance - Productivity: Huselid (1995), Chang and Chen (2002); Job satisfaction: Guest (1999), Hoque (1999); Organisational Commitment: Tsui, Pearce, Porter and Tripoli, (1997); and Effectiveness: Kirkpatrick and Kirkpatrick, (2006; 2007); USOPM, (2011). The feedbacks arising from the open-ended questionnaires are the perceptions of the managers whose subordinates (employees) attended the relevant CBT programme by observing their behaviours and performance on their return to the work site following the training.

With the use of internet survey (e.g., email) the issue of the richness of responses to open-ended question became significant. The relative ease of typing a longer response, as compared to handwriting, made researchers to believe that email surveys would generate richer open-ended responses, a hypothesis that has been empirically proven (Mehta & Sivadas, 1995; Comley, 1998). Another advantage in this study is that the written narratives reduce costs by eliminating transcription, as would be required for audiotaped interviews. Although open-ended responses are difficult to analyse, they often provide specific and meaningful information (Arhar, Holly & Kasten, 2001). The primary advantage of mail questionnaire method is its easy and fast administration and low cost. However, a disadvantage is that most questionnaires are never returned, with return rate of typically 20-

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30% (Nederhof, 1985 cited in Christensen, Johnson & Turner, 2015). It is noted that response rates from mail surveys for prior studies are typically not high. Slater and Narver (2003), for example, achieved a response rate of 23 percent and Lopez, Peon and Ordas (2005), eight percent.

3.4.4 Structure of Open-ended Questionnaire

The open-ended questionnaire comprises two sections. Section 1 is the demographic questionnaire and Section 2 consists of seven open-ended questions on effectiveness based on and influenced by Kirkpatrick four level of evaluation with questions relating to the dependent variables of reaction, learning, behaviour change, and results and organisational performance with questions relating to productivity, organisational commitments, and job satisfaction of the employees. This open-ended questionnaire is shown in Appendix E. The details of the two sections of the questionnaires are given below.

Section 1: Respondent's characteristics. This demographic questionnaire is designed by the researcher to elicit demographic information of the participants and it included questions concerning the participant's gender, age, current position in company, number of years served in their work and highest educational qualification.

Section 2: Open-ended questions. A total of seven questions are provided for the managers to write their stories or experiences related to CBT and its effectiveness and effect on organisational performance. In the questionnaire for the main study, spaces are also provided at the end of each question for informants to provide feedback. The questions are:

（1） How does CBT influence trainees' reaction CBT?

（2） How do you believe that the trainees have learned new competency (KSA) as a result of the CBT? What evidence do you have for this?

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（3） What behavioural changes have you observed in the job performance of the trainees as a result of the CBT?

（4） What is the relationship between CBT and business results?

（5） What is the relationship between CBT and productivity?

（6） How committed are the trainees to the organisation?

（7） How satisfied would you say the trainees are with their job?

3.5 Validity, Reliability and Trustworthiness

Research instruments must be reliable and valid before they are used for data collection in the main study. The use of valid and reliable instruments ensures more accurate results and thus enhances the quality of the research. The validity of a test relates to the question of whether a test measure is measuring what it is purported to measure (Cooper & Schindler, 2011; Bryman, 2012) while reliability of a measure is an indication of the stability and consistency with which the instrument measures the concept (Sekaran, 2006; Cooper & Schindler, 2011). All measuring scales, irrespective of whether they are newly constructed, adopted or adapted (from prior studies and other populations or contexts), need reliability and validity test (Coopper & Schindler, 2011). This is to ensure that the measuring scales are capable of accurately measure the variables under investigation in the local organisational context (Conway & Huffcutt, 2003). A pilot study is undertaken to validate the instruments used in this study of which the procedures, sample size, respondents' demographic details and preliminary analysis including outliers, distribution normality are shown in Appendix E (Pilot Study Details).

Qualitative researchers use the term trustworthiness to describe the rigour or quality in the qualitative paradigm (Merriman, 1998; Lincoln & Guba, 2000; Bryman, 2012). Trustworthiness is defined as a methodological (research design, data gathering, data

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analysis) accuracy or soundness and adequacy of the research inquiry (Holloway & Wheeler, 2002). Qualitative research is trustworthy when it accurately represents the experiences of the informants or participants (Streubert & Carpenter, 1999) or the participants' views of reality (Berg, 2001).

3.5.1 Face Validity

Face validity refers to the degree to which a test appears to measure what it claims to measure (Leedy & Ormrod, 2004). It is a simple form of validity in which researchers determine whether a measure appears, on the face of it, to measure the concept it is intended to measure. Essentially, researchers simply take the validity of the test at face value by looking at whether a test appears to measure the targeted variable. The objective of face validity is to test items at face value.

Although face validity is often considered as a weak form of validity, much emphasis is placed, at least implicitly, on the face validity of individual items and of an instrument as a whole. It is an essential component in enlisting the motivation of the respondents. The respondents who think that the items are relevant and make sense to the subject matter are more likely to answer the questions properly, rather than leave it unanswered. Face validity is a component of content validity. As a check on face validity, test items are given to subject matter experts to obtain their suggestions for improvement. It is established when an individual reviewing the instrument concludes that it measures the characteristic or trait of interest (Bryman, 2012).

Six experts participated in the validation of the face validity of the questionnaire. The experts' comments received and the corrective actions taken are as follow:

(1) HRD manager of company under study suggested to add "Commitment to further self-development" to the Learning construct of the close-ended

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questionnaire. Having consideration for the objective of the study and after discussion with the HRD manager and in consultation with the Research Supervisor, the suggested item is not adopted.

(2) Research Supervisor commented that there are too many rows for questions 2 (learning construct) of the open-ended questionnaire which may give the respondents the impression that a lot of writing is involved deterring them to attempt to answer them. The number of rows provided for answers is reduced from five to two.

Overall, comments received from the subject matter experts indicated that the questionnaires appeared to be relevant to the subject matter of the study and thus are having face validity.

3.5.2 Content Validity

Content validity is the extent to which a measure adequately represents all facets of a construct of interest. According to Babbie (2007), content validity shows the degree to which a measure covers the range of meanings included within a concept. In another dimension, Cohen et al. (2008) define content validity as a form of validity which ensures that the elements of the main issue to be covered in a research are both a fair representation of the wider issue under investigation and that the elements chosen for the research sample are addressed in depth and breadth. Content validity ensures that the measure covers the broad range of areas within the concept under study. When a test has content validity, the items on the test represent the entire range of possible items that the content area of the test is adequately covered. Content validity requires experts in specific areas to validate the content of items in the survey questionnaire (Raoprasert & Islam, 2012). The inputs

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provided by these experts can correct any inappropriate or irrelevant subject matter and offer concrete suggestions to improve the content of a research instrument (Rubio et al., 2003).

Six experts participated in validating the content validity of the questionnaire. The experts' comments received and the corrective actions taken are as follow:

The research supervisor commented that the item "I feel I have had an increase in knowledge and skills after the learning experience" in the learning construct is a double-barrelled item as one question asked for both knowledge and skill, two different subject matter.

The item was changed into two questions (items):

(1) I feel I have had an increase in knowledge after the learning experience;

(2) I feel I have had an increase in my present skills after the training.

The subjective feedbacks are reviewed and appropriate revision to the instruments made to accommodate the experts' feedbacks.

3.5.3 Construct Validity

Construct validity is the degree to which a research instrument is able to provide evidence based on theory (Cooper & Schindler, 2011). It is concerned with the extent to which a measure is related to other measures as specified by theory or previous research. Construct validity is used to ensure that the measure is actually measuring what it is intended to measure and no other variables (Coopers & Schindler, 2011). A test or scale has construct validity if it demonstrates an association (correlation) between the test scores and the prediction of a theoretical trait.

Evidence of construct validity can be accomplished by examining the close-ended questionnaire in terms of factorial validity. Factorial validity is a form of construct validity that uses statistical tools which work with factor structures (Straub, Boudreau & Gefen,

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2004). This factorial validity deals with whether the pattern of loadings of the measurement items corresponds to the theoretically anticipated factors (Gefen & Straub, 2005). The purpose of factorial validity is to show that constructs that are posited to be made up of certain measurement items are, indeed, made up of those items, and not made up of items posited to be part of another construct. Factorial (construct) validity is assessed, in this study, by the process of factor analysing the correlations of scores from selected tests and obtaining predicted factor-loading patterns (Gefen & Straub, 2005; Burton & Mazerolle, 2011).

The items used in research instrument is considered valid if the factor loadings for the variables under study reached ± 0.40 thresholds (Hair et al., 2006). Table 3.1 shows that the factor loadings calculated for all constructs used in this study are relatively high, ranging between 0.602 and 0.959, and well above the minimum acceptable value of 0.4 as recommended by Hair et al. (2006) in order to provide support for factorial validity. As predicted, all the items loaded highly on the components they were intended to load on and did not load highly on the other components. This provided evidence of the factorial validity of the scales. Henceforth, the values of factor loadings in this pilot study suggest that the scales used in the instrument are valid, reliable and suitable for the main study.

In this study, the research instrument was adapted from established scales that have been previously used by researchers from different countries and cultures, the validity of the instrument has been proven (Weiss et al., 1967; Mowday, Steers & Porter, 1982; McNeese-Smith, 1995; Kirkpatrick & Kirpatrick, 2007). Similarly, the Kirkpatrick's model, CBT, training effectiveness and the training-organisational performance relationship are well-established concepts which have been extensively studied, the scales deriving from which should be valid and reliable.

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The scales which have also demonstrated content validity and internal consistency reliability as shown in the pilot study for this study provide supportive evidence of construct validity. In addition, item analysis have been employed as a preliminary factor analysis to drop unsatisfactory items (Nunnally & Bernstein, 1994). Kline (2013) argued that in respect of scientific measurement, item analysis and factor analysis are highly similar (p. 72) and Nunnally and Bernstein (1994) recommend the use of item analysis to be followed by factor analysis. In agreement with this, factor analysis is conducted in this study to establish construct validity of the research instrument. Furthermore, beside tests on item analysis, item-total correlation, factor loading, eigenvalues and percentage of variance explained and the scree plots confirm the unidimensionality of the constructs or measuring scales, removing unsatisfactory, low factor loading or irrelevant items enhancing their validity and reliability.

Principal components extraction and direct Oblimin rotation technique are used to test the construct validity of all the items that represented each of the constructs under study (Fraenkel & Wallen, 2006) and in the adaptation of established research instruments in this research settings (Conway & Huffcutt, 2003). Direct Oblimin rotation could deliver a simpler, accurate and interpretable solution in the form of factor intercorrelations compared to other rotation techniques that can cause the loss of important information when the factors are correlated (Conway & Huffcutt, 2003; Costello & Osborne, 2005). The rationale for employing a direct Oblimin rotation technique in factor analysis in this study is thus due to its capability to allow factors to be correlated with each other (Conway & Huffcutt, 2003).

While performing factor analysis, Kaiser-Mayer-Olkin (KMO) test and Bartlett's test of sphericity (Bartlett's Test) were also conducted for each variable to justify the application of factor analysis in this study. The KMO is a method to determine sampling

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adequacy or the sufficiency of sample size of the study (Hair et al., 2006; Rasli, 2006). The KMO should be 0.6 and higher (Coakes & Steed, 2003; Pallant, 2013). For Bartlett's test, it is an indicator to measure whether the correlation matrix is significant to be worthy of factor analysis (Child, 2006). The Bartlett test should be large and significant at < 0.05 (Coakes & Steed, 2003; Leech, Barrett & Morgan, 2005; Pallant, 2013). As shown in Table 3.1, the KMO statistics for all variables under investigation, varying between 0.779 to 0.899, are much larger than 0.60 (Coakes & Steed, 2003; Pallant, 2013), and the Bartlett's test scores where chi-square values for all constructs are significant at less than 0.05 ($p < 0.05$) level of significance (all $p = 0.000$) (Coakes & Steed, 2003; Leech, Barrett & Morgan, 2005; Pallant, 2013), the application of factor analysis is confirmed as an appropriate technique for further analysis of the data.

3.5.4 Reliability

Reliability is the extent to which an assessment tool produces stable and consistent results. It attests to the consistency and stability of the measuring instrument (Bollen, 1989; Sekaran, 2006; Yaakob, 2008). Reliability is measured using internal consistency method through finding the Cronbach's alpha (Sekaran, 2006) among a group of items combined to form a single scale. It is a statistic that reflects the homogeneity of the scale. Georgekutty and Mathew (2012) recommend that Cronbach's alpha is a good measure for measuring internal consistency. According to Hayes (1998), it is the most common method used for assessing the reliability of a measurement scale with multipoint items. Hence, this study adopts the Cronbach's alpha for estimating reliability.

Cronbach's alpha coefficient varies in value from 0 to 1 and the higher the score, the more reliable the generated scale is. The minimum value of Cronbach's Alpha should be 0.7 to be accepted in a reliability test (Nunnally, 1978; Kaplan & Saccuz, 1993; George

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& Mallery, 2005; Hair et al, 2006; Pallant, 2013). The close-ended questionnaires are pilot tested to ensure that they achieved the recommended reliability thresholds (Hair et al., 2006).

The Cronbach's Alpha calculated for all the constructs including the overall Cronbach value for CBT (combing competency standards, design, and delivery), after deletion of items from the respective scales during their development, are shown in Table 3.1 (Goodness of Data). It is noted that the Cronbach's values for the constructs are high, varying between 0.890 and 0.954, and are well above the minimum acceptable value of 0.7 (Nunnally, 1978; Kaplan & Saccuz, 1993; Hair et al., 2006; Georgekutty & Mathew, 2012; Pallant, 2013). Henceforth, the values of Cronbach's alpha in this pilot study indicate that the scales used in the instrument are reliable, adequate and suitable for the main study.

3.5.5 Goodness of Data

EFA performed on the pilot data included tests on construct validity, factor loading, item analysis, total-item analysis, eigenvalues, percentage of variance explained and the scree plots. In addition, KMO test and Bartlett's test of sphericity were conducted for each variable.

The statistical analyses showed that all variables under investigation exceeded the recommended thresholds. Table 3.1 shows the results of the validity and reliability analyses where (1) all research variables exceeded the minimum standard of KMO's value of 0.6 (Coakes & Steed, 2003; Pallant, 2013); (2) Bartlett's test scores where chi-square values are significant at less than 0.05 ($p < 0.05$) level of significance (all $p = 0.000$) (Coakes & Steed, 2003; Pallant, 2013); (3) all research variables had eigenvalues larger than 1 (Kaiser, 1958 cited in DeCoster, 1998); (4) all research variables had variance explained of more than of 60% (Hair et al., 2006); (5) the items for each variable exceeded factor loading of 0.4 (Hair et al., 2006) and item-total correlation of 0.3 (Nunnally, 1978; Ferketich, 1991; Kline, 1993)

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and (6) all variables for item-analysis and reliability analysis exceeded the acceptable standard of Cronbach's Alpha of 0.7 (Nunnally, 1978; Kaplan & Saccuz, 1993; Hair et al., 2006; Georgekutty & Mathew, 2012; Pallant, 2013).

Table 3.1: Goodness of Data

Variables	Items	Factor Loading	KMO	Bartlett's Test	Eigen value	Variance Explained	Cronbach's Alpha
Competency Standards	8	0.602 - 0.853	0.854	188.749 p = 0.000	4.940	61.748	0.908
Training Design	8	0.718 - 0.894	0.796	221.217 p = 0.000	5.120	63.999	0.918
Training Delivery	11	0.732 – 0.883	0.881	379.593 p = 0.000	7.314	66.495	0.948
Competency-based Training (CS + DN + DY)	27	0.662 – 0.846	0.899	1111.314 p = 0.000	7.964	69.002	0.960
Reaction	11	0.688 – 0.889	0.848	380.030 p = 0.000	7.385	67.132	0.950
Learning	6	0.742 - 0.910	0.888	151.494 p = 0.000	4.212	70.201	0.905
Behaviour Change	7	0.716 - 0.907	0.779	166.390 p = 0.000	4.395	62.789	0.893
Results	6	0.672 - 0.888	0.823	131.980 p = 0.000	3.909	65.143	0.890
Employee Productivity	14	0.626 - 0.855	0.865	453.223 p = 0.000	8.787	62.768	0.954
Organisational Commitment	9	0.744 - 0.910	0.899	302.898 p = 0.000	6.449	71.654	0.950
Job Satisfaction	10	0.693 - 0.959	0.883	247.832 p = 0.000	6.109	61.086	0.927

*KMO = Kaiser-Mayer-Olkin

These results demonstrate the goodness of data for this study (Hair et al., 2006). The goodness of data for the pilot study indicated that the measurement scales used in this study satisfied the acceptable standards of validity and reliability analyses and thus they were valid and reliable in measuring the variables under study.

3.5.6 Trustworthiness of Qualitative Study

The rigour in qualitative research is described by the term trustworthiness (Guba, 1981). Trustworthiness addresses methods that can ensure one has carried out the research

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process correctly (Guba & Lincoln, 1989; Manning, 1997). The trustworthiness criteria for qualitative investigation are credibility, dependability, confirmability and transferability (Guba, 1981; Schwandt, Lincoln & Guba, 2007). In this study, these four criteria would be addressed to ensure the highest standard of trustworthiness of the qualitative research instrument, data collection and analysis, and the findings in the qualitative study.

Credibility is one of the most important factors in establishing trustworthiness (Lincoln & Guba, 1985). It relates to how truthful particular findings are (Guba, 1981; Rolfe, 2006). The aim of establishing credibility is to produce findings that are plausible (Guba, 1981). It was argued that credibility corresponds roughly with the positivist concept of internal validity (Guba, 1981; Shenton, 2004; Rolfe, 2006). Dependability refers to the stability of data over time and under different conditions (Guba, 1981). It relates to how research findings are consistent and reproducible which is perceived as similar to the positivist concept of reliability (Shenton, 2004). Confirmability is the objectivity of the research findings (Guba, 1981; Shenton, 2004). It largely deals with whether the findings could be confirmed by another researcher. The goal of confirmability is to ensure that the research findings are reflective of the subjects' own experience and the inquiry and not a product of the researcher's biases and prejudices (Lincoln & Guba, 1985; Shenton, 2004).

Transferability is a form of external validity and refers to the extent to which the findings can be transferred to other settings or groups (Koch, 1994; Shenton, 2004; Polit & Beck, 2012). Transferability is similar to external validity or generalisability of quantitative studies (Shenton, 2004). Although generalization in qualitative research is limited and the concept of generalisability of research findings in qualitative research is not appropriate (Shenton, 2004), Polit and Beck (2012), however, argued that it is possible, and in some cases, important to generalise qualitative findings to another similar situation or context. As

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a strategy, this can be achieved by the provision of thick description to collect and provide detailed information of the context in which the qualitative inquiries take place to ensure comparison of the findings of this particular context to another context is possible.

It is important that qualitative research incorporates strategies for each of the criteria to enhance the trustworthiness of a study. Creswell (2006) suggested for at least two strategies to be used in any particular credible qualitative study. These strategies are important not only to researchers in designing ways to increase the rigour of their qualitative studies but also for readers as a means to assess the value of the findings of qualitative researcher. However, not all these strategies as suggested in the literature are applicable in all types of qualitative studies (Morse, Barrett, Mayan, Olson & Spiers, 2002). In this regard, several strategies have been incorporated in the qualitative portion of this research study to enhance its trustworthiness which includes triangulation, member checks, audit trails, peer debriefing and thick description.

3.5.6.1 Triangulation

Triangulation is a widely used method to ensure credibility and conformability of qualitative studies (Creswell, 2006). In this study, triangulation is achieved by utilising multiple sources of data or multiple informants and multiple perspectives to confirm the emerging findings (Merriam, 1998; Sarantakos, 2005). The informants are managers from various disciplines and different departments of the company under study. The perceptions of the fourteen managers who returned their completed questionnaires provided different perspectives on CBT and its relationships with training effectiveness and organisational performance.

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3.5.6.2 Member Check

Member check or informant validation refers to checking of findings and conclusions by the informants from whom the data were originally obtained (Long & Johnson, 2000). It is an important method to ensure credibility and dependability of a qualitative study (Long & Johnson, 2000). The initial results were sent back to the informants requesting for their validation and verification of the interpretation of the data that was contributed by them. The researcher did not receive any dissenting opinion after one week. This may mean that, as the results are synthesized from data obtained from the informants, they are difficult for individuals to recognize his own personal view (Hammersley & Atkinson, 1995; Long & Johnson, 2000; Hadi, 2016).

3.5.6.3 Audit Trail

Audit of the decision trail involves detailed description of sources and techniques of data collection and analysis, interpretations made, decisions taken, and influences on the researcher with the aim of demonstrating truthfulness within the findings (Sandelowski, 1986). It is important to provide the information others require to make their own judgments about the quality, transferability and worth of a study (Sandelowski, 1986) and about the usefulness of the work in other settings (Merriam, 1998). In this study, details about the methodology employed were discussed. The researcher has provided a description of the research design based on the research onion, samples and sampling, data collection and analysis procedures and other relevant information in sufficient detail that would enable future researchers to follow as closely as possible the methodology for their respective study and for them to make a judgment about the usefulness of this work in other contexts. The reader may then follow the researcher's decision trail and associate it with their own conclusions which they have drawn from the information provided.

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3.5.6.4 Peer Debriefing

Peer debriefing is a method in which the researcher discusses the research methodology, data collection, analysis and interpretations continually throughout the research process with his peer who is not directly involved in the research project (Lincoln & Guba, 1985; Merriam, 1998). The peer de-briefer should ideally be a skilled qualitative researcher who can meaningfully question the researcher's interpretations, provoke critical thinking, and provide alternative/additional perspectives and explanations. Peer debriefing enhances credibility and trustworthiness as it gives the researcher an opportunity to ensure that emergent hypotheses, themes or theories are derived from the data (Nguyen, 2008).

As a part time student, the researcher does not have a peer for debriefing. His supervisor acted as de-briefer instead. In this study, progress reports, supervisor comments and critiques were a consistent part of the research process from the very beginning. Regular meetings with the research supervisor provided the researcher with critical comments on his developing ideas, challenging the interpretations and thinking. Ongoing discussions with supervisor helped the researcher to clarify and continually test his assumptions and theoretical orientations that also help address issues of researcher bias.

3.5.6.5 Thick Description

Thick description is a rich and extensive set of details concerning methodology and context provided in a research report (Ahmad & Usop, 2011). Rich and thick description is a strategy used to obtain transferability or external validity (Long & Johnson, 2000; Creswell, 2006) and enhances study credibility (Shenton, 2004). The main question is whether the findings of an inquiry can be repeated if it were replicated with the same or similar respondents in the same context (Lincoln & Guba, 1985; Polit & Beck, 2012). By

providing sufficient contextual detail, the question of transferability would be open to individuals to determine for themselves (Merriam, 1998).

In this study, the aim was to provide a rich, thick description of the informants' experiences as managers of the employees involved in CBT that would assist readers to make judgments about the usefulness of the work in other situations or contexts. As Lincoln and Guba (1985) argue, thick description provides others with a database for making judgments about the possible transferability of findings to other situations. Having a thick description of the research process and how the researcher reaches the conclusions can greatly help another researcher replicate the study and arrive at the same general scheme of findings.

3.6 Research Ethics

Permission to access the site and conduct research is obtained from the company under study. Appendix F and G are respectively the letter requesting permission to conduct research and written permission to conduct research on site.

In this study, the researcher undertakes to uphold the principles derived from the Belmont Report (1979) which summarizes the ethical principles for research involving human subjects (Polit, Beck & Hungler, 2001) and respect the rights, needs, values and desires of the respondents or informants (Creswell, 2006). The primary issues considered are informed consent, freedom from harm and danger, fair treatment and privacy, protection from harm and hurt, anonymity and confidentiality.

3.6.1 Informed Consent

In this study, the researcher fully explained in a cover letter (Appendix H: Cover letter for questionnaire) to the respondents what the whole process would involve including the relevance and main objectives of the study, nature, data collection, extent of the research

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and their typical roles prior to commencement of the study. They were also informed of their rights to voluntarily consent or decline to participate, to refuse to answer any question that they do not feel comfortable with and to withdraw participation at any time without penalty (Polit et al., 2001). Written consent forms were not prepared and issued to the respondents as the participation in answering the questions and returning them are accepted as implied respondents' consent. As recommended by O'Leary (2004), the researcher's contact details were also included in the cover letter to enable respondents to contact him if clarification of any sort was needed.

3.6.2 Freedom from Harm and Danger

Respondents in a study should be protected from harm, adverse situations and exploitation. The researcher-respondent relationship should not be exploited (Polit et al., 2001). In this research study, the researcher informed participants that none of them would be put in a situation where they might be exploited or harmed as a result of their participation, physical or psychological. They are assured that the information they provide to the researcher or their participation in the research would not be used against them.

3.6.3 Fair Treatment and Privacy

Respondents have the right to fair treatment and privacy. Selection of respondents was carried out fairly and based on the requirements of the research. Respondents who refused to take part or those who withdrew are treated non-prejudicially. The respondents had access to the researcher at any point in the study to clarify information. In this connection, the researcher's e-mail address and mobile and fixed phone contacts were provided on the cover letter for the respondents. The respondents were treated respectfully and courteously at all times (Polit et al., 2001). As the study was conducted in the

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respondents' natural work setting, there was no coercion and intrusion of privacy with regard to the information they provided.

3.6.4 Anonymity and Confidentiality

Respondents are assured that the research would only be for academic purpose, they have the right to remain anonymous and the information they provide on the questionnaire is kept confidential (Burns & Grove, 2001). This means that the identities of the respondents and the participating organisation are not revealed in the final research report or for any other purposes. Confidentiality is upheld. The completed questionnaires and any written notes were safely stored and destroyed after the study (Robson 1997). The respondents were not asked to write their names or requested to sign the questionnaire. As it is not able to link the information to respondents, anonymity is therefore upheld (Burns & Grove, 2001).

3.7 Main Data Collection Procedures

The data collection procedures involve both the qualitative and quantitative study. In the quantitative study, close-ended questionnaires were used to solicit information (quantitative data) from the employees (respondents) while in the qualitative study, the open-ended questionnaires were employed to gain information (qualitative data) from the managers (informants). In administering the questionnaires, it is vital to ensure that the questionnaire reaches all those in the sample in order to optimise the response rate (Anderson, 2004).

3.7.1 Data Collection for Quantitative Study

A total of 300 copies of the close-ended questionnaires were administered at the workplace by distributing them to the respondents through their respective managers. The respondents were selected by systematic sampling. The respondents list was identified from

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the name list of 823 employees together with their departments, locations and contacts provided by the HRD manager.

A covering letter, with an explanation of the purpose and the importance of the study, was attached to the questionnaires (Appendix H: Cover letter for survey questionnaires). In the letter, the researcher explains the relevance and main objectives of the study. Respondents/informants were assured of ethical treatment. The instructions on how the questionnaire is to be completed and what is expected from them are explained to respondent in the questionnaire. Respondents were also informed of their rights to voluntarily consent or decline to participate, and to withdraw from participation at any time without penalty (Polit & Beck, 2012). The researcher's contact details were also included in the cover letter to enable respondents to contact him if clarification of any sort was needed (O'Leary, 2004).

The respondents were requested to complete the questionnaire and provide feedbacks within one week. A self-addressed envelope was also attached for the feedbacks on the questionnaires to be returned to the researcher through their respective managers. This method assures a high response rate, accurate sampling, and minimum of bias, providing necessary explanations and giving the benefit of personal contact (Oppenheim, 2003). By the end of one week, all 300 close-ended questionnaires had been returned through the managers. The return rate achieved is 100%.

3.7.2 Data Collection for Qualitative Study

In the case of the open-ended questionnaires, they are electronically administered using the company's intranet (Saunders et al., 2012). An email message similar to the one used for the quantitative study (Appendix H) with an appeal to complete the questionnaire attached to the email is sent to 25 respondents selected by purposive sampling. The 25

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informants were identified from the name list of 64 managers together with their departments, locations and contacts provided by the HRD manager.

The primary advantage of mail questionnaire method is its easy and fast administration and low cost. However, a disadvantage is that most questionnaires are never returned, with return rate of typically 20-30% (Nederhof, 1985 cited in Christensen, Johnson & Turner, 2015). It is noted that response rates from mail surveys for prior studies are typically not high. Slater and Narver (2003), for example, achieved a response rate of 23 percent and Lopez et al. (2005), eight percent.

The informants were requested to return to the researcher also through e-mails within one week. By the end of the week, the researcher received 14 completed questionnaires via company intranet, achieving a response rate of 56% which is higher than the 20-30% suggested by Nederhof, 1985, cited in Christensen et al. (2015).

3.8 Main Data Analysis Procedures

This is data analysis for the main study. The data analytical methods in this study are divided into quantitative method and qualitative method**.** For quantitative analysis, correlation analysis was used to analyse the quantitative data collected by the close-ended questionnaires. Qualitative content analysis was used for analysing the qualitative data obtained from the open-ended questionnaire.

3.8.1 Quantitative Data Analysis Procedures

Quantitative analysis is the process of presenting and interpreting numerical data. This involves using correctional analysis to test the hypotheses and relating findings to the sample or population. The goal of correlational research is to identify predictive relationships by using correlations statistical techniques based on using the Statistical Package for the Social Sciences (SPSS) version 23.0.

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3.8.2 Correlational Analysis

Correlation is a bivariate analysis that measures the strength of association between two variables and the direction of the relationship. In terms of the strength of relationship, the value of the correlation coefficient varies between +1 and -1. While the strength of the correlation is indicated by the magnitude of the correlation coefficient, the direction of the relationship is simply the + or - sign of the correlation indicating respectively a positive relationship or a negative relationship between the variables. In this study, Pearson's product moment correlational analysis (Pearson's r) is used for computing the correlation between two variables using SPSS. It measures the strength and direction of a linear relationship between the independent variable of CBT and the dependent variables of reaction, learning, behaviours, results, productivity, organisational commitment and job satisfaction.

Table 3.2: Strength of Correlation (adapted from Cohen, 1988)

Coefficient Value	Strength of Correlation Descriptors
0.1 = |r| < 0.3	Small correlation
0.3 = |r| < 0.5	Medium correlation
0.5 = |r| = 1.0	Large correlation

where | *r* | means the absolute value of *r*.

The general guidelines provided by Cohen (1988) for interpreting the magnitude of correlation coefficients, as shown in Table 3.2, are used to help interpret the correlations between the relevant variables in this study. According to Cohen (1988), absolute value of correlation coefficient (r) of 0.1 is classified as small, an absolute value of 0.3 is classified as medium and of 0.5 is classified as large correlations.

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3.8.3 Screening the Quantitative Data

As part of the data screening, several tests were conducted before proceeding to perform further tests. These tests help to find the hidden effects that could be missed by the researcher. The checks or tests that are conducted in this part of the study are for missing data and for assumptions that must be met in order to use Pearson's product moment correlational analysis which include normality, homoscedasticity, linearity tests in addition to the use of continuous variables (interval scales) and the absence of outliers.

Having checked the 300 questionnaires returned, three of them were not properly completed and thus discarded. The valid datasets were then keyed into and kept in the SPSS data files. In order to ensure the integrity of the data, the researcher conducted a proof reading of the computer printouts against the original data in the questionnaires to ensure they are entered correctly. The datasets are then screened for distribution normality and outliers based on guidelines prescribed by Tabachnick and Fidell, (2001) before proceeding to perform further tests.

3.8.4 Testing Assumptions for Pearson's r

Parametric tests are based on assumptions about the distribution of the underlying population from which the sample was taken. In order to appropriately use Pearson's product moment correlational analysis and give valid results, there are underlying assumptions that the data collected must markedly satisfy (Coakes & Steed, 2003; Burns & Grove, 2005; Polit & Beck, 2006). The underlying assumptions are level of measurement (of continuous variables or interval scales), related pairs, absence of outliers, normality of variables, linearity, and homoscedasticity (Burns & Grove, 2001; Coakes & Steed, 2003; Polit & Beck, 2006) for which tests were performed to ensure non-violation of these

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assumptions. These tests did not reveal any violations and thus the quantitative data can be used for Pearson's r analysis.

3.8.4.1 Related Pairs

Paired observations mean that every data point must be in pairs. That is, for every observation of the independent variable, there must be a corresponding observation of the dependent variable. In this study, a related pairs existed where the independent variable of CBT is paired with each of the dependent variables of reaction, learning, behaviours, results, productivity, organisational commitment and job satisfaction. The data satisfies the related pairs assumption.

3.8.4.2 Continuous Variables

In order to compute Pearson's coefficient of correlation (Pearson's r coefficient), both sets of data must be interval or ratio in nature, i.e., each variable should be continuous (Bryman, 2012). Continuous variables are those that can take any value within the interval or ratio variables. In this study, Likert scales are used in the close-ended questionnaire. Likert scales are commonly treated and can be analysed effectively as interval scales (Baggaley & Hull, 1983; Maurer & Pierce, 1998; Allen & Seaman, 2007). Thus, the variables satisfy the interval level of measurement assumption.

3.8.4.3 Test for Absence of Outliers

Outliers are points or data of unusual observations that are quite different or far removed from the mass of the data, either much higher or much lower (Pallant, 2013). Absence of outliers refers to not having outliers in either variable (IV and DV). Having an outlier can skew the results of the correlation by pulling the line of best fit formed by the correlation too far in one direction or another concerned. They are either kept to a minimum or are removed entirely.

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Table 3.3: Outlier Analysis of Quantitative Data

Item	Case number	Scores	Reason for being an outlier	Treatment of outlier
DN1	297	1	Extreme case value of 1	Value increased to 3
DN2	297	1	Extreme case value of 1	Value increased to 3
DN3	297	1	Extreme case value of 1	Value increased to 3
DN4	297	1	Extreme case value of 1	Value increased to 3
DN5	297	1	Extreme case value of 1	Value increased to 3
DN6	297	1	Extreme case value of 1	Value increased to 3
DN7	297	1	Extreme case value of 1	Value increased to 3
DN8	297	1	Extreme case value of 1	Value increased to 3
RN1	297	1	Extreme case value of 1	Value increased to 3
RN2	297	1	Extreme case value of 1	Value increased to 3
RN3	297	1	Extreme case value of 1	Value increased to 3
RN4	297	1	Extreme case value of 1	Value increased to 3
RN5	297	1	Extreme case value of 1	Value increased to 3
RN6	297	1	Extreme case value of 1	Value increased to 3
RN7	297	1	Extreme case value of 1	Value increased to 3
RN8	297	1	Extreme case value of 1	Value increased to 3
RN9	297	1	Extreme case value of 1	Value increased to 3
RN10	297	1	Extreme case value of 1	Value increased to 3
RN11	297	1	Extreme case value of 1	Value increased to 3

Box plot is the graphical techniques used for identifying outliers in this study. In the box plots, any scores that IBM SPSS considers as outliers appear as little circles with the ID number of the case attached if they are 1.5 box-lengths and as asterisks (*) with the ID number of the case attached if they are more than three box-lengths from the edge of the box (Pallant, 2013).

The data is checked for outliers through exploring them using boxplots. Nineteen significant outliers were detected. They appeared as asterisks (*) with the ID number of the case attached since they are more than three box-lengths from the edge of the box (Pallant, 2013). They were found to be outliers because of their extreme case scores. The outliers are

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shown in Table 3.3. The outliers detected were then treated by increasing the case score of each of the outliers by two units (Tabachnick & Fidell, 2001).

3.8.4.4 Test of Normality

Normality means that the data sets to be correlated should approximate the normal distribution. In such normally distributed data, most data points tend to hover close to the mean. An assessment of the normality of data is a prerequisite for many statistical tests, including the Pearson's product moment correlational analysis because normal data is an underlying assumption in parametric testing. In this study, normality is assessed numerically by using skewness and kurtosis tests (Tabachnick & Fidell, 2001). In order to test the assumption of normality numerically, skewness should be within the range of ± 2.0 and kurtosis values within the range of ± 3.0 (Hair et al., 2006).

Table 3.4: Skewness and Kurtosis for Quantitative Data

Variables	Items	Skewness	Kurtosis	Normality Assumption
Competency Standards	8	-0.139	-0.395	Normal
Training Design	8	-0.252	-0.669	Normal
Training Delivery	11	-0.057	-0.491	Normal
Competency-based Training	27	-0.104	-0.695	Normal
Reaction	11	- 0.071	-0.260	Normal
Learning	6	0.251	- 0.681	Normal
Behaviour Change	7	0.029	-0.013	Normal
Results	6	0.140	- 1.070	Normal
Productivity	14	- 0.728	-0.747	Normal
Organisational Commitment	9	0.234	0.157	Normal
Job Satisfaction	10	0.013	- 0.640	Normal

The results obtained for skewness and kurtosis for each of the 10 constructs of this study are summarised in Table 3.4. It can be noted that there is no major skewness and kurtosis issue found in this study. Both skewness and kurtosis for the datasets indicate that

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they fall within the acceptable ranges of ± 2.0 and of ± 3.0 (Hair et al., 2006) respectively which can be considered as free from serious normality problem that could distort the validity of research findings and they are thus normally distributed.

3.8.4.5 Test of Linearity

The distributions of the two variables related by the coefficient of correlation should be linear. Linearity means that the data follows a straight-line relationship between the two variables. This can be examined by looking at the shape of the scatterplots, consistent with Hair et al. (2006). If the data points have a straight-line relationship, then the data satisfies the linearity assumption. As it can be seen from the scatter plots shown in Appendix H, the results showed a straight-line relationship between the independent and dependent variables indicating that they were sufficiently linear. The data thus satisfies the linearity assumption.

3.8.4.6 Test of Homoscedasticity

The distributions of the two variables related by the coefficient of correlation should be homoscedastic. Homoscedasticity refers to the distance between the points to the straight line formed by the line of best fit. This involves the assumption that the dependent variables show equal levels of variance across the range of independent variables. The variability in scores for one variable is roughly the same for all values of the other variable. Consistent with Hair et al. (2006), this study tested the homoscedasticity for the variables using scatterplot. The shape of the scatterplots should be tube-like or oval in shape enclosing the data points. If the shape is cone-like, then homoscedasticity would not be met. As it can be seen from the scatter plots shown in Appendix I, the results showed that the dependent variables show equal levels of variance across the range of independent variables or the

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variability in scores for one variable is roughly the same for all values of the other variable. There was thus a consistent pattern, a good result pointing to homoscedasticity.

3.9 Qualitative Data Analysis Procedures

Data analysis in qualitative research consists of preparing and organizing the data for analysis, then reducing the data into themes through a process of coding and condensing the codes, and finally representing the data in suitable formats (Creswell, 2006). Content analysis procedures are chosen to guide the categorizations of a priori variables, while still allowing for emergent categories to be identified. The key feature of all content analysis is that the many words of the text are classified into much smaller content categories (Weber 1990; Burnard (1996), cited in Elo & Kyngas, 2007).

3.9.1 Content Analysis Procedures

Qualitative content analysis follows an objective and systematic process for coding and drawing inferences from texts (Cooper & Schindler, 2011). This allows researchers to categorize the information and organize them into themes and patterns for easy interpretation (Saunders et al., 2012) which, in this study, make use of pre-selected themes of the four levels of training effectiveness (reaction, learning, behaviour and result) and the three variables of organisational performance (productivity, organisational commitment and job satisfaction). Qualitative content analysis can be divided into seven basic steps: (1) selection of the unit of analysis; (2) analysis of manifest content or the latent content; (3) making sense of the data; (4) choosing to conduct inductive or deductive analysis; (5) development of categories; (6) data coding; and (7) interpretation and reporting of results. This is based mainly on the guidelines proposed by Elo and Kyngas (2007) and Cho and Lee (2014). The analysis is performed manually.

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The first step of the qualitative content analysis is deciding what to analyse and the selection of the unit of analysis. In this study, the data to be content-analysed are all the written responses from the 14 managers to the open-ended questionnaires and the unit of analysis for the qualitative content analysis were the words and sentences provided by each of the informants.

In the second step of the qualitative content analysis, the researcher must decide whether to analyse only the manifest content or the latent content as well. In a manifest analysis, the researcher describes what the informants actually say, stays very close to the text, uses the words themselves, and describes the visible and obvious in the text. In contrast, latent analysis is extended to an interpretive level in which the researcher seeks to find the underlying meaning of the text: what the text is talking about (Berg, 2001). In this study, only the manifest content is analysed.

In step 3 of the analytic process, the researcher strives to make sense of the data and to learn what is going on (Morse & Field, 1995) and obtain a sense of the whole data (Tesch,1990). The researcher is immersed in the written responses to the open questions and reading through them several times (Polit & Beck, 2004), becomes completely familiar with them (Polit & Beck, 2004) and strives to make sense of the whole data (Tesch, 1990; Morse & Field, 1995). As the researcher read through the responses, he might see some common themes emerging.

In step 4, the researcher decides whether to conduct content analysis in the form of inductive or deductive or the combination of both approaches (Elo & Kyngas, 2007; Cho & Lee, 2014). Qualitative content analysis based on the inductive approach is appropriate for studies that do not have sufficient prior knowledge on the phenomenon of interest and/or that the prior knowledge is fragmented (Elo & Kyngas, 2007) whereas qualitative content

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analysis based upon the deductive approach is appropriate for studies that is guided by existing theories and/or prior studies (Elo & Kyngas, 2007). As this study involves using previous knowledge or earlier work on Kirkpatrick four level of training evaluation, CBT and its relationship with training effectiveness and organisational performance as a starting point and tested by empirical findings rather than of any intention to formulate new theories., deductive content analysis is particularly appropriate. Thus, a deductive content analysis is chosen.

Step 5 of the content analysis process is to develop a categorization matrix (Elo & Kyngas, 2007; Cho & Lee, 2014) which is usually guided by existing theories, models, and/or literature reviews (Elo & Kyngas, 2007). The development of categories is aimed at reducing a large number of texts into a fewer content-related categories (Weber, 1990; Cho & Lee, 2014). In this study, the assumed category scheme, which consisted of seven major categories, was generated based on the widely-accepted Kirkpatrick four level of evaluation and on training and organisational performance. These categories for training effectiveness are reactions, learning, behaviour and results while those for organisational performance are productivity, organisational commitment and job satisfaction.

After the categorisation matrix has been developed, the next step (step 6) involves the coding of data (Elo & Kyngas, 2007; Cho & Lee, 2014). All the data are reviewed for content and coded in accordance with the identified categories (Polit & Beck, 2004). The data coding process involves the reading of the qualitative data repeatedly to code the data according to the pre-determined categories (Elo & Kyngas, 2007) in order to elicit the informant's meanings (Hycner, 1985).

Once the data are categorized and coded, step 7 is the interpretation and reporting of results (Elo & Kyngas, 2007). The researcher has to think about what the responses mean

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and identify the patterns and trends. He explains what is being said about the subject or theme. The researcher can then see what categories are related, where trends and patterns can be identified, and if there are common themes emerging. Once the responses are analysed and the major patterns and trends identified, the next step is for the researcher to write a summary in descriptive text of what he has found. The qualitative data is presented in a narrative form and inferences drawn from it. The findings should be described in great details and without biases (Elo & Kyngas, 2007). The findings were then compared to existing theories, prior studies, models, and/or literature reviews and conclusion can be made from the comparisons (Elo & Kyngas, 2007) which, for this study is the comparison of this content analysis with that of the quantitative study in this study.

3.10 Chapter Summary

This chapter discussed about the methodological strategy employed to address the research questions relating to training or CBT and the associated hypotheses. The research design is guided by the research onion which is a systematic approach. The topics discussed in this chapter include research design, research site, population and sampling, instruments used in the study, pilot study, validity and reliability of instruments, trustworthiness of qualitative study and research ethics. Finally, a section on data collection and analysis procedures are described before ending the chapter with a summary. The next chapter is on "Findings and Discussion".

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CHAPTER 4

FINDINGS AND DISCUSSION

4.1 Chapter Overview

The quantitative and qualitative data collected is screened and separately analysed in order to give meaningful interpretation and draw inferences about the objectives of the study. The quantitative data is analysed using the SPSS Version 23 whereby the Pearson's product moment correlational analysis (Pearson's r) is employed to test the direct relationships of CBT with training effectiveness in terms of reaction, learning, behaviour, and results, and with organisational performance in terms of productivity, organisational commitment and job satisfaction. As for the qualitative data, it is analysed using the qualitative content analysis manually. This chapter presents the results of the data analysis and a discussion of the research findings. It is intended to answer the problems of the study.

4.2 Respondents' Demographics for Quantitative Study

All 300 respondents have returned their questionnaires, showing a response rate of 100%. The questionnaires returned were checked and three of them (1%) were discarded because they were not properly completed. The usable sample is thus 297.

The descriptive statistics used to analyse the respondents' demographic background include gender, age, education levels, length of service, current position, and trade groups (disciplines) described in terms of frequency count and distribution. Table 4.1 shows the demographic results attained. In terms of gender, the majority of respondents were male (96.3%) with females comprising the remainder (3.7%). With reference to age groups, the majority of respondents were in the ages between 30 and 39 years old and 20

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and 29 years old, which consisted of 57.9% and 33.3% respectively. The 40-49 age group and the 30-39 age group consisted of 6.1% and 2.7% respectively.

Table 4.1: Respondents' Demographics for Quantitative Study

Respondent	Sub Profile	Frequency	Percent
Gender	Male	286	96.3
	Female	11	3.7
Age	20-29	99	33.3
	30-39	172	57.9
	40-49	18	6.1
	>50	8	2.7
Education	SPM	45	15.2
	STPM/equivalent	28	9.4
	Diploma	219	73.7
	Bachelor Degree	5	1.7
Trade Group	Operations	159	53.5
	Mechanical	40	13.5
	Instrument	42	14.1
	Electrical	38	12.8
	Laboratory	9	3.0
	HSE	9	3.0
Job Position	Technician Grade 1	102	34.3
	Technician Grade 2	78	26.3
	Technician Grade 3	78	26.3
	Technician Grade 4	28	9.4
	Technician Grade 5	11	3.7
Service Length	<5 year	95	32.0
	6-10	160	53.9
	11-15	24	8.1
	16-20	9	3.0
	>20 years	9	3.0

In term of education level, the majority of the respondents are diploma holders (73.7%), and the remaining respondents are SPM holders (15.2%), STPM holders (9.4%), and degree holder (1.7%). With reference to trade groups/disciplines, the majority are

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attached to Operations Department (53.5%), followed by Instrument Department (14.1%), Mechanical Department (13.5%), Electrical Department (12.8%), Laboratory (3.0%) and HSE Department (3%). With reference to the job positions, 34.3% of the respondents were Grade 1 technicians, 26.3% each were Grade 2 and Grade 3 technicians while 9.4% and 3.7% of them were respectively Grade 4 and Grade 5 technicians. In terms of length of service, 53.9% of them served the company for 6-10 years, 32% served five years or less, 8.1% served between 11 and 15 years, 3% severed between 16 and 20 years and another 3% had been with the company for more than 20 years.

4.3 Findings and Discussion for Quantitative Study

A Pearson product-moment correlation was run to test the relationships of CBT with four levels of training effectiveness and with organisational performance. Table 4.2

Table 4.2: Pearson Correlation Matrix

	Pearson r							
Variable	1	2	3	4	5	6	7	8
1. Competency-based Training	1.000							
2. Reaction	.691**	1.000						
3. Learning	.671**	.583**	1.000					
4. Behaviour Change	.600**	.526**	.625**	1.000				
5. Results	.681**	.501**	.689**	.678**	1.000			
6. Productivity	.630**	.604**	.565**	.506**	.602**	1.000		
7. Organisational Commitment	.540**	.531**	.532**	.513**	.450**	.570**	1.000	
8. Job Satisfaction	.571**	.501**	.494**	.465**	.496**	.530**	.448**	1.000

** Correlation is significant at the 0.01 level (2-tailed). n = 297

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presents the Pearson correlation matrix of the variables under study, testing hypotheses Ha1 to Ha7. It can be noted that training effectiveness (reaction, learning, behaviour, behaviour and results) and organisational performance (productivity, organisational commitment and job satisfaction) showed positive and large correlation coefficients of more than 0.5 (Cohen, 1988) and all correlations (r) are significant ($p = 0.000$) at $p < 0.01$ level (2-tailed).

4.4 CBT and Training Effectiveness

The general objective of the study is to determine the relationships that exist between CBT and its training effectiveness and organisational performance. The relationships that exist between CBT and its training effectiveness is examined first and then it is followed by the relationship between CBT and organisational performance.

Now, the objective is to determine the relationship between CBT and training effectiveness. As there are four specific objectives relating to this part of the general objective, four alternate hypotheses have been formulated to test the relationships between CBT and trainees' reaction, learning, behaviour and organisational results.

4.4.1 Relationship between CBT and Trainees' Reaction

In order to determine the significant relationship between CBT and trainees' reaction, the following hypothesis has been developed:

Ha1: CBT has a significant relationship with trainees' reaction.

The result of Pearson correlation coefficient between CBT and trainees' reaction is shown in Table 4.2. It can be noted that there was a positive significant correlation between CBT and trainees' reaction, which was statistically significant at $p = .01$ level ($r = 0.691$, $n = 297$, $p = 0.000$). Hypothesis Ha1 that hypothesized significant relationship of CBT with trainees' reaction is thus accepted. The findings suggest that CBT has a significant

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relationship with trainees' reaction and thus a change in reaction following the training has significant influence on training effectiveness.

The finding agreed with the result of an earlier study carried out by Embi, et al. (2017) who conducted a study to evaluate the multimedia-based learning environment and found that training has a positive effect on reaction. The trainees liked the training and are satisfied with its usefulness. The current result is also consistent with findings of Aryadoust (2017), Mahmood et al. (2017), and Heydari et al. (2019).

Reaction is trainees' feelings for and liking of a training programme. At this level, the focus is on the trainees' perceptions about a training programme and its effectiveness. Kirkpatrick and Kirkpatrick (2006) simply defined reaction as how well the trainees liked a particular training course. This level of evaluation focuses on the trainees' perceptions of the usefulness (utility reaction) of a particular training programme and their satisfaction with the training programme (affective reaction) and which Kirkpatrick referred to as a measure of customer satisfaction (Kirkpatrick & Kirkpatrick, 2006). The trainee's initial response is critical for the rest of the training and represents three elements: expectations, desire and perception (Tannenbaum, Mathieu, Salas & Cannon-Bowers, 1991).

This level only describes the trainee's impressions and feelings about the training programme as well as their judgments and understanding of the training elements, such as the content, material, instructors and training environment. Steensma and Groeneveld (2010) believe this is a problem because while measurement of trainees' satisfaction with the training is significant, it is not enough to determine whether there is a positive relationship between acquiring knowledge and improving job performance. Although reaction can provide valuable information about a training programme, it should not be used solely as an indicator of training evaluation to determine its effectiveness (Arthur et al., 2003; Steele,

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Mulhearn, Medeiros, Watts, Connelly & Mumford, 2016). The main limitation of evaluating at the reaction level is that this information cannot indicate whether the programme met the objectives beyond ensuring participant satisfaction (Werner & DeSimone, 2009). Patrick (1992) argues that trainees' motivation and feelings towards training have a critical influence on their level of success in the training programme.

Reaction provides insights about the trainees' degrees of satisfaction with the training design and implementation (Lee & Pershing, 1999). Trainee reaction focuses on how trainees feel about the training programme overall, its content, methods and skills of the instructor or facilitator (Kusy, 1988). The training objectives, methods, environment, trainer and training content are important factors related to designing a training programme (Nikandrou et al., 2009). Therefore, the evaluation of trainee reaction requires trainees to comment on these factors (Lee & Pershing, 1999; Kirkpatrick & Kirkpatrick, 2006).

Positive reactions to a training programme may make it easier to encourage employees to attend future programmes. However, if trainees do not like the programme or think they are less likely to learn, they may discourage others from attending and be reluctant to use the knowledge and skills obtained in the training programme. This research studies reaction as a multi-dimensional construct and this represents respondents' feedback to the training as a multi-dimensional construct with particular reference to their impression of the training, training objectives, training facility, contents, training materials, performance of the instructor, timing, relevance to job, and overall satisfaction/enjoyment of the training.

While Kirkpatrick acknowledged that this initial level of evaluation does not provide any measure of learning, a more favourable reaction may lead trainees to pay more attention during the training, resulting in greater learning. Measuring trainees' reaction

about certain aspects of the training can be beneficial for identifying problems and measurement of satisfaction with the training is useful for detecting motivation or diagnosing problems with trainees (Brown, 2007), and for providing suggestions for improvement, provides quantifiable information for training designers evaluating the course, and conveys to trainees the value of their input (Kirkpatrick, 1998). Information obtained from reactions about the training may also lead to decisions on future training activities. Trainee reaction can provide substantive input for the design and improvement of training efforts (Morgan & Casper, 2000; Lee & Pershing, 2002; Goldstein & Ford, 2002), Quantitative information provided by trainee reaction is useful to set the standards for the performance of future training programmes (Kirkpatrick & Kirkpatrick, 2006). It also develops a function of customer relations with employees showing that the organisation pays attention to training (Santos & Stuart, 2003).

The findings that CBT has a significant relationship with trainees' reaction can be explained by the concept of motivation arising from social support. Social supports motivate the employees to learn and transfer training on the job. Motivation is a force (either intrinsic or extrinsic) that makes people do what they do. It boosts the psychological contract between the employees and the organisation in that by showing employees that they are recognised, they tend to show commitment and loyalty to the organisation which can be translated into improved organisational performance. The training literature recognised that motivation plays a critical role in training transfer (Baldwin et al., 2009; Pham et al., 2010). In order to ensure training programmes bring benefits to an organisation, it is necessary for trainees to possess motivation to learn training content and motivation to transfer the new learning onto the job (Holton, 2005; Chiaburu & Lindsay, 2008; Pham et al., 2010). It is therefore important that trainees are willing to exert effort to acquire new KSA in training and

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interested to make use of what they have learned in the workplace to warrant training transfer. While motivation to learn refers to employees' desire to attend, learn and participate in training programmes (Machin & Treloar, 2004; Ayres, 2005), motivation to transfer is employees' desire to apply what they learned from training onto the job (Holton et al., 2000). It is important for trainees to be supported to boost their motivation levels. They need to be recognised. Thus, when employees are motivated, they would be encouraged to learn new KSA and transferred it to the job.

4.4.2 Relationship between CBT and Trainees' Learning

In order to determine the significant relationship between CBT and trainees' learning, the following hypothesis has been developed:

Ha2: CBT has a significant relationship with trainees' learning.

The result of Pearson correlation coefficient between CBT and trainees' learning is shown in Table 4.2. It can be noted that there was a positive relationship between CBT and trainees' learning, which was statistically significant at p = .01 level ($r = 0.671$, $n = 297$, $p = .000$). Hypothesis Ha2 that hypothesized significant relationship of CBT on trainees' learning is thus accepted. The findings suggest that CBT has a positive and significant effect on trainees' learning and thus a change in trainees' learning following the training has significant influence on training effectiveness.

The finding agreed with the result of an earlier study carried out by Aryadoust (2017) who conducted a study by adapting Levels 1 and 2 of Kirkpatrick's model of training evaluation to evaluate learning outcomes of an English as a second language paragraph writing course offered by a major Asian university and found that training has a positive effect on reaction and learning. Learners have shown changed attitudes/approaches,

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enhanced knowledge and developed new skills. The current result is also in line with findings by Embi et al. (2017), Mahmood et al. (2017), and Heydari et al. (2019).

Level 2 of the Kirkpatrick's model (Kirkpatrick & Kirkpatrick, 2006) defines learning as the extent to which trainees change attitudes, improve knowledge, and/or increase skill as a result of attending the programme. It measures the extent to which knowledge and skills are gained (Rajeev, Madan & Jayarajan, 2009; Kunche, Puli, Gunigant & Puli, 2011). While learning is perceived as the acquisition of knowledge, behavioural change, skills and attitudes (Knowles & Saxberg, 1988), Kirkpatrick describes this level as the scope in which trainees in a training programme change approaches, enhance knowledge, or develop skills (Kirkpatrick, 1998). No change in behaviour can be expected unless one or more of these learning objectives has been accomplished (Kirkpatrick & Kirkpatrick, 2006). This level of evaluation allows trainees to demonstrate their understanding of specific KSA acquired.

While learning helps to identify whether a training programme was successful, it does not offer data about the effects of the training on the organisation or whether the organisation supports the application of new knowledge or skills. In other words, Level 2 (learning) evaluates the outcome of learning but not job related-performance (Arthur et al., 2003). In support of this view, Tannenbaum and Yukl (1992) note that learning criteria are not useful for measuring changes in behaviour. Thus, if learning is assessed separately from other levels, it will not offer feedback about whether learners were satisfied with training, nor will it determine if the learning was transferred to the workplace or if it affected the organisation (Kirkpatrick & Kirkpatrick, 2006). Although Level 2 provides useful information about the advancement of KSA after a training programme (Tamkin, et al., 2002), it is costly to plan and execute (Morgan & Casper, 2000). It apparently requires more

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time and money than Level 1 and requires greater insight into the evaluation process to develop valid measures of learning. Thus, well designed and delivered training programmes may reduce the effort and time necessary to conduct training evaluations at Level 2.

Learning is a function of the content, methods and processes used during a training programme (Tannenbaum, Cannon-Bowers, & Mathieu, 1993). Level 2 aims to understand the learner's comprehension of instructions, principles, ideas, knowledge and skills (Lin, Chen & Chuang, 2011). Also, several environmental and situational factors can affect trainees' learning (Turner, Watts, Steele, Mulhearn, Torrence, Todd, Mumford & Connelly, 2018). The trainers who are knowledgeable about the training environment and trainees' reactions are responsible for administering and delivering the course objectives and whether or not trainees acquire the necessary knowledge and skills during training. This study also aims to investigate trainees perceptions of the impact of CBT on learning in terms of increased knowledge and skills and their relevancy and application on the job.

Evaluating learning is critical to evaluating other training evaluation levels because without learning, no behavioural change will occur (Kirkpatrick & Kirkpatrick, 2006). Velada, Caetano, Michel, Lyons and Kavanagh, (2007) indicate that the more training content is retained, the more knowledge will be transferred to the workplace. Furthermore, Homklin et al., (2014) and Diamantidis and Chatzoglou (2012) find that learning significantly influences behavioural change. Evaluating training at the reaction and learning levels will help to identify training requirements and objectives based on the context of the organisations and determine improvements in the KSA of participants (Kirkpatrick & Kirkpatrick, 2006). In addition, measuring behaviour and results helps to determine if learning has been transferred to the workplace and if performance has improved. In the same vein, Saks and Burke (2012) state that evaluating learning reveals whether the supervisor

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should adjust the training context or teaching techniques. Hence, in order to evaluate learning, it is necessary to ensure that new KSA have been acquired (Kirkpatrick & Kirkpatrick, 2006).

The findings that CBT has a significant relationship with trainees' learning can be explained by the concept of motivation arising from social support. Social support is the supports emanating from the organisation, supervisor and peers. These supports motivate the employees to learn and transfer training on the job. Motivation of employees boosts the psychological contract between the employees and the organisation in that by showing employees that they are recognised, they tend to show commitment and loyalty to the organisation which can be translated into improved organisational performance. The training literature recognised that motivation plays a critical role in training transfer (Baldwin et al., 2009; Pham et al., 2010). In order to ensure training programmes bring benefits to an organisation, it is necessary for trainees to possess motivation to learn training content and motivation to transfer the new learning onto the job (Holton, 2005; Chiaburu & Lindsay, 2008; Pham et al., 2010). It is also important that trainees are willing to exert effort to acquire new KSA in training and interested to make use of what they have learned in the workplace to warrant training transfer. While motivation to learn refers to employees' desire to attend, learn and participate in training programmes (Machin & Treloar, 2004; Ayres, 2005), motivation to transfer is employees' desire to apply what they learned from training onto the job (Holton et al., 2000). Arising from the notion of social exchange, it is important for trainees to be supported to boost their motivation levels. They need to be recognised. Thus, when employees are motivated, they would show changed attitudes/approaches, enhanced knowledge and developed new skills. They would be encouraged/motivated to learn new KSA and transferred it to the job.

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4.4.3 Relationship between CBT and Trainees' Behaviour

In order to determine the significant relationship between CBT and trainees' behaviour change, the following hypothesis has been developed:

Ha3: CBT has a significant relationship with trainees' behaviour change.

The result of Pearson correlation coefficient between CBT and trainees' behaviour change is shown in Table 4.2. It can be noted that there was a positive relationship CBT between and trainees' behaviour change, which was statistically significant at p = .01 level (r = 0.600, n = 297, p = 0.000). Hypothesis Ha3 that hypothesized significant relationship of CBT with on trainees' behaviour change is thus accepted. The learners have applied what they have learned to the workplace. The findings suggest that CBT has a positive significant effect on trainees' behaviour change and thus a change in trainees' behaviour following the training has significant relationship with training effectiveness.

The finding agreed with the result of an earlier study performed by Mahmood et al. (2017) who conducted a study to determine the effectiveness of a related traditional training using Kirkpatrick model at technical Academy Telekom Malaysia and found that training has a positive effect on reaction, learning and behaviour. The findings provide more positive evidences to transfer of training, and are consistent with previous studies such as Rafiq (2015), Embi et al. (2017), and Heydari et al. (2019), suggesting that respondents have transferred their KSA to the workplace. In other words, the result means that KSA learned are transferred to the job, the training efforts have an effect on employee or organisational effectiveness. This represents respondents' perception of the extent of their behaviour change in areas relating to information sharing, teamwork, defects prevention, safety at work, attitude toward job, attitude toward co-workers, and attitude toward management arising from the CBT programme they have attended.

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Level three, behaviour or transfer, refers to the knowledge and skills transferred to the job by trainees (Kirkpatrick & Kirkpatrick, 2006). Training is considered successful only when employees effectively practise the training on the job (Bear et al., 2008; Blume, 2010; Thiran, 2012). Behaviour is defined as the capability to perform the learned skills while on the job (Kunche et al., 2011). Saks and Burke (2012) state that evaluating behaviour can show if changes happened or if further training is required to enhance development. In other words, behaviour is measured by determining if the trainees implemented their newly learned tasks in the workplace. It looks at whether or not trainees apply the knowledge, skills or attitudes they learned during the training course back in their work setting. This level attempts to determine whether trainees use their new KSA when returning to the work environment. If KSA learned are not transferred to the job, the training effort cannot have an impact on employee or organisational effectiveness.

There are several reasons for measuring behaviour. The training objectives and the needs of trainees are met if changes in behaviour and progress can be observed. Attia, Honeycutt and Fakhr (2013) add that this level is the only one that supports the goals and objectives of the organisation. When designing a training programme, the objectives, needs and results have to be clear, and these should form the basis of the evaluation. Behaviour measures improvement in job performance, which shows the effect of training on employee performance. In other words, the effectiveness of a training programme can be observed through how much knowledge is transferred to the workplace (Arthur et al., 2003). Level 3 can reveal problems in a training programme and identify the support that the organisation should provide for the training (Kirkpatrick & Kirkpatrick, 2006).

Measurement of behaviour change is important because organisations typically offer training to their employees with the intention that the employees will actually use the

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training on the job. Organisations should not assume that performance of a skill during a training course always results in similar behaviour in the work setting (Goldstein, 2001; Goldstein & Ford, 2002). Although there are advantages to measuring behavioural change, there are also many reasons that training may not transfer to the work setting. It requires more time and money (Morgan & Casper, 2000). In the same vein, Noe (2002) also outlines three main obstacles to transfer of training: work conditions, lack of peer support and lack of management support. Working conditions include aspects such as time pressures or inadequate equipment. Lack of peer support may lead to trainees being discouraged to use the new skill or language. Finally, managers may not reinforce training or provide opportunities to use new knowledge or skills. Due to these and other obstacles, it is important for organisations to evaluate the behaviour level to determine if transfer of training has occurred.

This study investigated the effect of training characteristics such as information sharing, teamwork, defects prevention, safety at work, attitude toward job, attitude toward co-workers, and attitude toward management on behaviour. Training characteristics play a critical role in the transfer of learning. The methods used, the variety of training stimuli, which is associated with the usage of different instructional methods, as well as the interactions between trainees and the trainer create the proper learning environment and play a defining role in the transfer of knowledge (Nikandrou et al., 2009). Moreover, if the behaviour level is evaluated separately from other levels, it cannot offer information about trainee satisfaction, does not guarantee that learning occurred, and cannot expect organisational results (Kirkpatrick & Kirkpatrick, 2006).

The findings that CBT has a significant relationship with trainees' learning can be explained by the concept of motivation arising from social support. These supports

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emanating from organisation, supervisor and peers motivate the employees to learn and transfer training on the job. While motivation to learn is employees' desire to attend, learn and participate in training programmes (Machin & Treloar, 2004; Ayres, 2005), motivation to transfer is employees' desire to apply what they learned from training onto the job (Holton et al., 2000). Arising from the notion of social exchange, it is important for trainees to be supported to boost their motivation levels. They need to be recognised, felt valued and cared for. Thus, when employees are motivated, they would be encouraged/motivated to learn new KSA and transferred it to the job.

POS is closely associated with a person's general view on the degree to which an organisation supports his welfare as an employee (Chen et al., 2009). Employees also perceive support as the organisation's commitment to him (Eisenberger et al., 1986). Based on the notion of social exchange and the assumption of mutuality, employee's trade-off their loyalty and effort for tangible benefits they have received from their organisation (Armeli et al., 1998). In the training contexts, an organisation may signal its support by proposing and encouraging employees to attend training programmes (Battistelli, 2008). Organisations that emphasise on performance often provide due consideration for training and tend to offer employees with opportunities to experiment and apply newly acquired KSA to the job (Nikandrou et al., 2009). The ability of the organisations to provide support in the context of training and development was able to motivate employees to acquired new KSA in training and motivate them to apply the training back in the workplace (Chiaburu et al., 2010). When employees perceived their organisation as caring, they had more motivation to make use of what they learned in the workplace.

Supervisor support is the extent to which a trainee's immediate superior encourages learning in training programmes, encourages the sharing of what had been

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learned from training, and helps in the application of the newly gained KAO on the job (Ayres, 2005; Chiaburu & Tekleab, 2005). Basically, training transfer is the ability to transfer the knowledge and skills learned in training programmes back to the workplace (Subedi, 2004). It is the ability of trainees to effectively apply, adapt and reproduce what they have learned from training programmes onto the job (Chiaburu & Tekleab, 2005; Chiaburu et al., 2010). For example, supervisor support is provided in different times related to training before, during, and after training (Grossman & Salas, 2011; Bhatti et al., 2014). Similarly, supervisors provide support in terms of encouragement to attend and learn in training programmes (before training), provision of assurance that employees are capable to complete the training (during training), and reassure employees to apply newly acquired KSA to the job (after training) (Nijman, 2004; Merriam & Leahy, 2005; Switzer et al., 2005; Bhatti et al., 2014).

Workplace peers' support can influence training and training transfer in an organisation. Peer support is the support given by co-workers to encourage a trainee to attend training, to willingly give opinion on how to apply training, to willingly assist a trainee in applying new learning on the job, and to provide the necessary advice and co-operation to assist a trainee to apply newly acquired KSA on the job (Cromwell & Kolb, 2004; Baharim, 2008). Peers provide critical functions for employees in mentoring, information exchange, and social support due to their more proximal relationship (Sias, 2005). The support from peers is a powerful source for reducing uncertainty and stress, which can improve wellbeing of employees and organisations (Sias, 2005). In order to ensure anticipated training transfer, it is important for trainees to receive encouragement, opportunities, and endorsement from peers to apply training on the job (Chiaburu, 2010). Because of the continuous flow of information and encouragement, peer support has been

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postulated to exert stronger influence on training transfer than the one coming from the organisation and supervisors (Chiaburu, 2010).

4.4.4 Relationship between CBT and Organisational Results

In order to determine the significant relationship between CBT and organisational results, the following hypothesis has been developed:

Ha4: CBT has a significant relationship with organisational results.

The result of Pearson correlation coefficient between CBT and results is shown in Table 4.2. It can be noted that there was a positive relationship between CBT and organisational results, which was statistically significant at p = .01 level ($r = 0.681$, $n = 297$, $p = 0.000$). Hypothesis Ha4 that hypothesized significant relationship of CBT with organisational results is thus accepted. The findings suggest that CBT has a positive significant relationship with organisational results and thus a change in organisational results following the training has significant influence on training effectiveness.

The findings provide positive evidences for organisational results or organisational performance, and are consistent with previous studies such as Rafiq (2015), Zahro and Wu (2016), and Dorri et al. (2016), suggesting that training is positively and significantly related to organisational performance (results).

Organisational results are any number of outcomes that the organisation feels are an indicator of success. These may include the attainment of organisational goals and objectives in terms of measures such as productivity gains, improved organisational commitment and job satisfaction. In recent practice, the typical focus of these measures has been on organisational level of financial measures. Kirkpatrick and Kirkpatrick, (2006), for example, define the final results of a training programme, such as increased production, upgraded quality, reduced costs, decreased frequency and/or severity of accidents, increased

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sales, condensed turnover and higher profits. For Arthur et al. (2003), they also measure the monetary benefits of training programmes, such as productivity and profits. In the case of Saks and Burke (2012), they state that this level measures the degree to which a training programme has improved the outcome of a department or a whole organisation, such as achieving higher profits. It can be noted that Level 4, results, involves evaluation of the final results of the training on a broader scale. These broader measures include factors such as increases in productivity, decreased costs and mishaps, and higher profits (Saks & Burke, 2012; Karim, Huda & Khan, 2012; Kennedy, Chyung, Winiecki & Brinkerhoff, 2013).

The findings on the relationship between CBT and organisational results (organisational performance) may be explained by the theoretical framework which emphasises the interrelatedness and the coherence of HR practices, firm strategy and firm level outcomes presented by Wright and McMahan (1992) is known as the RBV. Firm resources include physical capital, human capital and organisational capital that enable the firm to improve its efficiency and effectiveness. Its resources determine the strength of a firm in the long term. In order for a firm's resources to provide sustained competitive advantages, however, they must be valuable, rare, imperfectly imitable, and cannot be replaced with another resource by competing companies (Barney, 1991). Therefore, human capital is a primary source of sustained competitive advantage to a firm because apart from the four listed criteria it cannot be duplicated or bought in the market by competitors. Applying the RBV to training suggests that training can provide knowledge and skills (competencies) for employees and in turn this may lead to high firm performance.

Organisational results criteria represent, for training evaluation, the criteria that is often perceived as the most fundamental to judging training success (Brogden & Taylor, 1950). These qualities make Level 4 (result) training criteria seem highly desirable and it

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makes good sense to collect them. However, organisational constraints greatly limit the opportunities for gathering Level 4 data (Tannenbaum & Woods, 1992; Shelton & Alliger, 1993), and most training efforts are incapable of directly affecting results level criteria as it is difficult to measure the contributions of the long-term results of training programmes (Brinkerhoff, 2005). These perhaps include the lack of evaluation instruments at this level, the normally long delay between seeing improvement in the desired organisational impact and the variables that can influence results can come from both inside and outside of the organisation (Clement, 1982). In addition, results are considered higher levels of Kirkpatrick's model, which makes them more difficult to measure (Homklin et al., 2013).

4.5. CBT and Organisational Performance

Having examined the relationships that exist between CBT and its four levels of training effectiveness, the relationships between CBT and organisational performance is now examined. As there are three specific objectives relating to this part of the general objective, three hypotheses have been formulated to test the relationships between CBT and productivity, organisational commitment and job satisfaction. The specific objectives aimed at determining the relationships that exist between CBT and overall organisational performance are: (1) to determine the significant relationship between CBT and productivity; (2) to determine the significant relationship between CBT and organisational commitment; and (3) to determine the significant relationship between CBT and job satisfaction.

4.5..1 Relationship between CBT and Productivity

In order to determine the significant relationship of CBT and productivity, the following hypothesis has been developed:

Ha5: CBT has a significant relationship with productivity.

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The result of Pearson correlation coefficient between CBT and productivity is shown in Table 4.2. It can be noted that there was a positive relationship between CBT and productivity, which was statistically significant at p = .01 level (r = 0.630, n = 297, p = 0.000). Hypothesis Ha6 that hypothesized significant relationship of CBT with productivity is thus accepted. The findings suggest that CBT has a positive and significant relationship with productivity and thus a change in CBT has a significant influence on productivity.

The main finding is that CBT has a positive and significant effect on productivity. Workers can increase their productivity on the job by following training programmes. The finding of the study agreed with the result of earlier study. The current result is consistent with findings of Konings and Vanormelingen (2015), Daniel (2018), Masayuki (2019), and Khan and Abdullah (2019) who found that training has a positive and significant effect on productivity.

Productivity is the effective use of innovation and resources to increase the value-added content of products and services (HKPC, 2013). It is the measure of how specified resources are managed to accomplish timely objectives as stated in terms of quantity and quality (Stevenson, 1999). As for Baines (1997), he perceives productivity as the application of the various resources (inputs) of an organisation, industry, or country, in order to achieve certain planned and desired results (outputs). The concept of productivity is linked closely with the issue of efficiency. If an organisation is achieving rising efficiency, it would imply rising productivity or productivity growth for the organisation's production. Productivity growth is important because it contributes to growth in output, income and living standards. Productivity gains are vital to the economy because they allow us to accomplish more with less. Rising productivity, according to Rogers (1998), implies either more output is produced with the same amount of inputs, or that less inputs is required to produce the same

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level of output. Productivity enhancements or improvements can come from the increased competencies or skill levels within the workforce through HR training. The human capital investment theory of Becker (1962) points out that firms invest in training programmes with the intention to affect the workers' productivity. For Cole (2002) and Noe et al. (2010), training is meant for productivity improvement. The benefits arising from training programs consist of improvement of employees' capacities and knowledge, which will result in improved job performance. Companies invest in their HR to increase the workers' value, in terms of job performance and productivity, and subsequently to achieve competitive advantages (Barney, 1991).

The effect of training on productivity can be explained with reference to the RBV of the firm. According to the RBV of the firm, an organisation's resources can be a source of competitive advantage when it possesses resources that add positive value to the firm, are unique, imperfectly imitable, and cannot be substituted with another resource by competitors. Accordingly, human capital is considered to be a resource that can provide a competitive advantage to the extent that HR practices produce skilled employees who provide value to the firm and have unique inimitable skills. Applying the RBV to training suggests that training can be viewed as an investment in human capital that provides employees with unique knowledge, skills and abilities that add value to the firm and enable the performance of activities required to achieve organisational goals, thus resulting in positive organisational-level outcomes (Ostroff & Bowen, 2000) which, in this case, is improved productivity.

4.5.2 Relationship between CBT and Organisational Commitment

In order to determine the significant relationship with CBT with organisational commitment, the following hypothesis has been developed

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Ha6: CBT has a significant relationship with organisational commitment

The result of Pearson correlation coefficient between CBT and organisational commitment is shown in Table 4.2. It can be noted that there was a positive relationship between CBT and organisational commitment, which was statistically significant at p = .01 level (r = 0.540, n = 297, p = 0.000). Hypothesis Ha6 that hypothesized significant relationship with organisational commitment is thus accepted. The findings suggest that CBT has a positive significant relationship with organisational commitment and thus a change in CBT has significant influence on organisational commitment.

The finding of this research agreed with the result of earlier studies. The current result is consistent with findings by Katawneh and Osman (2014) who found a direct relationship of core competencies with organisational commitment. Kuhuparuw and Ferdinandus (2014) also found that training and competency affect organisational commitment. In related cases in traditional training, Bashir and Choi (2015), Riyanto et al. (2017), Ahmad et al. (2019) and Sittisom (2020) revealed similar results, confirming that training or CBT is positively and significantly related to organisational commitment following training.

High level of organisational commitment is important as it can have a very significant effect on the economic stability of any organisation. Overall, the findings suggest the existence of a significant positive relationship between training and organisational commitment. This means that as commitment to employee training increases employee commitment to the organisation also increases. Training has been acknowledged as contributing greatly to organisational competitiveness (Schuler & MacMillan, 1984). Owens (2006) and Brum (2010) also posit that training will increase employees' commitment. Training can lead to high levels of commitment, as employees show

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appreciation to the organisation for the investment made in them by working hard and consenting to be a member of the organisation (Sahindis & Bouris, 2008). Employees are more likely to be committed to an organisation, if they feel the organisation is committed to them (Eisenberger et al., cited in Sahindis & Bouris, 2008). According to Newman et al. (2011), provision of training by an organisation, is perceived by employees as the organisation seeking to go into a social exchange with them. This creates a strong psychological bond between the employee and the employer. Training is perceived as a tool for eliciting and altering desired responses from employees (Ivancevich, 2007), which may include organisational commitment (Bartel, 2000). Employees exposed to more training opportunities are more likely to exhibit higher levels of organisational commitment (Anvari, Amin, Ismail & Ahmad, 2010).

Organisations that invest in human capital acknowledge their significance in term of overall organisational performance. These organisations are very attractive to the employees because of emotional attachment to give something in return. Thus, workers are more interested to stay in organisations that offer training opportunities because it increases their employability (Groot & Brink, 2000). Organisations that invest on training give the feeling of values and employees will be less interested to quit (Barrett & O'Connell, 2001). There is a growing consensus that HRM practices influence employee attitudes and work-related behaviour (Allen, Shore & Griffeth, 2003). It has been demonstrated that training is positively related to organisational effectiveness (Bartlett, 2001). The implementation of effective HR practices, including training or CBT, has been shown to play an important role in building and maintaining the commitment of employees towards the organisation (Allen et al., 2003). Recent studies of HR practices, including training, have been shown to influence employee commitment (Iles, Mabey, & Robertson, 1990; Meyer & Smith, 2000).

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These findings support a larger body of commitment literature that explores various outcomes measures associated with organisational commitment.

The effect of training on organisational commitment may be explained by the social exchange theory with particular reference to the norm of reciprocity. Individuals enter into a relationship with an organisation so as to maximise the benefits they can obtain (Blau, 1964). An organisation that provides training opportunities to their employees gives the impression of care and importance of employees, so they will be loyal with the organisation. This is consistent with the social exchange theory, which is based on an implicit agreement between employee and the employer. The social exchange theory which emphasizes the reciprocity norm explains that the support from the organisation received by an employee creates an obligation to return this support in some way. In this context, it can result in employees' loyal commitment to the organisation, improved organisational civil behaviour, better or improved job performance, and low quitting intention (Shore et al., 2009). Brum (2007) also states that training provided by the employers that achieves reciprocity in the employee would foster an individual's commitment to the organisation. Building and maintaining commitment has been shown to be dependent on a reciprocal relationship between the organisation and the employee (Sturges, Conway, Guest & Liefooghe, 2005). Brum (2007) affirms that the principle behind this reciprocity is that the employees will help the organisation because the organisation has helped them.

4.5.3 Relationship between CBT and Job Satisfaction

In order to determine the significant relationship between CBT and job satisfaction, the following hypothesis has been developed:

Ha7: CBT has a significant relationship with job satisfaction.

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The result of Pearson correlation coefficient between CBT and job satisfaction is shown in Table 4.2. It can be noted that there was a positive relationship between CBT and job satisfaction, which was statistically significant at p = .01 level (r = 0.571, n = 297, p = 0.000). Hypothesis Ha7 that hypothesized significant relationship of CBT with job satisfaction is thus accepted. The findings suggest that CBT has a positive significant relationship with job satisfaction and thus a change in CBT has significant influence on job satisfaction.

The finding of this research agreed with the result of earlier studies. The current result is consistent with findings by Sani et al. (2016) who conducted a study and found a direct relationship between competencies and job satisfaction. In related cases in traditional training, Okechukwu (2017), Lai (2018), Lei et al. (2018), Karimi and Nejad (2018), Fuzi and Yuzi Fuzi (2019) and Kanapathipillai and Azam (2020) found similar results, confirming that training or CBT is positively and significantly related to organisational commitment following training.

Effective training programme will positively impact on job satisfaction of employees. In many organisations, training is a method for increasing employees' satisfaction and decreasing turnover intentions. Effective training programme helps in increasing job satisfaction (Osca, Urien, Gonzalez-Camino, Martnez-Perez & Martınez-Perez, 2005; Sahinidis & Bouris, 2008) and customer satisfaction (Rust et al., 1996). A research recommended that there is a positive relationship between training and job satisfaction, and particularly, the employees who participate in training programmes are more satisfied than those who did not (Owens, 2006).

There is satisfactory evidence that training leads to both individual and organisational outcomes which, in this study, is job satisfaction (e.g., Fisher & McPhail,

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2010; Costen & Salazar, 2011; Gurbuz & Mert, 2011). The literature on strategic human resource management (SHRM) provides a number of perspectives and models to explain how training might relate or lead to organisational outcomes (Wright & McMahan, 1992) that are generally referred to as the universalistic, contingency, and configurational perspectives (Delery & Doty, 1996; Ostroff & Bowen, 2000). These perspectives can be used to explain different types of relationships between training and organisational-level outcomes. The most basic perspective is the universalistic perspective. According to the universalistic perspective, some HR practices such as formal training are work practices that are believed to be linked to organisational effectiveness for organisations that use them (Delery & Doty, 1996; Ostroff & Bowen, 2000). According to their frameworks and the theoretical models, HRM practices influence the HR capital pool and HR behaviours; HR behaviours then lead to firm-level outcomes. The basic premise of the universalistic perspective is that greater use of particular HR practices will result in better organisational performance. Thus, according to the universalistic perspective, organisations that provide more extensive training will be more effective. This is in effect the primary perspective taken in most studies on training and organisational-level outcomes, in which training is predicted to have a positive relationship with organisational outcomes.

4.5.4 Summary of Quantitative Research Findings

The research findings of the tests on the hypotheses based on Pearson's correlation analysis using SPSS Version 23 are summarised in Table 4.2. All the seven hypotheses showed positive significant relationships between CBT and the variables under study and thus have been supported or accepted. The findings suggest that CBT has a positive significant relationship with each of the four level of training effectiveness in terms of trainees' reaction, learning, behaviour, and organisational results; and with organisational

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performance in terms of productivity, organisational commitment and job satisfaction. Based on these findings, the general objective of this study that it is to determine the relationships that exist between CBT and its training effectiveness and organisational performance together with the related specific objectives of the study have been achieved. The results of the hypotheses testing are summarised in Table 4.3.

Table 4.3: Summary of Results of Hypotheses Testing

No	Hypothesis	Test	Findings
Ha1	CBT has a significant relationship with trainees' reaction.	Pearson's correlation	Accepted
Ha2	CBT has a significant relationship with trainees' learning.	Pearson's correlation	Accepted
Ha3	CBT has a significant relationship with trainees' behaviour change.	Pearson's correlation	Accepted
Ha4	CBT has a significant relationship with organisational results.	Pearson's correlation	Accepted
Ha5	CBT has a significant relationship with productivity.	Pearson's correlation	Accepted
Ha6	CBT has a significant relationship with organisational commitment	Pearson's correlation	Accepted
Ha7	CBT has a significant relationship with job satisfaction.	Pearson's correlation	Accepted

4.6 Finding and Discussion for Qualitative Study

In this section, qualitative content analysis is employed to analyse the qualitative data. The analysis resulted in the pre-selected themes of the four levels of training effectiveness and three variables of organisational performance. The seven major categories are reaction, learning, behaviour change, results, productivity, organisational commitment and job satisfaction. They are now presented followed by a discussion on the findings of each criteria of training effectiveness.

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4.6.1 Informants' Demographics for Qualitative Study

There were 14 informants who returned their completed qualitative questionnaires. The informants were managers whose subordinates attended the CBT and related assessment programmes relevant to their jobs and grades. The informants' demographic background include gender, age, education levels, length of service, current position, and trade groups (disciplines) which are described in terms of frequency count and distribution. Table 4.4 shows the demographic results attained. In terms of gender, there were 85.7% (12) males while there were only 14.7% (2) females. With reference to age groups, the majority of informants were in the ages between 40 and 49 years old and more than 50 years old, each of which consisted of 35.7%. The 20-29 age group and the 30-39 age group consisted of 21.4% and 7.1% respectively.

In the case of the informants' education, the majority of them are bachelor degree holders (57.1%), and the remaining informants are SPM, STPM, and Diploma holders (14.3% each). With reference to trade groups/disciplines, the majority are attached to Operations Department (35.7%), followed by Mechanical Department (21.4%), Instrument Department (14.3%), Electrical Department (14.3%), Laboratory (14.3%). With reference to the job positions, 57.1% of the informants were executive officer while 42.9% were managers. In terms of length of service, 50% of them served the company for more than 20 years, 14.3% served between 16 and 20 years, 21.4% served between 11 to 15 years, and another 14.3% had been with the company for less than five years.

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Table 4.4: Informants' Demographics for Qualitative Study

Profile	Sub Profile	Frequency	Percent
Gender	Male	12	85.7
	Female	2	14.3
Age	20-29	3	21.4
	30-39	1	7.1
	40-49	5	35.7
	>50	5	35.7
Education	SPM	2	14.3
	STPM/equivalent	2	14.3
	Diploma	2	14.3
	Bachelor Degree	8	57.1
Trade Groups	Operations	5	35.7
	Mechanical	3	21.4
	Instrument	2	14.3
	Electrical	2	14.3
	Laboratory	2	14.3
Job Positions	Executive	8	57.1
	Manager	6	42.9
Service Length	<5 year	2	14.3
	6-10	0	0
	11-15	3	21.4
	16-20	2	14.3
	>20 years	7	50.0

4.6.2 Qualitative Study of CBT and its effectiveness

The general objective was to determine the relationships that existed between CBT and its four levels of training effectiveness (in terms of trainees' reaction, learning, behaviour, and organisational results using Kirkpatrick four-level of evaluation model. Four specific objectives have been derived from this general objective are: (1) to determine the relationship between CBT and employees' reaction;(2) to determine the relationship between CBT and employees' learning; (3) to determine the relationship between CBT and employees' behaviour change back in the workplace; and (4) to determine the relationship between CBT and organisational results. The objective of this analysis is to find answers to the research questions. Appendix I contains details of the qualitative content analysis.

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4.6.3 CBT and Trainees' Reaction

The research question derived from the specific objective is:

How does CBT influence trainees' reaction?

The theme is the managers' perceptions of the trainees' reaction to the CBT they have attended. The majority of informants perceive that the trainees are satisfied with the training programme (Iinformants 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, and 13). They perceived that the trainees liked and enjoyed the training (Iinformants 3, and 5) and had shown positive attitude about it (Iinformants 1, 6, and 7). The trainees consider the training relevant to their job (Iinformants 3, 7, 8, 9, 11, and 12) and a good use of their time (Iinformants 8, and 12). The trainees are happy about the training (Iinformants 2, 4, 6, 11, and 13). Trainees thought that the training was a good experience (Informants 4, 7, 9, and 14) and worthy of their effort and hard work in attending the training (Informants 4, and 8). They felt good about their participation in the training (Informants 5, 6, and 11) as the training provided them with knowledge and skills or up-skilling and progression opportunity (Informants 7, 8, and 9). Overall, the informants perceive that the trainees have shown affective and utility reactions to the CBT programme. Table 4.5 shows examples of some of the statements on the theme provided by the respondents.

The results thus indicated that the trainees have shown affective and utility reactions to the CBT programme. In answering the research question, the managers perceived that the trainees have reacted positively to the CBT programme they have attended which is consistent with the findings of the quantitative study (close-ended questionnaires) conducted on the trainees.

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Table 4.5: Examples of Iinformants' Statements on Trainees' Reactions to CBT

Informant	Statement
2	Majority of trainees are satisfied with the competency-based training programme. They are happy about the training.
3	Trainees liked the programme. They felt the training was relevant to them. The majority of trainees seemed satisfied with the competency-based training programme.
5	The trainees enjoyed the training. They felt good about their participation in the training.
6	They seem very happy and satisfied about the programme. They considered the training good and showed positive attitudes about it.
8	Agreed that trainees are satisfied with the competency-based training programme. They felt that the training gave them up-skilling and progression opportunity. It was good and worthy of the time and hard work.
9	Trainees are satisfied. They are happy about the competency-based training programme. They considered it a good experience to gain knowledge and skills.
12	Trainees are satisfied with the competency-based training programme. They considered the training a good use of their time and it is relevant to their work.

Reaction is one of the important criteria to evaluate training effectiveness in the organisation. It may be considered as how well the trainees liked a particular training programme (Kirkpatrick, 1998). In other words, reaction is trainees' feelings for and liking of a training programme. At this level, the focus is on the trainees' perceptions about the training programme. Kirkpatrick (1998) states that evaluating reaction is the same thing as measuring customer satisfaction. If training is going to be effective, it is important that trainees react favourably to it (Kirkpatrick, 1998). Kirkpatrick also states that if trainees do not react favourably to a training programme, they usually are not motivated to learn. Thus, positive reactions to a training programme may make it easier to encourage employees to learn and transfer the training to the work context. According to Kirkpatrick, high levels of trainee satisfaction (reaction) with the training should lead to high levels of learning, which

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in turn should transfer to job performance that in turn leads to increased organisational outcomes. Of primary importance is the positive transfer of training, or the extent to which the learning that results from training transfers to the job and leads to relevant changes in work performance (Goldstein & Ford, 2002).

Measures at this level have evolved and are most commonly directed at assessing trainees' affective responses to the quality (e.g. satisfaction with particular aspects of the training) or the relevance (e.g. work-related utility) of training. Accordingly, Arthur et al. (2003) state that reaction refers to trainees' affective and utility responses to the training programme. While utility reaction refers to the relevance of the training to the work context, the affective reaction is the degree to which an employee felt happy with the training programme, for example, training content, instructional materials, technique for conveyance and the facilities of training programme. Reaction focuses on the responses of employee on whether they have been given reasonable training that suits their need and is valuable for their activity (Alliger et al., 1997; Rowold, 2007).

The reaction of employee is fundamental since it affects the future training programmes and the financial plans in the organisation. The reaction of employees involved in the training programme is important in order to find out whether the employees understand and are satisfied with the training programme in addition to getting the feedback and suggestion for improvements in future training. Based on their reaction, it could be concluded whether they would join the training programme again or suggest others to join the training organised by their organisation (Handledare & Jobring, 2013). If trainees did not like the programme or think they are less likely to learn, they may discourage others from attending and be reluctant to use the knowledge and skills obtained in the training programme. The main limitation of evaluating at the reaction level is that this information

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cannot indicate whether the programme met the objectives beyond ensuring participant satisfaction (Werner & DeSimone, 2009).

Empirical studies confirm a significant relationship between reaction and motivation to transfer (Warr et al., 1999; Liebermann & Hoffmann, 2008). In fact, reaction has been found as the main predictor for motivation to transfer (Liebermann & Hoffmann, 2008). These findings suggest that trainees who have positive reaction to the training programme show high intention to transfer the learned knowledge and skills to their workplace following the training.

As with the quantitative study, the findings that CBT has a significant relationship with trainees' reaction can be explained by the concept of motivation arising from social support. These supports emanating from organisation, supervisor and peers motivate the employees to learn and transfer training on the job. While motivation to learn is employees' desire to attend, learn and participate in training programmes (Machin & Treloar, 2004; Ayres, 2005), motivation to transfer is employees' desire to apply what they learned from training onto the job (Holton et al., 2000). Arising from the notion of social exchange, it is important for trainees to be supported to boost their motivation levels. They need to be recognised, felt valued and cared for. Thus, when employees are motivated, they would be motivated to learn new KSA and transferred it to the job.

4.6.4 CBT and Trainees' Learning

The research question derived from the specific objective is:

How do you believe that the trainees have learned new competency (KSA) as a result of the CBT? What evidence do you have for this?

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Table 4.6: Examples of Informants' Statements on New Knowledge Acquired and the Related Evidence

Informants	New Knowledge	Evidence
1	(1) Flow measuring instrument, (2) Control valve positioner	Passed knowledge assessment on new knowledge
2	(1) Earthing and lightning protection system. (2) Electrical control for diesel engine fire water pump	Passed knowledge assessment
4	(1) Knowledge on gear box and its overhaul (2) Knowledge on gas turbine combustion inspection	Passed Knowledge assessment
7	(1) Principles of alignment. (2) Safety valves and their operating principles.	Passed Knowledge test
9	(1) Electrochemistry (2) Principles of titration.	Passed Knowledge test
10	(1) Principles and purpose of hydrotesting. (2) Sources of vibration	Passed Knowledge test
13	(1) Principles of liquefaction (2) Sub-cooling and end flash	Passed Knowledge test

Learning refers to the KSA acquired by trainees. Evaluation on learning aims at understanding trainees' comprehension of instruction, principles, ideas, knowledge and skills from training. It is the measurement of the increase in knowledge or intellectual capability of the trainees following the training. In this study, the managers perceived that, as a result of attending the CBT, the trainees have shown learning of new KSA (Informants 1, 2, 3, …, and 14). This was evidenced by the trainees passing the relevant knowledge assessments and demonstrating the relevant skills in meeting competency standards, where the task profiles may be extended to include equipment and materials used on the job, attitudes and qualities of successful workers, safety, and other details associated with the

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occupation, in certificated assessments (Informants 1, 2, 3, …, and 14). Table 4.6 shows examples of some of the statements provided by the respondents on new knowledge acquired and the related evidence while Table 4.7 shows examples of some of the statements provided by the informants to show new skills learned together with the related evidence. It can be noted that the knowledge and skills are technical knowledge and skills relevant to the respective trade groups in the company under study.

The results showed that the managers perceived that the trainees have learned new KSA after they have attended the relevant CBT programme which is consistent with the findings of the quantitative study conducted on the employees.

Learning is a test to determine if the learning transfer has occurred. It measures the extent to which trainees change attitudes, improve knowledge, and increase skill as a result of attending the programme. Learning is also described as the process of changes the trainees' attitude, knowledge improvement and skill enhancement or gain after the training (O'Neil, Wainess & Baker, 2005). It is the trainees' perception of the effects of the training on his or her acquisition of new insights (Velada et al., 2007).

Kirkpatrick (1998) states that it is important to measure learning because no change in behaviour can be expected unless one or more of these learning objectives have been accomplished. This step is vital because if learning does not take place, behaviour cannot change and no results to the company can be realised. In this study, a competency-based assessment is conducted to measure if the trainees achieved the requirements and be able to demonstrate their ability as specified in the relevant standards after they had completed their training programme. This level of evaluation, therefore, allows trainees to demonstrate their understanding of specific KSA within the learning programme.

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Table 4.7 Examples of Iinformants' statements on new skills acquired and the related evidence

Iinformants	New Skill	Evidence
3	(1) Overhaul control valves (2) Removal of control valve actuator	Passed skill test
4	(1) Perform gear box overhaul (2) Perform gas turbine combustion inspection	Certified competent by assessors
6	(1) Operate the dehydration Unit (2) Operate the mercury removal unit	Certified competent by assessors
8	(1) Sampling of LNG (2) Determination of biological oxygen demand (BOD)	Assessed as competent in the tasks
9	(1) Perform PH analysis (2) Perform analysis by Potentiometry	Assessed as competent by assessors.
11	(1) Operate the heavy hydrocarbon removal column (2) Operate LNG circulation pump	Assessed as competent by assessors.

The important criterion in a training programme is learning because the main objective of learning is to focus on the goal of increasing knowledge and skills for the trainees or employees. After the employees have finished their training programme, they need to know the benefits of training for themselves (Handledare & Jobring, 2013). It is also important to the organisation or trainer to understand to what extent learning has occurred. Employees play the important role in understanding the need of training designed and organized by the organisation.

The findings that CBT has a significant relationship with trainees' learning can be explained by the concept of motivation arising from social support. These supports emanating from organisation, supervisor and peers motivate the employees to learn and transfer training on the job. This is consistent with the findings in the quantitative study.

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4.6.5 CBT and Trainees' Behaviour

The research question derived from the specific objective is:

What behavioural changes have you observed in the job performance of the trainees as a result of the CBT?

The theme is managers' perception of trainees' behavioural changes as observed in their job performance as a result of the CBT programme they have attended. The managers perceived that the trainees have shown positive behaviour changes in information sharing, teamwork, preventing defects, safety at work, attitude toward job, attitude toward co-workers, and attitude toward management. In terms of information sharing, the trainees were perceived willingly (Informants 6, 8, and 11) or more willingly (Informants 1, 2, 4, 12, and 14) or eager (Informants 10) to share information or experience with colleagues (Informants 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, and 13), superior (Informants 1, 4, 6, 9, and 10) and others (Informants 1, 6, 9, and 10). With respect to teamwork, the trainees work in a group or team to complete work safely and in high quality (Informants 9, and 10). More effective teamwork has been observed (Informant 1) as they are willing to work as a member of a team (Informants 2, 5, 6, 7, 9, and 10) and they are more willing to work with colleagues, customers and others (Informants 2, 3, 4, 6, 7, 8, 11, 12, 13 and 14). In the case of defect prevention, the trainees were perceived to be more conscious or shown increased awareness or more sensitive in preventive measures (Informants 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, and 14).

As for safety at work, the trainees were perceived to have increased capability and confidence in maintaining safe plant operations (Informants 2, 3, 4, 5, 7, 11, 12, 13 and 14), improved or more positive attitude in carrying out work (Informants 2, 4, 5, 6, 7, 8, 11, and 13), be more aware of hazards (Informants 2, 7, 8, 9, and 12), more aware of safe plant

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operation (Informants 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14), obey rule and regulations, follow standard operating procedures in carrying out work efficiently (Informants 5, 6, 9, and 11). For attitude toward work, the trainees were perceived to have improved or more positive attitudes in carrying out their work (Informants 2, 4, 5, 6, 7, 8, 11, 12, 13, and 14). They were more focused on job execution (Informant 1), and were more observant for safety and established procedures in carrying out work (Informants 3, 4, and 10). In terms of attitude toward co-workers, the trainees were perceived to show positive attitude towards co-workers (Informant 5). They were more helpful and tolerant (Informants 6, and 8), co-operative and respectful of their co-workers (Informants 2, 3, 4, 7, 8, 9, 11, 12, 13, and 14). They seemed to be more willing to co-operate with each other to work as a member of a team (Informants 1, 2, 7, and 12). With respect to attitude toward management, the trainees have shown improved attitude toward management (Informants 1, 2, 5, 6, and 12). They seemed to be more cooperative, respectful and supportive of their supervisors and managers (Informants 1, 4, 5, 7, 8, 10, 11, 13, and 14) and appreciative of the career path created following the implementation of the CBT system by management (Informants 2, 1nd 12).

The results showed that the managers perceived that the trainees have learned new KSA after they have attended the relevant CBT programme and transferred the training on the job. The findings are consistent with the findings of the quantitative study conducted on the employees. Table 4.8 shows examples of some of the statements provided by informants on behaviour changes in information sharing, teamwork, preventing defects, while Table 4.9 shows examples of some of the statements on safety at work, attitude toward job, attitude toward co-workers, and attitude toward management.

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Table 4.8: Examples of informants' statements on behaviour change (Sharing information, teamwork and preventing defects)

Informants	Statements (Behaviour changes)		
	Sharing Information.	**Teamwork**	**Preventing Defects.**
1	They are more willing to share new information to others.	More effective teamwork can be observed after the training.	Increase in awareness to do prevention action.
3	The trainee shares information among themselves	Trainees are more willing to work with others in order to close their competency gaps faster	More conscious of defects during walkabouts
4	More willing to share information among themselves and with superiors	More willing to work with others	More sensitive to defect prevention
8	Willingly share information.	Cooperative and more willing to work with colleagues.	More sensitive to defect prevention.
10	Eager to tell new experience to superior and colleagues.	Work in a group to complete jobs with high quality and safety.	There is always a party to act as QA/QC
12	Trainees are more willing to share information among themselves.	Trainee are more willing to work with customers and colleagues.	More conscious of defects during their walkabouts. They discuss such matter among themselves to improve defect prevention.
14	More willing to share	More willing to work with others	They became more sensitive to defect prevention.

The behaviour outcomes refers to the change of behaviour after an individual attended the training programme (Kirkpatrick & Kirkpatrick, 2006). The behaviour outcomes address either the extent to which knowledge and skills gained in training are applied on the job or result in job-related performance in the work environment (Bates, 2004). It is also referred to as transfer criteria (Alliger et al., 1997). This level evaluates how far the trainees have changed their behaviour, based on the training they received. It is a

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measure of the amount of material learned that participants actually applied on the job or transferred to the workplace to reflect positive changes in behaviour and job performance (Sarpy, 2003). This includes evaluation on actual job performance and can be used to identify the effects of training on work performance. Specifically, this examines at how trainees apply the information learned in the training. In this study, behaviour or behaviour change after attending a CBT programme covers evaluation of changes in trainees' behaviour relating to sharing information, teamwork, preventing and handling defects, safety at work, attitude toward job, attitude toward co-workers, and attitude toward management.

It is important to realize that behaviour can only change if conditions are favourable. This level differentiates between knowing the principles and techniques and using them on the job. If KSA learned are not transferred to the job, the training effort cannot have an impact on employee or organisational effectiveness. Handledare and Jobring (2013), for example, stated that if the participants of training programme cannot apply what they have learned during the training, then, the training has not been effective regardless of the possibility that learning has occurred. Therefore, while it is so vital to measure the changes of behaviour, it is also essential to discover the reasons why a change has not occurred.

As with the quantitative study, the finding can be explained by the concept of the RBV. Under this theory, human capital is considered to be a resource that can provide a competitive advantage to the extent that HR practices produce skilled employees who provide value to the firm and have unique inimitable skills. Applying the RBV to training suggests that training can be viewed as an investment in human capital that provides employees with unique KSA that add value to the firm and enable the performance of

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activities required to achieve organisational goals, thus resulting in positive organisational-level outcomes such as organisational results.

Table 4.9: Examples of informants' statements on behaviour change (safety at work, attitude toward job, attitude toward co-workers, attitude toward management)

Informants	Statements (Behaviour changes)			
	Safety at Work	**Attitude toward Job**	**Attitude toward Co-workers**	**Attitude toward Management**
1	More awareness on safe plant operation and more observant in safety in carrying out work efficiently.	More focus on job execution.	More teamwork can be observed. Better respect for other workers can be seen.	More respect and cooperation towards their management.
3	Better capability and confidence.	More observant in carrying out work	Better respect for other workers	No blaming attitude as individual is responsible for his own progress.
4	Increased capability and confidence in maintaining safe plant operation	More positive and enthusiastic toward job. Work diligently and safely.	More cooperative and tolerant to co-workers.	Respect instructions from management.
6	Obey rules and regulations. Able to operate plant safety and efficiently.	More positive attitudes with open mind.	More helpful and tolerant.	Contribute to better fruitful idea and more positive attitude toward management.
8	Trainees are competent and capable of carrying out their job roles safely maintaining safe plant operation.	Positive attitude toward job	Cooperative and helpful to co-workers.	Cooperative toward management directive.
10	Raise concern to higher authority and always operate safely.	Safety first and work until completion where possible.	Act as buddy – to teach each other	More respectful of orders from management.

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4.6.6 CBT and Organisational Results

The research question derived from the specific objective is:

What is the relationship of the CBT with business results?

The theme is about the managers' perception of the CBT employees have attended improve their effectiveness and have had an overall impact on organisational results. The managers perceived that the trainees have improved their effectiveness and had an overall positive impact on organisational results based on the results criteria of quantity of production, quality of work, safety of plant operation, housekeeping, employee attitude, and employee morale.

The production targets are consistently met (Informants 6, and 10) and the majority of respondents perceived increased quantity of production (Informants 1, 2, 3, 4, 5, 7, 8, 9, 12, 12 and 14). The quality of work is perceived to have improved (Informants 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13 and 14). In terms of safety of plant operation, the trainees were perceived to be more aware of safety or more safety conscious on the job (Informants 1, 3, 4, 6, 9, and 10) with the majority of the respondents perceiving a general improvement on safety (Informants 2, 5, 7, 8, 11, 12, 13 and 14). As for housekeeping, it was perceived that improved or better housekeeping have been maintained in the work areas following the training (Informants 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, and 14) with one respondent (Informants 5) indicating that as housekeeping has always been the focus of management, it is difficult to say that the improved housekeeping is in fact due to the CBT the trainees attended.

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Table 4.10: Examples of informants' statements on improvement/changes observed on Results (Quantity of production, quality of work and safety of plant operation)

Informants	Statement (Improvements/changes observed on results criteria)		
	Quantity of production	**Quality of work**	**Safety of plant operation**
1	Increment of quantity of production.	Quality of work improved.	Safer work environment as trainees are more aware of safety on the job.
3	Increased production quantity	Improved quality	More careful on safety
5	Increased quantity of production	Improved quality.	Improved safety of plant operation
7	Improved.	Improved quality of work.	Improved.
10	Strive to meet production target	Ensure check and balance in all works	Conduct tool box session before work.
11	Increased.	Improved.	Improved
12	Improvement in production quantity	Improved quality of work.	Improved safety in operating plant and equipment.
14	Increased	Improved.	Improved

With respect to employee attitude, improved attitude toward work, colleagues, management and customers have been observed (Informants 1, 2, 4, 5, 6, 7, 8, 11, 12, 13 and 14) to achieve results for self and team (Informant 2). The morale of the trainees (employees) is perceived to be high or improved (Informants 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14). They are competent and confident following the training resulting in improved morale (Informant 2) and there is no report/indication that the CBT had lower the morale of employees (Informants 5, and 9). The findings are consistent with the findings of the quantitative study (close-ended questionnaires) conducted on the trainees. Table 4.10

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and Table 4.11 show examples of some of the statements provided by the informants on responses to the results criteria items by the informants.

Table 4.11: Examples of informants' statements on improvement/changes observed (housekeeping, employee attitude and employee morale)

Informants	**Statement (Improvements/changes observed on results criteria)**		
	Housekeeping	**Employee attitude**	**Employee morale**
1	Better housekeeping maintained every time after work.	Improved attitude to work, co-workers, and customers, including management.	Improved morale.
2	Improved housekeeping	Better attitude to achieve good results for self and team	They are competent and confident resulting in improved morale.
4	Improved housekeeping	Improved attitude	Increased morale.
7	Plant is maintained to a very high level of housekeeping.	Improved.	Improved.
10	Conduct housekeeping after completion of jobs.	Strive for excellence and make it happen.	Keeping it high all the time.
12	Improved housekeeping.	Improved attitude	They are competent and confident resulting in improved morale.
13	Improved	Improved	Improved

Result refers to the final results that occurred because the trainees attended the programme (Kirkpatrick & Kirkpatrick, 2006). Topno (2012) perceives that results are the effects on the business or environment resulting from the improved performance of the trainees following the attendance of a programme. This result is the organisational effectiveness or performance of the organisation. Measuring results, which is Level 4 of the

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Kirkpatrick's model, is necessary to determine the efficiency of training programmes as well as to measure the impact of training on organisations and to measure training effectiveness through objective measures, (Phillips, 1991). Organisational results are any number of outcomes that the organisation feels are an indicator of success. These could include the attainment of organisational objectives and individual benefits such as the results criteria used in this study, namely, quantity of production, quality of work, safety of plant operation, housekeeping, employee attitude, and employee morale.

As with the quantitative study, the finding can be explained by the concept of the RBV. Under this theory, human capital is considered to be a resource that can provide a competitive advantage to the extent that HR practices produce skilled employees who provide value to the firm and have unique inimitable skills. Applying the RBV to training suggests that training can be viewed as an investment in human capital that provides employees with unique KSA that add value to the firm and enable the performance of activities required to achieve organisational goals, thus resulting in positive organisational-level outcomes such as organisational results.

4.7 CBT and Organisational Performance

The general objective was to determine the relationships that existed between CBT and the three variables of organizational performance: productivity, organizational commitment and job satisfaction. The three specific objectives have been derived from this general objective are: (1) to determine relationship between CBT and productivity; (2) to determine relationship between CBT and organisational commitment; (3) to determine the relationship between CBT and job satisfaction. The objective of this analysis is to find answers to the research questions. Appendix I contains details of the qualitative content analysis.

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4.7.1 CBT and Productivity

The research question derived from the relevant specific objective is:

What is the relationship between CBT and productivity?

The theme is about the managers' perception of the relationship between CBT and productivity. The managers perceived that the employees have improved their effectiveness and had an overall positive effect on productivity.

The majority of respondents perceive that the CBT programme attended by their trainees have improved or achieved higher productivity (Informants 1, 2, 3, ….., 13, and 14). The training provided by the employer raised the competency or capability of the trainees to help achieve company goals (Informants 1, 4, 7, and 14). The results showed that the managers perceived that the CBT programme their trainees attended have a positive and significant relationship with productivity. This finding is consistent with the findings of the quantitative study conducted on the trainees. Table 4.12 shows examples of some of the statements provided by the informants on show improved productivity.

Table 4.12: Examples of informants' statements on productivity

Informants	Statement (on productivity)
1	The training provided trainees with competency or capability to carry out their work roles safety and efficiently, thus increasing their productivity and productivity of the company. They helped to achieve company goals.
2	Resulted in better productivity.
5	It helped increased productivity as competency increased although difficult to measure how much productivity increased.
6	Productivity improved.
9	Productivity improved. Staff are competent, confident in their duty.
12	Resulted in better or improved productivity.
14	Productivity improved achieving company objective.

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The relationship of CBT with productivity can be explained with reference to the RBV of the firm. According to the RBV of the firm, an organisation's resources can be a source of competitive advantage when it possesses resources that add positive value to the firm, are unique, imperfectly imitable, and cannot be substituted with another resource by competitors. Accordingly, human capital is considered to be a resource that can provide a competitive advantage to the extent that HR practices produce skilled employees who provide value to the firm and have unique inimitable skills. Applying the RBV to training suggests that training can be viewed as an investment in human capital that provides employees with unique knowledge, skills and abilities that add value to the firm and enable the performance of activities required to achieve organisational goals, thus resulting in positive organisational-level outcomes (Ostroff & Bowen, 2000) which, in this case, is improved productivity.

4.7.2 CBT and Organisational Commitment

The research question derived from the specific objective is:

How committed are the trainees to the organisation?

The theme is about the managers' perception of the relationship between CBT and organisational commitment. The managers perceived that the trainees have improved their effectiveness and had an overall positive effect on commitment to organisation. The organisation must keep motivating the trainees by sending them to the required training. This commitment of the employees can help improve organisational commitment and organisation level outcomes.

The majority of respondents perceive that the CBT programme attended by the trainees have improved or raised their commitment level to the organisation (Informants 1, 2, 3, ….., 13, and 14). The trainees were committed to the company, feeling proud to work

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for it (Informant 1), working to the best of their ability to achieve results and completion target (Informants 4, 6, 7, and 9). The results showed that the managers perceived that the CBT programme their trainees have attended positively impacted on organisational commitment. Table 4.13 shows examples of some of the statements provided by the informants on organisational commitment.

The findings of this research agreed and is consistent with the results of the quantitative study conducted on the trainees confirming that CBT is positively and significantly related to organisational commitment.

Table 4.13: Examples of some informants' statements on organisational commitment

Informant	Statement (on organisational commitment)
1	Trainees are very committed to the organisation and work. They felt proud to work for the company.
2	Trainees are fully committed.
6	Good results and behaviour show all the commitment. On a scale of 1 – 10, I mark their commitment level as 9.
7	The trainees are committed to their work and the organisation doing their level best to achieve improved results. They do not seem to have intention to leave company.
8	Trainees are committed to the organisation
9	Highly committed. Work packages are timely and precisely implemented to achieve completion target.
10	The trainees are committed to their work and the organisation.
13	The trainees are committed to their organisation.

Training has been acknowledged as contributing greatly to organisational competitiveness (Schuler & MacMillan, 1984). Owens (2006) and Brum (2010) posit that training will increase employees' commitment. Training can lead to high levels of commitment, as employees show appreciation to the organisation for the investment made in them by working hard and consenting to be a member of the organisation (Sahindis &

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Bouris, 2008). Employees are more likely to be committed to an organisation, if they feel the organisation is committed to them (Eisenberger et al., cited in Sahindis & Bouris, 2008). According to Newman et al., (2011), provision of training by an organisation, is perceived by employees as the organisation seeking to go into a social exchange with them. This creates a strong psychological bond between the employee and the employer. Training is perceived as a tool for eliciting and altering desired responses from employees (Ivancevich, 2007), which may include organisational commitment (Bartel, 2000). Employees exposed to more training opportunities are more likely to exhibit higher levels of organisational commitment (Anvari et al., 2010).

The findings that CBT has a positive and significant relationship with organisational commitment can be explained with reference to the social exchange theory. Social exchange theory and the norm of reciprocity have been used to describe motivations behind employee behaviours and attitudes. A social exchange relationship rests on the norm of reciprocity. The reciprocity norm is crucial to social exchanges as it determines and maintains the ongoing fulfilment of obligations and relationships as a whole. The social exchange theory which emphasises the reciprocity norm explains that the support from the organisation received by an employee creates an obligation to return this support in some way. This social exchange can result in employees' loyal commitment to the organisation, Training that achieves reciprocity in the employee will foster an individual's commitment to the organisation. This is the basis on which the relationship between training and organisational outcomes such as organisational commitment is explained.

4.7.3 CBT and Job Satisfaction

The research question derived from the specific objective:

How satisfied would you say the trainees are with their job?

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The theme is about the managers' perception of the relationship of CBT with job satisfaction. The managers perceived that the trainees have improved their effectiveness and had an overall positive relationship with job satisfaction. The findings of this research agreed and is consistent with the results of the quantitative study conducted on the trainees confirming that CBT is positively and significantly related to job satisfaction.

Table 4.14: Examples of informants' statements on job satisfaction

Informant	Statement on Job Satisfaction
1	Trainees are highly satisfied with their own job, I am also very satisfied with their job.
2	Generally, trainees are happy and satisfied with their job.
3	They are satisfied. The job provide the trainees with steady employment. Chances for promotion on the job is good and dependent on the achievement of relevant competencies for the job. Working environment in the company is excellent. They felt they have achieved something in doing the job.
4	They are satisfied. Promotion is based on merit and based on completion of training and assessment of work related training.
6	They are satisfied with their job. On a scale of 1 – 10, I mark their satisfaction level as 8.5.
8	They are highly satisfied. They liked the job. They liked the working environment,
12	They are highly satisfied with their job in the company

The majority of respondents perceive that the trainees are satisfied with their job in the company (Informants 1, 2, 3, ….., 13, and 14). The trainees liked their job (Informants 2, and 8), liked the working environment (Informants 3, and 8), feeling good to work for it (Informant 3) as it is providing them with stable or steady employment (Informant 3). In addition, the prospects for promotion depend on merit and achievement of relevant competencies (Informants 3, and 4). The results showed that the managers perceived that the CBT programme their trainees have attended positively impacted on job satisfaction. Table 4.14 shows some of the statements provided by the informants on job satisfaction.

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Effective training programme will positively impact on job satisfaction of employees. In many organisations, training is a method for increasing employees' satisfaction and decreasing turnover intentions. Effective training programme helps in increasing job satisfaction (Osca et al., 2005; Sahinidis & Bouris, 2008) and customer satisfaction (Rust et al., 1996). A research recommended that there is a positive relationship between training and job satisfaction, and particularly, the employees who participate in training programmes are more satisfied than those who did not (Owens, 2006).

There is satisfactory evidence that training leads to both individual and organisational outcomes (e.g., Fisher & McPhail, 2010; Costen & Salazar, 2011; Gurbuz & Mert, 2011). The literature on strategic human resource management (SHRM) provides a number of perspectives and models to explain how training might relate or lead to organisational outcomes (Wright & McMahan, 1992) that are generally referred to as the universalistic, contingency, and configurational perspectives (Delery & Doty, 1996; Ostroff & Bowen, 2000). These perspectives can be used to explain different types of relationships between training and organisational-level outcomes. The most basic perspective is the universalistic perspective. The universalistic perspective posits a simple direct linear relationship between variables, for example, between training and organisational performance. According to the universalistic perspective, some HR practices such as formal training are work practices that are believed to be linked to organisational effectiveness for organisations that use them (Delery & Doty, 1996; Ostroff & Bowen, 2000). According to their frameworks and the theoretical models, HRM practices influence the HR capital pool and HR behaviours; HR behaviours then lead to firm-level outcomes. The basic premise of the universalistic perspective is that greater use of particular HR practices will result in better organisational performance. Thus, according to the universalistic perspective,

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organisations that provide more extensive training will be more effective. This is in effect the primary perspective taken in most studies on training and organisational-level outcomes, in which training is predicted to have a positive relationship with organisational outcomes.

4.8 Summary of Qualitative Study

The qualitative study involved the results of qualitative content analysis. The managers perceived that the trainees liked and were satisfied with the training, learned new KSA, transferred the learning to the workplace, and applied the learning in the workplace which enabled the required changes in organisational performance to happen, suggesting that CBT has a positive significant relationship with reaction, learning, behaviour and results. The managers also perceived that CBT has a positive and significant relationship with productivity, organisational commitment and job satisfaction. With these findings, the research questions of the study have been answered, supporting and reinforcing the results of the quantitative analysis.

4.9 Chapter Summary

This chapter presents the results of the data analysis together with a discussion of the research findings. The quantitative and qualitative data obtained are analysed separately. For the quantitative data, the Pearson's product moment correlational analysis was employed to test the direct relationships of CBT with training effectiveness and organisational performance. The results suggested that CBT was effective and had a positive significant relationships with its effectiveness in terms of reaction, learning, behaviour, and results, and with organisational performance in terms of productivity, organisational commitment and job satisfaction. For the qualitative data, the results of qualitative content analysis was obtained. The findings of the qualitative analysis also suggested that CBT had

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significant relationships with training effectiveness and organisational performance which support and reinforce the results of the quantitative analysis.

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CHAPTER 5

CONCLUSION, IMPLICATION AND RECOMMENDATIONS

5.1 Chapter Overview

This chapter presents a summary of the processes involved in the research from the formulation of research objectives to the conclusion of the findings. The conclusion of the study will be discussed to highlight important findings derived from quantitative and qualitative analyses. Implications of the research findings are discussed. Limitations and recommendations for future researches are offered. This chapter is important because it reports the significant findings of the study, research implications, limitations, and recommendations that could benefit researchers and practitioners alike who are interested in the CBT and its relationships with training effectiveness using Kirkpatrick model with organisational performance.

5.2 Summary of the Study

This study is concerned with CBT and its relationships with training effectiveness and organisational performance in the oil and gas company in Malaysia. The study evaluates effectiveness of CBT using Kirkpatrick four level of evaluation and assesses the relationships of CBT with organisational performance. This research report comprises five chapters.

Chapter 1 describes a brief background of the research and provides the necessary context for the research problem. This chapter provides a roadmap that sets the scene and tone for the thesis and guides the direction of this study. It explores the background of the study, problem statement, research objectives, research questions, conceptual framework,

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research hypotheses, significance of the study, scope of the study and definition of terms most pertinent to this study.

Chapter 2 discusses about the review of literature relating to the research focus of this study, that is, training or CBT and its relationship with training effectiveness and organisational performance. This chapter reviews the related literature that addresses the conceptual framework and empirical research relevant to this study. The literature review is studied to uncover the gaps. The important concepts, theories and methodologies of each construct and the current status of the relationships between key concepts in the hypothesised models as well as the variables (both independent and dependent variables) are reviewed. These concepts would guide the analysis of the findings drawn from the field.

Chapter 3 describes the methodology adopted by this study for data collection, analysis and interpretation to achieve its stipulated objectives. The research design or methodological strategy used to address the research questions is guided in a systematic approach by the research onion (Saunders et al., 2012) comprising research philosophy, research approaches, strategies, methodical choices, time horizons and techniques and procedures. This systematically defined research methodology using the research onion provides the basis for the completion of the research within specified scope, time and resources (Saunders et al., 2012). The topics discussed in this chapter include research design, research site, population and sampling, instrumentations, validity and reliability of instruments, trustworthiness of qualitative study, research ethics, data collection and analysis procedures.

Chapter 4 described the analysis of the quantitative and qualitative data to give meaningful interpretation and draw inferences about the objectives of the study. Quantitative data is analysed using the SPSS Version 23 where Pearson's product moment

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correlational analysis (Pearson's r) is employed to test the direct relationship of CBT with training effectiveness in terms of reaction, learning, behaviour, and results, and with organisational performance in terms of productivity, organisational commitment and job satisfaction. The qualitative data is analysed using the qualitative content analysis manually. This chapter presents the results of the data analysis and a discussion of the research findings to achieve research objectives and answer the research questions of the study.

Chapter 5 presents a summary of the processes involved in the research from the formulation of research objectives to the conclusion of the findings. Implications of the research findings, limitations of the study are discussed and recommendations for future researches are provided. The conclusion of the study is discussed to highlight significant findings derived from quantitative and qualitative analyses.

5.3 Implications of the Study

The findings in this study contributed to the knowledge, theories and practices of CBT with training effectiveness and organisational performance and also have implications for individual worker, team or group and the organisation.

5.3.1 Theoretical and Practical Contributions

This study investigated the relationship of CBT with all four levels of Kirkpatrick's model and with organisational performance which may be the first time CBT is tested empirically in the oil and gas industry in Malaysia. The study provides insight into CBT and contributes to enhanced understanding about training effectiveness at all four levels of training effectiveness of the Kirkpatrick Model. It also contributes to enhanced understanding of the relationship between CBT and organisational performance and adds knowledge and theory on the link of CBT to improved business results or organization-level objectives. This filled the gap in the body of theoretical knowledge in the practices of CBT

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and its effectiveness and organisational performance. The knowledge and theory used to explain the relationships between CBT and the training outcomes of Kirkpatrick's model and with organisational performance is tested and confirmed using real data obtained from site in the context of the oil and gas industry in Malaysia. Thus, the findings of this study contributed to filling the empirical gap in these areas of the training literature.

A mixed methodology is chosen to collect and analyse data where elements of quantitative and qualitative research techniques, methods and approaches are combined for the broad purpose of understanding and corroborating into a single study. The primary advantage of using mixed methodology in research is the capability to enrich the data collection and interpretation and it is used in order to capitalise on the respective strengths of each approach and at the same time to compensate the weaknesses of the two approaches. Under this mixed methodology, surveys in the forms of close-ended and open-ended questionnaires are conducted to gather data respectively from the trainees (employees) and their superiors to test the hypotheses and answer the research questions. The quantitative and qualitative data are analysed using correlational analyses and qualitative content analysis respectively. The methodological strategy used to address the research questions is guided by Saunders' research onion where the layers of an onion from the outer most layer to the inner core is used as a metaphor to describe systematically the general steps of the research process to achieve research objectives. These layers are the important aspects to be considered in determining the research methodology for the research study. The research onion process has been selected for the purpose of this research as it indicates all the steps involved in the research process. It presents an unambiguous overall framework for the research by giving options in every step of the research process involved. The

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methodological insight used in this study would contribute to the body of research knowledge in Malaysia.

The knowledge gained from the study could assist industry planners and policy makers to better understand the relationship of CBT on the training outcomes of reaction, learning, behaviour and results of the Kirkpatrick evaluation model and on organisational performance in terms of productivity, organisational commitment and job satisfaction. This would help make better or improved plans and policies accordingly at the organisational level. This can also assist them to make improved decisions pertaining to planning, developing and implementing CBT systems to achieve the planned outcomes more effectively and efficiently. In turn, it can lead to the development and implementation of improved plans and policies at the state or national level relating generally to vocational education and training systems and particularly CBT systems.

This study provides important practical contribution to the management of business organisations particularly those in the oil and gas industry in Malaysia on CBT and its relationship with organisational performance. In this perspective, the findings of this study may be of interest to the management of the company where the study is undertaken, policy makers and practitioners alike. This study would be useful, for example, to the company management to conduct evaluation of training at all four levels of the Kirkpatrick's model and to help streamline and improve, where it is necessary, on their training programmes, which will result in yielding positive result towards organisational performance. The findings of this study can also assist management to achieve the planned outcomes more effectively and efficiently at the organisational level. It would also be useful to the HR practitioners in helping them to design their HR practices and formulate HRM plans within

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a strategic condition at the micro or macro organisational level in order to improve organisational performance.

5.3.2 Implications for Individual Worker

In terms of implications for the individual worker, there are several aspects which may be important. Firstly, in the immediate and short-term, the individual ensures that, as soon as possible after the training programme finishes, he attends a post-training debriefing meeting with either the team leader or manager. This follow-up meeting builds on the impetus gained from the initial pre-training meeting held immediately before the training to discuss the session ahead to motivate the worker to attend the training and acquire new KSA and sets the scene for the actual application of the skills on the job. In this meeting, the worker's manager reviews with him the content taught in the training and the individual worker's experiences during the training course. The post-training debriefing is an ideal juncture at which the trainee (worker) and the manager identify, plan and agree where and when the skills will be applied and to set specific goals for their application. The debriefing should preferably be conducted on a one-on-one basis as it conveys a greater sense that the employee is important and gives him more of an opportunity to express private concerns.

Secondly, the individual worker provides, at the post-training debriefing session, honest and constructive feedback to his manager (reaction) about the content taught in the training and his experiences during the training course (learning). This helps the manager understands how well the training was received by the worker and knows what he was learning allowing him to identify shortfalls or areas of concerns, contributing to improving future training.

Thirdly, in the short-term, the individual worker, with the support and encouragement of the organisation, supervisor and peers, shares with team members what

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he has learned, both knowledge and skills, during the training. This may be included in the agenda for one of the team meetings held regularly. When learners interact with each other in the team, they are able to share what they have learned and also ask others to share the knowledge and skills they have. This contributes to creating a knowledge-sharing culture in which each learner shares responsibility for driving training.

Fourthly, in the short term, the individual worker ensures that he seeks to set specific goals to effectively apply the KSA gained during the training to the job and leads to meaningful changes in work performance (Bates, Holton, Seyler & Carvalho, 2000). The worker implements the training application plan that he has established and agreed with his manager during the post-training debriefing to achieve individual and organisational objectives or goals. This needs the worker to work as a team requiring support of the organisations, supervisors and peers. Since the ultimate goal of any training programmes is to increase workers' job performance (Baldwin, Ford & Blume, 2009; Kontoghiorghes, 2004), it is important for them to transfer what they had learned to the workplace. Training is considered successful only when workers effectively practise the training on the job (Baldwin & Ford, 1988).

Fifthly, in the immediate and short-term, it is important for the individual worker to be aware that he should take charge of his own training or learning programme. He establishes and agrees with his manager a training plan for his current role. This plan should meet his and the organisation's needs to achieve organisational objectives.

Sixth and finally, CBT has a positive and significant effect on organisational performance in terms of productivity, organisational commitment and job satisfaction. Motivated by relevant training, the worker would continue to work toward increased productivity, improved commitment and job satisfaction in the short and long terms.

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5.3.3 Implications for the Team or Group

The findings of this study provide several meaningful implications for the team or group. Firstly, the individual worker needs support of the team to encourage him to attend training, give opinion on how to apply training, assist him to apply new learning on the job, provide the necessary co-operation and advices to assist him to apply the newly acquired KSA on the job.

Secondly, in the short- and long-term, peers should provide what is referred to as peer support which is the degree to which co-workers and peers support the application of learning in the workplace (Holton, Chen & Naquin, 2003; Chiaburu & Marinova, 2005). Provision of support by the team of co-workers should take into account of what the individual worker needs and when he needs it. In this context (workplace training), provision of support in the form of emotional support, guidance, and recognitions should be practised in various stages of training to ensure that the individual worker keeps motivated to attend, learn, and apply new learning in the workplace.

Thirdly, the team leader or supervisor should also provide the necessary support for the worker's training plan and various stages of training. This is referred to as supervisor support which is the extent to which the worker's immediate superior encourages learning in training programmes, encourages the sharing of what had been learned from training, assists in the application of newly gained KSA on the job, and provides reminders and sufficient time of new learning on the job (Bates et al., 2000). The support trainees receive from his supervisor and peers to use the new skills and knowledge is a positive factor for training transfer (Clarke, 2002). The team leader or supervisor should provide the worker with opportunities to practise new skills on the job or apply learning in the workplace.

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Fourth and finally, CBT has a positive and significant relationship with organisational performance in terms of organisational performance such as productivity, organisational commitment and job satisfaction. The team should continue to provide workers the necessary cooperation and support for training that would allow him to contribute to increased productivity, improved commitment and job satisfaction in the short and long terms.

5.3.4 Implications for the Organisation

In terms of implications for the organisation, there are several aspects which may be important. Firstly, in the long-term, the organisation should continue to employ the pre-training briefing meetings and post training debriefing meetings to get the most out of their training resources. These meetings and other activities that occur before and after the training are very important for motivating workers to transfer training to the job which managers should undertake.

Secondly, in the immediate and short-term, the trainers or coaches should review the honest and constructive feedbacks of the trainees. Reactions and learning evaluation can provide useful feedbacks about the training session in terms of the content, structure and how it was delivered (Lee & Pershing, 2002; Mavin & Robson, 2010) and judging the effectiveness of a training programme so that the trainer or coach can recognise what the trainee needs from the training programme (Kirkpatrick & Kirkpatrick, 2006). Trainee reaction can also provide substantive inputs for the design and improvement of training initiatives (Morgan & Casper, 2000) which helps organisations improve future training programmes by recognising any weaknesses of the existing training. It is increasingly vital to evaluate training in order to ensure its effectiveness (Kirkpatrick & Kirkpatrick, 2006; Ji et al., 2011) in producing the specified learning outcomes when training intervention is

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planned, and to indicate where improvements or changes are required to make the training even more effective as learning and skills development have become more integrated with business strategies.

Thirdly, an organisation has to provide support for employees to acquire competencies. This may signal its support for the workers by proposing and encouraging them to attend training programmes (Battistelli, 2008). Organisations that emphasise on performance often provide due weightage to training of their workers and tend to offer them opportunities to experiment and apply newly acquired KSA to the job (Nikandrou, et al., 2009). This is perceived organisational support which is related to a person's general view on the degree to which an organisation supports his welfare as a worker (Chen, Eisenberger, Johnson, Sucharski & Aselage, 2009). Workers also perceive support as the organisation's commitment to him or her (Eisenberger et. al., 1986). Based on social exchange and the norm of reciprocity, workers who reported having perceived organisation support are able to reciprocate and apply what they learned in training to the workplace (Burke & Hutchins, 2008; Homklin et al., 2013). Training impacts on organisational performance and the organisation in the short and long term should actively seek to improve training opportunities and how they should be properly conducted and evaluated to achieve improved organisational performance such as productivity, organisational commitment and job satisfaction.

Fourthly, based on the training outcomes of reaction, learning, behaviour and results of the Kirkpatrick's model and on the organisational performance criteria, the findings in this study reveal that the CBT implemented in the company in the oil and gas industry is effective. In the long-run, the organisation should adopt the Kirkpatrick's model and the organisational performance criteria to evaluate training programmes not just on

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individual and group level of outcomes but also on organisational outcomes or results criteria to ensure training objectives are fully achieved. In this context, the operational performance domain used should be based on key performance index most relevant to their operations.

Fifthly, in the immediate and short-term, it is important for the organisation to hold awareness or engagement sessions for the workers, to remind them that they should take charge of their training or learning as owners without having to wait for sanction of his coach. According to the principles of adult and self-directed learning, adults like to make their own decisions pertaining to their learning and hence these awareness sessions help remind them of their role in the CBT so that they can complete their learning successfully. In this case, the coach's role is to guide or facilitate the trainees in their learning journey. In the same vein, the organisation should provide appropriate capacity building and training through seminars and workshops for workers, coaches or facilitators and assessors so that they can competently carry out their respective roles required of them in the short- and long-term.

Sixth and finally, the empirical analysis indicates that CBT which measured its relationship with the training outcomes is effective and add value to organisational performance. Therefore, it is vital for the company to focus on these critical areas in order to improve their performance. The organisation can motivate their workers to work harder and be involved in achieving organisational goals as motivation is a tool to improve performance through learning. Employee training is not only linked to improved business results but is also a powerful factor in shaping employee attitudes. It creates a motivation for increased discretionary behaviour and a satisfaction with career development that ultimately leads to increased productivity, organisational commitment and job satisfaction.

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Success in the workplace is highly related to learning and how to motivate employees to learn. In this context, it is important for the organisation to have a conducive and comfortable work environment for workers to work well while it is imperative for company management to show a sense of recognition of their workers. Workers need to feel that they are recognised, that their jobs help them achieve their aspirations and that there are prospects of advancement in terms of career (Herzberg, 1966).

5.4 Limitation of the Study

Although the study provides insights about the effectiveness of CBT programmes and the relationship between CBT and organisational performance, several limitations of this study should be recognised.

The study is confined to only the oil and gas industry in Malaysia. It was further limited to a few people representing one of the oil and gas companies in Malaysia which has implemented a CBT and assessment for training and assessment of its staff. The entire sample, for instance, was drawn from the people involved in CBT in that participating company. Hence, the findings may not lend well to generalizations. The data was obtained in the form of perceptual measures of training and thus giving room for respondents' bias.

This study only dealt with direct relationship between CBT and the constructs of reaction, learning, behaviour, results, productivity, organisational commitment and job satisfaction. The mediating role of any factors in the relationship between training practices and how they improve performance is not dealt with in this study.

The cross-sectional design may pose limitations in a research study. Cross-sectional studies are relatively cheap, easy to administer and less time-consuming but such research design only collects data from the respondents/informants on a snap-shot basis or at single-point in time. The situation may provide differing results if another time-frame

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have been chosen. Cross-sectional design is thus not able to capture the changes over a time period to establish a change pattern and the magnitude of causal relationships between the constructs under study. The cross sectional study can only see that two constructs are correlated but it cannot show if one construct is causing a change in another.

Gaining ready access to the participants have been difficult because of their work commitments, shift system and the requirement for the researcher to make contact with the them at the company through a contact person. This involved indirect communication with most of the personnel involved. This lack of opportunity for the researcher to communicate directly with the participants and their managers limited the researcher's ability to encourage participants to be involved or to increase the response rate from the questionnaire. The researcher relied heavily on the goodwill of one or two people in the company who are prepared to assist with internal communication and with gaining their consent to participate. In addition, the security associated with the company, including the need to sign in and out and moving about designated areas, would likely to prevent the researcher from gaining a deep understanding of the workplace culture and from observing activities and events as they occurred.

Whilst this study contributes to new knowledge, it cannot be assumed that its findings can be generalised, even to other subsidiaries within the group of companies in which the company under study is one of its subsidiaries as differences between companies in terms of differing local traditions, diverse economic and political contexts which shape the nature of the workplace may constitute different contexts for further study. Despite these limitations, the study makes significant contributions to the theoretical, empirical, methodological and practical knowledge on CBT and its relationship with training effectiveness and organisational performance, with particular reference to the oil and gas

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context in Malaysia, filling the research gaps as identified in the section 1.5 on problem statement in Chapter 1.

5.5 Recommendations for Future Studies

This study provides some future research directions that may help to further expand knowledge about CBT, training effectiveness and organisational performance and overcome some of the limitations of the current study. Several recommendations on these are described.

As this research covers only one company and limited to a few people representing one of the oil and gas companies in Malaysia that has implemented a CBT programme for its staff, further research should be carried out on a larger scale to include more participation from other companies in the oil and gas industry in Malaysia may be more beneficial in terms of a larger population base and thus a more representative sample. For example, the other operating units of the group of companies for which this study was undertaken will have a total population of a couple of thousands employees who have undertaken CBT. Such research may lend better to generalizations though it will be time consuming and cost much more to carry out. In addition, as there are also limited literature on research on the CBT approach conducted in the oil and gas industry, many more research should be conducted to add additional information in the literature in these areas of interest.

Instead of studies only focused on the direct relationship between CBT and the constructs of reaction, learning, behaviour, results, productivity, organisational commitment and job satisfaction, studies including the mediating or moderating role of factors in the relationship between training or HR practices and how they improve performance should be dealt with in future studies. A mediating factor is a intervening variable that occurs between two other variables in a causal chain. HR practices could include such factors as

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employment security, commitment, compensation and reward, motivation, and so on. It is suggested that the organisational performance variable should use standardised elements to facilitate comparisons across contexts.

Future studies could be carried out by longitudinal study which is a research study for which data is gathered at several points in time to answer a research question (Sekaran, 2006). As compared with cross-sectional study, longitudinal study may be more demanding since the work involves collecting data from the respondents in different time periods. Longitudinal study could help to capture the changes over a time period to establish a change pattern or to determine whether there is a linkage between training and improved business performance and the magnitude of causal relationships between the constructs under study but such studies will again be costly and time-consuming.

In future research, evaluation of training effectiveness should continue to be conducted to include all four criteria of the Kirkpatrick's four level of evaluation. Like this study, this will fill a gap in this area in the training literature. This is because research on the effects of CBT on results criteria remains relatively few, especially at the organisational level of analysis. Training should be evaluated to ensure training effectiveness and to justify the recourses incurred in carrying out the training activities.

5.6 Conclusion

This study is concerned with CBT and its relationships with training effectiveness and organisational performance in the oil and gas industry in Malaysia. This research study and its findings are considered important as they would contribute to closing the theoretical, empirical and practical gaps existing in the relevant training literature. The objective of the study is to determine the relationships that exist between CBT and its training effectiveness and organisational performance. In order to achieve the objective, seven specific objectives

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have been set up: (1) to determine the significant relationship between CBT and trainees' reaction; (2) to determine the significant relationship between CBT and trainees' learning.; (3) to determine the significant relationship between CBT and trainees' behaviour change; (4) to determine the significant relationship between CBT and organisational results; (5) to determine the significant relationship between CBT and productivity; (6) to determine the significant relationship between CBT and organisational commitment and (7) to determine the significant relationship between CBT and job satisfaction.

The objectives of this study have been achieved by employing a mixed research methodology, which collected quantitative and qualitative data from the participants of the study using close-ended and open-ended questionnaires respectively. Correlational and qualitative content analyses were used to answer the research question and to test the hypotheses. The results of Pearson correlation coefficient between CBT and constructs under study indicate that they are positively and statistically significant which showed that all the seven hypotheses (Ha1, Ha2, through to Ha7) have been accepted. The current results are consistent with findings of earlier studies. These findings suggest that CBT has a significant relationship with training effectiveness based on Kirkpatrick's model (Kirkpatrick & Kirkpatrick, 2006) and with organisational-level outcomes or performance based on productivity, organisational commitment and job satisfaction (Dyers & Reeves, 1995; Tharenou et al., 2007).

The findings of the qualitative study also suggest that CBT has a significant relationship with training effectiveness in terms of reaction, learning, behaviour and results of the Kirkpatrick's model and with organisational performance in terms of productivity, organisational commitment and job satisfaction. The results of the qualitative studies lend support to and reinforce the results of the quantitative analysis. With these findings, this

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study can conclude that CBT programme has a significant relationship with training effectiveness in terms of trainees' reaction, learning, behaviour, and organisational results and with organisational performance in terms of productivity, organisational commitment and job satisfaction, answering the research questions and achieving the objectives of the study.

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APPENDICES

Appendix A: Factor Analysis for Dimensionality Tests of Constructs

Factor analysis is a common method used by researchers to pinpoint underlying variables or factors that explain the pattern of correlations in a set of observed variables (Coakes & Steed, 2003; Yaacob, 2008). EFA is utilised to identify the number of latent variables that underlies an entire set of items (Coakes & Steed, 2003). It is a procedure which is primarily used for data reduction and structure detection. The purpose of data reduction is to remove redundant and highly correlated variables from the data file while the purpose of structure detection is to examine the underlying or latent relationships between the variables. The purpose is achieved through tests on construct dimensionality tests such as item analysis, item-total correlation, construct validity, factor loading, eigenvalues and percentage of variance explained and the scree plots provided below.

A1 Item Analysis

The generation of items during questionnaire development requires considerable pilot work to refine wording and content. Items can be generated from various sources including consultation with practitioners or experts in the field, proposed respondents, and review of associated literature (Bowling, 1997). Item analysis is one of the ways to pilot a questionnaire. It is a process which examines participants' responses to individual test items in order to assess the quality of those items and of the test as a whole. Item analysis is especially valuable in improving items which would be used again in later tests, but it can also be used to eliminate ambiguous or misleading items in a single test administration.

When conducting an item analysis, the internal consistency reliability for the tests have to be considered. Internal reliability refers to whether those items are internally consistent or whether the items that constitute the scale are measuring a single concept (Hair

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et al., 2006). In item analysis, Cronbach's alpha coefficient (an indicator of internal consistency of the scale) is used to assess how reliable the scale is in measuring a single underlying construct. It is a measure that determines the degree to which an internal consistency exists among the items within the same variable or factor (Malhotra, 2004; Lu et al., 2007). Internal consistency is used to check internal reliability of a measurement in multi-item scales (Hair et al., 2006).

Item analysis provides some simple heuristics about item retention or deletion. This analysis tells how well a set of questions (or items) measures one characteristic (or construct) and helps in identifying questions that are problematic. Item analysis helps in evaluating the correlation of related survey items with only a few statistics. The most important statistic is the Cronbach's Alpha, which is a single number that tells how well a set of items measures a single characteristic. This statistic is an overall item correlation where the values range between 0 and 1. Minimum values of 0.7 are often considered to be acceptable (Nunnally, 1978; George & Mallery, 2003). On the other hand, a Cronbach's Alpha of less than 0.7 may suggest that items in a questionnaire or subscale are poorly grouped and can be removed from the scale. Indeed, according to Nunnally and Bernstein (1994), item analysis can be employed as a preliminary factor analysis to drop or remove unsatisfactory items. The removal or deletion of items from factor analysis is done one at a time and each time after an item removal, a retest of factor analysis is performed. The computation of Cronbach's Alpha when a particular item is removed from consideration is a good measure of that item's contribution to the entire test's assessment performance (Singh, 2012). The Cronbach's alpha test is used to confirm the reliability of the scales. Issues of reliability and validity are also examined using item analysis and exploratory factor analysis. The Cronbach's Alpha of the constructs (before and after deletion of items, as appropriate) are

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shown in Tables 3.4. It is noted that the Cronbach's values for the constructs are high, varying between 0.890 and 0.954, and are well above the minimum acceptable value of 0.7 (Nunnally, 1978; Kaplan & Saccuzzo, 1993).

A.2 Item-Total Correlation

Item-total correlations are the correlations between each item and the total score from the questionnaire. They refer to the correlations of items with their variables (factors) (Malhotra, 2004; Lu et al., 2007). An item-total correlation test is performed to check if any item in the set of tests is inconsistent with the averaged behaviour of the others, and thus can be discarded. The analysis is performed to purify the measure by eliminating problematic items prior to determining the factors that represent the construct (Churchill, 1979). Removal of problematic items (mis-fitting items, poorly written items, multi-dimensional items) will increase the overall test reliability (Verma, 1999). If the reliability increases when an item is deleted, it indicates that the item is problematic and reduces test reliability instead of increasing it (Verma, 1999).

Table A.1 – Item-total Correlation Values of Questionnaire Items

VARIBALE	ITEM	ITEM-TOTAL CORRELATION													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Competency Standards	8	0.636	0.799	0.747	0.742	0.779	0.711	0.728	0.519						
Training Design	8	0.650	0.788	0.846	0.780	0.682	0.734	0.647	0.711						
Training Delivery	11	0.781	0.681	0.815	0.811	0.748	0.708	0.794	0.853	0.792	0.757	0.744			
Reaction	11	0.811	0.805	0.861	0.632	0.816	0.754	0.736	0.721	0.751	0.821	0.824			
Learning	6	0.727	0.690	0.799	0.852	0.813	0.643								
Behaviour	7	0.667	0.627	0.721	0.628	0.851	0.769	0.657							
Results	6	0.683	0.556	0.821	0.794	0.689	0.722								
Productivity	14	0.793	0.821	0.798	0.724	0.812	0.721	0.790	0.748	0.747	0.807	0.773	0.693	0.580	0.733
Organisational Commitment	9	0.684	0.809	0.830	0.784	0.890	0.794	0.878	0.812	0.729					
Job Satisfaction	10	0.699	0.729	0.633	0.717	0.665	0.724	0.783	0.811	0.803	0.647				
Valid N (list wise)	40														

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In a reliable scale, all items should correlate with the total. Item-total correlations were used to examine the contributions of specific items to their underlying construct. It is a score between an individual item and the sum of the scores of other items within the variable or construct. Their scores are used to screen items that might have to be deleted to improve the reliability of the scale and items to be retained for further analysis (Nunnally, 1978). The items that have low correlations are to be deleted. A small item-total correlation provides empirical evidence that the item is not measuring the same construct measured by the other items included. A correlation value of less than 0.3 indicates that the corresponding item does not correlate very well with the scale overall and, thus, it may be dropped (Everitt, 2002; Field, 2005). The item-total correlations of all the constructs (after finalising the items) are tabulated in Table A.1, all of which are well above the recommended level of 0.3 (Nunnally, 1978; Ferketich, 1991; Kline, 1993). If the correlation of an item is 0.3 or above, it is probably at least moderately correlated with most of the other items and make a good component of the relevant scale. On the other hand, an item with lower item-total correlation probably does not fit into the scale and be dropped. Kline (1993) recommends deleting any questionnaire items with item-total correlation of less than 0.3.

A3 Eigenvalues and Variance Explained

Eigenvalue is the sum of squared loadings for a factor, i.e., the latent root. It conceptually represents the amount of variance of a factor. It shows the variance explained by that particular factor out of the total variance. A popular and intuitive index in multivariate data analysis is the percentage of variance explained. The higher the percentage of variance a scale manages to explain, the more valid the scale seems to be. According to Hair et al. (2006), the latent root criterion (eigenvalues) is the most commonly used methods for determining whether items are loading on one factor. In exploratory factor analysis,

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following the Kaiser criterion (1958, cited in DeCoster, 1998), which recommends that only factors with eigenvalues greater than one are retained. Factors having eigenvalues greater than one are considered significant while those factors with eigenvalues less than one are considered insignificant and are thus discarded (Field, 2005; Kaiser, 1958 cited in DeCoster, 1998). This is because a factor with an eigenvalue of one accounts for as much variance as a single variable and the logic is that only factors that explain at least the same amount of variance as a single variable is worth keeping. Table A.2 shows total variance explained for organisational commitment where the eigenvalues for the factor is 6.45 that explained 71.7% of the variance for the factor. Here, only one factor is extracted with eigenvalue greater than one (eigenvalue = 6.449) which indicates that all the items for the scale measures only one construct.

Table A.2: Total Variance Explained for Organisational Commitment

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.449	71.654	71.654	6.449	71.654	71.654
2	.633	7.028	78.682			
3	.536	5.957	84.639			
4	.372	4.128	88.767			
5	.306	3.405	92.172			
6	.263	2.922	95.093			
7	.191	2.123	97.216			
8	.159	1.772	98.988			
9	.091	1.012	100.000			

Extraction Method: Principal Component Analysis.

It should be noted that the percentage of variance explained can be used as criteria for judging whether items in a scale load on one factor. It is not uncommon to consider a solution that accounts for 60% of the total variance as a satisfactory solution (Hair et al., 2006). In the pilot study, it can be noted from Table 3.1 that the total percentage of variance

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explained loadings on a single factor for all constructs varies between 61.1% and 71.7%. All of them met the commonly acceptable value of 60% as recommended by Hair et al. (2006). Henceforth, the values of total variance explained which load on a single factor for all constructs in the pilot study indicates that the scales used in the instrument are adequate and suitable for the main study.

A4 Scree Plot

The scree plot is a graph where the eigenvalues of each component is plotted (on the vertical axis) against the factors/components (on the horizontal axis). The scree plot is useful for determining the number of factors to retain and interpret. This test involves examining the graph and seeking for the natural bend or break point in the data where the curve flattens out. The factors with eigenvalues above the "break point" but not including the break itself, is usually the number of factors to retain and interpret (Stevens, 1992; Costello & Osborne, 2005; Williams, Brown & Osman, 2010).

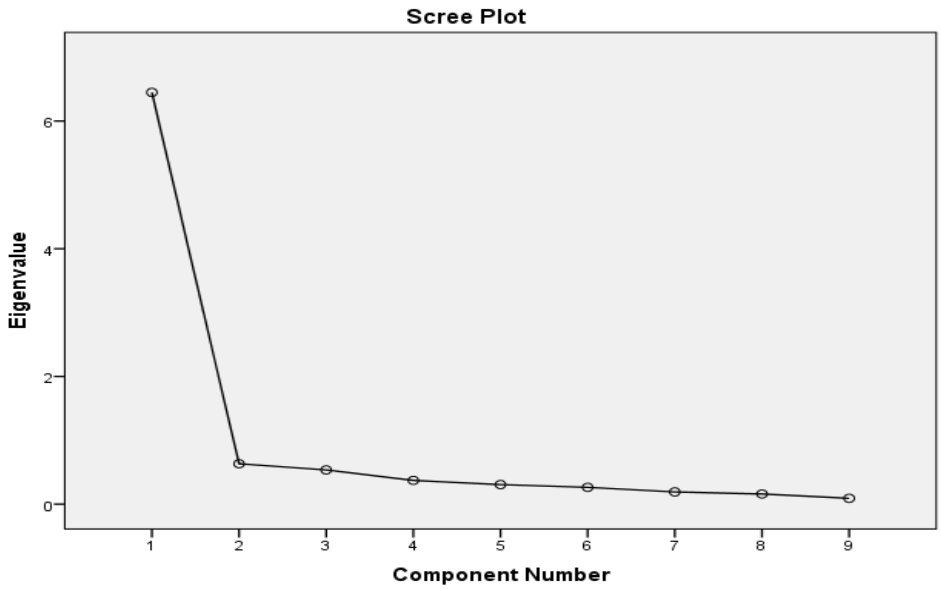
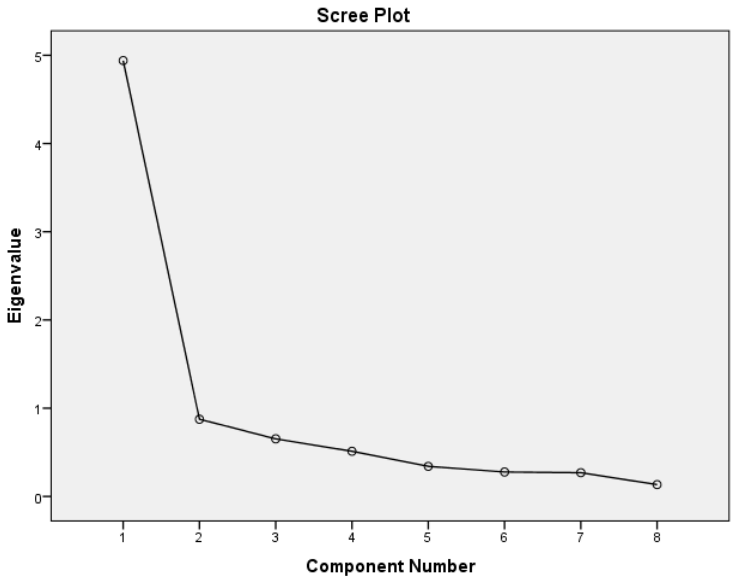


Figure A.2: Scree Plot: Organisational Commitment

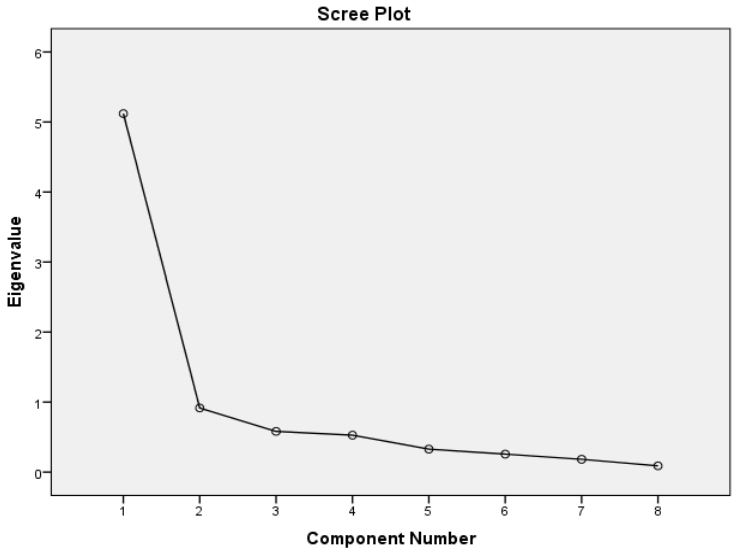
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In this case, Figure A.2 shows the scree plot developed for organisational commitment. The X-axis shows the component number and the Y-axis shows the eigenvalues. As noted from Table A.2 (total variance explained for organisational commitment), the eigenvalues for the first factor is 6.45 and, for the second factor, it is 0.63 (Eigenvalue < 1.0, and factors with eigenvalues of less than one are considered as insignificant and are thus discarded) (Kaiser, 1958 cited in DeCoster, 1998). The difference between the eigenvalue of the first factor and second factor is 5.82 which is much greater than 2. It can be noted that the "break point" forming the "elbow" is at factor 2, indicating that, as per the scree plot, one factor only can be extracted for the organisational commitment scale. Similarly, the scree plots developed for each of the other constructs (Attachment: Figure on scree plots for constructs) indicated that only a single factor is to be retained, indicating that the items in each construct measure the same things (Aiken, 1996).

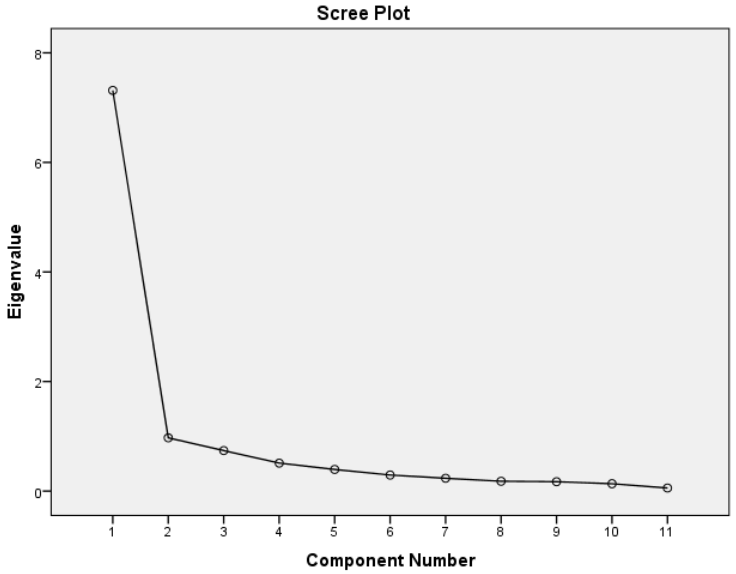
Attachment: Figure on Scree Plots for Constructs



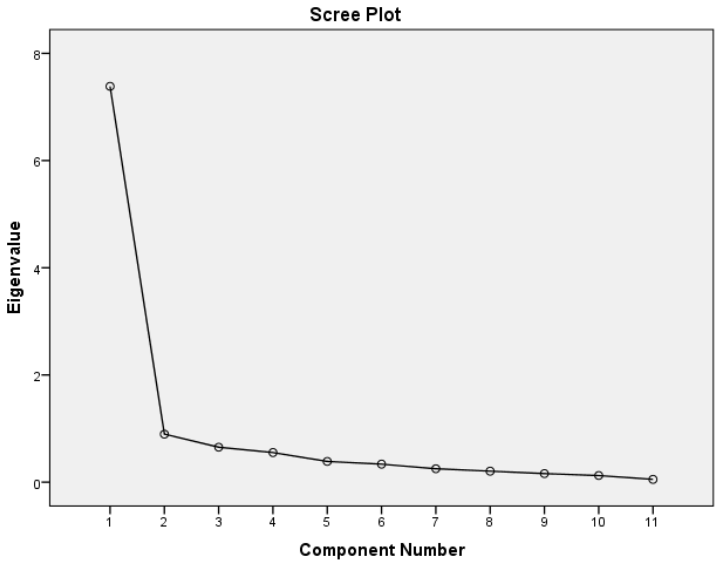
Scree Plot: Competency Standard



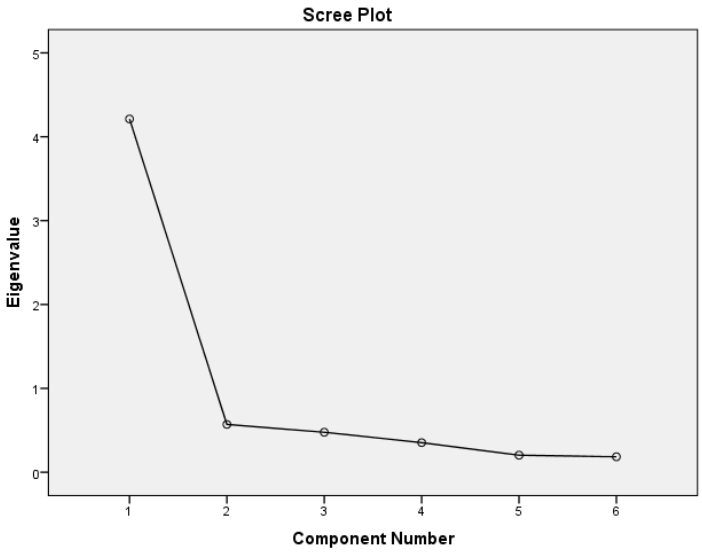
Scree Plot: Training Design



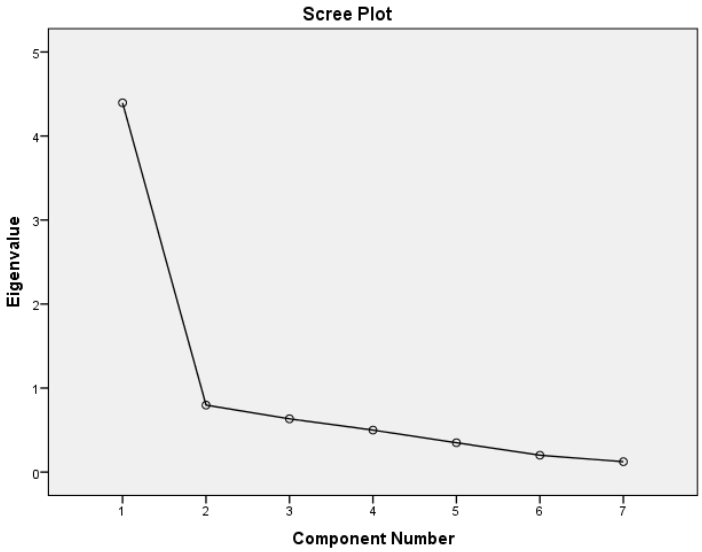
Scree Plot: Training Delivery



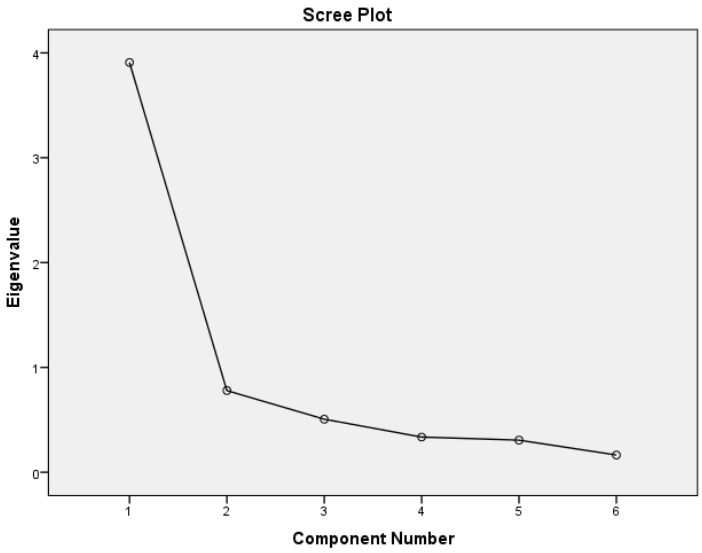
Scree Plot: Reaction



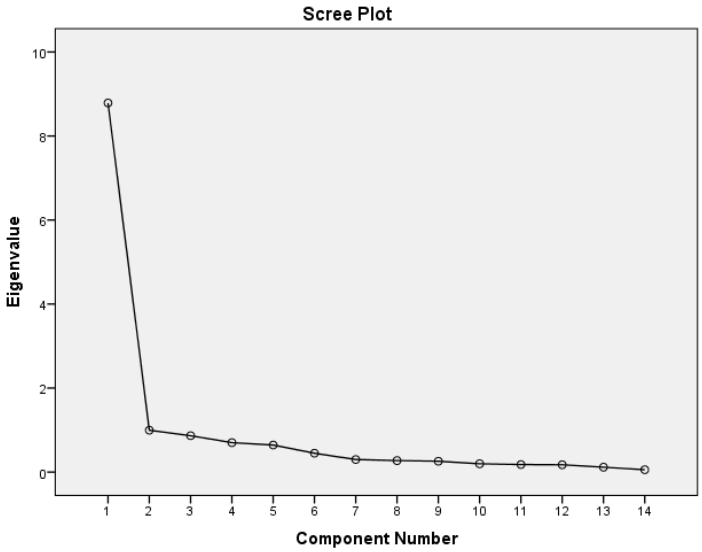
Scree Plot: Learning



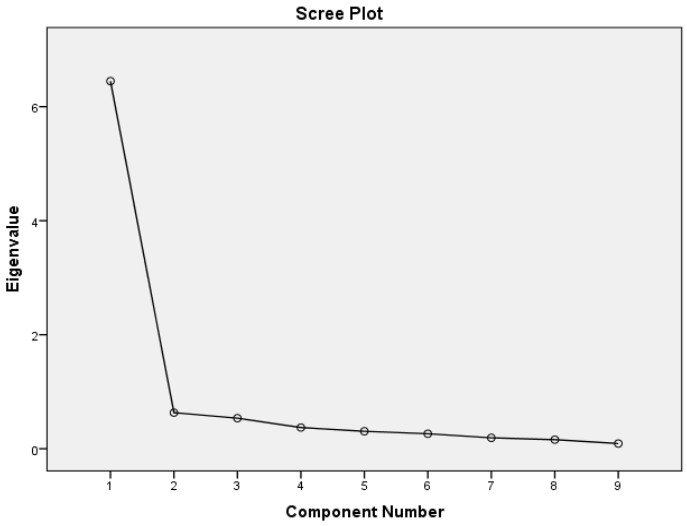
Scree Plot: Behaviour Change



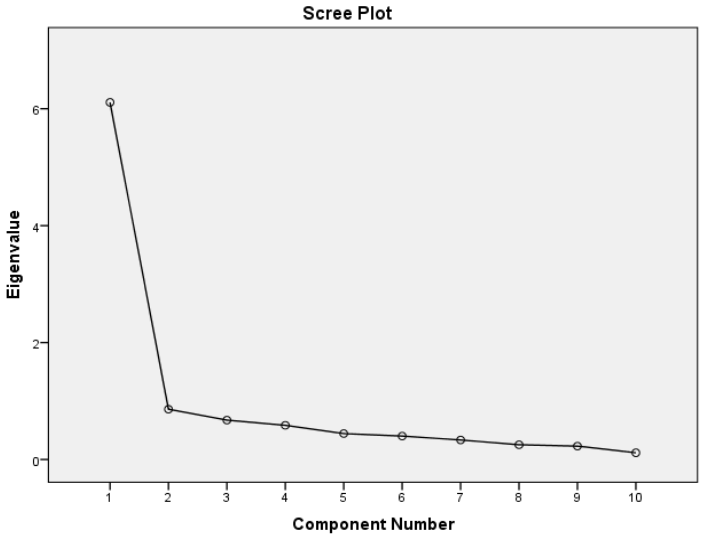
Scree Plot: Results



Scree Plot: Productivity



Scree Plot: Organisational Commitment



Scree Plot: Job Satisfaction

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Appendix B: Items removed from constructs during scale adaptation

No	Construct	Items Removed
1	CBT – competency Standards	They are skills defined by organisation/industry which an employee must be able to demonstrate at work.
2	CBT – competency Standards	They specify the minimum requirements to perform a particular task.
3	Productivity	Helping to minimise resignations in my section.
4	Job Satisfaction	Being able to keep busy all the time.
5	Job Satisfaction	The chance to work alone on the job.
6	Job Satisfaction	The chance to do different things from time to time.
7	Job Satisfaction	The chance to be somebody in the community.
8	Job Satisfaction	The ways my boss handles his/her workers.
9	Job Satisfaction	The chance to tell people what to do.
10	Job Satisfaction	The chance to do something that make use of my abilities.
11	Job Satisfaction	My pay and the amount of work I do.
12	Job Satisfaction	The way my co-workers get along with each other.
13	Job Satisfaction	The praise I get for doing a good job
14	Reaction	The equipment met all needs of the training.

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Appendix C: Structure of Close-ended Questionnaire

Section 1: Respondent's Characteristics
This part concerns your employment particulars. Please provide answer or select and tick the appropriate box as required.

1.0	Gender (select and tick appropriate box):	
1.1	Male	
2.2	Female	
2.0	Age range (select and tick appropriate box):	
2.1	20 - 29	
2.2	30 - 39	
2.3	40 - 49	
2.4	50 and above	
3.0	Highest Qualifications (select and tick appropriate box from below):	
3.1	SPM	
3.2	STPM or equivalent	
3.3	Diploma or equivalent	
3.4	Bachelor Degree	
4.0	How many years have you worked for your current employer? (Please tick the appropriate box from below)	
4.1	Below 5 years	
4.2	6 to 10 years	
4.3	11 to 15 years	
4.4	16 to 20 years	
4.5	More than 20 years	
5.0	Current Position: (Please circle the appropriate position)	
5.1	Technician Grade 1	
5.2	Technician Grade 2	
5.3	Technician Grade 3	
5.4	Technician Grade 4	
5.5	Technician Grade 5	
6.0	Trade Group (Please tick the appropriate box from below)	
6.1	Operations	
6.2	Mechanical	
6.3	Instrument	
6.4	Electrical	
6.5	Laboratory	
6.6	HSE	

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Section 2: Competency Standards

The following statements relate to the competency standards for the competency-based training programme you have attended. For each statement, please indicate to what extent you feel it is agreeable or disagreeable by circling the appropriate number on the scale. Please circle only one answer for each statement.

No.	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Competency standards reflect actual job performance at the workplace.	1	2	3	4	5
2	They provide consistent framework for developing competency based on organisational or industrial needs.	1	2	3	4	5
3	They are benchmarks for curriculum development, delivery of training, and assessment.	1	2	3	4	5
4	Managers assess/evaluate employees' performance based on competency required according to job specification.	1	2	3	4	5
5	Competency statements describe outcomes expected from performance of job roles.	1	2	3	4	5
6	They address what learners are expected to do rather than on what they are expected to learn about.	1	2	3	4	5
7	Competency standards define demonstrable behaviours to determine specific outcomes.	1	2	3	4	5
8	They help employees to deliver safe work.	1	2	3	4	5

`

Section 3: Training Design

The following statements relate to the training design of the competency-based training programme you have attended. For each statement, please indicate to what extent you feel it is agreeable or disagreeable by circling the appropriate number on the scale. Please circle only one answer for each statement.

No.	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The programme content meets trainees' needs.	1	2	3	4	5
2	The curriculum reflects training requirements for the job.	1	2	3	4	5
3	Learning outcomes are appropriately specified.	1	2	3	4	5
4	The conditions under which the skills must be demonstrated are identified.	1	2	3	4	5
5	Assessment criteria associated with each learning outcomes are appropriately specified.	1	2	3	4	5
6	Instructional materials are appropriately selected to develop learning modules.	1	2	3	4	5
7	The instructional aids (equipment, illustrations, etc.) used in training are very similar to real things trainees use on the job.	1	2	3	4	5
8	The methods used in training are very similar to how trainees do it on the job.	1	2	3	4	5

`

Section 4: Training Delivery

The following statements relate to the training delivery of the competency-based training programme you have attended. For each statement, please indicate to what extent you feel it is agreeable or disagreeable by circling the appropriate number on the scale. Please circle only one answer for each statement.

No	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	The activities the trainers used helped trainees know how to apply their learning on the job.	1	2	3	4	5
2	The trainers conducting the training understand how the trainees will use what they learn.	1	2	3	4	5
3	The trainers used examples that showed trainees how they could use their learning on the job.	1	2	3	4	5
4	What is taught in training closely matches trainees' job requirements.	1	2	3	4	5
5	The situations used in training are similar to those trainees meet on the job.	1	2	3	4	5
6	Trainers are appropriately trained to deliver instructions effectively.	1	2	3	4	5
7	Instructional techniques are used effectively.	1	2	3	4	5
8	Delivery of the course by a trainer/facilitator using an interactive approach.	1	2	3	4	5
9	Delivery of the course by a trainer/facilitator using a participatory approach.	1	2	3	4	5
10	Training is conducted in a suitably arranged environment.	1	2	3	4	5
11	Assessment is carried out against specified criteria fairly.	1	2	3	4	5

`

Section 5: Reaction

The following statements describe your general reaction towards the competency-based training and assessment programme you had attended. For each statement, please indicate to what extent you feel it is agreeable or disagreeable by circling the appropriate number on the scale. Please circle only one answer for each statement.

No	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	My impression of the training was excellent.	1	2	3	4	5
2	The training objectives were clearly stated in understandable terms.	1	2	3	4	5
3	The training met the defined objectives.	1	2	3	4	5
4	The facility met all needs of the training.	1	2	3	4	5
5	The training materials were easy to follow.	1	2	3	4	5
6	The training contents meet trainees' needs.	1	2	3	4	5
7	The instructor demonstrated thorough knowledge of the subject.	1	2	3	4	5
8	The instructor presented information in a clear manner.	1	2	3	4	5
9	The amount of time scheduled was adequate to meet the training objectives.	1	2	3	4	5
10	The training relates directly to my job responsibilities.	1	2	3	4	5
11	Overall, I enjoyed the training.	1	2	3	4	5

`

Section 6: Learning

The following statements describe your feeling about mastery of the training content of the competency-based training and assessment programme that you had attended. For each statement, please indicate to what extent you feel it is agreeable or disagreeable by circling the appropriate number on the scale. Please circle only one answer for each statement.

No	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	I feel I have had an increase in knowledge after the learning experience.	1	2	3	4	5
2	I feel I have had an increase in my present skills after the training.	1	2	3	4	5
3	I learned something I can apply immediately in my work.	1	2	3	4	5
4	The knowledge I acquired from the training related to my job.	1	2	3	4	5
5	The skills I learned from the training related to my job.	1	2	3	4	5
6	I feel I have to take responsibility to apply in the workplace what I have learned.	1	2	3	4	5

`

Section 7: Behaviour Change

The following statements describe the areas of behaviour change expected from the competency-based training and assessment programme you had attended. For each change area, please indicate to what extent you feel you have changed by circling the appropriate number on the scale. Please circle only one answer for each behaviour change area.

No	Behaviour change areas	Much worse	Somewhat worse	No change	Somewhat better	Much better
1	Sharing information.	1	2	3	4	5
2	Teamwork.	1	2	3	4	5
3	Preventing defects.	1	2	3	4	5
4	Safety at work.	1	2	3	4	5
5	Attitude toward job.	1	2	3	4	5
6	Attitude toward co-workers.	1	2	3	4	5
7	Attitude toward management.	1	2	3	4	5

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Section 8: Results

The following statements describe your feeling about achievement of improved results arising from the competency-based training and assessment programme you had attended. For each performance benchmark, please indicate to what extent you feel improvements have been made by circling the appropriate number on the scale. Please circle only one answer for each performance benchmark item.

No	Performance benchmarks	Much worse	Somewhat worse	No change	Somewhat better	Much better
1	Quantity of production.	1	2	3	4	5
2	Quality of work.	1	2	3	4	5
3	Safety of plant operation.	1	2	3	4	5
4	Housekeeping.	1	2	3	4	5
5	Employee attitudes.	1	2	3	4	5
6	Employee morale.	1	2	3	4	5

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Section 9: Productivity

The productivity questionnaire has been used to measure the employee productivity work outcome. As an employee of Company A, you have many responsibilities. The following are just a few of them. For each statement, please indicate to the contribution you feel you have been able to make to your company in each area in the past year by circling the appropriate number on the scale. Please circle only one answer for each statement.

No.	Factors of Productivity	Slight	Some	Medium	High	Very High
1	Helping to meet overall company goals.	1	2	3	4	5
2	Helping to meet the goals of my section.	1	2	3	4	5
3	Helping to keep cost of supplies down in my section.	1	2	3	4	5
4	Helping to keep cost of labour down in my department.	1	2	3	4	5
5	Providing a high quality of service in my section.	1	2	3	4	5
6	Helping to support professional/ educational growth of all employees in my section.	1	2	3	4	5
7	Assisting my section to set useful goals.	1	2	3	4	5
8	Assisting my section to meet its productivity goals.	1	2	3	4	5
9	Helping my section to meet deadlines.	1	2	3	4	5
10	Helping to accomplish a large amount of work in my section.	1	2	3	4	5
11	Being well organised.	1	2	3	4	5
12	Helping my section to be accurate or free of errors.	1	2	3	4	5
13	Keeping my sick leave usage low.	1	2	3	4	5
14	Helping my section to solve its problem.	1	2	3	4	5

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Section 10: Organisational Commitment

Organisational Commitment Questionnaire is designed to identify respondents' organisational commitment. The following set of statements describes your commitment to the organisation. For each statement, please indicate to what extent you feel it is agreeable or disagreeable by circling the appropriate number on the scale. Please circle only one answer for each statement.

No.	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation to be successful.	1	2	3	4	5
2	I talk up this organisation to my friends as a great organisation to work for.	1	2	3	4	5
3	I would accept almost any type of job assignment in order to keep working for this organisation.	1	2	3	4	5
4	I find that my values and the organisation's values are very similar.	1	2	3	4	5
5	I am proud to tell others that I am a part of this organisation.	1	2	3	4	5
6	This organisation really inspire the very best in me in the way of job performance.	1	2	3	4	5
7	I am extremely glad that I chose this organisation to work for over others I was considering at the time I joined.	1	2	3	4	5
8	I really care about the fate of this organisation.	1	2	3	4	5
9	For me, this is the best of all possible organisations for which to work.	1	2	3	4	5

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Section 11: Job Satisfaction

The following set of statements describes your degree of satisfaction in your current job. For each statement, please indicate to what extent you feel it is agreeable or disagreeable by circling the appropriate number on the scale. Please circle only one answer for each statement.

No.	Items	Very dissatisfied	Dissatisfied	Can't decide	Satisfied	Very satisfied
1	The competence of my supervisor in making decisions.	1	2	3	4	5
2	Being able to do things that don't go against my conscience.	1	2	3	4	5
3	The way my job provides for steady employment.	1	2	3	4	5
4	The chance to do things for other people.	1	2	3	4	5
5	The way company policies are put into practice.	1	2	3	4	5
6	The chances for advancement on this job.	1	2	3	4	5
7	The freedom to use my own judgement.	1	2	3	4	5
8	The chance to try my own methods of doing the job.	1	2	3	4	5
9	The working environment in the organisation.	1	2	3	4	5
10	The feeling of accomplishment I get from the job.	1	2	3	4	5

`

Appendix D: Structure of Open-ended Questionnaires

Section 1: Respondent's Characteristics

This part concerns your employment particulars. Please provide answer or select and tick the appropriate box as required.

1.0	Gender (select and tick appropriate box):	
1.1	Male	
2.2	Female	
2.0	Age range (select and tick appropriate box):	
2.1	20 - 29	
2.2	30 - 39	
2.3	40 - 49	
2.4	50 and above	
3.0	Highest Qualifications (select and tick appropriate box from below):	
3.1	SPM	
3.2	STPM or equivalent	
3.3	Diploma or equivalent	
3.4	Bachelor Degree	
3.5	Others (Please specify)	
4.0	How many years have you worked for your current employer? (Please tick the appropriate box from below)	
4.1	Below 5 years	
4.2	6 to 10 years	
4.3	11 to 15 years	
4.4	16 to 20 years	
4.5	More than 20 years	
5.0	Current Position: (Please circle the appropriate position)	
5.1	Executive	
5.2	Manager	
6.0	Trade Group (Please tick the appropriate box from below)	
6.1	Operations	
6.2	Mechanical	
6.3	Instrument	
6.4	Electrical	
6.5	Laboratory	
6.6	HSE	

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Section 2: Open-ended Questions on impact of competency-based training

<table>
<tr><td>No</td><td>Questions</td></tr>
<tr><td rowspan="2">1</td><td>Candidates' Reaction:
How does competency-based training influence trainees' reaction?</td></tr>
<tr><td>Answer:</td></tr>
<tr><td rowspan="3">2</td><td>Candidates' Learning:
How do you believe that the trainees have learned new knowledge and skills as a result of the competency-based training? What evidence do you have for this?</td></tr>
<tr><td>Answer:
<table>
<tr><td colspan="2">Knowledge</td><td colspan="2">Skills</td></tr>
<tr><td>New Knowledge</td><td>Evidence</td><td>New Skill</td><td>Evidence</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td rowspan="3">3</td><td>Behaviour Change:
What behavioural changes have you observed in the job performance of the trainees as a result of the competency-based training programme?</td></tr>
<tr><td>Answer:
<table>
<tr><td colspan="2">Behaviour changes</td><td>Your observations</td></tr>
<tr><td>1</td><td>Willingness to share information</td><td></td></tr>
<tr><td>2</td><td>Willingness to work with others (Teamwork)</td><td></td></tr>
<tr><td>3</td><td>Willing or sensitivity to prevent defects</td><td></td></tr>
<tr><td>4</td><td>Capability of maintaining safe plant operation</td><td></td></tr>
<tr><td>5</td><td>Attitude toward job</td><td></td></tr>
</table></td></tr>
</table>

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	6	Attitude toward co-workers	
	7	Attitude toward management	

4 Results:
What is the effect of the competency-based training on business results? Indicate whether they have been increased, reduced, improved and, etc. on each of the following items.

Answer:

No	Results criteria items	Improvements/changes observed
1	Quantity of production	
2	Quality of work	
3	Safety of plant operation	
4	Housekeeping	
5	Employee attitude	
6	Employee morale	

5 Productivity
What is the effect of competency-based training provided by employer on productivity?

Answer:

6 Organisational Commitment: In your view, how committed are the trainees to the organisation?

Answer:

7 Job Satisfaction:
Overall, how satisfied would you say the trainees are with their job?

Answer:

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Appendix E: Pilot Study Details

A pilot study of the questionnaires is a small-scale study of the target populations undertaken to explore areas that may need improvements. It involves pretesting the questionnaires on members of the target populations or participants with similar characteristics (Cooper & Schindler, 2011). Such pilot study on the questionnaire, according to Cohen et al. (2000), has several functions, principally to increase the reliability, validity and practicality of the questionnaires. These tests help in identifying pitfalls (Royce, Hymowitz, Corbett, Hartwell & Orlandi, 1993). Furthermore, pre-testing the questionnaire is to ensure that the items are easily understood by the respondents/informants, detect obvious problems regarding the length and sequencing of questions, avoid sensitive questions, and ensure the data produced by the questionnaire could be analysed (Easterby-Smith et al., 2002).. Any such problems uncovered in the pilot study are addressed accordingly to make the instruments better and clearer for data collection. Pilot study of these instruments adds more time to the research process, but it is an essential task (Salant & Dillman, 1994; Krosnick, 1999).

E.1 Pilot Study Sampling Details

There are two sample sizes involved, one for collecting data to validate both the open-ended and the close-ended questionnaires for face validity and content validity and the other for collecting data to validate the close-ended questionnaire for construct validity and reliability.

Firstly, for validation of the open-ended and close-ended questionnaires in terms of face validity and content validity, a sample of six experts selected purposively is used, in line with recommendations advocated by authors in the literature. Rubio et al. (2003), for example, recommended for six to 20 respondents with good expertise and knowledge to

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review and provide feedbacks about the research instruments. For content validity, the number of experts, as recommended by Umar and Su-Lyn (2011), Strickland, Strickland, Wang, Zimmerly and Moulton (2013) should be not less than two, but not more than six.

In this pilot study, face validity and content validity of the questionnaires were determined and confirmed by the judgement of the six experts as follow:

(i) Three senior academics from the Faculty of Cognitive Sciences and Human Development of Universiti Malaysia Sarawak (UNIMAS) including the research supervisor;

(ii) HRD manager; and

(iii) Two line managers from the company under study.

They have good expertise and knowledge to review and provide feedbacks about the research instruments. The inputs provided by these experts can offer concrete suggestions to improve the content of a research instrument (Rubio et al., 2003). Furthermore, by choosing experts in related fields to validate the research instruments is a recommended practice as they are more credible (Rubio et al., 2003) and it is unlikely a higher authority may question the validity of the research instruments (Lawshe, 1975).

Secondly, in the case of assessment of construct validity and reliability for the close-ended questionnaire, a sample size of 30 selected systematically from members of the target population (trainees) is used for this pilot study of close-ended questionnaires. This is in line with expert recommendations about the appropriate size of questionnaire pretests as have been advocated in the literature (Champion, 1981; Dawson, Klass, Guy & Edgley, 1991; Hill, 1998). Hill (1998), for example, suggested 10 to 30 participants for pilots in survey research while Dawson et al. (1991) recommended that a sample size of 30 is

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adequate for a pilot study. The number of subjects in this pilot study of close-ended questionnaires was increased to 40 to account for possible attrition.

E.2 Pilot Study Procedures

There are two sets of procedures for the pilot study. One of the procedures is for collecting data to validate both the open-ended and the close-ended questionnaires for face validity and content validity while the other set is for collecting data to validate the close-ended questionnaire for construct validity and reliability.

E.2.1 Face Validity and Content Validity of Questionnaires

A set each of the open-ended and close-ended questionnaires were distributed to the six selected experts. A covering letter, with an explanation of the purpose and the importance of the study, was attached to the questionnaires. The experts are requested for their cooperation to evaluate the survey questionnaire for factors such as flow of questions, logic, spelling and language, and clarity of the questionnaire (Kvale, 2007) and provide feedbacks. They are also requested to determine if the questions are relevant to the subject under study and the content area adequately covered or sampled.

A self-addressed envelope was also attached for the feedbacks on the questionnaires to be returned to the researcher. The experts were given one week to return their comments on the questionnaires. Feedbacks were received from the six experts by the end of one week. The feedbacks are reviewed by the researcher in consultation with his supervisor and, where appropriate, revisions made to the instrument to accommodate the experts' feedbacks.

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E.2.2 Construct Validity of Close-ended Questionnaire

In the case of the pilot study of the close-ended questionnaires for construct validity, 40 set of the questionnaires were distributed to the pilot study participants through their respective managers for them to complete.

A covering letter, with an explanation of the purpose and the importance of the study, was attached to the questionnaires. The selected respondents were requested to complete the survey questionnaire. Instructions were given to the respondents regarding completion of items in the questionnaire. The respondents were assured of their anonymity and freedom to decide if they want to participate in the study or not.

A self-addressed envelope was also attached for the completed questionnaires to be sealed and returned to the researcher through their managers. The respondents were given one week to return the completed questionnaires. By the end of one week, all 40 of them returned their completed questionnaire, showing a response rate of 100%. The feedbacks from the respondents are reviewed by the researcher in consultation with his supervisor and, where appropriate, revisions made to the instrument to accommodate the experts' feedbacks.

E.3 Pilot Study Respondents' Demographic Details

The demographic details of the two groups of respondents/informants are described in this section. Six subject matter experts are selected to determine the face validity and content validity of both the open-ended and close-ended questionnaires. Three of these subject matter experts are senior academics from the Faculty of Cognitive Sciences and Human Development of Universiti Malaysia Sarawak all of whom possess doctoral degrees in the related areas of expertise. They also have wide experience in research methodology in social science studies. The other three experts are practitioners from the company under

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study. They are the HRD Manager and two senior line (functional) managers, all of whom are holders of Bachelor degrees.

Table E.1: Respondents' Demographics (Sample Profile)

Respondent	Sub Profile	Frequency	Percent
Gender	Male	38	95.0
	Female	2	5.0
Age	20-29	8	20.0
	30-39	27	67.5
	40-49	4	10.0
	>50	1	2.5
Education	SPM	6	15.0
	STPM/equivalent	7	17.5
	Diploma	27	67.5
	Bachelor Degree	0	0
Trade Groups	Operations	22	55.0
	Mechanical	6	15.0
	Instrument	5	12.5
	Electrical	3	7.5
	Laboratory	2	5.0
	Health, Safety & Environment (HSE)	2	5.0
Job Positions	Technician Grade 1	7	17.5
	Technician Grade 2	8	20.0
	Technician Grade 3	12	30.0
	Technician Grade 4	10	25.0
	Technician Grade 5	3	7.5
Service Length	<5 year	5	12.5
	6-10	23	57.5
	11-15	9	22.5
	16-20	1	2.5
	>20 years	2	5.0

In the case of assessment of construct validity and reliability for the close-ended questionnaire, the participants are employees of an oil and gas company in Malaysia. For this group, the descriptive statistics used to analyse the respondents' demographic background include gender, age, education levels, length of service, current position, and

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trade groups or disciplines. They are described in terms of frequency count and distribution. Table E.1 shows that the majority of respondents were male (95%), ages between 30 and 39 years old (67.5%), diploma holders (67.5%), grade 3 technicians (30%), operations trade group (55%), and employees who worked between six to ten years (57.5%) in the company.

E.4 Pilot Study Preliminary Analysis

As the scales used have to be tested for validity and reliability before conducting any further analysis, data purification is vitally important. The questionnaires returned from respondents were screened for completeness. All the 40 sets of questionnaires returned were found with complete datasets; there were no incomplete questionnaires or missing values. This number exceeds the minimum sample of 30 participants as required by probability sampling technique showing that it may be analysed using inferential statistics (Sekaran & Bougie, 2011).

The valid datasets were then keyed into and kept in the SPSS data files. In order to ensure the integrity of the data, the researcher conducted a proof reading of the computer printouts against the original data. Three entries were found wrongly entered and they were corrected accordingly by referring to the original data in the questionnaires. Preliminary analysis was performed on the datasets to screen for outliers and distribution normality based on guidelines prescribed by Tabachnick and Fidell (2001) before proceeding to perform reliability and validity tests.

E.4.1 Outliers

Outliers are cases with scores that are quite different from the remainder of the sample, either much higher or much lower (Pallant, 2013). Box plot is the graphical techniques used for identifying outliers in this study. In the box plots, any scores that IBM SPSS considers as outliers appear as little circles (o) with the ID number of the case attached

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if they are 1.5 box-lengths and as asterisks (*) with the ID number of the case attached if they are more than three box-lengths from the edge of the box (Pallant, 2013).

The data is checked for outliers through exploring it using boxplot in SPSS Version 23. Seven outliers were detected. They were found to be outliers because of their extreme case scores of one. The outliers detected were then treated by increasing the case score of each of the outliers by one unit (Tabachnick & Fidell, 2001). The outliers are shown in Table E.2.

Table E.2: Outlier Analysis of the Pilot Datasets

Item	Case number	Scores	Reason for being an outlier	Treatment of outlier
CS6	14	1	Extreme case value of 1	Value increased to 2
DN3	29	1	Extreme case value of 1	Value increased to 2
RN1	29	1	Extreme case value of 1	Value increased to 2
DY11	29	1	Extreme case value of 1	Value increased to 2
LG1	29	1	Extreme case value of 1	Value increased to 2
RS4	25	1	Extreme case value of 1	Value increased to 2
PY13	6	1	Extreme case value of 1	Value increased to 2

E.4.2 Distribution Normality

Normality is assessed numerically by using skewness and kurtosis tests (Tabachnick & Fidell, 2001). Skewness and kurtosis values provide information about the distribution of the scores of each of the constructs under study (Tabacknick & Fidell, 2001). The skewness value gives an indication of the symmetry of the distribution while kurtosis provides information about the central peak of the distribution. A skewness and kurtosis value of 0 indicates that the distribution is perfectly normal. In order to test the assumption of normality numerically, the acceptable skewness should be within the range of ± 2.0 and kurtosis values within the range of ± 3.0 (Hair et al., 2006).

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Table E.3: Descriptive Statistics – Skewness and Kurtosis

Variables	Items	Skewness	Kurtosis	Normality
Competency Standards	8	- 0.494	- 0.552	Normal
Training Design	8	- 0.475	- 0.300	Normal
Training Delivery	11	- 0.728	0.569	Normal
Reaction	11	- 0.403	0.213	Normal
Learning	6	- 0.003	- 0.576	Normal
Behaviour Change	7	- 0.165	0.233	Normal
Results	6	- 0.198	- 1.070	Normal
Productivity	14	- 0.728	0.569	Normal
Organisational Commitment	9	- 0.266	- 0.952	Normal
Job Satisfaction	10	0.063	- 0.918	Normal
Valid N (list wise)	40			

In this pilot study, the results obtained for skewness and kurtosis for each of the constructs are summarised in Table E.3. It can be noted that there is no skewness and kurtosis issue found. Both skewness and kurtosis for the datasets indicate that they are normally distributed as the skewness and kurtosis for the questionnaire responses are within the acceptable range of ± 2.0 and ± 3.0 respectively (Hair et al., 2006).

Appendix F: Letter Requesting Permission to Conduct Research
(For anonymity, manager name, company name and address have been removed)

Fakulti Sains Kognitif dan Pembangunan Manusia
Faculty of Cognitive Sciences and Human Development

UNIMAS/TNC(AA)-05.02/04-05 Jld. 02 (67)

18 June 2015

Dear Sir,

Permission to Conduct Research in the Fulfillment of Postgraduate Degree

With reference to the above matter, I would like to request permission for the following student from the Faculty of Cognitive Sciences and Human Development, Universiti Malaysia Sarawak, to conduct surveys and interviews at your organization.

Student name	:	Chong Thin Kiong (11011518)
Telephone	:	0138305098
Program	:	PhD in Human Resource Development
Research title	:	Competency-Based Training And Its Impact And Effectiveness On Organizational Performance In The Oil And Gas Industry In Malaysia
Principle supervisor	:	Associate Prof. Dr. Rusli Ahmad
Telephone	:	082-581839
Fax	:	082-581866
Email	:	arusli@fcs.unimas.my

His research is purely for academic purpose and all information will be kept secure and treated as strictly confidential. The support and cooperation given by your organization for the success of this research is highly appreciated.

Thank you.

Sincerely,

Assoc. Prof Dr. Rusli Ahmad
Supervisor

MSC-Status

94300 Kota Samarahan, Sarawak, MALAYSIA | Tel + 60 82 581 578 | Faks + 60 82 581 579

Appendix G: Written Permission to Conduct Research
(For anonymity, manager name, company name, logo and address have been removed)

8th July 2015

Associate Prof. Dr. Rusli Ahmad
Faculty of Cognitive Sciences and Human Development
Universiti Malaysia Sarawak (Unimas)
94300 Kota Samarahan
Sarawak, Malaysia

Dear Sir,

RE: Permission to Conduct Research in the Fulfillment of Postgraduates Degree

We refer to your letter dated 18th June 2015.

We wish to inform that the company has no objection for student **(Chong Thin Kiong – 11011518)** to conduct surveys and interviews at Malaysia LNG Sdn. Bhd.

The management would like to emphasize on the subject to your assurance that research is purely for academic purpose and all information will be kept secure and treated as strictly confidential. All the data obtained from Malaysia LNG Sdn. Bhd should not be identifiable in any published results.

Shall you have any concerns or require additional information regarding this matter, please contact **Khalida Binti Che Rambli** at **086 – 856 426** or **khalida.rambli@petronas.com.my**.

Thank you.

Yours faithfully,

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Appendix H: Cover Letter for Survey Questionnaire

I am a research candidate at Universiti Malaysia Sarawak (UNIMAS). I will conduct a research study on competency-based training and its effectiveness and impact on organisational performance in the oil and gas industry in Malaysia as an academic exercise, for which your response to the questionnaire is greatly appreciated. As a company that has implemented competency-based training and assessment for its non-executive technical staff, your management has agreed for me to conduct this research on site.

In this study, I want to find out from you about the implementation of competency-based training and assessment as you are or have been directly involved. I want your honest opinion about the implementation of competency-based training and how you feel about it. This is important and I therefore earnestly request that you will give your honest opinion and complete this questionnaire.

For the purpose of this study, competency-based assessment is similar to competency-based training. Although competency-based training suggests a training system, it is primarily an assessment system. This is because training relating to aspects of performance have to be assessed in order to certify competency and the way to measure whether the standard has been met in the competency-based training system is by assessment.

It should be noted that relatively little research has been done in Malaysia on competency-based systems implemented at the workplace. The findings of this study may be useful for formulation of strategies by companies in the Malaysian oil and gas industry and indeed in other industrial sectors to meet the challenges of implementing a competency-based training and assessment system. Because of your valuable knowledge and direct involvement in implementation of competency-based training, you will be able to add value and contribute to this cause.

Your participation is entirely voluntary. Your name is not required.

I can assure you that no one will suffer adverse consequences or be harmed from these research activities and your privacy, confidentiality, dignity, rights, and anonymity will be upheld to the best of my ability. The final report will not contain information about the company and your individual response.

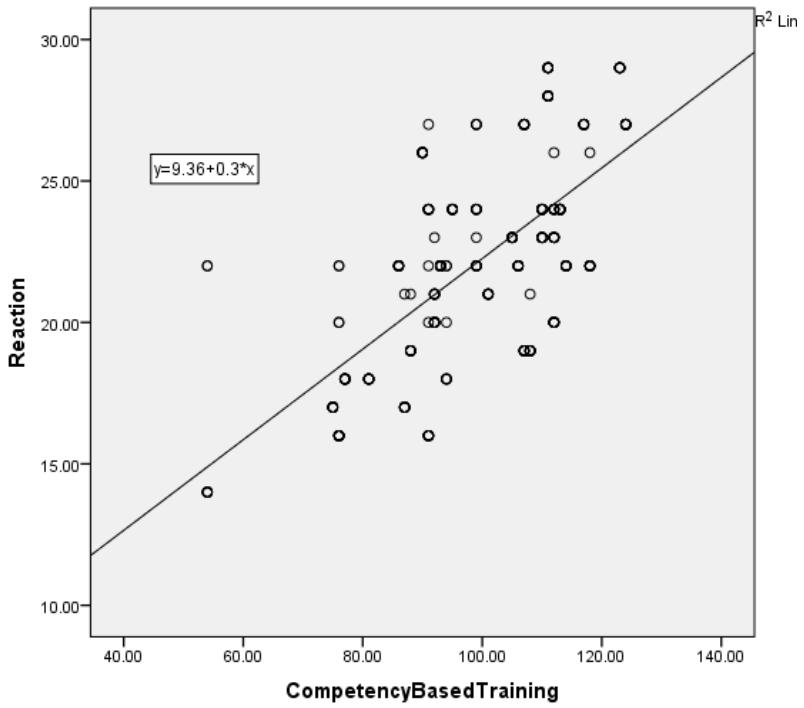
There are 10 pages in this questionnaire. The study takes about 25 minutes to complete. Please complete the questionnaire honestly and put it in the pre-addressed envelope and return it or give it to the person who distributed the questionnaire for its return to me at No. 7, Jalan Tuan Khatib, 97000 Bintulu, Sarawak, Malaysia, Tel. No: 086-853323; Mobile: 013-8305098; Email: Chong.thinkiong@gmail.com.

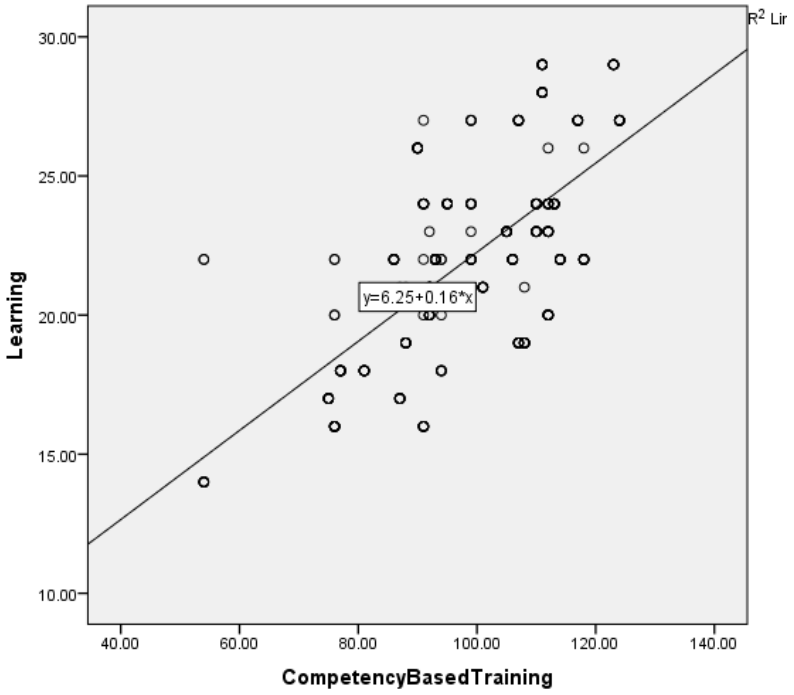
Thank you for your support in my research study.

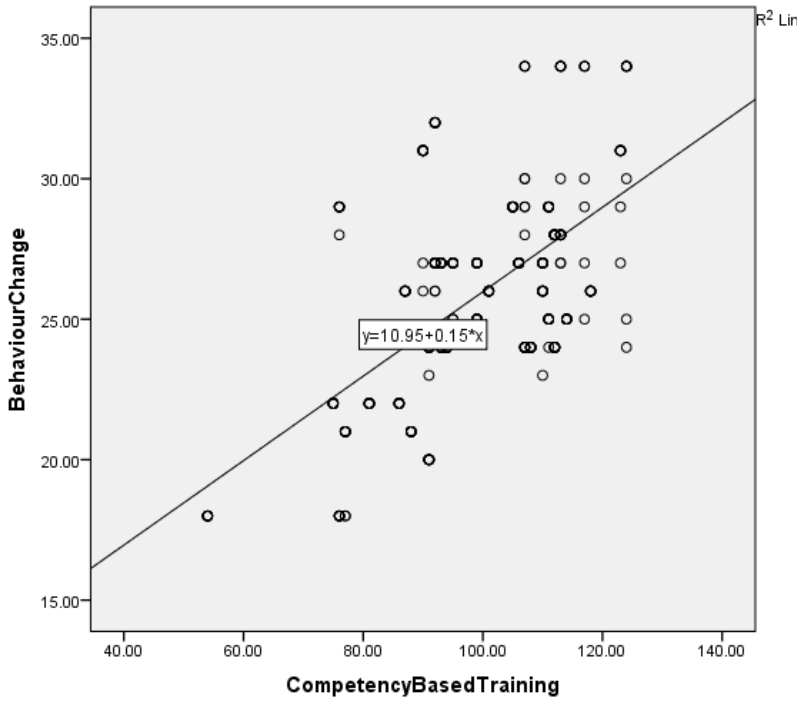
Chong Thin Kiong

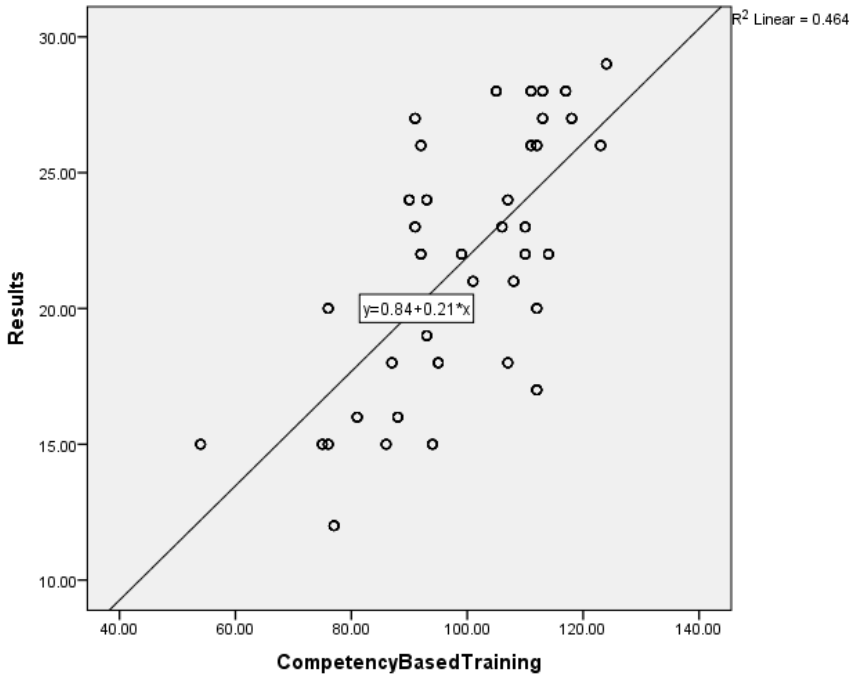
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Appendix I: Scatter Plots for Constructs

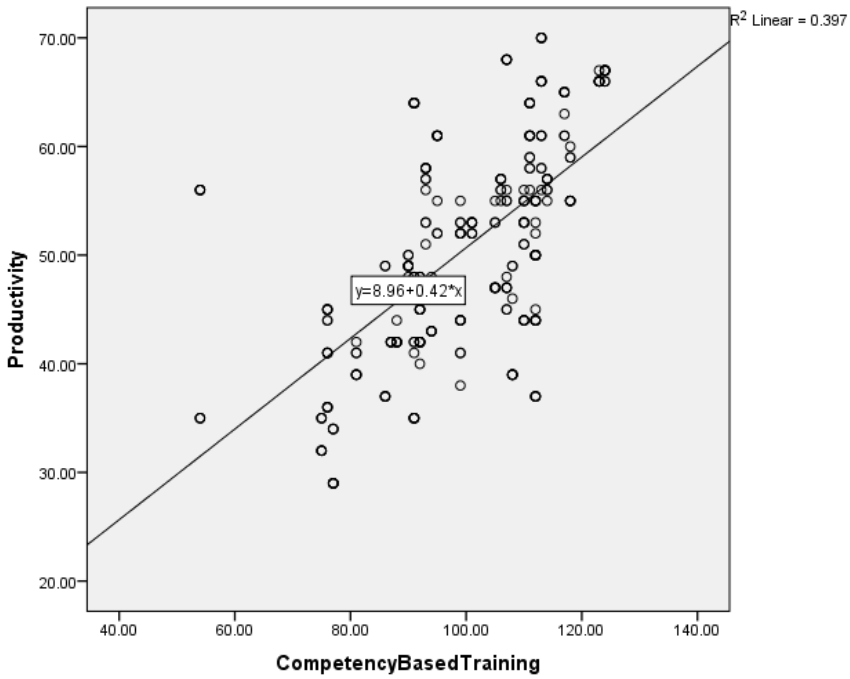


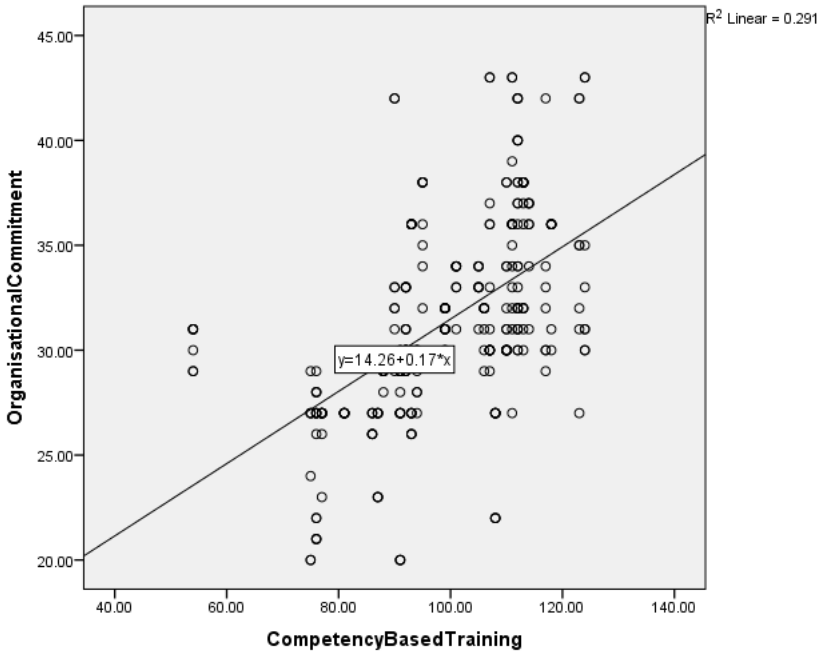



R2 Lin
35.00
30.00
25.00
20.00
15.00
BehaviourChange
y=10.95+0.15*x
40.00
60.00
80.00
100.00
120.00
140.00
CompetencyBasedTraining

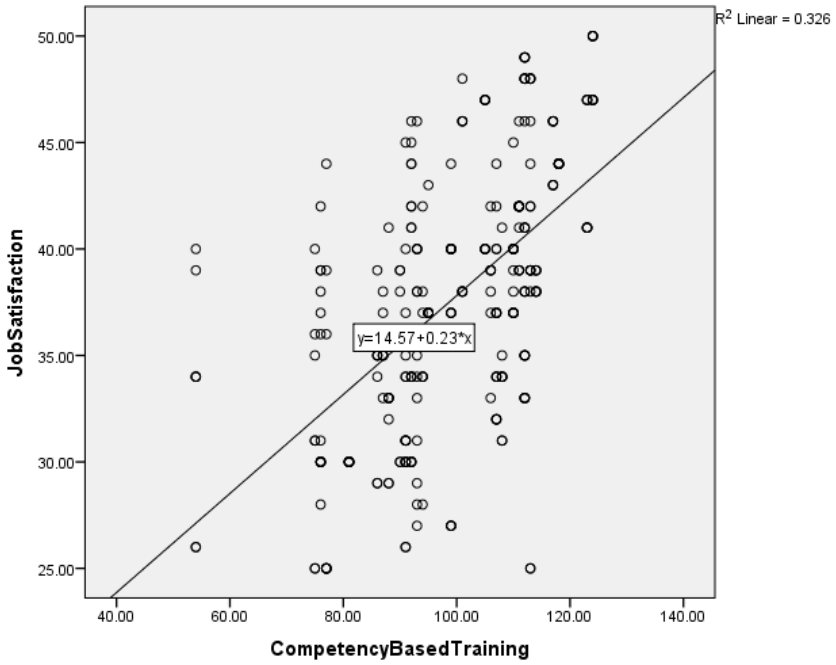

R2 Linear = 0.464
30.00
25.00
20.00
15.00
10.00
Results
y=0.84+0.21*x
40.00
60.00
80.00
100.00
120.00
140.00
CompetencyBasedTraining

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R² Linear = 0.397
y=8.96+0.42*x
Productivity
CompetencyBasedTraining
70.00
60.00
50.00
40.00
30.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00


R² Linear = 0.291
y=14.26+0.17*x
OrganisationalCommitment
CompetencyBasedTraining
45.00
40.00
35.00
30.00
25.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00

`


R2 Linear = 0.326
50.00
45.00
40.00
35.00
30.00
25.00
JobSatisfaction
y=14.57+0.23*x
40.00
60.00
80.00
100.00
120.00
140.00
CompetencyBasedTraining

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Appendix J: Content Analysis Details

Question 1	What is your view on the perceptions that the trainees (technicians and operators) are satisfied with the competency-based training programme?
Theme	Reaction
Informant	Statements
1	Trainees have *positive attitude* and *seems satisfied* with the programme.
2	Majority of trainees *are satisfied* with the competency-based training programme. They *are happy* about the training.
3	*Trainees liked* the programme .They felt the training *was relevant* to them. Majority of trainees seemed *satisfied* with the competency-based training programme.
4	Trainees believed the training was *worthy of their effort and hard* work. The training gave them a *comfortable and good experience*. They seemed satisfied with the programme.
5	The *trainees enjoyed the training*. They *felt good about their participation* in the training.
6	They seem very happy and satisfied about the programme. They considered the training good and showed positive attitudes about it.
7	Positive. They are *satisfied* with the programme. They felt that the training gave them good experience in providing them with knowledge and skills.
8	Agreed that trainees *are satisfied* with the competency-based training programme. They felt that the training *gave them up-skilling and progression* opportunity. It was good and worthy of the time and hard work.
9	Trainees are *satisfied.* They are *happy* about the competency-based training programme. They considered it a good experience to gain knowledge and skills.
10	Trainees are satisfied.
11	Staff are *happy and satisfied* with the training. They felt that the level of their participation in the *training was good and considered it a comfortable experience.*
12	Trainees are *satisfied* with the competency-based training programme .They considered the *training a good use of their time and it is relevant to their work.*
13	Trainees are *happy and satisfied*.
14	Time spent on the training was considered a good experience and *felt satisfied about the training.*

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Question 2 (knowledge)	How do you believe that the trainees have learned new knowledge and skills as a result of the competency-based training? What evidence do you have for this?	
Theme	Learning (Knowledge)	
Informant	New Knowledge	Evidence
1	(1) Flow measuring instrument (2) Control valve positioner	Passed knowledge assessment on the new knowledge
2	(1) Earthing and lightning protection system. (2) Electrical control for diesel engine fire water pump	Passed knowledge assessment Passed knowledge test
3	(1) working principles of control valves (2) Control valve actuator	Passed knowledge test Passed knowledge test
4	(1) Gear box and its overhaul (2) Gas turbine combustion inspection	Passed Knowledge assessment
5	(1) Absorption and regeneration processes (2) Operating parameters for acid gas removal	Passed Knowledge test
6	(1) Principles of dehydration (2) Principle of mercury removal of natural gas.	Passed Knowledge test
7	(1) Principles of alignment. (2) Safety valves and operating principles.	Passed Knowledge test
8	(1) Philosophy and principles of gas sampling system. (2) Principles on determination of biological oxygen demand in water.	Passed Knowledge test
9	(1) Electrochemistry (2) Principles of titration.	Passed Knowledge test
10	(1) Principles and purpose of hydrotesting. (2) Sources of vibration	Passed Knowledge test
11	(1) Principles of heavy hydrocarbon removal (2) Reason for circulating liquefied natural gas during holding mode	Passed Knowledge test
12	(1) Transformer protection system (2) Power generation	Passed Knowledge test
13	(1) Principles of liquefaction (2) Sub cooling and end flash.	Passed Knowledge test
14	(1) Principles and purpose of boiling off liquefied natural gas (2) Sub-cooling	Passed Knowledge test

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Question 2 (Skill)	How do you believe that the trainees have learned new knowledge and skills as a result of the competency-based training? What evidence do you have for this?	
Theme	Learning (skill)	
Informant	New Skill	Evidence
1	(1) Calibrate flow measuring instrument (2) Perform functional test on single control loop	(1) As demonstrated by the skill tests (2) Demonstrated ability in the skill test.
2	(1) Perform periodic maintenance on earthing and lightning protection system (2) Perform periodic maintenance on electrical control for diesel engine fire water pump.	Certified competent in skill test Certified as competent in skill test.
3	(1) Ability to overhaul control valves (2) Able to remove control valve actuator	Passed skill test
4	(1) Perform gear box overhaul (2) Perform gas turbine combustion inspection	Certified competent by assessors
5	(1) Operate the absorber column (2) Operate the degeneration column	Passed skill test
6	(1) Operate the dehydration unit (2) Operate the mercury removal unit	Certified competent by assessors
7	(1) Perform alignment on pump, compressor, turbine and gearbox (2) Perform safety valves servicing and testing.	Passed skill test
8	(1) Sampling of liquefied natural gas (2) Determination of biological oxygen demand (BOD)	Assessed as competent in the tasks
9	(1) Perform PH analysis (2) Perform analysis by Potentiometry	Assessed as competent by assessors.
10	(1) Conduct hydrotesting (2) Take vibration measurements	Passed skill test
11	(1) Operate the heavy hydrocarbon removal column (2) Operate liquefied natural gas circulation pump	Assessed as competent by assessors.
12	(1) Perform functional test of transformer protection system	Assessed as competent in the tasks

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	(2) Perform operation of plant power generators.	
13	(1) Operate refrigerant compressors (2) Operate main cryogenic exchanger	Assessed competent,
14	(1) Operate the boil-off compressors (2) Operate the refrigerant system	Certified as competent

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Question 3	What behavioural changes have you observed in the job performance of the trainees as a result of the competency-based programme?		
Theme	Behaviour change (Sharing Information, Teamwork, Preventing defects)		
Informant	Sharing Information	Teamwork	Preventing defect
1	They *are more willing to share new information* to others.	*More effective teamwork* can be observed after the training.	*Increase in awareness* to do prevention action.
2	Trainees *are more willingly share information* among themselves	Trainees are *more willing to work with others in a team*.	*More conscious of defects* during their walkabouts. They discussed such matter among themselves to *improve defect prevention.*
3	The trainee *shares information among themselves*	Trainees are more *willing to work with others* in order to close their competency gaps faster	*More conscious of defects*
4	More willing to share information among themselves and with superiors	*More willing to work with others*	*More sensitive to defect prevention*
5	Candidates were seen *sharing information and experience* on how competency-based training.	Competency-based training candidates were seen doing preparation for assessment and arrangement of portfolio together. They *can work as member of a team*.	The *sensitivity of preventing and reacting to defect* is high.
6	Trainees *are willingly sharing what they have learned* in the training by discussing such information in meeting or discussion groups.	*Willing to work with others as a tea*m. Positive thinking towards activities given. Generally, the trainees can work as a shift team well.	*Willingly* trying their best *to prevent defects and solve any operational problems*.
7	They benchmark from each other, *sharing information learned*	They are *more willing to work with colleagues and customers*. They *work as a team*.	*Awareness about willing or sensitive to defect prevention* and they also have been seen to encourage each other to do the same.

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8	*Willingly share information.*	*Cooperative and more willing to work with colleagues.*	*More sensitive to defect prevention*.
9	They have platforms to *share information* such as weekly toolbox talks and shift handover log books.	*Team work is good* especially in 5S activities. Troubleshooting of problems and support plant turn around or plant commissioning.	Always *report* to superior if they encounter *problem that can lead to defects*.
10	Eager to tell new experience to superior and colleagues.	Work in a group to complete jobs with high quality and safety.	There is always a party to act as quality assurance/quality control.
11	Trainees *willingly share what they had learned*	More *cooperative and willing to work with others.*	*More willing or sensitive to solve operational problems to avoid defects*. Defects found were *reported for* rectification promptly.
12	Trainees are *more willing to share* information among themselves.	Trainees are *more willing to work with customers and colleagues.*	*More conscious of defects*. They discuss such matter among themselves to improve defect prevention.
13	*Trainees shared information* among themselves as part of their learning	*More willing to work with others*.	*More conscious of recognizing defects and their prevention*.
14	More *willing to share*	*Willing to work with others*	They became more *sensitive to defect prevention*.

`

Question 3	What behavioural changes have you observed in the job performance of the trainees as a result of the competency-based programme?			
Theme	Behaviour changes (Safety at work, Attitude toward co-workers, Attitude toward management)			
Informant	Safety at Work	Attitude toward Job	Attitude toward Co-workers	Attitude toward Management
1	More *awareness on safe plant operation and more observant in safety in carrying out work efficiently.*	*More focus on job* execution.	*More tea*mwork can be observed. *Better respect for other workers* can be seen.	*More respect and cooperation* towards their management.
2	*More aware of hazards*. Improved capability and confidence.	*Improved attitude* in carrying out work.	*Improved respect* for other workers. They seemed *willing to cooperate* with each other to *work as member of the work team*.	*Improved attitude* toward management. They do make suggestion to management for improvement in work and environment.
3	*Better capability and confidence.*	*More observant in carrying out work*	*Better respect for other* workers	*No blaming attitude* as individual is responsible for his own progress.
4	*Increased capability and confidence in maintaining safe plant operation*	*More positive and enthusiastic toward job. Work diligently and safely.*	*More cooperative and tolerant* to co-workers.	*Respect* instructions from management.
5	Through training, they learned correct way of operating equipment and process.	*Motivated and positive attitude*.	Demonstrated *positive attitude towards co-workers.*	Shown *positive attitude and support* to management.
6	Obey rules and regulations. Able to *operate*	*More positive attitudes with open mind.*	*More helpful and tolerant.*	Contribute to better/fruitful idea and *more positive*

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	plant safety and efficiently.			*attitude toward management.*
7	They are *competent to carry out their job roles* ensuring consistent work outcomes and *maintaining safe plant operation.*	*More positive toward job.*	*Cooperative and able to work as a team.*	*Positive. Respectful of management.*
8	Trainees are *competent and capable of carrying out their job roles safely maintaining safe plant operation.*	*Positive attitude toward job*	Cooperative and *helpful to co-workers.*	*Cooperative* toward management directive.
9	Never fail to *comply to work permit requirement.*	*Always timely* in sampling and producing data.	*Good cooperation* in discharging responsibility, no official complaint received.	*Good.* Never heard of serious accusation or disagreement.
10	Raise concern to higher authority and *always operate with standard operating procedures (SOP).*	*Safety first and* work until completion where possible.	Act as buddy – to *teach each other*	*More respectful of orders* from management.
11	Understand the working principles and design of equipment and *followed SOP to operate plant safely.*	Staff are more *confident* and their *attitude is positive.*	*More cooperative.*	*Respect instructions* given by management.
12	*More aware of hazards. Improved capability and confidence in maintaining*	*Improved attitude* in carrying out work. *More careful.*	*Improved respect for other workers.* They seemed more *willing to cooperate* with each other to	*Improved attitude* toward management. They appreciate the career path created as a

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	safe plant operations.		*work as a member of a team.*	result of the implementation of competency-based training by management.
13	More capable and *confidence in safe plant operations*.	*Very positive* in carrying out job.	*More respect and cooperative* with other workers.	*More respect* toward supervisors and managers.
14	More capable of *maintaining safe operation.*	*More confide*nt in carrying out their job.	They *are more cooperative and respect* their co-workers	Shown *greater respect t*o superiors.

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Question 4	What is the impact of the competency-based training on business results?		
Theme	Results (Quantity of production, Quality of work, Safety of plant operation)		
Informant	Quantity of production.	Quality of work.	Safety of plant operation
1	*Increment of* quantity of production.	Quality of work *improved.*	Safer work environment as employees *are more aware of safety* on the job.
2	*Increased quantity of production.*	*Improved quality of work*	*Improvement on safety*
3	*Increased production quantity*	*Improved quality*	*More careful on safety*
4	*Increased production quantity*	*Improved quality of work*	More *safety conscious* on plant operation
5	*Increased quantity of production*	*Improved quality.*	*Improved safety of plant operation*
6	*Good results*. Plant production targets are consistently met.	*Excellent work quality.*	Shown *more awareness of and demonstrated* on plant *operational safety*
7	*Improved.*	*Improved quality of work.*	*Improved.*
8	*Increased*	*Improved quality.*	*Improved*
9	Improved. Excellent/no complaint from customers.	*Excellent*/no complaint from customers, both internal and external.	*Excellent.* no permit to work violation.
10	Strive to *meet production target*	*Ensure check* and balance in all works	*Conduct tool box session* before work.
11	*Increased.*	*Improved.*	*Improved*
12	*Improvement in production quantity*	*Improved quality of work.*	*Improved safety in operating plant and equipment.*
13	*Increased*	*Improved.*	*Improved*
14	*Increased*	*Improved.*	*Improved*

`

Question 4	What is the impact of the competency-based training on business results?		
Theme	Results (Housing keeping, Employee attitude, Employee morale)		
Informant	Housekeeping.	Employee attitude.	Employee morale.
1	*Better housekeeping maintained* every time after work.	*Improved attitude to* work, co-workers, and customers, including management.	*Improved morale.*
2	*Improved* housekeeping	*Better attitude* to achieve good results for self and team	They are *competent* and *confident resulting in improved morale.*
3	*Better housekeeping*	Self-driven to determine own pace of progress	*Improved morale*
4	*Improved housekeeping*	*Improved attitude*	*Increased morale.*
5	Difficult to say that competency-based training has improved housekeeping or not because housekeeping is always the focus of management.	*More positive attitude.*	Some staff indicated *improved morale*; others are neutral. However, there was no indication that competency-based training had reduced the morale of staff.
6	Generally *improved housekeeping* in the work areas.	Employees' attitudes towards work, colleagues, management and customers *are much better than before.*	Employees' *morale are higher* and many are role models in their work areas.
7	Plant is *maintained to a very high level of housekeeping.*	*Improved.*	*Improved.*
8	*Improved.*	*Improved.*	*Improved.*
9	*Good.* Achieved "4S" last year.	*Good,* No disciplinary action reported.	*Excellent/*no report on low morale.
10	*Conduct housekeeping after completion of jobs.*	Strive for *excellence* and make it happen.	Keeping it *high* all the time.

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11	*Housekeeping rounds were consistently conducted* in their assigned areas and after completion of jobs.	*Improved.*	*Improved.*
12	*Improved housekeeping.*	*Improved attitude*	They are competent and confident resulting in *improved morale*.
13	*Improved*	*Improved*	*Improved*
14	*Improved*	*Improved*	*Improved*

`

Question 5	What is the impact of competency-based training provided by employer on productivity?
Theme	Productivity
Informant	Statements
1	The training provided trainees with competency or capability to carry out their work roles *safety and efficiently, thus increasing their productivity* and productivity of the company. They helped to achieve company goals.
2	Resulted in *better productivity*.
3	*Better productivity*
4	*Higher productivity*. They helped to achieve overall company objectives.
5	It helped *increased productivity* as competency increased although difficult to measure how much productivity increased.
6	*Productivity improved.*
7	*Productivity improved*. They helped to achieve the goals of my section and also goals of the company.
8	*Improved.*
9	*Productivity improved*. Staff are competent, confident in their duty.
10	*Productivity improved* as employees had acquired new knowledge and skill. Improvement in the level of competency and *increased level of productivity*. Also, more jobs can be carried out within same period.
11	*Productivity improved*.
12	Resulted in *better or improved productivity*.
13	Improved productivity
14	*Productivity improved*

`

Question 6	How committed are the trainees to the organisation?
Theme	Organisational Commitment
Informant	Statements
1	They are *very committed* to the organisation and work. They felt proud to work for the company.
2	Employees are *fully committed*.
3	*Fully committed*.
4	*Fully committed*. The company, its management and co-workers inspired the trainees to work to their best ability.
5	Employees *are committed* to the organisation. Of course there are some who seem to be less committed but the number is small and the impact is not obvious.
6	Good results and behaviour *show all the commi*tment. On a scale of 1 – 10, I mark their commitment level as 9.
7	Employees *are committed* to their work and the organisation doing their level best to achieve improved results. They do not seem to have intention to leave company.
8	Employees are *committed to the organisatio*n
9	*Highly committed*. Work packages are timely and precisely implemented to achieve completion target.
10	Employees are *committed to their work and the organi*sation.
11	They are *highly committed*.
12	Employees are *fully committed*.
13	Employees are *committed* to their organisation.
14	Employees are *committed*.

`

Question 7	Overall, how satisfied would you say the trainees are with their job?
Theme	Job Satisfaction
Informant	Statements
1	Trainees are *highly satisfied with their own jo*b, I am also very satisfied with their job.
2	Generally, Trainees are *satisfied with their job*.
3	They are *satisfied.* The job provide the trainees with steady employment. Chances for promotion on the job is good and dependent on the achievement of relevant competencies for the job. Working environment in the company is excellent. They felt they have achieved something in doing the job.
4	They are *satisfied.* Promotion is based on merit and based on completion of training and assessment of work related training.
5	Based on observation *on their commitment toward work, they seemed to be satisfied* with their job. Currently, the turnover rate among trainee is low, may reflect that most trainees *are satisfied* with their job. Even though there are some trainees seem to be dissatisfied with their job, we cannot conclude that it is because of the competency-based training/assessment as there are many other contributing factors.
6	*They are satisfied with their job.* On a scale of 1 – 10, their satisfaction level is considered as 8.5.
7	*They seem to be highly satisfied.*
8	They are *highly satisfied*. They liked the job. They liked the working environment,
9	*Highly satisfied*.
10	They seemed to be *highly satisfied*.
11	*Highly satisfied*.
12	They are *highly satisfied* with their job in the company
13	They seemed to be *highly satisfied*
14	*Highly satisfied*