



IMPROVING CONTINUING PROFESSIONAL DEVELOPMENT FOR HEALTH WORKERS: IS LEARNING THEORY RELEVANT?

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ABSTRACT

Background: Many in the health professions would agree that continuing professional development (CPD) plays a key role in the quality of services they provide to their clients. However, how effectively CPD should be delivered is still contentious. This paper argues that CPD is about learning and can only be effective if it is designed while taking into account the relevant theoretical underpinnings drawn from the learning theory. **Objectives:** An external desk research was conducted to achieve 3 objectives: 1) to decipher the concept of learning in the context of CPD; 2) to examine what health professionals learn; and 3) to examine how health professionals learn basing on learning theory. **Methods:** Secondary data sources were searched using medical and public health data bases as well as data bases on CPD and its influence on health workers' performance. After obtaining material, a rapid assessment was conducted and selection done basing on relevance, and if the study was conducted from the year 2000 onwards. **Results:** It was established that the concept of learning is variously understood depending on learning theories being employed; that professionals learn verbal information, intellectual skills, motor skills, attitude and cognitive skills; and that they learn mainly through stimulation of senses, reinforcement, experiences, mental processing, social interaction and in a bid to fulfil needs. **Conclusion:** It was concluded that continuing professional development is about learning and that its designers should employ learning theory to grasp the factors that affect the learning process if they want to use it as a tool to improve professional practice.

Keywords: *Continuing Professional Development, Health Workers, Learning Theory.*

1. INTRODUCTION

Continuing professional development (CPD) is widely seen as an instrument of updating professionals' knowledge and skills to improve or sustain desirable levels of performance [1,2]. Because of this, health care professions have made CPD mandatory for annual professional licensure [1,2]. Yet, how effectively it should be delivered is still a matter of contention. This contention could be addressed if CPD is planned and executed in the context of learning. This paper argues that since CPD is about learning, it can only be effective if it is designed while taking into account lessons drawn from the learning theory. Yet, the designers and providers of CPD programmes for health professionals are usually technical experts who do not have an adequate conceptualisation of learning theory to better grasp the individual differences that affect the learning process. This paper is designed to help such professionals and, in the process, improve CPD planning and delivery, and ultimately contribute to improvements in professional practice.

Although literature on learning theories is burgeoning, the link between these theories and continuing professional development (CPD) approaches is still malnourished. Moreover, most of the available information on learning is used in the context of the teaching profession. There is need to review different learning theories and compare them with findings from research on CPD of health workers in order to assess their relevance on the basis of empirical evidence. This paper attempts to fill this gap. The paper adds value to the existing body of knowledge not only by examining the theories in the context of health care professions but also by designing a framework that links each theory with its learning method and showing relevance for the CPD of health professionals.

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2. MATERIALS AND METHODS

2.1 Data sources

Secondary data sources were searched using medical and public health data bases as well as data bases on continuing professional development and its influence on health workers' performance. The main articles were obtained mainly from

MEDLINE, ERIC, HINARI and the Cochrane library. To avoid the risk of missing important studies, alternative words were used in the search engine to capture relevant studies that could have used other terms. For instance, continuing medical education (CME), continuing nurse education (CNE) because these are components of CPD.

2.2 Selection criteria

After identifying massive material of studies covering related topics, a rapid assessment was conducted to identify the ones that were more relevant to this study. Papers were selected if the research was about techniques and effectiveness of continuing professional development for health workers. The other consideration was if the study was conducted from the year 2000 onwards. However, earlier studies would be considered if there was repeated reference to them by the more recent studies.

3. RESULTS

3.1 Deciphering the concept: What is learning?

It was established that learning does not have a single acceptable definition mainly due to its complexity and dynamics which tend to change as people and conditions change. Indeed, Merriam and Caffarella (1991. p.123) posited that "learning defies easy definition and simple theorising" [3]. This view was reinforced by Brockbank and McGill (1998, p.32) who concluded that "there is no science or theory of learning which embraces all the activities involved in human learning" [4]. Nonetheless, attempts to define learning have been made, many of them basing on the different theoretical schools of thought. Some people have defined learning as a process by which "behaviour changes as a result of experiences" (Maples and Webster, 1980. p.1; Hergenhahn, 1988). These people view learning as an externally induced effort [5,6], a view held under the behaviourist theory. There are "need theorists" who view learning as "a form of self-actualisation" especially of the higher level needs – need to know, need to understand, and need to be competent – (Sahakian, 1984, p.438) [7]. Then there are those as Knowles (1980) and Rogers (1983) who view learning as accumulation and interpretation of experiences [8,9]. This is just to mention but only a few. This paper agrees with the definition by Jones et al (2006, p.377) which seems to capture most of the above characteristics of learning:

Learning involves the acquisition of knowledge and revised ways of thinking as well as confirming, amending or rejecting attachments to prior beliefs, knowledge and ideas that have served well previously. In addition, all mature learners may well reflect on their learning, and learn how to learn, developing their own styles and approaches. Learning hence is an activity contributing to the enrichment of the individual [10].

It is important to emphasise that not even the above definition captures all aspects of learning. None does. This paper does not aim to exhaust the debate on learning, but to shade light on it as concept for better understanding of the learning theory and its implications for CPD. The Chartered Institute of Personnel and Development (2005) categorises CPD into two stages: learning which is seen as acquisition of new knowledge and skills; and application which means utilising the learned knowledge and skills on the job [11]. Yet, the definitions earlier quoted above suggest that these stages are interwoven and difficult to separate. Burns (1995, p.233) for instance, argues that someone may show behaviour change long after a CPD event (learning intervention) has occurred [12]. This seems to challenge the post-tests usually administered at the end of training sessions to show evidence of learning. It calls for another follow-up evaluation to capture the behaviours that will be manifest much later. It also means that the processes of learning and behaviour change (change in professional practice) are not easy to untangle, reinforcing the need to apply learning theory in the design and delivery of CPD.

3.2 Learning outcomes: what do health professionals learn?

It might sound ridiculous to ask what health professionals learn. It is easy to rush to give generalised answers – they learn new knowledge or new skills or new attitudes. But without answering this question in more explicit terms, we cannot utilise the learning theory to design appropriate and effective continuing professional development interventions. Gagne and Medsker (in Noe 2002, p.107) argue that development of new capabilities should be related to specific learning outcomes – things that people actually learn [13]. They group learning outcomes into five main categories:

Verbal information – concrete facts such as data from records, labels and names which is the information that employees need and always apply to their jobs. For example, a doctor needs to know the different types of medical equipment and facts related to quality assurance in health care.

Intellectual skills – concepts and rules which are critical to problem solving, client care and performance improvement. For example, a senior nurse needs to know how to design a system of patient flow, performance appraisal of junior nurses, organising a patient counselling session etc.

Motor skills – how to use physical abilities in order to execute certain actions. For instance, a midwife needs physical abilities to assemble a delivery kit, sterilise the maternity equipment, conduct deliveries etc.

Attitudes – a combination of beliefs and feelings that influence a person to behave in a certain way. Important work-related attitudes for health professionals may include job interest in medical care, inner drive to alleviate suffering and feeling of belongingness to the organisation.

Cognitive strategies – employees' decision regarding how to learn; for instance, how to remember certain important issues, what problems to attend to first and how to solve problems. It is about one's thinking and learning processes.

The above classification of learning outcomes is fundamental to the design of continuing professional development activities especially setting the learning objectives and determining the effective approaches to professional development. For instance, whereas changing professionals' attitudes would require strategies aimed at altering organisational culture, developing intellectual skills would require professional discussions and scientific conferences while motor skills would need on-the-job training emphasising use of practical sessions and demonstrations. Often times, a mix of these strategies is necessary as a combination of skills is always required by the professionals.

3.3 How do professionals learn? A review of the learning theories in the context of continuing professional development

The linkage between learning theory and CPD has neither been extensively reviewed nor explicitly acknowledged. While this paper attempts to make this link, it should be clarified that the question of how health workers learn is subject of much debate. The learning theories remain the primary source of knowledge. However, there are several theories each relating to different aspects of the learning process, which does make its understanding necessarily unproblematic. Moreover, many theories tend to describe the learning process rather than factors responsible for learning. The following sections provide the different theoretical schools of thought on how people learn.

3.3.1 Learning through stimulation of senses

This is explained by '*sensory stimulation theory*'. The basic premise of this theory is that effective learning occurs when the human senses are stimulated. Laird (1985), the main protagonist of this theory, quotes research which found out that the vast majority (75%) of knowledge held by adults is learned through seeing. Hearing is ranked the next most effective sense (13%) while other senses - touch, smell and taste account for 12% of what people know [14]. This ranking may be contentious – indeed it suggests that blind persons know 25 percent of what their counterparts with eyesight know - something rather ridiculous. Yet, the role of senses in learning remains undisputable. The theory implies that learning can be enhanced by stimulating the senses, and that greater learning takes place when multiple senses are stimulated.

By appealing to a wide stimulation of senses, this theory reinforces the use of several modern CPD techniques especially the visual learning aides like charts, maps, pictures and interactive multi-media including videos and computers. A number of studies [15,16] have established that the use of interactive methods among doctors is an effective method for learning and improvements in clinical practice. Yet, literature suggests that the dominant methods of delivering CPD in the health professions are lectures and unsolicited manuals which have been proved to be ineffective approaches to professionals' learning and development [17,18].

3.3.2 Learning through reinforcement

The key theories that explain this type of learning are '*behaviourism*' and '*neo-behaviourism*'. The central element of behaviourism, also known as reinforcement theory, is 'stimulus-response' learning (Thorndike, 1999). It explains how a given stimulus leads to a certain response (learning) and suggests that desired responses can be reinforced by rewards [19]. Its main protagonist, Skinner (1974), believed that behaviour is a function of its consequences and therefore the learner will repeat the desired behaviour if positive reinforcement follows that behaviour [20]. Following this logic, punishment represents "an unpleasant outcome after a behaviour leading to a decrease in that behaviour" [21]. *Neo-behaviourism*, which emerged as an offshoot of behaviourist theory, also considers stimulus - response learning but in addition to external factors (observable stimulus and response) seeks to understand internal or unobservable factors such as the heart or mind of the learner which are considered as mediating factors between stimulus and response.

From a CPD perspective, this theory suggests that effective learning which leads to modification of performance requires the CPD provider to first identify what outcomes the professionals find most positive and then link them to the new knowledge and skills. These could include knowing easier or better ways to perform one's job, acquisition of promotional opportunities, job security, and higher pay. The point here is that professionals learn faster if the CPD programme is associated with the outcomes they value.

3.3.3 Learning through social interaction

This is mainly explained by *social learning theory*, which puts emphasis on the individual learner and the social context in which the learning takes place. Albert Bandura (1982), the exponent of this theory, believed that people learn new skills or

behaviour after observing others whom they regard as models and seeing the consequences of their behaviour [22]. Like the reinforcement theory, social learning theory recognises that a person who observes certain behaviour being rewarded is likely to adopt a similar behaviour. However, the theory adds that learning is influenced by the learner's self efficacy which is self judgement on one's ability to successfully learn knowledge and skills. In this case, a professional with high self efficacy is more likely to learn and persevere even under circumstances that may be uncondusive while one with low self efficacy is likely to withdraw both physically and psychologically.

Fortunately, self efficacy, according to Gist and Mitchell (1992), can be increased through verbal encouragement, demonstration which helps to demystify feared aspects of certain activities and making reference to the learners' past accomplishments to boost their confidence [23].

Social learning theory has a number of educational applications for continuing professional development in the health professions especially in the use of models, and mentoring. Most of the techniques of conducting on-the-job training used in health care organisations such as demonstrations, support supervision, case analysis and bedside coaching can be said to be associated with social learning theory. However, lack of proper theoretical grounding in the workings of this theory, by health professionals, may cause failure to follow all the involved steps and lead to diminished learning benefits.

3.3.4 Learning through mental processes

Cognitive learning theory

The proponents of cognitive theory of learning argued by Brunner (1966) and Ausubel et al. (1978), also known as 'information-processing' theory hold that learning takes place when the information taken in by the learner undergoes several processes in the learner's cognitive structures or brain. Information processing begins when a message or stimulus (e.g. sound, smell, picture, etc) from the environment is received by the receptors (ears, eyes, nose, and skin) [24, 25]. The message is registered in the senses and stored in short memory after which it is coded for storage in long term memory. A search process follows during which a response to the stimulus or message is organised. This response is the actual learning outcome e.g. cognitive skills, motor skills, intellectual skills or attitude. Then there is feedback from the environment in reaction to the learned outcome which may be positive or negative. The positive feedback provides reinforcement that the behaviour is desirable and is then stored in long term memory for use in similar situations. Unfortunately, a number of studies [15, 26, 27] have identified this method as less effective when used in professional development. The reason could be that cognitive learning does not target transferring certain skills but grounding the learners into a certain frame of thinking which leads to critical learning. One would argue that this is necessary at the pre-service training stage when one is still being groomed to become a professional. However, cognitive learning is also essential to the development of mental abilities and understanding of global processes which are essential for health workers to function adequately in the complex and changing environment of the health services. This argument seems to concur with the view of the so called "intellectual capital" theorists as Rosow and Zager (1988) and Stamps (1997) who argue that for organisations to gain a competitive advantage, they have to design employee training to involve more than just the development of basic skills but to create intellectual capital [28, 29].

Constructivism

Constructivists believe that all humans have the ability to construct knowledge in their own minds through a process of discovery and problem solving (Chowdhury, 2006). Unlike behaviourists and cognitivists who believe that learning goes with analysing a task and breaking it down into manageable parts, constructivists posit that learning results from open - ended experiences and involves methods and results that cannot be easily measured and which differ for each learner [30]. However, there are varying views among them as to the extent this process can naturally occur without structure and teaching. Moreover, constructivism focuses more on the mental processes that construct meanings, and therefore appears to be a subset of cognitive theory. However, its uniqueness stems from emphasis on constructing culture and context. For e.g. Lev Vygotsky (1978) postulated that the culture one lives in influences one's social and cognitive development [31]. Hence, CPD facilitators can be effective by encouraging professionals to analyse, interpret and build competencies from their work experiences. This may lead to construction, deconstruction or reconstruction of the experiences leading to new knowledge and competencies.

3.3.5 Learning in an attempt to fulfil needs:

Goal Theories

According to Locke and Letham (1990), these theories are premised on the belief that learning or behaviour derives from the learner's conscious goals and intentions [32]. Noe (2002) is believed that deliberate goals will influence behaviour by directing energy, sustaining effort over time and motivating a person to develop strategies for goal attainment [21]. What needs to be noted, however, is that goals are likely to lead to learning and improved performance only if people are committed to those goals. This commitment will itself depend on a host of factors such as belief in the possibility of achieving the goal, the setting of the learning environment and method of instruction among others.

The goal theory suggests that in designing a CPD programme, facilitators can enhance learning more by helping the targeted professionals to set specific but challenging goals and above all setting the stage to make sure that the environment is conducive and provides motivation for learning.

Expectancy Theory

The expectancy theorists – Vroom (1964) and his cohorts – believed that a person's behaviour is based on three factors: expectancy, instrumentality and valence [33]. They define expectancy as the belief that working hard will lead to a certain level of performance; instrumentality as belief that good performance will lead to certain desired outcomes; and valence as the value placed by a person on a given outcome.

From a CPD point of view, the theory suggests that effective learning is most likely to occur when professionals have confidence in themselves to actually learn the content of the programme if they work hard. They are also likely to learn better when the CPD activity is linked to desired outcomes like improved work performance, better pay, peer recognition, possibility of promotion etc. The CPD programme designers therefore need to make sure that they raise self efficacy of the learners through social mobilisation to increase the expectancy. They also need to communicate the link between learning and certain desirable outcomes which are of value to those professionals as this will increase both the instrumentality and valence leading to greater effort by professionals to learn and improve performance.

3.3.6 Learning through experiences:

Experiential learning Theory

Experiential learning theory (Kolb and Kolb, 2001) revolves around Kolb's four-stage learning process: i) concrete experience, ii) reflective observation, iii) abstract conceptualisation and iv) active experimentation [34]. It is argued that when a learner encounters a concrete experience such as a work-related problem, he or she will then observe and reflect on that problem to find out its possible nature, cause and effects. This leads to generation of ideas on how to solve the problem (i.e. abstract conceptualization); and finally implementation of those ideas to see if the problem is solved (i.e. active experimentation). Kolb's four-stage model is also called the learning cycle. But learning process can begin at any of the stages and is continuous. The theory attaches weight on reflection in the learning process and contends that without reflection one would simply continue to repeat mistakes.

Experiential learning theory is applicable to CPD of health workers since health organisations present real phenomena that health workers encounter everyday and which they (should) constantly learn from. The current emphasis on self-directed learning model of CPD (Souza and Rosche, 2003) is recognition of the experiential learning theory [35]. Literature on physicians' learning suggests that most doctors learn in response either to specific problems posed by particular patients or general problems posed by the socio-economic and political dynamics of their work [36, 37], which underlines the relevance of this theory to CPD.

Facilitation theory

Rogers (1983) and Laird (1985) based the theory of facilitative learning on the premise that learning takes place in situations where the educator acts as a facilitator rather than an expert. This, they argue, establishes an atmosphere in which learners feel comfortable to consider new ideas and are not threatened by external factors. They maintain that facilitative educators are less protective of their constructs and beliefs than other teachers, are more able to listen and are inclined to pay as much attention to their relationship with learners as to the content of the course. They are also more likely to accept feedback and to use it as constructive insight to themselves [9, 14].

Under the facilitative method, learners are encouraged to take responsibility for their own learning and to provide much of the input for their learning which occurs through their insights and experiences. They value self-evaluation and focus learning on factors that contribute to solving significant problems or achieve significant results. Available literature on physician learning suggests that physicians tend to learn better when they are mentored by their more senior colleagues in a facilitative relationship where the juniors initiate and direct the interaction [38]. In a study which was conducted in a Norwegian hospital, it was found out that facilitative interaction between novice doctors with more experienced physicians led the former to learn more necessary practical skills, better reasoning and improved standards of diagnosis and treatment in the hospital. It was concluded that the overall quality of what was learned depended on the dialogue between the novice and the expert, with better facilitative interaction resulting into better learning [38].

Adult Learning Theory

The chief protagonists of this theory such as Rogers (1983) Knowles (1980) argued that adults have the need for learning something; they want to be self directed, expect to have a high degree of influence on what they are to be educated in, and how they are to be educated [9, 8]. They add that adults need to see applications for new learning and bring with them many experiences which educators can use as a resource. Burns (1995), an advocate of adult learning theory has summarised the whole theory thus:

By adulthood people are self-directing. This is the concept that lies at the heart of andragogy ... Andragogy is therefore student - centred, experience - based, problem - oriented and collaborative ... the whole educational activity turns on the student [12].

Adult learning theory is important for CPD since all professionals are adults, with experiences to share and reflect upon. Those who facilitate the learning of working professionals need to provide opportunities for them to share experiences in relation to their jobs. They should also aim at providing new experiences altogether; and relate them to the professionals' jobs. In practical terms, adult learning or andragogy simply means that teaching adults should focus on utilising strategies such as role plays, case studies, simulations and self-evaluation instead of lecturing. The teachers should be more of resource persons than lecturers.

However, Pogson and Tennant (1995) and Burns (1995), have provided a perspective of adulthood as a social construction [39, 12]. They argue that the concept of adulthood varies for different individuals and different cultures. Therefore it is possible that some people could be mature but with limited experiences to share which should not be overlooked. Whereas children of equal age are probably at the same stage of development, Dunn (2006) contends that adults vary tremendously in their levels of knowledge and also in their life experiences [40]. Continuing professional development designers and providers should consider the need for professionals with comparable job experiences to undertake similar CPD events for easy reflection on those experiences.

Table 1: The table showed the typology of learning theories and their application for continuing professional development.

Theory	Main proponents	Learning method	Implication for continuing professional development of health professionals	Critique of the theory
Sensory stimulation	Laird	Stimulation of senses	Need to use visual learning aides e.g. charts, maps, pictures and interactive multimedia when delivering CPD	The theory makes a contentious ranking of senses e.g. arguing that 75% of knowledge is from seeing; It ignores the role of experiences, reflection etc.
Behaviourism	Skinner, Pavlov, Thorndike	Learning is a result of its consequence; Reinforcement of good behaviour through rewards and punishment	Need to identify outcomes valued by health workers and link them to CPD; Use certain benefits to reinforce learning and cause behaviour change	The supporters of the theory disagree on the use of negative reinforcement or punishment; Managers can use it to manipulate health professionals once they establish effective outcomes or reinforcers.
Neo-behaviourism	Gagne	Learning responds to a need to acquire certain capabilities e.g. skills, understanding, etc. Cumulative learning leads to wide ranging capabilities	CPD providers should consider the type of capabilities they want to promote and identify favourable conditions for those capabilities	It is not clear how the capabilities differ from the learning outcomes under behaviourist approach; Managers can as well manipulate health professionals using the desired capabilities to skew learning in a particular way
Cognitive learning theory	Bode, Ausubel <i>et al</i>	Learning occurs through information processing in the cognitive structure / brain	Emphasis on underlying principles which can be applied in several situations; Deductive methods are used in workshops and conferences	Research evidence has shown that use of deductive methods is less effective in CPD; Rather than target to impart skills, cognitive learning aims to ground learners into a certain frame of thinking hence more relevant at pre-service stage, not professional learning stage.
Constructivism	Jean Piaget, Levi Vygotsky, Brunner	Learning occurs through construction of knowledge through discovery and open - ended experiences.	CPD providers should build on what professionals already know; encourage self-directed learning, case reviews and self assessment	Its proponents disagree on the extent constructivist learning can occur naturally without structure and teaching; It looks partly like cognitivism and partly like the social learning theory
Social learning	Albert Bandura	Learning occurs through observation of others called models; cognition and expectation of reinforcement	CPD providers should increase self-efficacy of health workers, focus on role models and use demonstration for observation	The theory does not emphasise theoretical grounding which might undermine transfer of knowledge; It seems not to add much value to cognitive learning and behaviourism save for emphasising the importance of social context.
Facilitation	Karl	Learning occurs in	Health professionals learn	The theory does not cater for new

Theory	Main proponents	Learning method	Implication for continuing professional development of health professionals	Critique of the theory
theory	Rogers, Laird	conditions where the educator acts as a facilitator, not an expert; learners can consider new ideas, pose questions and consider self-evaluation	better when they are facilitated rather than instructed; there is emphasis on self-evaluation and learning from experiences and questioning	experiences which learners may not be versed with and where educators are indeed experts; Changes in medical practice bring about new diseases and technologies which are not easy to learn in a facilitative style
Experiential learning	Kolb, Kolb and Fry	Learning is a process that goes through stages: concrete experience, reflective observation, abstract observation and active experimentation	The theory points to the need for health workers to learn in response to problems posed by patients; It also explains the need for self-directed learning as a principle for CPD	Proponents of this theory apply it in contrasting ways: some saying it involves a direct encounter with a phenomenon being studied while others argue that it occurs through reflection on the phenomenon; It emphasises learning from primary experiences and ignores secondary experiences
Goal theories	Locke and Latham; Fisher and Ford	Learning derives from people's conscious goals and intentions. Desired goals drive energy, sustain effort to attain those goals and influence behaviour	CPD providers should assist health workers to set specific but challenging goals; set specific and achievable but also motivating CPD objectives and offer a wide range of programmes to increase motivation for learning	The theory is undermined by recent research which shows that health professionals learn more in response to the challenges they face in their daily practice rather than goals they independently set; It does not explain how divergent goals of different health professionals can be harmonised together with those of the organisation to design useful CPD
Expectancy theory	Victor Vroom	Motivation for learning is a function of expectancy, instrumentality and valence	It is vital for CPD providers to boost the self esteem of professionals by linking CPD to expected benefits in the profession	The theory presents motivation to learn as a mathematical product of expectancy x instrumentality x valence which professionals are unlikely to calculate before undertaking CPD
Adult learning theory	Rogers, Knowles, Burns	Learning depends on learners' curiosity, motivation, experiences and needs	CPD should utilise professionals' experiences, needs, skills to reflect, and transfer knowledge	The threshold for an adult is not clear; various adults could have varying experiences and motivations; Some adults have no experiences in respect of certain jobs or undertakings.

CPD: continuing professional development

4. DISCUSSION

Although each of the theories of learning tackles a certain aspect of how people learn, a synthesis of all the theories indicates a number of factors that influence how people learn. From these factors, we can coin principles that can be used to maximise the effectiveness of continuing professional development for health professionals. The theories point to a number of factors as being critical to the learning process. Although the influence of these factors varies from one individual to another, they should be taken care of while designing and delivering continuing professional development programmes for health professionals in order to achieve greater learning effectiveness. These factors include the following:

- Setting continuing professional development objectives to enable learners relate learning with their experiences.
- Identifying and clarifying learning outcomes because people learn faster if they the continuing professional development programme is associated with outcomes they value
- Aligning the content to learners' abilities and experiences, considering fully the needed time for assimilation, use of familiar examples and tailoring content to professionals' experiences.
- Providing opportunities for practice and experience utilizing role plays and simulations that are directly linked to health care such as examining patients and counselling
- Increasing interaction with peers and facilitators in small groups to enhance collaborative learning
- Provision of feedback, since several theories suggest that learning is reinforced by feedback.

5. CONCLUSION

This paper has discussed the importance of learning theory in the design and implementation of continuing professional development programmes for health care professionals. As noted earlier, continuing professional development is about learning. Therefore the need to understand how people learn while planning and delivering CPD activities in health care organisations is not an option. Several theories have been reviewed and their relevance to the CPD of health workers articulated.

It can be concluded that different categories of health professionals (and indeed different individuals within the same category) could have different learning styles and abilities depending on one's motivation, goals, experiences and cognitive abilities. Continuing professional development providers should therefore be flexible enough to allow different health professionals to maximise learning using styles that are most appropriate to them while doing everything possible to reduce individual differences by harmonising expectations and abilities.

One can also conclude that there is need to organise learning events for health workers of related professions to maximise learning from experiences, enhance group dynamics and boost efficacy of individual professionals who tend to feel confident when they are among their peers. However, care should be taken to avoid creating professional isolation because diversity encourages cross-fertilisation of ideas and effective health care involves multi-professional teams.

Finally, since different learning theories reinforce each other, they should be applied synergistically rather than individualistically for better learning outcomes.

6. REFERENCES

1. CIPD (2006). At <http://www.cipd.co.uk/subjects/perfmangmt/general/perfman.htm> Accessed on 10/1/2015.
2. Rothwell, A. and Arnold, J. How HR professionals rate continuing professional development. *Human Resource Management Journal*. 2005; 15(3): 18-32.
3. Merriam, S.B., and Caffarella, R.S. (1991). *Learning in Adulthood: A Comprehensive Guide*. San Francisco: Jossey-Bass.
4. Brockbank, A. and McGill, I. (2007). *Facilitating Reflective Learning in Higher Education*. 2ed. Buckingham: SRHE/Open University Press.
5. Maples, M.F., and Webster, J.M. (1980). "Thorndike's Connectionism" in G.M. Gazda and R.J. Corsini (eds.), *Theories of Learning*. Itasca, ILL.: Peacock.
6. Hergenhahn, B.R. (1988). *An Introduction to Theories of Learning*. (3rd ed.) Englewood Cliffs, N.J.: Prentice-Hall.
7. Sahakian, W.S. (1983). *Introduction to the Psychology of Learning*. (2nd edition). Itasca, III.: Peacock.
8. Knowles, M.S. (1980). *The Modern Practice of Adult Education: From Pedagogy to Andragogy*. (2nd ed.) New York: Cambridge Books.
9. Rogers, C. (1983). *Freedom to learn for the 1980s*. Columbus, Ohio: Merrill.
10. Jones, C., Connolly, M., Gear, A, and Read, M. Collaborative Learning with Group Interactive Technology. A Case Study of Post-graduate Students. *Management Learning*. 2006; 37(3): 377-396
11. CIPD (2005). *Learning Styles, Fact Sheet*. Chartered Institute of Personnel and Development: London.
12. Burns, R. (1995). *The adult learner at work*. Sydney: Business and Professional Publishing.
13. Gagne and Medsker (in Noe, R. A. (2002). *Employee Training and Development* (2 ed). New York. McGraw-Hill Companies, Inc.
14. Laird, D. 1985 *Approaches to training and development* Addison-Wesley, Reading, Mass.
15. Davis, D., O'Brien, M.A., Freemantle, N., Wolf, F.M., Mazmanian, P., Taylor-Vaisey, A. Impact of Formal Continuing Education. Do Conferences, Workshops, Rounds and Other Traditional Continuing Educational Activities Change Physician Behaviour or Health Care Outcomes? *JAMA*, 1999; 282 (9), 867-874.
16. Shahabudin, S.H. Life-Long Learning and Continuing Education. Assessing Their Contribution to Individual and Organisational Performance. *Studies in Health Service Organisation and Policy*, 2003; (2): 347-374.
17. Cantillon, P. and Jones, R. Does continuing medical education in general practice make a difference? *BMJ*, 1999; 318, 1276-79.
18. Armstrong, E. and Parsa-Persi, R. (2005). How can physicians' learning styles drive educational planning? *Academy of Medicine*, 80(70): 680-4.
19. Thorndike. (1999), *Education Psychology: briefer course*, New York: Routledge
20. Skinner, B.F. (1974). *About Behaviourism*. New York: Knopf.
21. Noe, R. A. (2002). *Employee Training and Development* (2ed). New York. McGraw-Hill Companies, Inc.
22. Bandura, A. Self-Efficacy Mechanisms in Human Behaviour. *American Psychologist*, 1982; 37:122-47
23. Gist, M.A. and Mitchell, T.R. "Self-Efficacy: A Theoretical Analysis of Its Determinants and Malleability", *Academy of Management Review* 1992(17): 183-221.
24. Bruner, J. (1966). *The Process of Education*. Cambridge: Harvard University Press.
25. Ausubel, D.P., Novak, J.D. and Hanesian, H. (1978). *Education Psychology: A Cognitive View*. (2 ed.). New York: Holt, Rhinehart and Winston.
26. Bloom, B.S. Effects of continuing medical education on improving physician clinical care and patient health: a review of systematic reviews. *Int J Technol Assess Health Care*. 2005; 21 (3): 380-5.
27. Freemantle, N., Harvey, E.L., Wolf, F., Grimshaw, J.M., Grilli, R., Bero, L.A. Printed educational materials: effects on professional practice and health care outcomes. *Cochrane Database Syst Rev*. 2000; (2) CD000172.
28. Rosow, J.M and Zager, R. (1988). *Training, the Competitive Edge*. San Francisco: Jossey-Bass.

29. Stamps, P. (1997). Managing Corporate Smarts. *Training*, August, 40-46.
30. Chowdhury, M.S. (2006). Human Behaviour in the context of training: an overview of the role of learning theories as applied to training and development. Available on <http://www.unlibrary-nairobi.org/PDFs/Humanbehaviour.doc> Accessed on 16/12/2014.
31. Vygotsky, L.S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press
32. Locke, E.A and Latham, G.D. (1990). *A Theory of Goal Setting and Task Performance*, Englewood Cliffs, NJ: Prentice Hall.
33. Vroom, 1964 in Noe, R. A. (2002). *Employee Training and Development* (2 ed). New York. McGraw-Hill Companies, Inc.
34. Kolb, A. and Kolb, D.A. (2001). *Experiential Learning Theory Bibliography 1971-2001*, Boston, Ma.:McBer and Co.
35. Souza, A. and Roschke, A. (2003). *Studies in Health Service Organisation and Policy*, 21, 375-397.
36. Slotnick, H. B., Kristjanson, A. F., Raszkowski, R.R et al. How doctors learn: mechanisms of action in physician learning. *Professions Education Research Q.* 1998; 15:5-12.
37. McClaran, J., Snell, L., Franco, E. Type of clinical problem in a determinant of physicians self-selected learning methods in their practice settings. *J Continuing Education Health Professions.* 1998; 18: 107-118.
38. Akre, V., and Ludvigsen, S. R. How to learn medical practice? A qualitative study of physicians' perception of their own learning processes. *Tidsskr Nor Laegeforen* 1997; 117(19): 2757-61.
39. Pogson, P. & Tennant, M. 1995 'Understanding Adults' in Foley, G. (ed.) *Understanding adult education and training*, St Leonards, Allen & Unwin, pp.20-30.
40. Dunn, 2006. Oxford Centre for Staff and Learning Development, Oxford Brookes University Wheatley Campus, Wheatley, Oxford.

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