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Teaching and Learning in Workplace: Contemporary Perspectives

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ABSTRACT

Workplace learning is essentially informal that is unstructured, unintended and opportunistic from educational view point. Recall of factual knowledge and applying skills is central in workplace so learning becomes meaningful and evidence based. To maximise their learning, the learners must take active participation in their own learning, set goals and march towards achieving these goals. The objective of the teacher at this juncture is obliging to the needs of the learners and of the patients. This review aims to address the teaching and learning theories that impact the workplace learning, factors influencing workplace based learning, identifying opportunities for learning to occur parallel with work and strategies that maximise successful workplace learning.

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Introduction

Work place learning is essentially informal that is unstructured, unintended and opportunistic from educational view point. Dornan refers workplace learning as to any place where the learners, patients and practitioners come together for the purpose of providing medical care and learning (1). The learners can be medical students, new trainees or even seasoned practitioners. The common feature among learners that is underpinning is the recall of factual knowledge and applying skills so learning becomes meaningful and evidence based. The entire focus of workplace teaching and learning is the optimisation of patient's outcome. The objective of the teacher at this juncture is obliging to the needs of the learners and to the patients. This is the triadic relationship of the teachers, learners and patients that is central to workplace teaching in contrast to the two way teacher and learner relationship in classroom based teaching (2). Sometimes patient's unpredictable needs can create excellent learning opportunities albeit the tensions related to it. To maximise their learning, the learners must take active participation in their own learning, set goals and march towards achieving these goals. This implies developing self-regulation skills and learning from experience. Self-regulation skills and an ability to learn effectively from experience are now regarded as critical elements of professional competence (2). Thus with the background of workplace learning as heart of medical education, this review aims to address the following aspects. The teaching and learning theories that impact the workplace learning, factors influencing workplace based learning, identifying opportunities for learning to occur parallel with work and assessment methods and strategies that maximise successful workplace learning. Theoretical concepts of

workplace learning Kolb's experiential learning model Medical education witnessed noticeable transition from traditional teaching that is knowledge centred to experiential learning based on Kolb's learning cycle. In Kolb's learning model, the learners have a 'concrete experience on which they reflect. Through this process of reflection, they develop abstract concepts and further consolidate their conceptual understanding and test them in new situation to gain more concrete experience and therefore the cycle continues. The focus is on what experiences the learners had and how they make a sense of it. Kolb's cycle provides the start point framework for the teachers to consider what the learners will learn in the workplace and what is the final outcome expected (3). The concerns with this model of learning is related to the fact that learning becomes an individual pursuit and underplays the complexity involved in and through the learning and the role played by the teachers in supporting the learning process (4).

Social Constructivist Theory

Vygotsky's social constructivist theory focus on the how the learning community contributes to learning. Here the learning is not an individual pursuit but is viewed as happening through engagement by participation by shared activities in the community. It emphasises onthe zone of proximal development is the acquisition of new knowledge by linking it with the pre-existing knowledge. Communication between teachers and learners is vital to extend this proximal development (5). This is discussed further by bandura and Lave and Wanger in their communities of practice theory referring Education in Medicine Journal to the interaction of new learners within the existing group of practitioners. Thus the process of learning new things should not be perceived as just acquiring new knowledge, but to arrive at meaningful conclusion and make use of it.

Situated Cognitive Theory

The concept of situated cognition as developed by Wenger has relevance in workplace learning. The setting and tools available at specific situations influence learning and thinking (6, 7). The approach to teaching is different in a bedside session as compared to operating room, or a busy outpatient clinic. However each setting has its own value and learning outcomes. The role of teachers to make the learners achieve the threshold of meaningful learning so that they function as part of team and assuming new identity. Besides the teacher, it is also the community that prepares the learner to assume their place in the community of practice, where they will ultimately function (4).

Key points

- Kolb's theory of learning postulates that learning occurs by doing (experential) by knowledge that is formed and modified by experiences.
- Vygoytsky proposes that learning is ocially determined and that learning takes place by interaction with others
- Lave and Wenger proposes that learners are legitimate partcipants in a taem where knowledge and skills are transferred.

Factors Influencing Work Place Learning

There is dynamic interaction between the learners, teachers and social environment that fosters strategies for successful workplace teaching and learning as shown in Figure 1.

Learner's Factors

Understanding the learning needs of the learners is the starting point of facilitating teaching and learning at workplace. Identification of leaner needs help to plan curriculum, diagnose learner problems, assessment of students leaning, improve educational practice, accountability, providing appropriate feedback and allows resourceful educational interventions (8). The learning needs can be identified formally or informally. It is evident that medical curriculum have well defined learning outcomes. Familiarising with these intended learning outcomes is the first step that guides in the planning teaching and learning activities. The learning needs of a learner are described by Maslow hierarchy of students learning motivation. Failure to address the early stages

(physical, emotional and social needs) may result in risk of failure of the learners to learn. So prior addressing the internal (self-respect) and external needs (safe environment and planning so students do not tire) facilitates good learning relationship. Along with motivational factors, the affective and action states of people are based on what they believe than what it is objectively (9). This brings in light the concept of confidence and self-efficacy that are integrally related and refers to the ability to execute a particular task or fulfil a particular role. Bandura recognised the need for learner's self-reflection and self-regulatory behaviour that regulates the thought and action and outcome of events. Besides this, self-efficacy which is the core belief that one has power to produce effects by one's own action., influences the learners participation in their workplace by self-judgement of their performance. Improving their self-efficacy is by positive encouragement and motivation by reinforcing what was done right rather than just focussing on what went wrong (10).

Social Factors

Constructive learning at workplace is achieved by participatory practices of the learners. The communities of practice theory highlight the social practices of the learner. It refers to the interaction of new learners within the existing group of practitioners. The need for legitimate participation of new learners develops their personal trajectory and creates opportunities to learn (4). How inviting is the environment to engage the newcomers depend on whether the workplace environment is restrictive or expansive. Expansive environment provides support, guidance and social recognition of the learners and encourages full participation from mere peripheral involvement. On the other hand restrictive environment is related to difficult attitude of co-workers, competitive and physical barriers for further interaction and hinders achieving the educational outcome (11). This could be overcome by positive role modelling of the supervisors, providing constructive feedback on performances, verbal encouragements that improve the self-efficacy of the learners (10).

Role of a Teacher

The role of teachers is to facilitate the process of learning by making the learning opportunities explicit for them. This can be done by targeting a learning goal based on prior experience on the learners or priming them for a purposeful enhance learning by observation and reflect on the encounters. So reflection is the key for learning. It should be by active thinking rather than simple description of events (12). This is by good questioning and feedback that throws light on multiple dimensions of experience (13). One aspect of reflection that's needs emphasis is that learner's need to be defined on reflection prior to making them reflect and these reflective skills needs evaluation for future improvement. This process of critical reflection of analysing, questioning and reframing the experience promotes cohesiveness between professional knowledge and competence and matures the learners into reflective practioner as described by Schon's 1995 (reflection in action and reflection on action) (14). Futhermore evaluation of any reflection is paramount so learning is motivated and value is placed on the exercise for the educators themselves. However it needs emphasis that there are challenges to the teachers in the workplace which includes difficulty in organisation of time for treating and teaching especially in the presence of busy clinical work schedule (15). Besides the time, the other challenges include unpredictable patient's presentation, or unavailability of patients for clinical scenarios intended to teach the learners, diverse educational settings that pose difficulty in executing the learning objectives (16). This time constraint can be overcome by the One Minute Preceptor teaching strategy. This has found to promote efficient teacher and student communication, allowing students to demonstrate their clinical reasoning and thus allows the teacher to diagnose the learner and the patient (17). This is by adopting 'five micro-skills' that includes:

i. Getting commitment, for e.g by asking differential diagnoses in a given clinical scenario,
ii. Probing for supporting evidence –how the learner can arrive at a diagnoses
iii. Teaching general rules

iv. Reinforcing general rules and
v. Correcting mistakes.

This strategy keeps alive the dialogue between the teacher and learner and provides ample learning opportunities (18). There is concern for perceived patient discomfort in bedside sessions although it is refuted by recent evidence that most of the patient enjoyed the experience and felt that they understood their problems (19, 20). Cox proposes a model for effective bedside teaching. The activities to be done before, at and after bedside for maximising teaching. Before bedside, briefing the patient whether he/she is happy to discuss, briefing ourselves on our objectives, check whether the patient selection is appropriate and briefing the students in learning objectives. At the bedside, role modelling by demonstrating good doctor-patient relationship and clinical competence. After bedside, providing constructive feedback and reflect on what could be done better in future similar clinical encounters (21).

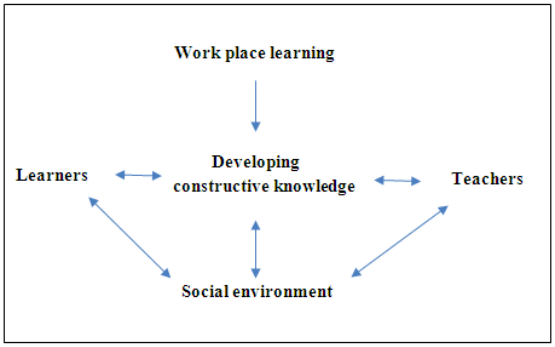

Figure 1: Dynamic interaction of factors that influence workplace learning

Key points

- Identifying the learning needs of the leaners is the starting point of workplace teaching and learning
- Workplace has to invitational for the learners that encourages full participation
- Learning occurs by participation and engagement with members of the community
- Teachers needs to make learning more explicit so they learn 'how to do the job' when 'on the job and doing the job'

Workplace Learning Assessment Methods

How do we know active learning has taken place? It is by the process of the assessment that connects teaching and learning. As it known 'assessment drives learning (22). It is essential to collect evidence about attainment of competence with the clinical teachers as supervisors monitoring the learner's progress against the desired competencies. However the process of documenting the evidence is essentially learners led. Beyond this documentation of evidence, the actual performance of the learner should be assessed against the competencies they exhibit in the workplace (23). The Miller's pyramid of competence maps the assessment methods against 'Does' dimension of the pyramid tiers (21). There are different methods of assessment such as portfolios, observations of patients encounters such as Mini CEX, direct observation of procedural skills (DOPS), case based discussion etc. So different methods of assessment over a period of time with various tools with multiple raters increases the reproducibility of the results. This is referred as triangulation within work-based assessment (22). Portfolios are increasingly used as assessment tool in medical education. They are considered as record of achievement of the student and as evidence for continuous professional development. The evidence of learning from different curriculum is brought in one document. It encourages reflective practice and for self-assessment (24). Clinical log books are also used as continuous assessment tool to monitor the progress of the students (25). They communicate curriculum to students and make them understand of what is expected from them and help to monitor their clinical progress. However to make it an effective assessment tool, logbooks need to be reviewed periodically with appropriate feedback (21). Mini CEX is technique of assessing clinical skills that are commonly encountered in real time practice. Competency in skills for history taking, physical examination and clinical reasoning are assessed in the hospital setting by the clinical teacher or supervisor (26). General Medical Council (GMC 2011) recognises DOPS to evaluate trainee competencies on performance against structured checklist and formative DOPS can be undertaken

as many times until desired competency is achieved (22). Case based discussions are powerful workplace learning and assessment tools that provide opportunities to develop clinical reasoning behind practice and explicit thinking. Multi source feedback (MSF) is the process of assessment of a trainer from different perspectives. The feedback is provided by the supervisor, peers or from patient. The trainer also self-assesses and has the opportunity to compare his rates with external assessors. Some of the tools used for MSF include Team assessment of behaviour (TAB), consultation satisfaction questionnaire (CSQ), Doctors interpersonal skills questionnaire (DISQ) (27). Critical to all these assessment tools is providing an effective feedback. A role of good clinical teacher is to provide a positive and constructive feedback. An interactive approach keeps the dialogue between the learner and teacher active. It builds on the self-assessment of the learner and promotes active charge of his learning (28). The simplest method of providing feedback is replaying the observations during the session in a chronological way. The Pendleton feedback sets learners objectives, provides positive feedback and specific feedback provided on the areas of improved identified by the learner (29). The limitation to Pendleton feedback is it can be formulaic and superficial. An alternative is the SET-GO method developed by Silverman et al of value in bedside teaching in groups. The feedback is given as –What I Saw (from the group), the teacher adds to the group- What Else did you see, encourages the learner for clinical reasoning by what did you think, clarifies the learning foals by what needs to be achieved and offers feedback on how to achieve the goal. The advantage of this technique is that is –agenda led and outcome based as the learners look at the outcomes they are trying to achieve (30).

Key points

- The assessment methods in workplace should assess the 'Does' component of the Miller's pyramid of competence
- Portfolios and clinical log books needs to be periodically reviewed to monitor the progress of the learner
- An interactive feedback builds on the self-assessment of the learner and promotes active charge of his learning.

Conclusion

To conclude, there is dynamic interaction between the learners, teachers and social factors that underpin the workplace teaching and learning. The contemporary views can guide educators to value workplace as key site for teaching, learning and practice. The implications for future is to imbibe these principles, by encouraging motivation, engagement, legitimate peripheral participation of learners within different members in community in any settings of workplace, improve their confidence, self-efficacy and to tackle new challenges by providing feedback and appreciation. The contemporary views on workplace learning will guide the teachers to draw will guide. This will bring meaningful learning experience in an environment the learners will ultimately function. The overall implications of demonstrating effective workplace learning in advancing medical education is in supporting health professional reflection on practice and their performance, preventing errors, strengthening on-going professional development and to sustain individual and organizational goals of education.

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