

Investigating Work-based Learning Influences, Outcomes and Sustainability: A Conceptual Model

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Due to policy changes across Europe, work-based learning pedagogies are on the increase in Higher Education programmes. This paper discusses the development of a theoretical framework and conceptual model used to underpin an investigation of work-based learning in postgraduate nurse education. An original conceptual model for analyzing the influences and outcomes of work-based learning and studying these concerns from a social learning theory perspective is presented. The model is based on the assumption that individuals learn within and across communities of practice, yet also recognizes the duality of individual and social contributions required for successful work-based learning.

The research aimed to explore how different cultural tools and processes, in addition to social and personal contributions, influenced and sustained outcomes during and following work-based learning. A qualitative case study was employed to investigate the experiences and perceptions of WBL students and those in support roles, using interviews and documentary analysis. Four main categories of data emerged from the thematic analysis: navigating workplace cultures and contexts; learning within and across practices; practitioner trajectories and transformations; and practice transformations. The findings support the conceptual model proposed in this paper as a means of investigating, understanding and promoting discourse concerning the interrelated influences and outcomes of WBL in differing contexts.

Keywords: Work-based learning, higher education, nursing, conceptual model, cultural historical activity theory, communities/landscapes of practice theory.

Introduction

Work-based learning (WBL) in Higher Education is a complex system of learning for self, workplace and university level credit that involves tripartite relationships between learners, employers and academic settings. Due to policy changes across Europe, WBL pedagogies and practices are on the increase in Higher Education programmes (Nottingham, 2016).

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Seen either as a distinct 'mode' or disciplinary 'field' of practice, WBL in Higher Education differs from the more traditional university based programmes that focus mainly on the students' attainment of academic credit (Costley & Armsby, 2007). An emphasis on the learners' workplace and practice is evident in the many pedagogical models and interpretations of WBL in Higher Education (Manley *et al.*, 2009). Primarily situated in the workplace, learners undertaking WBL programmes apply the elements of their professional role and activities to academic study within University level programmes (Nottingham, 2016). The tripartite relationship between the learner (employee), their employer and the university for negotiating and supporting learning, in consideration of both learner and organizational developmental needs, is a significant feature of WBL (Basit *et al.*, 2015; Manley *et al.*, 2009). Consequently, the employer and the workplace play an important role in learning, in addition to the university and learner (Critten & Moteleb, 2007; Basit *et al.*, 2015), thus contrasting with the previous emphasis on learners and their relationship with the university alone. WBL is 'multi-modal and complex' as it is influenced by multiple sociocultural contexts, boundaries and people (Billet & Choy, 2013: 273). Therefore a multi-faceted approach to furthering understanding of factors that influence WBL experiences and outcomes, for learners and their employers, is required.

In health care contexts WBL has been argued as a means of continued professional development that transforms practitioners and practice (Manley *et al.*, 2009). The research presented in this paper aimed to explore trajectories of change (in participants and practice) during and following WBL whilst asking 'how' the different cultural tools and processes situated within the WBL programme, in addition to social and personal contributions, influenced and sustained outcomes. Positioned within an interpretivist paradigm, a qualitative case study design was employed to investigate one WBL postgraduate nurse education programme, in Ireland. This paper discusses the development and application of the theoretical framework and conceptual model underpinning the research. A review of key ideas and concepts from sociocultural theory, cultural historical activity theory (CHAT), communities/landscapes of practice theory is presented and their importance for understanding and positioning research on WBL discussed. Specific concepts and areas of analysis used to explore WBL influences and outcomes are integrated within a conceptual

model. The research methods and findings are described, followed by a discussion of the findings related to the conceptual model and its implications for practice.

Theoretical Perspectives

The purpose of this paper is to enable researchers and academics to further understand and investigate the complexities of WBL in Higher Education through a sociocultural lens. The sociocultural theorist considers the broader social context and systems in which learning takes place and how learners develop based on participation in culturally situated activities (Scott & Palincsar, 2013). It is from this position that the theoretical framework and conceptual model underpinning this research was developed.

Sociocultural Theory

Vygotsky, in his work in the 1920's claimed that learning and human development more broadly, occurred within a social world and therefore must be examined on a multidimensional level that takes account of the individual and the social context (Vygotsky, 1978). He argued that development of mind and cognition occurred on two planes; externally first and then internally and was always mediated through the use of tools such as language or signs (Vygotsky, 1978). This sociocultural perspective on mind and cognition asserts that individual development and higher mental functioning originate from social interaction with others (Scott and Palincsar, 2013).

Mediation is one of the most important concepts in sociocultural theory (Wertsch, 2007). Mediation is considered an umbrella term that encompasses the different ways in which material tools, psychological tools and other people mediate human mental processes (Guerrero Nieto, 2007). Of these mediational tools, Vygotsky claimed speech and social interaction to be the most important mediator of psychological processes (Kozulin, 1998). This links to his assertion that individual mental functioning develops first externally between people on the interpsychological plane, then second internally on the intrapsychological plane (Vygotsky, 1978). Consequently, mediation is seen in terms of the critical role individuals play in mediating the learning of others as the 'human mediator', and the role of tools and signs as 'symbolic mediators' (Kozulin, 2003: 18). Given the multiple 'human' and 'symbolic' mediators at play, the types of tools, structures and mediational

means employed in WBL, mediation is a key concept and important area of analysis for researchers.

Vygotsky also emphasized the importance of the environment on learning, arguing that it was not the material qualities of a situation, but how it was experienced or interpreted by an individual that was interrelated to their development (Vygotsky, 1994). Similarly context can be viewed in terms of the immediate context as the task and content of learning within a specific physical and relational environment and the larger contexts of social, historical and cultural settings in which the interaction takes place (Latucca, 2002). Typically, culture refers to the ideas, customs, and social behaviour of a particular people or society. Individuals are represented within many cultures such of those surrounding work, education and family contexts. This plural notion of culture, indicating that an individual is not represented within one but many, is relevant in considering the differing contexts and cultures surrounding those who participate in programmes of WBL. The interplay between workplace 'affordances' (learning opportunities afforded to individuals) and 'constraints' (Wertsch, 1998: 45) and how learning is influenced by these are important areas for analysis.

Central to understanding human development from a sociocultural perspective is the idea that culture is embedded in and represented through tools and discourses; 'cultural tools' as mediational means. Tool and artifact are often used synonymously however Cole (1996) sees tool (both physical and psychological) as a subcategory of artifact which represents a wider range of cultural and historical embodiments. This wider interpretation of culture through the concept of 'artifact' as suggested by Cole (1996) is useful in exploring how behaviours, interactions, and histories of groups influence individual learning through tools and discourse as mediational means. An analysis which takes into account the interplay of sociocultural factors and the individual (Palincsar, 1998), is important in understanding WBL. These key ideas originating from Vygotsky's sociocultural theory are seen in the evolving generations of CHAT.

Cultural Historical Activity Theory

CHAT evolved through three generations (Engeström, 2001) and can be viewed as an ongoing tradition of both sociocultural psychology and activity theory (Edwards, 2005). The concept of mediation and mediational means in addition to activity (and later activity systems), are central to CHAT as the key foci of analysis. Vygotsky's idea of cultural mediation involves a three way relationship of subject, object and mediating artifact which shows how cultural tools mediate actions (Engeström, 2001). The concept of 'object' is understood as the purpose of activity and consequently renders the activity meaningful. The subject (person) achieves their purpose (object) by employing cultural tools or artefacts. However, Leont'ev (1981) argued that the object of activity is not always understood by the different actors in an activity system. Shared understandings of the object are important and if not present tensions and conflicts may arise which in turn can lead to difficulties in negotiating activities and meaning (Timmis, 2013). In investigating the influences of WBL, where projects or learning activities are negotiated within tripartite relationships, this 'shared understanding' is worthy of analytic attention.

Towards a second generation of CHAT, Engeström (1987) turns the analytic focus toward 'complex interrelations between the individual subject and his or her community' (Engeström, 2001: 134). Engeström recognises that 'object-orientated actions are always explicitly, or implicitly, characterised by ambiguity, surprise, interpretation, sense making, and potential for change' (2001: 134). Where tensions and contradictions between elements of the activity system exist, interpretation and meaning making is not always aligned by all actors. This idea relates to a key concept of 'multi-voicedness' of systems, recognising the multiple views, traditions and interests of a community (Engeström, 2001: 136-137). Furthermore, activity systems change and transform over time and concepts 'historicity' and the possibility of 'expansive transformation' are central principles of CHAT; meaning that they can only be understood against 'their own history' and undergo cycles of change (Engeström 2001: 137).

In a third generation of CHAT, the focus of analysis moves to networks of interacting activity systems with the possibility of jointly shared objects, transitions and reorganization within and between activity systems (Engeström, 2009). Greater attention is paid to the ways in which people have to work and move across boundaries between activity systems; such

boundary crossing requiring negotiation of activity and jointly shared meaning of the object (Engeström, 2001). Furthermore, individual subjectivity, agency and relationality become key considerations (Engeström, 2001). The relational inter-dependence between personal agency, subjectivity and social factors are important in WBL (Billet, 2011). For practitioners who are required to work across organisational boundaries, strong forms of agency are essential as they need to recognise and access the resources that others bring to the object (Edwards, 2005). This relational agency, 'a capacity to offer support and to ask for support from others' (Edwards, 2005: 168) is a useful concept in highlighting an important area of analysis. Relational agency shifts the focus from the system to the impact of those who engage in joint action between and across systems (Edwards, 2005).

Key ideas and concepts that have evolved through three generations of CHAT, such as community, boundary crossing, agency, culture, history, multi-voicedness and transformation, are beneficial in furthering understandings of the myriad of factors influencing WBL experiences and outcomes. These important areas for analytic attention are linked to similar theories of communities/landscapes of practice.

Communities and Landscapes of Practice

In his work on communities of practice, Wenger (1998) claims that we learn and become who we are as a result of our engagement in social practice. The community of practice concept is underpinned by four main components of social learning: meaning (learning as experience); community (learning as belonging); identity (learning as becoming); and practice (learning as doing) (Wenger, 1998). The integration of these concepts provides the conceptual framework of a 'community of practice' within which to analyse 'social participation as a process of learning and knowing' (Wenger, 1998: 4).

Participation in culturally valued collaborative practices, that produces something useful, motivates individuals to learn (Lave & Wenger, 1991). Wenger (1998) employs the concepts of participation and reification in theorising meaningful learning. Participation is an active process of taking part in something, of connection with others and action. Reification refers to engagement as productive, in that experience is made into a thing; a concrete object such as a document or tool (Wenger, 1998). Situated in context, meaningful learning is

essentially a social activity of engagement where skills are developed in practice and person identities are produced and transformed (Lave & Wenger, 2005). Wenger (1998) identifies three modes of belonging: alignment, a process of coordination of own activities so they are aligned with the community; engagement with others in the social world and developing trajectory; and imagination whereby the individual visualizes their own position within the community and imagines their future. In exploring learner trajectories and the initial and longer term (sustainable) outcomes of WBL, concepts of alignment, engagement and imagination provide important ways of looking at the processes and tools that mediate learning. By analyzing in what ways WBL promotes participation and reification and enables trajectories of learning towards personal and professional identity development through alignment, engagement and imagination within and across communities in practice, a range of influences and outcomes can be investigated.

The notion of multiple communities as a landscape of practice is useful in the investigation of WBL, as inherent in this concept is the idea that boundary crossing between communities has the potential for rich insightful learning and innovation (Engeström, 2001; Wenger-Trayner & Wenger-Trayner, 2015a). Whilst active experience and engagement within a community of practice is important with regard the notion of practitioners developing and maintaining competence (Wenger, 1998), learning in a landscape of practice enables practitioners to be knowledgeable about a multiplicity of related practices (Wenger-Trayner & Wenger-Trayner, 2015a). It is the connection with a multiplicity of practices across the landscape that helps develop knowledgeability; that is the relationships people build across the landscape to be knowledgeable about other practices and relevance to their own (Wenger-Trayner & Wenger-Trayner, 2015a). This suggests that in addition to developing competence within a single community of practice, knowledgeability would be an important outcome of WBL if professionals are to develop and sustain relationships across boundaries of practice.

Boundary objects and brokering are two types of connections that link communities of practice (Wenger-Trayner & Wenger-Trayner, 2015a). Boundary objects can be considered the products of reification such as documents and other artefacts around which communities are interconnected. For example, the tools and processes within a WBL

framework such as learning contracts can be seen as the boundary object that connects academic and practice communities. Whereas brokering refers to activities of persons on the periphery of various communities, that provide connections between them and consequently introduce practices across them (Wenger, 1998).

Whilst Wenger (1998) argues that learning and identity is associated with individual trajectories across landscapes of practices. Wenger-Trayner and Wenger-Trayner (2015a: 15) further stress that the 'landscape is political' and the power dynamics have a role to play with competing voices and claims to knowledge. Wenger-Trayner and Wenger-Trayner (2015a: 17-18) claim that 'crossing boundaries, boundary encounters and boundary partnerships are necessary for the integration of a landscape of practice'. However, boundaries can also be areas of confusion, conflict and misunderstandings as communities hold different perspectives, values and interests. Engeström's (2001) concepts of 'multi-voicedness' and 'contradictions' (as principles of CHAT) come to the fore in Wenger-Trayner and Wenger-Trayner's (2015a) interpretation of boundary crossing as both a source of challenge and innovation. Yet, Wenger-Trayner and Wenger-Trayner (2015b: 108) claim that 'meaningful engagement across boundaries is transformative' of both practice and identity. The landscape of practices concept and the role of 'brokers' and 'boundary objects' can help in furthering understandings of what occurs at the peripheries and across boundaries of interconnected communities of practice. Furthermore, they can help in analysing the tools and partnerships necessary for boundary encounters and successful WBL.

Development of a Conceptual Model of WBL

The theories discussed in this paper emphasise social and cultural contributions to individual cognition, contrasting with psychological explanations that focus on the person (Billet, 2011). Both activity theory and communities of practice can provide useful frameworks for analyzing learning at work (Fuller *et al.*, 2005). Although they diverge in areas and converge in others it is the key concepts that span some of these historical theoretical developments that are useful in framing a study of WBL that investigates both influences and outcomes. Current thinking on WBL recognises the relational interdependence of social contributions and individual agency required for learning at work (Billet, 2011). Whilst Engeström (2001) recognises the importance of agency within CHAT, Wenger's (1998) communities of practice

theory appears to pay little attention to how individual characteristics and traits influence learning which leaves a gap in this analytic framework. The inclusion of the concepts subjectivity, self and agency in a conceptual framework means the efforts of the individual, their subjectivities and degree of interest are identified as factors that influence learning through and for work (Bandura, 2001; Billet, 2011). Agency concerns the intention to ‘make things happen by ones actions’ and ‘embodies the endowments, belief systems, self-regulatory capabilities and distributed structures through which personal influence is exercised’ (Bandura, 2001: 2). Whereas relational agency is concerned with the ability to offer support and/or accept support from others (Edwards, 2005). With the addition of these concepts to the theoretical framework, both social and personal influences are paid analytical attention.

Figure 1 depicts the conceptual model arising from the theoretical framework and key concepts discussed within this paper.

Figure 1: A Conceptual Model for Investigating Work-based Learning in Higher Education

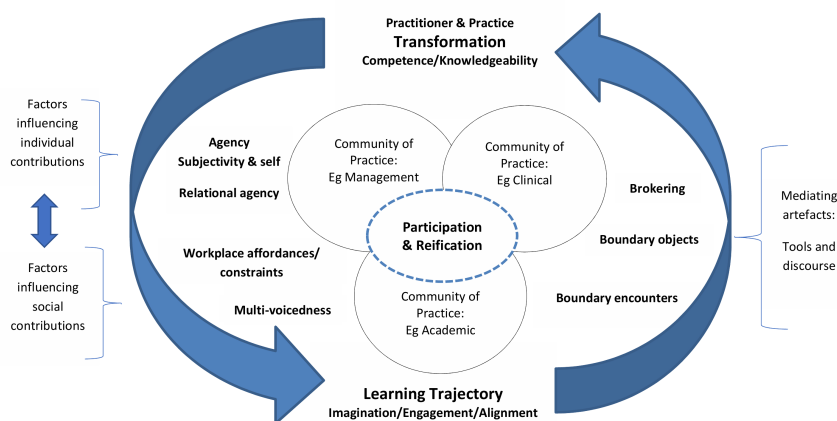


Figure 1: A Conceptual Model for Investigating WBL in Higher Education

The model is based on the assumption that individuals learn within and across communities of practice (Wenger, 1998; Wenger-Trayner & Wenger-Trayner, 2015a). Each community of

practice that the learner may engage with through WBL is represented by overlapping circles in the center of the model, thus signifying the landscape of practice. Such communities of practice could include for example the learner's clinical practice community; related practice areas/communities with the organisation such as management; and the academic community (peers, lecturers). Participation and reification are recognised as central to learning within and at the boundaries of communities of practice whereby individuals engage in meaningful activity with the aim of producing something useful (Wenger, 1998).

The duality of individual and social contributions required for successful WBL are represented on the left of the model, thus indicating these interrelated concepts as factors influencing WBL experiences and outcomes. Agency, self and subjectivity (Bandura, 2001; Billet, 2011) concern the role of the individual in learning; their personal traits and intentions as influences on engagement and outcomes of WBL. The influence of workplace cultures on WBL is considered within the concepts of workplace affordances and constraints (Billet, 2011; Wertsch, 1998). In addition, multi-voicedness recognises the multiple views, traditions and interests (from learner or support perspectives) and the potential for tensions and contradictions influencing activity (Engeström, 2001), central to participation and reification in communities of practice (Wenger, 1998). With the inclusion of these concepts, the interplay of individual and sociocultural factors that influence WBL are accounted for in the model.

On the right side of the model attention is drawn to how learning is mediated and scaffolded through cultural tools and discourse. These sociocultural influences on WBL are understood using the key concepts of mediating artifacts which include people and cultural tools as mediational means (Kozulin, 2003). Boundary objects, boundary encounters and brokers represent the different mediational tools and discourse experienced by work-based learners at the boundaries of communities (Engeström, 2001; Wenger, 1998; Wenger-Trayner & Wenger-Trayner, 2015a).

The cyclical nature of the model reflects trajectories of change and sustainable outcomes achieved through WBL. The transformation of practitioners and their practice is understood

through the remaking of cultural tools for their community (Billet, 2011) and the ensuring development of competence and knowledgeability (Wenger-Trayner & Wenger-Trayner, 2015a). This engagement, and ensuing learning trajectory and identity development of individuals, is believed to be influenced by how learners imagine their future and align self with community goals (Wenger, 1998). Consequently, the role of imagination, engagement and alignment are recognised as influences on learning trajectory.

The Research Approach and Methods

Developing a theoretical framework is an essential task of designing and conducting research. The ontological and epistemological positioning of the researcher, the methodological approach and the theoretical lens through which to situate questions and interpret findings are key considerations. The conceptual model (Figure 1) was used as a theoretical lens to underpin this qualitative case study of WBL influences and outcomes. The investigation was situated within one postgraduate nurse education programme in Ireland, of which I was the course leader.

The case

The 'case' in this study consists of the interrelated parts of the WBL programme: the Postgraduate Diploma in Nursing curriculum; the students on the programme; and those involved in supporting learning (academics supervisors, clinical supervisors and nurse managers). The programme curriculum framework is aligned with Boud's (2001) WBL curriculum elements, outlined in Table 1. The programme ethos supports a dually beneficial approach to learning that aligns practitioner development with practice development for service improvements through negotiated learning activities. Students undertaking the programme are all qualified nurses, working full or part time in clinical settings, who wish to further develop their knowledge, skills and competence within their area of practice. Students are supported through a tripartite system of supervision that includes a clinical supervisor (from their practice setting) and an academic supervisor (a lecturer from the programme). Tripartite meetings are held in the practice area three times per semester with the aim of negotiating and supporting student learning.

Table 1: Postgraduate Diploma in nursing WBL curriculum framework

WBL Curriculum (Boud 2001)	Postgraduate Diploma in Nursing Curriculum Framework
<p>Establish work-based learning in the school and clinical practice</p> <p>Address the diverse range of knowledge and skills of students at the outset</p> <p>Locate the outcomes of work-based learning in an academic framework</p> <p>Promoting the development & negotiation of learning activities</p> <p>Encourage critical reflection throughout the programme</p> <p>Support the on-going learning of students in situ</p> <p>Document learning in a form that can be assessed</p>	<p>Programme Development and Philosophy:</p> <ul style="list-style-type: none"> • Partnership approach throughout between Higher Education Institute and Health Service Organisation • Reflects a transformative work-based model that builds on the potential for learning within the work/practice environment through structured academic and clinical supervision and negotiated practitioner development aligned with practice development opportunities • Process and guidelines for recognition of prior learning (RPL) developed for access to the postgraduate programme • 6 modules, totalling 60 credits at NQAI (2003) level 9 (EQF level 7) <p>Teaching/learning/Approaches:</p> <ul style="list-style-type: none"> • Combined work-based learning as a mode of study with college based lectures and seminars • Work-based learning activities negotiated within learning agreements • Additional external (negotiated) clinical placements in centers of excellence to enable competency development within specialist practice. • Reflecting, enquiring and creating underpin academically rigorous learning for professional practice • Individual enquiry and critical reflection supported within supervisory discourse and seminars <p>Support Mechanisms/Roles:</p> <ul style="list-style-type: none"> • Clinical Management support and commitment required on application • Academic supervision (AS) and Clinical Supervision (CS) and support provided through tripartite meetings (between AS, CS and student) throughout programme <p>Assessment Methods:</p> <ul style="list-style-type: none"> • Theoretical and competency assessment; formative at tripartite meetings; summative at end of each semester • Academic assignments • Portfolio of Evidence • Reflective Learning Log

The participants

In order to explore the influences and outcomes of WBL from multiple perspectives, it was necessary to investigate the views of different stakeholders. Participants in this study included past students who had completed the programme; practitioners in support roles (clinical and academic supervisors); and nurse managers and Directors of Nursing from clinical practice settings. Past students who had completed the programme by 2012 (N = 55) were invited to participate via letter². The temporal aspect of the sample was important in investigating the *sustained* outcomes of WBL (interviews were conducted in 2013). Clinical supervisors, nurse managers and Directors of Nursing involved with the programme were recruited via purposeful sampling. Those who had experience of supporting two or more students over the course of the programme were invited to participate by letter³. Academic supervisors were approached informally first by the researcher then recruited via email.

The purposive sampling strategy yielded a heterogeneous composition of participants (N = 21). They included past students of the programme (N = 11) and those acting in support roles (clinical supervisors, academic supervisors and nurse managers) (N = 10). Some participants occupied dual roles at the time of interview; for example some clinical supervisors or nurse managers had previously undertaken the programme. All the participants in the study were qualified nurses. Practitioner participants worked in a variety of clinical settings; mental health; general; community; maternal and rehabilitation. An overview of the demographic and practice related variables of the sample are outlined in Table 2.

² Approval to contact students for evaluation and research purposes obtained on programme commencement

³ Letters sent to work addresses known to researcher as part of professional working partnerships.

Table 2: Participant details

Code	M/F	Years of Experience	Area of Practice	Position	Programme Role
P1	F	>20	Maternal /Child Health	Staff Midwife	Past Student
P2	M	>20	Regional	Director of Nursing	Commissioner
P3	F	12	Education	Lecturer in Mental Health Nursing	Academic Supervisor
P4	F	6	Education	Lecturer in Nursing	Academic Supervisor
P5	F	15	High Dependency	Staff Nurse	Past Student
P6	F	>20	Mental Health	Clinical Nurse Manager	Past Student
P7	M	15	High Dependency	Clinical Nurse Manager	Past Student/ Clinical Supervisor
P8	F	>20	Community Health	Clinical Nurse Specialist	Past Student
P9	F	12	Habilitation/Rehabilitation	Clinical Nurse Specialist	Past Student/ Clinical Supervisor
P10	F	10	Institute of Technology	Lecturer in General Nursing	Academic Supervisor
P11	F	4	Intellectual Disability	Staff Nurse	Past Student
P12	M	12	Education	Lecturer in Mental Health Nursing	Academic Supervisor
P13	F	>20	Maternal/Child Health	Advanced Nurse Practitioner	Clinical Supervisor
P14	F	4	Mental Health	Staff Nurse	Past Student
P15	M	>20	Community Mental Health	Clinical Nurse Specialist	Clinical Supervisor
P16	F	8	Community Mental Health	Staff Nurse	Past Student
P17	F	>20	General Nursing Acute Care	Clinical Nurse Manager	Nurse Manager
P18	F	>20	High Dependency	Staff Nurse	Past Student
P19	M	>20	Mental Health	Director of Nursing	Director of Nursing
P20	F	>20	Community Mental Health	Clinical Nurse Specialist	Past Student/ Clinical Supervisor
P21	F	>20	General Nursing Acute Care	Nurse Manager	Clinical Supervisor/ Nurse Manager

Data collection and analysis

Semi-structured interviews were conducted with all participants (N = 21) at their chosen location, between March and August 2013. They lasted between 30 – 40 minutes and were digitally recorded following permission. Questions explored topics relating to participant role and area of practice; experiences of undertaking (or supporting) WBL; factors they perceived to facilitate or hinder WBL; and outcomes of WBL. Documentary data sources included the reflective learning logs and portfolios of evidence of the past students (n=11). Students completed these assignments during their WBL and submitted on programme completion. Combined, these documents provided student reflections on their learning over the duration of the programme, evidence of competency development, practice development project reports and records of tripartite meetings. In interviewing past students post programme completion, it was conceivable that perceptions could change due to recall ability or the passage of time. Therefore documentary analysis in addition to interviews helped build a picture of WBL influences and outcomes over time for each past student.

Phased data analysis activities were based on an analytic hierarchy (Spencer *et al.*, 2003) (see Table 3), to ensure a systematic yet iterative approach, which involved three main stages: (1) thematic analysis (2) process tracing (3) a theoretically informed analysis. Microsoft word (2010) was used to support data management, coding and synthesis. Interview and documentary data (student portfolios and learning logs) underwent thematic analysis. Interviews were transcribed in full, recurring themes identified and then grouped. Memos and notes were used to identify then code initial themes in the analysis of documents. A comparison of documentary and interview data through the development of thematic charts lead to the final categories of themes.

Table 3: Analytic hierarchy adapted from Spencer *et al.* (2003: 212)

Stage of Data Analysis		Activities Undertaken
Data Familiarisation	C O N T I N U O U S R E F L E X I V I T Y	Reading of all interview transcripts Reading of all portfolios and learning logs Reading of interview transcripts whilst listening to audio of interview
Data Management: Interview transcripts and learning logs		Initial identification of recurring themes and key concepts based on research questions and theoretical framework Building of a thematic framework and grouping of smaller themes into main themes Application of coding system to raw data. Clustering of data into themes and subthemes
Portfolios		Identification of learning outcomes attained, competency development, practice improvement examples (based on research question 2) Development of categories of data from portfolios
Descriptive Accounts		Data synthesis and creation of thematic charts relative to participant characteristics and context Review and categorisation of data into themes and subthemes Comprehensive narratives of Individual cases (past students) developed Similarities identified
Explanatory Accounts		Explanations from both implicit and explicit accounts were developed. Links between influences and outcomes identified though causal process tracing Application of theoretical framework Related to other studies

The analytic strategy of process tracing offers a temporal aspect to data analysis and enables links to be ascertained between causes and outcomes (Collier, 2011). Blatter and Haverlands’ (2014) methods were applied to individual case analysis of past student participants. Careful examination of documents and interview transcripts enabled the development of a comprehensive story line for each past student. Applying ‘smoking gun’ and ‘confessions’ as observational methods (see Table 4.) strengthened descriptive claims and inferences between the influences and outcomes of WBL for each participant.

Table 4: Key aspects of causal-process tracing (Blatter & Haverland, 2014: 7-9)

Causal-Process Tracing		
Emphases	Configurational thinking	Based on assumptions that: social outcomes are the result of a combination of causal factors; there are divergent pathways to similar outcomes (equifinality); and the effects of the same 'causal factor' can be different in different contexts and combinations (causal heterogeneity).
	Causal mechanisms	Configurative entity that combines different types of social mechanisms
	Temporality	Time and temporality play a major role in causal process tracing. Configurational thinking with temporality complements qualitative comparative analysis
Types of observations	Comprehensive story line	Narrative style of presenting relevant causal conditions, major sequences of process and critical moments that shape the process
	Smoking gun observations	Connected to other observations, shows the temporal and special proximity of causes and effects (not to test hypothesis) Refers to the temporal closeness between observations pointing to a specific cause and others that provide evidence about consequences of the cause
	Confessions	Careful examination of the contexts in which actors provide information about their perceptions, motivations and anticipations. An awareness of typical biases with respect to motivations, in interpreting statements of actors in specific contexts.

The final stage of data analysis involved application of the theoretical framework and conceptual model to synthesised data. All data analysis phases were discussed through the peer debriefing process.

Ethical considerations

Ethical approval was granted by the University and Regional Health Service Ethics Committees prior to data collection. Permission to undertake the study and gain access to clinical staff was granted by the Directors of Nursing where participants worked. Potential

participants were informed fully of the nature and process of the study during the recruitment process (using information sheets) and invited to contact the researcher if they had questions. Written informed consent was obtained prior to data collection activities (interviews and document review) and participants reminded of their right to withdraw from the study at any time. Confidentiality and anonymity of participants (and their employing organisations/practice settings) were protected throughout.

As course leader of the programme I had a professional relationship with the participants and therefore considered carefully the potential impact of being an insider researcher throughout this study. Taking steps to limit bias, I engaged in peer debriefing with an experienced colleague and used a reflective diary. This process of critical reflexivity enabled me to examine decisions made, question any assumptions and ensure conclusions were drawn from research data rather than previous knowledge and experience of the WBL programme.

Findings

Four main categories of data emerged from the thematic analysis:

- Navigating workplace cultures and contexts
- Learning within and across practices
- Practitioner trajectories and transformations
- Practice transformations

Navigating workplace cultures and contexts

This category of data encompassed the role of social and personal agency, colleagues' attitudes and workplace supports as key influences on experiences and outcomes of WBL. Both personal and social expectations of WBL, knowing what to expect, indicated a perceived need for strong personal agency for those undertaking the programme '*you need to be open to it and know what you are getting in to*' (P20, Past Student – Interview). Previous experiences and expectations of postgraduate education were seen to influence both student and clinical supervisors' engagement as '*understanding of what it is all about*' was seen as an issue by student and supervisor participants, suggesting socially derived

individual subjectivities influenced agency (Billet, 2011). The paradigm shift towards WBL challenged practitioners whose previous experience was grounded in instrumental, content driven education as one manager argued the need for *'people who will actually teach specifics of each course'* (P17, Nurse Manager).

Participants revealed the importance of positive attitudes and support at work. The majority of learners were supported by managers and colleagues and were afforded opportunities to engage in WBL. Directors of Nursing recognized their responsibility in creating a learning culture and positive learning environments within their organisations for WBL to thrive.

I worked with the multidisciplinary team, they were very supportive and my nurse managers were supportive...always enquiring how I was getting on. I was given the freedom to attend college, to look at and develop practice (P20, Past Student).

You must foster an environment where the student can openly question their own practice, the practice of the unit ...and that they can then be supported to identify weaknesses (P2, Director of Nursing).

However less supportive cultures, negative attitudes from managers and colleagues were experienced by some past learners, as one described her need to *'fight for everything'*. Another described the poor attitudes of staff in her workplace towards her further study. Yet strong personal agency appeared to override workplace constraints for most past students in this study.

The key role of the nurse manager in empowering staff to engage in WBL projects, especially for students in direct care positions, was observed by many. Some learners expressed the need for dedicated time to engage with work-based learning activities; the difficulties of securing time were evident. Workplace affordances were often connected to learner position within the organisation. For some past students in staff nurse roles this influenced their ability to secure time and access to learning opportunities. Whereas learners who were in advanced positions (such as nurse managers or clinical nurse specialists) during the programme were able to negotiate time for project work within their current role, a finding that was also recognised by those in management positions.

I think there probably should be a few hours, not even a day, from a work perspective that you could just have dedicated to your bit of research in work (P5, Past Student).

The students who are at the managerial level... they've got the position power to do it. It depends on the relationship between the student and manager at local level (P17, Nurse Manager).

Learning within and across practices

WBL was experienced by participants across communities of practice spanning clinical (local practice settings and external clinical placements); managerial (management groups within own organisation or allied professional organisations) and educational settings (class seminars and enquiry groups). WBL across this landscape of practice involved partnership working, boundary encounters and the reciprocity of theory and practice, which enabled the scaffolding of learning. Partnership working through tripartite meetings between academic and clinical communities of practice (situated within the curriculum framework), provided the opportunity for learners, academics and clinical supervisors to negotiate meaning surrounding WBL processes and activities. These meetings were seen as productive and supportive for the majority of participants.

I had a clinical supervisor and an academic supervisor and it was great to have both of them (at the meeting) as they were coming from different perspectives... bashing out an issue. It was great. (P5, Past Student).

Negotiating learning through these tripartite partnerships was significant in aligning learner development needs with practice or service requirements, thus promoting the development of community tools and resources.

When the students are looking for an area of enquiry we usually come up with something there is a problem with rather than going off and doing something that is very abstract. It covers both college work and our service problem, which would benefit the patient (P15, Clinical Supervisor).

However, boundaries between different communities of practice (academic and clinical) were areas of conflict and misunderstanding on occasions, due to the different perspectives and interests of each. One academic supervisor reported students being under pressure at times to achieve a multitude of service improvements highlighting their key role in negotiating student projects that were in the first instance related to student learning needs.

It's also about working with the students and making sure that there isn't a conflict between the student and the clinical person as well.....saying 'while I appreciate this is what you might want as a clinical supervisor this is what the student also has to achieve' (P10, Academic Supervisor).

The role analysis and competency development plans were experienced as significant boundary objects through which the learners negotiated and planned their learning activities. Through the completion of these, learners were able to reflect on their current role and imagine their future role. These activities in addition to partnership working (tripartite meetings) supported the scaffolding of WBL and outlined learner intentionality with regard the kinds of work-based learning activities they would engage in.

The role analysis was a very good way to start any course so you can see what is going to be useful for yourself and what is going to be applicable (P7, Past Student).

My first strategy in developing this competency was to search the literature to ascertain best practice in relation to evaluation of antenatal education. I didn't know where to start. We discussed this in detail deciding search terms and peer reviewed journals. This meeting really helped me to focus on how to commence developing this competency (P1, Past Student – Learning Log Entry).

Findings indicated a reciprocal relationship between theory and practice. Through WBL activities, theory was used to inform practice and practice enabled an understanding of theory. Participants described 'eureka moments' highlighting the role engagement in social practice has in illuminating understandings of theory and the value this has for future practice.

It's one thing reading about it but when you come back here it makes more sense you're going 'oh right that's how it is supposed to be done, that's what that meant' (P14, Past Student)

Practitioner trajectories and transformations

Practitioner trajectories and transformations included developing competence; developing relationships; becoming reflexive and being confident. The development of personal and professional identity has been linked to the social context of learning and meaningful participation in practice (Wenger 1998). Past students in this study were engaged on a trajectory of learning that was aligned with their imagined future or negotiated future of role progression. At programme commencement, several nurses were 'acting' in their roles as clinical nurse specialists or clinical nurse managers and were already on such trajectories

in terms of achieving a qualification to support their career pathway. Others were hoping to advance their careers and promotion opportunities by gaining postgraduate qualifications. Several practitioners upon completion of the WBL programme had secured new positions. Although the transition into new posts and/or roles since undertaking the programme appeared to transform learner identities, past students identified with being a transformed practitioner as a consequence of their WBL experiences.

I am a different person to what I was. Sometimes I am amazed as to how much I have changed and I still think that the course is the root of that... it made me start thinking in a different way, in a more open way (P6, Past Student).

Learner trajectories through WBL resulted in competence development, developing relationships and becoming reflexive, confident practitioners. Key areas of practitioner competence development included audit and research; patient/service user advocacy, facilitating education and clinically focused skills related to their specialist clinical practice. The competency development process was underpinned by the student's competency development plan and related to professional role and relevance to practice. The impact of student competency development on practice was observed by a number of participants across a variety of areas; such as the provision of service user education and development of advocacy initiatives.

Clinically their level of competency has increased and the benefit is that there is kind of a knock on effect. We would see that, for the service users in mental health. One student in particular took on different aspects of an educational mode, both for the service user and the family (P3, Academic Supervisor).

Engagement with WBL promoted relationships between practitioners within and across practice and academic settings, many of which were sustained and proved beneficial beyond programme completion. The value placed on developing and sustaining mutual relationships with practitioners outside their immediate community was evident relative to the benefits of sharing knowledge across communities and developing services from both practitioner and academic perspectives.

The students had an opportunity to establish relationships with those who were working in a centre of excellence that after this programme ended, they would still have these key people that they could consult at any time (P4, Academic Supervisor).

Two years ago I was involved in a project that was out in renal dialysis. I was in and out of the unit so much that we set up informal links with the consultant and the clinical manager. I felt that went really, really well I was over again this year (P10, Academic Supervisor).

The process of writing within the learning log throughout the course, completing a portfolio of evidence and engaging in critical discourse stimulated practitioners to develop reflective skills over time. Being no longer happy with the status quo, questioning and challenging knowledge and practice as a result of their WBL experiences, suggested of a trajectory towards reflexive practice.

It did change how I practice, it makes you look at things differently and constantly reflect on your own practice and ask yourself how you could do things better (P20, Past Student).

It's like I am looking at stuff, I am reading, I am questioning much more like 'who said that, where did you get the evidence for that then' (P14, Past Student).

The ability to promote critical reflection through discourse was a skill that academic and clinical supervisors also developed over time through continued engagement with the programme, suggesting they too were on a trajectory of learning.

I had the role down better the second time... to question more, 'come on let's think a bit differently... tell me how you feel about this, have you any suggestions about what you think we could do', rather than you giving them the answers (P13, Clinical Supervisor).

Increased confidence was a prevalent finding related to practitioner engagement with work-based learning. Confidence in practice, in questioning practice and questioning colleagues was evident in past student reflective learning logs and interview data, demonstrating a changed identity for practitioners in that they became 'confident' practitioners. This decision to act differently as opposed to previously complying with managers' directions without query signified a link between confidence and critical reflexivity

I suppose just questioning maybe my line managers, well I would have confidence in myself to say 'no that's not ok' (P8, Past Student).

Practice Transformations

Data within this category related to developing community tools and resources; knowledge sharing; improving patient care; and sustaining practice development. WBL was understood by participants to be mutually beneficial to practitioners and practice. A breadth and depth

of practice development activities were evidenced through interviews and documentary analysis. Engagement in WBL influenced both technical and emancipatory practice development⁴ during and following course completion. The amount of projects that were embedded in practice and remained on-going at the time of interview signified the sustained influence of work-based learning in a variety of contexts. Practice transformation occurred through the development of community tools and resources and knowledge sharing, which sometimes translated into direct improvements in patient care. Cultural shifts were perceived by several participants within their organisations, associated with emancipatory practice development, as a result of ongoing engagement with WBL.

The production of community tools and resources included the development of practice guidelines; audit tools; and staff and patient education materials and programmes. Signatures from managers and clinical supervisors indicated the authenticity of the work in practice, as opposed to the possibility of it being purely academic. Findings in learning logs and interviews revealed the sense of accomplishment students felt in implementing changes in practice that ultimately benefited patients and service users.

I felt a great sense of achievement when this guideline was implemented into practice as it eliminated admissions for our service users to hospital. Nurses on the ground can change practice with the right knowledge and skills. This has given me the confidence to carry out more research in the area of palliative end of life care and hopefully in the future I can make a difference (P11, Past Student – Learning Log Entry).

That (information booklet) was really needed for some time. It has gone through all the governance and consumer panels. It is going to be in use, indefinitely, on-going with maybe only minor adjustments to it (P20, Past Student/Clinical Supervisor/Nurse Manager).

WBL students' shared knowledge of best practice with their colleagues as they developed competence in facilitating education. Presentations and workshops often related to new practice guideline implementation, audit or patient care topics. This was evident from education materials and evaluations in past student portfolios, learning logs and participant interviews. Partnership working through the tripartite support system promoted learning

⁴ Emancipatory practice development concerns the transformation of the culture and context of care, for improvement purposes (Garbett & McCormack 2004). Technical practice development relates to the development of a specific aspect of practice such as a guideline or policy (DoCH 2010).

between lecturers and practitioners, thus facilitating knowledge exchange and sharing of best practice across the landscape.

I took on a project in acute stroke care so in terms of education and training I trained my colleagues in that particular acute care area (P9, Past Student).

I was actually learning from the studentI learnt nearly as much being a supervisor. I was being a supervisor/student (P12, Academic Supervisor).

Through the process of participation and reification, negotiated WBL activities enabled past learners to develop competence and produce meaningful tools and resources for their practice communities. In this study the development and implementation of evidence based practice guidelines; the sharing of best practice through staff education sessions; conducting audits for practice improvement; and engaging in advocacy initiatives that involve the service user are a powerful demonstration of the benefits of WBL to both students and their organizations.

Sustained changes in practice were perceived by many of the participants. There were suggestions of cultural shifts within clinical settings as a result of practitioners undertaking WBL and the ensuing promotion of team learning and sharing of best practice.

It has an impact on the unit as a whole and things change, culture shifts from a place where we just come do our work and go home, to a place where we can openly discussit makes the environment very open to change (P2, Director of Nursing).

Entries in learning logs on programme completion often outlined learner intentions to continue their engagement with practice development; many of which were validated in participant interviews post programme completion as practitioners gave examples of new initiatives they were engaged in. However sustained change was not always perceived. The relational interdependence between and social and personal factors as the explanation for practitioners not continuing with practice development activities following completion of their programme was recognised.

Once sort of the programme finishes, the innovation, the projects, they seem to fall once the postgrad qualification is then got. I suppose that's also compounded by the environment we currently live inopportunities are not as forthcoming in terms of promotion (P21, Clinical Supervisor/Nurse Manager).

Discussion: Applying the Conceptual Model to the Research Findings

The findings from this study support the conceptual model proposed in this paper as a means of investigating and understanding the interrelated influences and outcomes of WBL. Thematic analysis uncovered four main categories of data: navigating workplace cultures and contexts; learning within and across practices; practitioner trajectories and transformations; and practice transformations. Process tracing of individual past student cases identified the learner trajectories through WBL that are unique to each learner and dependent on the degree of individual and social contributions across the landscape of practice in realising and sustaining WBL outcomes. Learning at, for and through work was found to be a combined endeavour of individual intentionality, agency and engagement with work-based learning opportunities, tools and discourse, in addition to the degree of workplace affordances (or constraints), within and across communities of practice.

Factors Influencing Individual and Social Contributions

An interdependent relationship exists between what is afforded individuals at work and how they choose to engage with work-based learning, thus indicating the duality of social and personal contributions required for success (Billet, 2011). However the efforts of individuals, their subjectivities and degree of motivation to engage in WBL despite challenges and constraints are powerful influences on WBL trajectories. Motivation to pursue and intentionality to learn from opportunities afforded to them was significant for many students in this study (Billet, 2011). It was clear that all students found WBL *'hard work'* all experienced time constraints and pressures associated with the dual role of learner and practitioner (Ramage, 2014). However, learner intentionality to continue on their trajectory despite *'feeling overwhelmed'* at various junctures through the programme was powerfully demonstrated. This was particularly evident for one student who surmounted work-place constraints by independently accessing resources and other people to achieve significant changes in practice. This suggests that learner agency, relational agency, individual contributions and resilience are of paramount importance in managing learning journeys through work and addressing weaknesses in work-place affordances (Billet & Choy 2013).

Mediating artefacts: tools and discourse

The tools and processes situated within the WBL curriculum were significant in promoting engagement and scaffolding learning through and for work for learners in this study. Findings suggest that boundary objects (the role analysis, competency development plan, learning logs) and boundary encounters (tripartite meetings) had a key role in mediating and scaffolding learning. The value of the role analysis in aligning WBL with role relevance and informing the competency development process was evident (Stanley & Simmons, 2011). Tripartite meetings enabled the negotiation of mutually beneficial learning for students and their organisations through discourse underpinned by the role analysis and competency development plans. Although multi-voicedness and competing interests resulted in conflict at times, for most, the multiple viewpoints and interests of clinicians and academics furthered understanding and promoted mutually beneficial engagement at the boundaries of academic and clinical communities of practice. The joint planning of student projects situated in practice enabled the negotiation of meaning between theory and practice, in addition to continued discourse surrounding the process of participation (engagement in practice) and reification (the production of something useful) (Wenger, 1998). However the power dynamics within a community of practice were evident on occasions where students were restricted from engagement with project work as a result of their position within the organisation. The potential role of academic supervisors in brokering WBL experiences and projects for students struggling to manage workplace constraints, is an area requiring further investigation.

Trajectories and transformations

Findings support Wenger-Trayner & Wenger-Trayners' claim that 'meaningful engagement across boundaries is transformative' of both practice and identity (2015: 108); as both personal and professional transformations were evident (Boomer & McCormack, 2010, Ramage, 2014). WBL participants became more confident and competent in their role thus indicating development of professional identity (Booth, 2019). It was the types of activities and social interactions that practitioners participated in that influenced their learning and transformation of self (Billet, 2004) and practice (Billet, 2011). Constant reflection on learning and practice (written and with supervisors) enabled the development of reflexive, proactive practitioners overtime who questioned and challenged practice. Learners

identified as being a '*transformed practitioner*' as a consequence of their WBL experiences. The alignment of competency development with the production of community tools and resources (participation and reification) enabled practitioners to develop 'knowledgeability', the building of relationships across the landscape and knowledge of people and practices related to their own (Wenger-Trayner & Wenger-Trayner, 2015a). Similar to Miller and Volantes' (2019) findings on workplace impact, undertaking projects related to workplace priorities and support from colleagues were considered important for creating and sustaining change through WBL. In this study, practitioner outcomes of knowledgeability and reflexivity (evident through learning log entries), were linked with sustained practice development outcomes, described by participants at the time of interview. This sustained impact also appeared to be a reflection of the practice community, as tools and resources were shared and further developed by the team, or new projects initiated. WBL was found to have a positive influence on learning cultures within organisations and create conditions for change (Boomer & McCormack, 2010; Ramage, 2014).

The relationship between social and individual contributions to WBL was also found to influence the continuation of practice development outcomes beyond course completion. One participant did not implement the tools and resources she developed during the programme, despite outlining her intentionality to do so in her learning log. Findings from her interview suggest that workplace cultures and constraints were a stronger force than her own agency. Whereas another participant faced with similar restrictive workplace cultures, was more successful in implementing and sustaining a number of practice developments beyond course completion, suggesting her agency outweighed workplace constraints. Although individual contributions have the potential to outweigh workplace constraints, conversely workplace constraints can limit the potential for sustained change in practice.

Conclusion and Implications

This paper has provided a discussion and trajectory of key ideas and concepts from sociocultural theory, CHAT, communities/landscapes of practice theory, and their importance for understanding and positioning research on WBL. These progressive theoretical and conceptual frameworks have been used to examine the sociocultural

influences on WBL in relation to the differentiation of sustainable outcomes in this study. The conceptual model offers the researcher a way of thinking about and investigating the influences and outcomes of WBL in Higher Education within their own discipline; be it healthcare, engineering or business for example. It is not a universal explanation of WBL influences and outcomes; it is a preliminary point within which to situate an investigation of WBL and all its complexities. A number of questions are raised: How do individual and social factors influence learner experience and outcomes of WBL? How does individual agency outweigh workplace constraints? How does multi-voiced-ness influence participation and reification within and across communities of practice? How are cultural tools (boundary objects) used at the boundaries of communities; what happens at the boundaries (boundary encounters) and who negotiates learning at the boundaries (brokers)? How do students undertaking a WBL programme, participate in and engage with multiple communities of practice across a landscape of practice? What are the products, reified outputs of their participation? How do work-based learners engage in the remaking of cultural tools and are these sustained? How do work-based learners develop competence and knowledgeability across a landscape of practice? These questions are important in furthering understanding of WBL influences and outcomes in differing contexts.

The model also provides a common language for academics, supervisors and students to broaden the discourse surrounding WBL pedagogy and practices regardless of the mode or disciplinary field such programmes are situated within. A framework that recognises the complex sociocultural influences and interfaces between communities, systems, organizations and individuals is essential in supporting successful WBL programmes. By integrating the model into induction programmes for students and supervisors, increased awareness to these challenges and discussions surrounding potential solutions may prevail. The need to pay attention to both sociocultural and individual factors that influence WBL and the many tools and processes of mediation is emphasized within the model. Promoting understanding and discourse around the multi-modal influences on WBL is critical if sustainable outcomes that are beneficial to learners, their professional role and work contexts are to be realized.

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