Theoretical perspectives on assessment in cooperative education placements

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In this paper we examine theoretical perspectives on assessment in cooperative education placements. As assessment is linked to student learning, we focus briefly on the purposes of assessment. We then consider a range of learning theories that have been, and are more recently, explored as ways to explain the process of learning on cooperative education placements and their implications for assessment. We conclude that assessment that focusses on a student actively participating in a socioculturally-influenced process is likely to be a fair reflection of, and help facilitate, student learning in cooperative education placements. *(Asia-Pacific Journal of Cooperative Education, Special Issue, 2014, 15(3), 189-207)*

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The principal goal of any educational program is to facilitate student learning. In educational programs, assessment is intrinsically linked to student learning and performance. In cooperative education, this learning largely occurs in two milieu: the educational institution and the workplace. Whilst assessment of student learning in educational institutions has been strongly theorized and well-researched, the assessment of student work placements and internships has been more problematic. Student learning in placements and internships has been described as broad in nature, complex and individual, and influenced by a myriad of contextual factors (Eames, 2003; Johnston, Angerilli, & Gajdamaschko, 2004). Work practices are inherently interactive, collegial and interdependent. Assessment of student performance and learning in these situations necessarily includes consideration of both hard and soft skills and involves a variety of assessors. It is hardly surprising then that the assessment of work placements and internships is challenging and demands a strong theoretical foundation. In this paper we set out some perspectives on that theoretical foundation of learning and its assessment in cooperative education.

THE PURPOSE OF ASSESSMENT

We begin with a brief look at the purpose of assessment, as this subject is dealt with much more conclusively by Yorke in this special issue. Brown and Pendlebury (1992) tell us that assessment originates from the term 'adsedere' - to sit down besides - and is primarily

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concerned with providing guidance and feedback to the learner on their learning. The nature and extent of this guidance and feedback is dependent upon the purpose of the assessment. Traditionally, there are two broad purposes of assessment, which are usually categorized as being either *formative* or *summative*. Formative assessment can be thought of as helping students improve as they work, while summative assessment makes evaluative judgments about level of achievement at the end of a placement (Brown, 1999). Formative assessment, often described as feedback by an educator, could be an important element in cooperative education placements as a student learns on the job. Summative assessment in cooperative education is generally criterion-referenced, where the student's performance or competence is assessed against some specified behavioural domain, standard or criteria (Mehrens & Lehmann, 1991). As we will argue through our theoretical discussion later, this process needs some careful thought.

A further purpose of assessment, originally identified by Rowntree (1987), is that it needs to prepare students for life. This is based on the view that learning is not something that only occurs during formal education, but is something that occurs throughout life. Given the influence of assessment on learning, Rowntree argued that assessment should help students to understand their own learning by providing feedback to themselves and "be weaned off dependence on others for knowledge of how well he [or she] is doing" (p. 27).

The value of lifelong learning for employment, the broader economy and life in general, and the subsequent implications of this for higher education, was identified in a number of influential reports in the mid-1990s (Dearing, 1997; Kennedy, 1997; Fryer, 1997). This increased attention to lifelong learning resulted in a greater focus being placed on the broader capabilities required of graduates beyond university, such as those identified by Stephenson and Yorke (1998). This change in perspective on the type of skills and capabilities required of graduates for lifelong learning was influential in a move away from the predominant teacher-directed approaches to learning, and a greater emphasis being placed on student-centered learning (Hasan, 1999). While student-centered learning has seen increased student involvement and participation in learning activities, it has not led to a similar change in curricula and assessment practices that may contribute to the desirable graduate outcomes necessary for lifelong learning (Taras, 2002). Given the important influence of assessment on learning, Taras suggests that, "it is becoming doubtful whether we are actually producing confident, independent and autonomous learners or worse still, whether these qualities are actually being undermined in learners during their time at university" (p. 502). Boud and Falchikov (2006) argue that a key constraint is that assessment practices are usually framed within the immediacy of current learning related to the curricula, which ignores "the place of assessment in learning beyond the academy and the contribution higher education can make to it" (p. 400). Boud and Falchikov consider that equal attention needs to be given to this "alongside the well-established purposes of assessment for certification [summative] and assessment to aid current learning [formative]" (p. 400).

Traditional approaches to assessment involve the teacher determining the required learning, the related assessment tasks and criteria, the performance of the student, and the grade awarded. Such approaches mean the student takes a passive, rather than active, role in assessment; counter to the need for sustainable assessment practices that help prepare students for lifelong learning beyond the academy.

An important contribution to learning is developing students' capacity to self-assess their work (Biggs, 2003). It has been argued that competent learners are those who are able to self-monitor their work (Boud, 1995; Falchikov, 2005; Gipps, 1994), which is a pre-requisite for self-regulation (Sadler, 1989). Intelligent self-regulation requires students to be competent learners who are able to measure and evaluate their own performance and progress towards their goals or objectives (Brookhart, 2001; Nicol & McFarlane-Dick, 2006; Sadler, 1998). Sadler (1989) considers that this enables learners to close the gap between the actual level of performance and the reference level, which in turn enables them "to judge the quality of what they are producing and be able to regulate what they are doing, during the doing of it" (p. 121). Such development will also enhance their capacity to become lifelong assessors of their own learning, an important sustainable assessment practice (Boud, 2000). The self-assessment and collaborative approach to performance assessment also parallels common performance evaluation approaches that students are likely to experience in their future careers.

Boud and Falchikov (2006) argue that "assessment activities should not only address the immediate needs of certification or feedback to students on their current learning, but also contribute in some way to their prospective learning" (p. 400). When graduates leave the confines of a formal education environment they will need to be equipped to make their own judgments about themselves, their performance and their learning, in a world described by Barnett (1999) as one involving 'supercomplexities' in which knowledge of what is required in a job is frequently changing. In such a world, workers will need "the capability to learn and change as a result of experience and reflection" (Duke, 2002, p. 28).

In the context of cooperative education, if assessment is to be sustainable it needs to consider how it contributes to preparing students for the future. In particular, how it helps develop self-regulation and development. To underpin sustainable assessment practices that promote active student participation, we now consider views of learning in cooperative education that can guide these assessment practices.

VIEWS OF LEARNING IN COOPERATIVE EDUCATION

As Eames (2003) notes, "It is important to educators that learning through work experience is understood so that it can be appropriately assessed" (p. 23). A number of theoretical views have been explored in an attempt to understand and characterize learning in placements (Eames & Cates, 2011; Van Gyn & Grove-White, 2011). These range from behaviorist ideas to cognitive development theories to more recently, sociocultural views of learning.

BEHAVIORISM

A behavioral view of learning is concerned with how the external environment influences and modifies human behavior (Mowrer & Klein, 1989). The basic notion of this view is that competence can be achieved by breaking down tasks and activities into their component parts or small steps. Achievement of each step is acknowledged and reinforced, providing the motivation to move to the next step. Miller and Seller (1990) note that this view of learning influenced a *transmission* pedagogy in education in which curricula knowledge is held by the expert teacher who passes on (or transmits) this knowledge to the student; analogous to pouring knowledge into the 'empty vessel' of the student's mind. This approach led to "content reproduction, combined with the assumption that learning is a solitary activity but similar for all students, permits direct comparison of student performance" (Van Gyn & Grove-White, 2011, p. 32).

Shepard (2000) argued that the atomized, deconstructed, behaviorist approach to learning also led to the separation of instruction and formal (summative) assessment, with the latter being an objective exercise in determining whether the learner was ready to move to the next stage of instruction. This 'building block' approach to learning led to a focus on the sub-components of student performance, rather than viewing performance as a whole (Jones, 1999) and, in the case of work-based learning, ignoring the contextual complexities inherent in a practice setting (Gonczi, 1994; Wolf, 1995). Thus subjective, holistic forms of summative assessment linked to the individual learner were seen as being unfair because "to ensure fairness, teachers believed that assessments had to be *uniformly* [original emphasis] administered, so they were reluctant to conduct more intensive, individualized assessments" (Shephard, 2000, p. 5). Such uniform approaches to assessment raises issues of validity and reliability, which were often underpinned by the behaviorist view, based on the assumption of a fixed curricula in which outcomes or performance expectations would be the same for each student.

The main criticism of the behaviorist approach to learning was that it took a simplistic and "mechanistic view of humans controlled by their environment" (Bruning, Schraw, & Renning, 1999, p. 5). In other words, behaviorism focused on learners reacting to environmental stimuli, rather than viewing learners as agents of their own learning.

COGNITIVE VIEWS OF LEARNING

In response to these criticisms, cognitive development theories developed in a number of guises. One particular perspective that has had a major influence in education is that of *constructivism* and its different forms. Bruner (1990) argued that "the central concept of a human psychology is *meaning* [original emphasis] and the processes and transaction involved in the construction of meanings" (p. 33). This view of the learner as a meaning-maker emerges as a common theme in constructivism, in particular that meaning and knowledge are formed by the interaction of new stimuli and ideas with an individual's existing knowledge and prior learning experiences (Bruner, 1990; Tobin & Tippins, 1993;

Wheatley, 1991). Essentially, meaning and knowledge are constructed in the mind through an interplay between what we currently understand (and how we organize these thoughts) and from what we subsequently experience in our encounters with the world around us, that is, our prior mental constructions both precede our observations (Boyd, 1994; Nussbaum, 1989), and influence how we view these observations (Duckworth, 1987). Bruner (1990) argued that these individual meanings are also interpreted and shared through our interactions with the cultural surroundings:

> By virtue of participation in culture, meaning is rendered *public* and *shared* [original emphasis]. Our culturally adapted way of life depends upon shared meanings and shared concepts and depends upon shared modes of discourse for negotiating differences in meaning and interpretation (p. 12).

From this constructivist view, learning is said to be "tuned to the situation in which it takes place" (Biggs, 2003, p. 21).

There are several implications of these constructivist views of learning for assessment in cooperative education. First, it is likely students' starting points are all different; each having differing levels of prior work and lived experiences. Thus assessment needs to acknowledge that each student learns different things from their work placement, each being of potential value and merit. Second, attention needs to be given to preparing students for their placement in ways that enables them to draw upon their existing knowledge schemas and link this to the possible stimuli afforded by a working environment. Assessment needs to find ways of probing their reactions to both the intellectual and emotional experiences they have. Third, assessment needs to include ways of enabling students to link their prior experiences and knowledge (e.g., theories developed in the classroom environment) with workplace practices. Fourth, students' procedural and conditional knowledge need to be emphasized. Finally, when preparing students for placement, and subsequently assessing the learning, it is advisable to allow for both verbal and imaginal expressions of learning. For example, portfolio-based assessment would enable students to demonstrate what they have learned using more than words (e.g., diagrams, pictures, photographs, videos).

Piaget is considered to be a key figure in the foundation of constructivism, based on his work in the cognitive development of children and young adults (Johnson & Gott, 1996; von Glasersfeld, 1988). According to Piaget (1950, 1985), a key aspect of the development of cognition and logical thinking in the learner (of all ages) is through their encounters with the world around them and the extent to which this reinforces or disturbs their current way of thinking about things (*equilibration*). What is considered to be familiar or similar to other prior experiences can be *assimilated* into the learner's existing knowledge or internal cognitive structures. The unfamiliar or new experience must be *accommodated* by the learner and this requires an adjustment to the learner's cognitive structures and the way they think about the world. Piaget argued that a learner facilitates cognitive growth throughout their life by maintaining a balance between assimilating and accommodating new knowledge, which he refers to as a process of equilibrium. Part of this process involves the learner in confronting

their prior ways of thinking about things that are in conflict with or do not fit easily with their experience of a new situation, causing cognitive conflict. According to Piaget (1950) this is not an easy process and can create a state of *disequilibrium* in the learner. This can sometimes result in the learner being reluctant to change their way of thinking even when there is significant evidence to suggest this is required (Kamiloff-Smith & Inhelder, 1975).

Eames and Cates (2011) relate Piaget's concept of equilibration to cooperative education. They argue that exposing students to the workplace provides an easier transition from classroom learning to workplace learning. This simultaneous development of reasoning and thinking in the two environments helps to maintain the learner's cognitive growth and logical thinking without overly disturbing their equilibrium:

> The non co-op student develops the logic of the classroom but upon graduation, must radically shift to the logic of work. This adjustment to the student's internal [cognitive] structure and subsequent change in thinking creates a state of disequilibrium that may explain the transition problems employers often describe in non co-op students. Co-op students may experience less disequilibrium compared with non co-op students (p. 43).

Referring to Piaget's cognitive theory of assimilation and accommodation of knowledge, and recognizing the potential for disequilibrium, Winter (2003) says that assessment practices need to recognize that learning "is a *process* [original emphasis] that takes place gradually, so students need time to digest their learning and to *make sense of it* [original emphasis]" (p. 120). This sense-making through experience and reflection (Schön 1983, 1987) has been the basis of further theorizing of relevance to cooperative education.

EXPERIENTIAL LEARNING

Principles from experiential learning theory have often been allied to cooperative education and internships, this alliance being seen as a natural fit to the experiential component in these programs. An influential educational philosopher, John Dewey (1938), viewed experience as an essential component of learning; that we learn best when actually experiencing the phenomena under scrutiny, creating the commonly known expression 'learning by doing'. In education, the notion of learning by doing is indicative of an activity-oriented approach, as noted by Gentry (1990): "Students must be involved in the process. Experiential learning is active, rather than passive" (p. 13). The active nature of experiential learning means that it is also considered to go beyond the cognitive dimension and includes affective and behavioural aspects of learning (Hoover & Whitehead, 1979).

Experiential learning has become known for its cyclical nature, which has its roots in Dewey's (1938) view of experience as one of continuity: "The principle of continuity of experience means that every experience takes up something which has gone before and modifies in some way the quality of those which come after" (p. 27). In other words, each student's experience opens up new ways of looking at things, which provides new cognitive

frameworks for viewing subsequent experiences, and so on. Each experience involves our interaction with whatever constitutes our environment within a given situation (e.g., people, the subject of conversation, objects). Dewey viewed the two principles of continuity and interaction as inseparable, as each interaction shapes our future.

While experiences shape our learning, without impulse, purpose and means they are unlikely to result in meaningful and intelligent outcomes. Dewey (1938) viewed impulses as our desires and feelings which are "the ultimate moving springs of action" (p. 82). Purpose involves observing the conditions we are in, using our knowledge of what we experienced in similar situations in the past, and then using judgment based on the interaction between current observation and prior knowledge. Means are viewed as converting impulses and purposes into a plan of action. Dewey stressed that teachers have an important responsibility in creating the right conditions that result in *purposeful action* of the students. Such conditions include the need for the teacher to engage with students in order that they become aware of their "capacities, needs, and past experiences" (p. 85). In relating this to cooperative education, it would seem incumbent upon those preparing students for a work placement that attention is given to students' past experiences and knowledge. While students undoubtedly have a desire and impulse to do well in their placement, they may not have the necessary skills to take purposeful action. One approach to building such skills may be to work with students to help them identify their perceived strengths and weaknesses and to use this as an individual plan of action or set of personal goals for their placement. Students might also be encouraged to observe those things that might be considered to be important, and to subsequently reflect on these observations in a way that, as Piaget outlines, assimilates and accommodates this with their prior knowledge and experiences.

A further contribution to the theory of experience-based learning was through the work of social psychologist, Kurt Lewin. Lewin's contribution led to the development of the experiential learning model (see Lewin, 1964) involving four elements. The cyclical model commences with concrete experiences which are subsequently reflected on. These reflections create the basis for the formulation of abstract concepts and generalizations (theories); the implications of which are used to guide future actions. This then leads to the next concrete experiences, and so on. Kolb (1984) built on the work of Lewin, as well as the work of Piaget and Dewey, to create an integrated model of experiential learning in education that makes explicit linkages between a student's personal development, the workplace and formal education. He viewed the workplace as "a learning environment that can enhance and supplement formal education and can foster personal development through meaningful work and career-development opportunities" (p. 4). A key aspect of this integrated view of experiential learning is that learning should be conceived of as a *process*, rather than an outcome. He criticizes educational institutions for defining learning through outcomes (and by implication assessment of outcomes), which he considers is caused by behaviorist influences embedded in our consciousness.

In contrast to the behaviorist views of learning, Kolb (1984) stated that experiential learning theory views learning differently: "Ideas are not fixed and immutable elements of thought, but are formed and re-formed through experience" (p. 26). He points out that in the models and views of learning developed by Dewey, Piaget, and Lewin, each view learning "as a process whereby concepts are derived from and continuously modified by experience. No two thoughts are ever the same, since experience always intervenes" (p. 26). Kolb's views of experiential learning reaffirm that a student's learning in the workplace is unique to them. Each student's development is then derived from the learning experiences they have and the prior knowledge and experiences they bring to each learning situation. While a learning outcome approach is commonly used in higher education, experiential learning theories suggest some caution is needed when used in cooperative education, where the learning occurs through the individual experiences students have in the workplace.

Cooperative education placements and internships are viewed as ideal 'real-life' opportunities that meet most of the criteria for acceptable, experiential learning pedagogical practices (Gentry, 1990; Gentry & Giarmartino, 1989). However, Gentry (1990) highlights two criteria that can sometimes be problematic in internships (and arguably could also be applied to cooperative education in general), which involve structure and feedback on student learning and performance. Lack of attention to these is likely to reduce the quality of learning that occurs. Because the learning takes place outside of the formal education setting, learning is less certain and "an 'experience' by itself will not ensure learning ... [and] if there is no guidance provided, the experience may be largely meaningless" (p. 14). Gentry and Giamartino (1989) suggest that a structured approach can enable attention to be paid to feedback. The authors reinforce the importance of focusing feedback on the process of learning, rather than simply on the outcome (e.g., from a written report). An implication of this for assessment is that students need to be able to articulate their learning and understanding in ways that elicit feedback from their employer (workplace host) and/or from their academic supervisor. An important and implied aspect of the experiential model of learning is the need for learners to reflect on their experiences in order to generate new concepts and meanings, which in turn informs future actions and experiences. The notion that these actions and experiences occur in a socially and culturally-derived context leads to a consideration of a further set of theoretical ideas of learning that are germane to cooperative education.

SOCIOCULTURAL VIEWS OF LEARNING

Earlier views of cognition, including constructivism, considered learning from an internal mental processing perspective, in which expertise is related largely to cognitive or intellectual ability (Sternberg, 1988). A constructivist view of knowledge is that individuals construct new knowledge from interactions with the world around them. As such, individuals are 'meaning makers', who learn from the interaction between new information and their current knowledge and prior learning experiences. This viewpoint gives the impression that knowledge is internalized by the learner and is largely a cerebral exercise

and therefore "too easily construed as an unproblematic process of absorbing the given, as a matter of transmission and assimilation" (Lave & Wenger, 1996, p. 143). In cooperative education, student placements will occur in different workplaces, with each bringing their own sociocultural influences on student learning.

Social constructivists consider that learning occurs within a social context (Wertsch, 1991) and that new information is obtained by individuals by constructing knowledge through their interaction with and influence from their social environment. Thus an individual's constructs are influenced by their own prior knowledge, and are also subject to influence by peers, contextual experiences, and social interactions within their particular learning environment (Good, Wandersee, & St Julien, 1993). In effect, while we may make meaning from the world in our mind, we do so through our active engagement with the social world.

Vygotsky (1978, 1981) viewed cognitive processes to be inseparable from social interactions and felt that learning cannot be explained solely by a process of internal assimilation and accommodation of new knowledge, but must also consider the way in which learners are integrated into a 'knowledge community'. In effect, the human mind and the way it constructs knowledge is embedded in a social setting. Importantly, Vygotsky argued that it is the social dimension of consciousness that creates the origins and stimulus for individual cognitive activity and the higher mental functioning. Vygotsky (1978) considered that the social setting creates its own culture – communicated through *physical tools* (graphical, verbal, and gestural signs) and *psychological tools* such as language.

There are two aspects of Vygotsky's concept of knowledge construction that require further brief exploration. First, it is apparent that the physical and psychological tools employed within a social setting provide the mediating mechanism for individual meaning-making. Knox and Stevens (1993) point out that the tools employed are merely symbolic and that it is the meaning encoded within them that is important. This, they suggest, means the tools employed necessarily vary in their impact on mental functioning and development. The second aspect is in Vygotsky's use of the term 'culture'. This term is used broadly, and he sees culture as being inseparable from its 'social' dimension: "Culture is the product of social life and human social activity. That is why just by raising the question of the cultural development of behavior we are directly introducing the social plane of development" (Vygotsky, 1981, p. 164). Vygotsky, like other social constructivists, viewed social activity, through its cultural forms and within its cultural settings, as creating shared meanings and individual mental constructs. Thus meaning and reality are socially constructed within cultures by the members within it (Kukla, 2000). These relationships formed are socially determined and this influences knowledge shared and learning derived (Goodnow, 1990).

The implications of social and cultural construction of learning for assessment means attention is given to how learning is both situated and distributed across cultural settings within communities of practice. This requires assessment to consider the emergent, informal learning that occurs within a community of work practice, rather than the pre-determined, formal learning that occurs within a community of education practice.

SITUATED LEARNING

The notion of *situated learning* has expanded on the premise of social constructivism by emphasizing the important influence of context on learning. Tennant (1999) defines situated learning as "a broad collection of work which shares an emphasis on the importance of context in acquiring knowledge and skill" (p. 170). Tennant notes that situated learning is underpinned by four key principles or assumptions, which can be summarized as: high level learning is gained from everyday work and life experiences; localized, domain-specific knowledge is necessary for the development of expertise; learning is a social process; and knowledge is embedded in practice and transformed through goal-directed activity. In emphasizing the importance of context and activity in formal education, Brown, Collins and Duguid (1989) point out that classroom learning is typically decontextualised, separating knowledge from the situation in which it is intended to be used as though "it is ancillary to learning and cognition" and suggest that context should be "an integral part of what is learned. Situations might be said to co-produce knowledge through activity" (p. 32).

There is some overlap between cognitive learning and situated learning. Shephard (2000) noted that "cognitivists focus more on cognitive structures, abstract representations, and in generalized principles" (p. 11). Greeno (1997) notes that cognition also focuses on acquisition of skills. Situated learning (or situated cognition as it is sometimes referred to) builds on this by focusing on "students' development of participation in valued social practices and of their identities as learners" (Greeno, 1997, p. 9). In other words, learning is also related to and influenced by the situation in which the learning activity occurs. It follows that performance and learning in the workplace are influenced by the often unpredictable, authentic, situated activities that students must adapt to, which is quite different to the situated nature of learning in a formal education setting in which students adapt to pre-determined, simulated activities.

However, relating students' 'efforts and successes in learning' to the notion of competence is a more complex issue. Eraut (2004) considers that this is due to the social-centered nature of workplace learning in which competence involves "meeting other people's expectations ... which will differ according to the performer's experience, and sometimes according to the price of their service" (p. 264). Furthermore, Eraut points out that competence is a moving target because "what counts as competence will change over time as practices change and the speed and quality of work improves" (p. 264). A further complexity in learner competency is when considering the issue of knowledge transfer across different situations. In this regard, Greeno (1997) considers that improvement in learning (and competence) "involves becoming better attuned to constraints and affordances of activity systems so that the learners' contribution to the interaction is more successful" (p. 12). In other words, what is of importance in knowledge transfer is not just the skills and knowledge (or competencies) acquired in a particular situation, but the understanding of how these competencies interact with and are influenced by the activities themselves and the situation in which they are

undertaken. Greeno's view also implies that competent performance in one workplace is not necessarily predictive of performance in another workplace.

Another important aspect of the situated nature of learning is that it is usually informal and occurs through interaction with co-workers. In Billett's (1994) research that considered the nature of learning within a mining and secondary processing plant, he concluded that the activities producing knowledge were embedded in the "social relations which comprise cultural practice" (p. 128). It was apparent that workers learned the most from their informal, everyday encounters with other workers (e.g., listening, observing and entering into a dialogue while undertaking work activities).

While informal learning is situated in a workplace setting, Cole and Engeström (1997) consider that it is also *distributed* across individuals and artefacts (e.g., through textual, electronic, and other visual forms). This means that learning is not solely a cognitive activity involving engagement with the social world, rather it is the social world, through its cultural forms, that distributes learning throughout the particular community; residing jointly among individuals and its cultural tools (Salomon, 1997). In other words, learning (and the knowledge derived) is not only situated, but is contextually-bound and distributed across a workplace community in different forms. Unlike the learning that occurs within a formal education setting, situated (and distributed) learning in the workplace can be considered to be "a sociocultural phenomenon, rather than an isolated activity in which an individual acquires knowledge from a decontextualised body of knowledge" (Buysee, Sparkman, & Wesley, 2003, p. 267).

APPRENTICESHIP

In a workplace setting, the social guidance between the learner and the more expert other is considered to be an important aspect of the learning process (Billett, 1994). Therefore, the support and development afforded by the traditional teacher-student relationship in a formal educational setting must be reconsidered. For example, an academic who supervises students in cooperative education cannot be considered as the expert practitioner within each workplace setting, and is likely to be unfamiliar with the cultural setting and its influences on student learning. Importantly, the academic is not in a position to actively engage with the student in their day-to-day activities, and is removed from the student's interactions with workplace staff and the formative feedback they receive. As a result, this makes it "extremely difficult to monitor the student's learning as it takes place" (Gentry & Giamartino, 1989, p. 129). A brief examination is given here to ideas that inform the nature of the support for student learning in a workplace setting and the implications of this for assessment.

The term apprenticeship is commonly referred to in different ways to explain the relationship between the student and the more experienced expert. Brown, Collins, and Duguid (1989) use the analogy of a craft apprenticeship to explain the notion of *cognitive apprenticeship*, which they view as "supporting learning in a domain by enabling students to acquire, develop and use cognitive tools in authentic domain activity. Craft apprenticeship

enables apprentices to "acquire and develop the tools and skills of the craft through authentic [situated] work" (p. 39). Thus cognitive apprenticeship occurs within a cultural setting where "ideas are exchanged and modified and belief systems developed and appropriated through conversation and narratives" (p. 40). Vygotsky (1978) considered that the construction of knowledge is maximized through a novice-expert relationship in which the expert provides guidance and support to the learner, gradually reducing this support as the learner becomes more competent. This is referred to by Bruner (1966) as *scaffolding*. The gap between the level of unaided performance and that demonstrated under expert guidance Vygotsky termed the 'zone of proximal development' (ZPD). Lave and Wenger (1996) noted that this concept can be subject to a number of different interpretations. Two particular interpretations are of relevance to cooperative education. First, in a 'scaffolding' interpretation the focus of the ZPD is on an individual's problem solving abilities. In the second interpretation, ZPD is viewed from a 'cultural' perspective. Here the ZPD is seen as "the distance between the cultural knowledge provided by the socio-historical context … and the everyday experience of individuals" (p. 144).

Each of these interpretations has implications for learning and assessment in cooperative education. In considering the first interpretation, the formative nature of scaffolding through the process of expert guidance suggests that the student's performance in a work placement is the result of a combination of the individual student's problem solving ability, their willingness to learn and the quality of the guidance given to them. This guidance involves worksite experts (employer & employees), as well as academic experts. Arguably, the situated nature of the work means that the guidance provided in the workplace is of the most value to the student in solving day-to-day, work-related problems. However, unlike the academic guidance provided through the pedagogical practices of classroom-based activities, worksite guidance is provided individually rather than collectively, and is therefore likely to be much more variable due to the different levels of employer expertise in, and commitment to, learner guidance and mentoring. Given student performance is influenced not only by their own efforts, skills and abilities, but also by the quality of mentoring and support they receive, the issue of mentoring variability needs to be acknowledged and addressed if student performance outcomes are part of the summative assessment.

In terms of the 'cultural' interpretation, there are likely to be considerable differences between work 'culture' and academic 'culture'. Having cooperative education as part of the academic curricula requires students to make sense of and move between two different forms of culture, expertise and knowledge. Such transition and movement is sometimes referred to as 'boundary crossing' (Reder, 1993; Engeström, Engeström, & Karkkainen, 1995). If assessment is to contribute to learning, then assessment practices must consider the implications of students moving between these two cultures and what this means for them in their preparation for professional practice. For example, students learn about what it means to be an employee, what is important in the organization in terms of work imperatives, how conditional knowledge is developed, and also 'how to get on' and assimilate into the workplace. This is likely to be particularly important for international students and new

migrants. Such experiences are also influential in students' choice of future careers and the type of organization they may wish to work for. Methods of assessment that focus students' attention on these learning experiences, such as critical reflection, are likely to be beneficial.

In returning to the earlier discussion on the different forms of apprenticeship and how learners are supported, Billett (1996) considers that in addition to the proximal guidance provided by workplace experts, learning in the workplace also benefits from *distal guidance*. This refers to the indirect guidance that learners extract from the physical environment and from observing other workers, and acquired from the "clues and cues, models and goals" (p. 55). The notion of clues and cues derived from indirect guidance is also a central theme in Rogoff's (1990, 1995) notion of *guided participation*, which she views as the mutual relationship between individuals as they participate in socioculturally-informed shared activities. In brief, this recognizes that "new members of a community are active in their attempts to make sense of activities" (Rogoff, 1995, p. 148). Guidance is provided "through the course of participation in shared endeavors, as people attempt to accomplish something" (ibid., p. 148). Such endeavors have purposes, which are commonly understood. There are a couple of implications of this for cooperative education. First, to maximize learning from distal guidance and participatory affordances, students might be encouraged to observe and reflect on the cues and clues, and models of practice through their engagement in work activities. As discussed earlier, using assessment methods that can give attention to such experiences (e.g., through critical reflection) contribute to students' learning. Second, the setting and managing of work objectives and personal goals during the work placement contribute to the students' motivation, participation and cultural understanding. Thus attention to these in assessment assists student's development.

COMMUNITY OF PRACTICE

Finally, a second view of apprenticeship is Lave and Wenger's (1991) *legitimate peripheral participation* (LPP) within a *community of practice*. LPP is described as "the process by which newcomers become part of a community of practice. A person's intentions to learn are engaged, and the meaning of learning is configured through the process of becoming a full participant in a sociocultural practice" (p. 29). A community of practice is described as "a set of relations among persons, activity and the world, over time and in relation to other tangential and overlapping communities of practice" (Lave & Wenger, 1991, p. 98). Essentially, a newcomer becomes enculturated into the community of practice over time before becoming a full participant (i.e., expert or *journeyperson*).

The notion of the newcomer moving towards the more advanced levels of competence of a journeyperson has implications for both learning and assessment in cooperative education. First, in connecting the two concepts of ZPD and LPP, Bockarie (2002) suggests that it would be beneficial to stretch students beyond their current level of competence "so they gain increased levels of knowledge and further develop the competence to engage in activities in a community of practice" (p. 63). Clearly, in adopting such a proposal students would need to

be helped to gain awareness of their current levels of cognitive and behavioural competencies before commencing their work placement (i.e., levels of 'unaided performance'). This could then be used by them to identify areas of focus for their work placement (e.g., in setting goals). They could then choose to share this information with a more experienced journeyman in the workplace, who could provide the support (or scaffolding) needed. Second, the relationship between newcomer and journeyperson can, to some extent, be related to metacognitive development. Students start their work placement as newcomers with reasonable levels of declarative knowledge (the curricula content domain) and some procedural knowledge (how to do things) - largely developed in abstract or simulated classroom-based conditions. As they engage in work activities and interact with work colleagues, they begin to learn the conditional knowledge (the ability to use declarative and procedural knowledge to take appropriate action in different situations) required in the cultural and contextual setting of the community of practice. Thus assessment practices may wish to incorporate those aspects of students' experiences that help develop their conditional knowledge. This may be achieved, for example, through providing direction and structure for students' critical reflections. Such direction may include asking students to broaden their view of experiences to include reference to the perceived gap between themselves (i.e., knowledge, skills, and abilities) as a newcomer and that of the experienced practitioners (journeypersons), and the implications of this for their professional development. They may also be asked to reflect upon the broader sociocultural aspects of their workplace experiences, thus helping them to 'fit in' and be accepted into the communities of work practice.

A further aspect of communities of practice of relevance to assessment is in determining the nature of the learning being assessed. As has been expressed throughout this article, workplace learning is complex and is influenced by a number of factors, such as: the sociocultural nuances of the practice setting; the expectations of competence within the particular workplace; the past experiences, abilities and sociocultural history of the student; the nature of the work students undertake; and the quality of the guidance and support students receive. These and other complexities involved in workplace learning perhaps account for Wenger's (1998) view that informal, *emergent* learning that occurs within a community of practice cannot be determined in advance.

Given that cooperative education contributes to students' preparation for employment upon graduation, the learning that occurs on-site during their work placement is of crucial importance. However, this creates a tension between the cultural norms of an education community of practice (which typically emphasizes formal, pre-determined learning outcomes), and the informal, emergent learning that takes place within a workplace community of practice. Fuller and Unwin (2003) consider this to be a weakness of Lave and Wenger's work "as it does not include a role for formal education institutions in the newcomer's learning process" (p. 408). Not surprisingly, staff, and students acculturated in classroom-based pedagogy and the 'rules of engagement' in communities of educational practice, sometimes struggle to undertake the necessary 'boundary crossing' into the communities of work practice (Engeström, Engeström, & Karkkainen, 1995). This suggests

that a student's workplace performance needs to be viewed collectively through the lenses of both the assessor(s) and the student within the context of, and with reference to, the broader community of practice. The implication of this is that student learning and achievements in the workplace need to be reconceived. For example, any pre-set learning outcomes (which are the norm in most academic courses) may need to be viewed as broad intentions and directions for learning that allow for unanticipated, emergent learning; thus avoiding a singular focus that views learning outcomes as knowable end-points that become the basis for precise, objective and measureable assessment criteria. Torrance (2007) suggests an alternative is to give more attention to developing assessors' support and judgment at a local level, thereby enabling the focus to be on "the nature of their relationships with learners, so that learners are inducted into 'communities of practice' which explore and interrogate criteria, rather than accept them as given" (p. 292). In addition, given the sociocultural nature of workplace learning, Eames and Coll (2006) suggest that appropriate "assessment of student achievement on placement focuses on the process of enculturation and the student's understanding of the workplace community of practice" (p. 9).

CONCLUSION

In this article we have set out to review theoretical perspectives on assessment in cooperative education. The approach we have taken to this task has been to argue firstly, that assessment is clearly linked to learning, and secondly, that learning in cooperative education can be theorized in many ways.

Whilst our brief discussion of behaviorism indicates that this notion of learning is not currently favored, there may be some specific skills in work placements that can be learnt in a behavioral type of way and could be included in assessment. We gave rather more attention to a cognitive view of learning that focuses on meaning construction. This view tells us that as students enter work placements, their starting points for learning are all different and that assessment practice should attempt to connect with this diversity. Learning on placements should then draw on these prior experiences and help students link these to their workplace experiences through appropriate assessment. This would include consideration of potential for learning different knowledge bases, and for students to express learning in different ways depending on their experiences.

In this view, students make sense of their work placement experiences though conscious reflection and theory making. This implies a need to draw students' attention to their past experiences for meaning making as they prepare for their placement. This is posited to allow students to develop a purposeful plan of action for their forthcoming experience and then to be able to reflect on new learning in relation to this plan when on placement. Assessment practice that facilitates such reflection with guidance would seem to be a fruitful consideration for cooperative educators.

Finally, in this article we have dwelt for some time on sociocultural views of learning and their implications for assessment. We have argued for a view of learning that sees it

occurring for a student on placement in a sociocultural context that includes exposure to tools which mediate learning as the student engages in workplace practices, sharing in the distributed knowledge that exists within the workplace and its employees. This experience enculturates the student into the community of practice in the workplace, helping them to progress from novice towards more expert practice, as they participate in the work of the community. These ideas focus our attention in assessment away from the pre-determined, formal learning that occurs within an educational institution to consider the emergent, informal learning that occurs within a community of work practice.

We see then that performance and learning in the workplace are influenced by unpredictable, authentic, and situated activities that demand different approaches to assessment. The learning is more informal and culturally-determined. It is subject to the guidance provided in the workplace, which may be of a variable educative nature, meaning that quality of learning support is a factor in student learning. Learning as participation helps us to consider how students learn to participate, placing as much attention on ways of learning as on what is learnt. This moves assessment on from solely a summative approach towards one in which a lifelong learning element is considered. In this view, students can begin to understand what it means to be successful in their workplace community of practice and take steps to achieving that. Assessment that focusses on this individualized but socioculturally-influenced process is likely to be a fair reflection of, and help facilitate, student learning in cooperative education placements.

REFERENCES

Barnett, R. (1999). Learning to work and working to learn. In D. Boud & J. Garrick (Eds.), *Understanding learning at work* (pp. 29-44). London: Routledge.

Biggs, J. B. (2003). *Teaching for quality learning at university: What the student does.* Buckingham: The Society for Research into Higher Education, Open University Press.

Billett, S. (1994). Situated learning: A workplace experience. *Australian Journal of Adult and Community Education, 34*(2), 112-130.

Billett, S. (1996). Towards a model of workplace learning: the learning curriculum. *Studies in Continuing Education, 18*(1), 43-58.

Bockarie, A. (2002). The potential of Vygotsky's contribution to our understanding of cognitive apprenticeship as a process of development in adult vocational and technical education. *Journal of Career and Technical Education. 19*(1), 47- 66.

Boud, D. (1995). *Enhancing learning through self assessment*. London: Kogan Page

Boud, D. (2000). Sustainable assessment: rethinking assessment for the learning society. *Studies in Continuing Education, 22*(2), 151-167.

Boud, D. & Falchikov, N. (2006). Aligning assessment with long-term learning. *Assessment and Evaluation in Higher Education*, *31*(4), 399 - 413.

Boyd, R. (1994). Scientific realism and naturalistic epistemology. In J. Worrall (Ed.), *The ontology of science* (pp. 97-146). Brookfield, VT: Dartmouth.

Brookhart, S. M. (2001). Successful students' formative and summative uses of assessment information. *Assessment in Education*, *8*(2), 153 - 169.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32 - 42.

Brown, S. (1999). Institutional strategies for assessment. In S. Brown & A. Glasner (Eds.), *Assessment matters in higher education: Choosing and using diverse approaches* (pp. 71-82). Buckingham: SRHE and Open University Press.

Brown, G., & Pendlebury, M. (1992). Assessing work-based learning. In G. Brown & M. Pendlebury (Eds.), *Assessing active learning* (pp. 91-96). Sheffield, UK: CVCP Universities' Staff Development and Training Unit.

Bruner, J. (1966). *Toward a theory of instruction*. Cambridge, MA: Harvard University Press.

Bruner, J. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press

Bruning, R. H., Schraw, G. J., & Renning, R. R. (1999). *Cognitive psychology and instruction* (3rd ed.). Upper Saddle River, NJ: Prentice-Hall.

Buysee, V., Sparkman, K.L., & Wesley, P.W. (2003). Communities of practice: Connecting what we know with what we do. *Exceptional Children, 3*, 263-277.

Cole, M., & Engeström, Y. (1997). A cultural-historical approach to distributed cognition. In G. Salomon (Ed.), *Distributed Cognitions: Psychological and educational considerations* (pp. 1-46). Cambridge, UK: Cambridge University Press.

Dearing, R. (1997). *Higher Education in the Learning Society*. *Report of the National Committee of Inquiry into Higher Education*. London: HMSO.

Dewey, J. (1938). *Experience and education*. New York: Macmillan.

Duckworth, E. (1987). *"The having of wonderful ideas" and other essays on teaching and learning*. New York: Teachers College Press.

Duke, C. (2002). The morning after the millennium: Building the long-haul learning university. *International Journal of Lifelong Education, 21*(1), 24-36.

Eames, C. (2003). *Learning through work placements in science and technology*. Unpublished PhD thesis. Hamilton, New Zealand: University of Waikato.

Eames, C., & Cates, C. (2011). Theories of learning in cooperative education and work-integrated learning. In R. K. Coll & K.E. Zegwaard (Eds.). *International handbook for cooperative education and work-integrated learning: International perspectives of Theory, Research and Practice 2nd Ed* (pp. 37-47). Lowell, MA: World Association for Cooperative Education.

Eames, C. & Coll, R. K. (2006) Sociocultural views of learning: A useful way of looking at learning in cooperative education. *Journal of Cooperative Education and Internships, 40,* 1-12.

Engeström, Y. Engeström, R., & Karkkainen (1995). Polycontextuality and boundary crossing in expert cognition: Learning and problem solving in complex work activities. *Learning and Instruction, 5*(4), 319-366.

Eraut, M. (2004). Informal learning in the workplace. *Studies in Continuing Education, 26*(2), 247-273.

Falchikov, N. (2005). *Improving assessment through student involvement*. London: Routledge-Falmer.

Fuller, A., & Unwin, L. (2003). Learning as apprentices in the contemporary UK workplace: creating and managing expansive and restrictive participation. *Journal of Education and Work, 16*(4), 407-426.

Gentry, J. W. (1990). What is experiential learning? In J. W. Gentry (Ed.), *The ABSEL guide to business gaming and experiential learning* (pp. 9-20). New York: Nichols.

Gentry, J. W., & Giarmartino, G. A. (1989). Dual views of internships as experiential learning. *Developments in Business Simulation & Experiential Exercises*, *16*, 128-131.

Gipps, C. V. (1994). *Beyond testing: Towards a theory of educational assessment*. London: Falmer Press.

Gonczi, A. (1994). Competency based assessment in the professions in Australia. *Assessment in Education*, *1*(1), 27-44.

Good, R. G., Wandersee, J. H., & St. Julien, J. (1993). Cautionary notes on the appeal of the new "ism" (constructivism) in science education. In K. Tobin (Ed.), *The practice of construction in science education* (pp. 71-87). Hillsdale, NJ: Lawrence Erlbaum Associates.

Goodnow, J. J. (1990). The socialisation of cognition: what's involved? In J.W. Stigler, R.A. Shweder & G. Herdt (Eds.), *Cultural Psychology* (pp. 259-86). Cambridge, UK: Cambridge University Press.

Greeno, J. G. (1997). On claims that answer the wrong question. *Educational Researcher, 20*(1), 5-17

Hasan, A. (1999). Lifelong learning: implications for education policy. In A. Tuijnman, & T. Schuller, (Eds.), *Lifelong Learning Policy and Research Proceedings of an International Symposium.* (pp.51-62). London: Portland Press.

Hoover, J. D., & Whitehead, C. J. (1979). An Experimental evaluation of a cognitive-experiential learning methodology in the basic management course. *Journal of Experiential Learning and Simulation, 1,* 119-125.

Johnson, P., & Gott, R. (1996). Constructivism and evidence from children's ideas. *Science Education*, *80*(5), 561-577.

Johnston, N., Angerilli, N., & Gajdamaschko, N. (2004). How to measure complex learning processes: The nature of learning in cooperative education. In P. L. Linn, A. Howard & E. Miller (Eds.), *Handbook for research in cooperative education and internships* (pp. 157-190). Mahwah, NJ: Lawrence Erlbaum Associates.

Jones, A. (1999). The place of judgement in competency-based assessment. *Journal of Vocational Education and Training, 51*(1), 145–60.

Kamiloff-Smith, A., & Inhelder, B. (1975). If you want to get ahead, get a theory. *Cognition 3*(3), 195-212.

Kennedy, H. (1997). *Learning Works: Widening participation in further education*. Coventry: Further Education Funding Council.

Knox, J., & Stevens, C. B. (1993). Translators' introduction. In R.W. Rieber & A.S. Carton (Eds.), *The fundamentals of defectology*, *Vol. 2. The collected works of L. S. Vygotsky* (pp. 1-25). New York: Plenum.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.

Kukla, A. (2000). *Social construction and the philosophy of science*, London: Routledge.

Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press

Lave, J. & Wenger, E. (1996). Practice, person, social world. In H. Daniels (Ed.), *An Introduction to Vygotsky* (pp.143-150). London: Routledge.

Lewin, K. (1964). *Field theory in social sciences*. New York: Harper & Row.

Mehrens, W. A., & Lehmann, I.J. (1991). *Measurement and evaluation in education and psychology* (4th edn.). Belmont, CA: Wadsworth/Thomson Learning.

Miller, J. P., & Seller, W. (1990). *Curriculum perspectives and practice*. Toronto: Copp Clark Pitman.

Mowrer, R. R., & Klein, S. B. (1989). A contrast between traditional and contemporary learning theory. In S. B. Klein & R. R. Mowrer (Eds.), *Contemporary learning theory: Instrumental conditioning and biological constraints on learning* (pp. 3-16). Hillsdale, N. J.: Lawrence Erlbaum Associates.

Nicol, D., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education, 31*(2), 199–218.

Nussbaum, J. (1989). Classroom conceptual change: Philosophical perspectives. *International Journal of Science Education*, *11*(5), 530-540.

Piaget, J. (1950). *The psychology of intelligence*. London: Routledge & Kegan Paul.

Piaget, J. (1985). *Equilibration of cognitive structures.* Chicago: University of Chicago Press.

Reder, S. (1993). Watching the flowers grow: polycontextuality and heterochronicity at work. *The Quarterly Newsletter of the Laboratory of Comparative Human Cognition, 15,* 116-125.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context.* New York: Oxford University Press.

Rogoff, B. (1995). Observing sociocultural activity on three planes: participatory appropriation, guided participation, and apprenticeship. In J. V. Wertsch, P. del Rio & A. Alvarez (Eds.), *Sociocultural studies of mind* (pp. 139-164). Cambridge, MA: Cambridge University Press.

Rowntree, D. (1987) *Assessing Students: How shall we know them?* (2nd edn.). London: Kogan Page.

Sadler, D. R. (1989). Formative assessment and the design of instructional systems. *Instructional Science, 18,* 119-144.

Sadler, D. R. (1998). Formative assessment: revisiting the territory. *Assessment in Education, 5*(1), 77–84.

Salomon, G. (Ed.). (1997). *Distributed cognitions: Psychological and educational considerations*. Cambridge, UK: Cambridge University Press.

Schön, D. A. (1983). *The reflective practitioner*. New York: Basic Books

Schön, D. A. (1987). *Educating the reflective practitioner.* San Francisco: Jossey-Bass.

Shepard, L. A. (2000). The role of assessment in a learning culture. *Educational Researcher, 29*(7), 4-14.

Stephenson, J. & Yorke, M. (1998) *Capability and quality in higher education.* London: Kogan Page.

Sternberg, R. J. (1988). *The triarchic mind: A new theory of human intelligence*. New York: Viking.

Taras, M. (2002). Using Assessment for learning and learning from assessment. *Assessment & Evaluation in Higher Education, 27*(6), 501-510.

Tennant, M. (1999). Is learning transferable? In D. Boud & J Garrick (Eds.), *Understanding learning at work* (pp. 165-179). London: Routledge.

Fryer, R.H. (1997). *Learning for the 21st Century*. *National Advisory Group for Continuing Education and Lifelong Learning*. London: Department for Further Education and Skills.

Tobin, K., & Tippins, D. (1993). Constructivism: A paradigm for the practice of science education. In K. Tobin (Ed.), *The practice of constructivism in science education* (pp. 3-21). Hillsdale, NJ: Lawrence Erlbaum Associates.

Torrance, H. (2007). Assessment *as* learning? How the use of explicit learning objectives, assessment criteria and feedback in post-secondary education and training can come to dominate learning. *Assessment in Education, 14(3),* 281-294.

Van Gyn, G. H., & Grove-White, E. (2011). Theories of learning in education. In R.K. Coll & K.E. Zegwaard (Eds.). *International handbook for cooperative education and work-integrated learning: International perspectives of Theory, Research and Practice 2nd Edn* (pp. 31-40). Lowell, MA: World Association for Cooperative Education.

von Glasersfeld, E. (1988). *The construction of knowledge: Contribution to conceptual semantics*. Salinas, CA: Intersystems.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1981). The genesis of higher mental functions. In J. V.Wertsch (Ed.), *The concept of activity in Soviet psychology* (pp. 144-188). New York: Sharpe.

Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge, MA: Cambridge University Press.

Wertsch, J. V. (1991). A sociocultural approach to socially shared cognition. In L. B. Resnick, J. M. Levine & S.D. Teasley (Eds.), *Perspectives on socially shared cognition* (pp. 85-100). Washington DC: American Psychological Association.

Wheatley, G. H. (1991). Constructivist perspectives on science and mathematics learning. *Science Education*, *75*(1), 9-21.

Winter, R. (2003). Contextualizing the patchwork text: Addressing problems of coursework assessment in higher education. *Innovations in Education & Teaching International*, *40*(2), 112-122.

Wolf, A. (1995). *Competence-based assessment*. Buckingham, UK: Open University Press.

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