

Are teachers facilitators or are they mediators? Piaget, Vygotsky and the wisdom of the teacher

Cecilia Selepe, University of Witwatersrand, South Africa Ian Moll, University of Witwatersrand, South Africa

ABSTRACT

There is an ongoing debate about whether teaching is better understood as ‘facilitation’ or ‘mediation’. The debate can be framed in relation to three different theoretical accounts of these concepts: (i) teaching as facilitation, as rooted in the genetic epistemology of Jean Piaget; (ii) teaching as mediation, as rooted in the cultural historical psychology of Lev Vygotsky; and (iii) teaching as the seamless incorporation of both facilitation and mediation in the deliberative practice of teachers. The first two frames, as formal theories of cognitive development and learning, suggest a clear analytic distinction between facilitation and mediation as teaching strategies. The last frame foregrounds the pragmatic sense that teachers have of facilitation and mediation as shifting moments in pedagogy. In debating the various framings, it becomes clear that both formal and pragmatic theories make sense of teachers’ classroom pedagogy.

Keywords: facilitation, mediation, Piaget, Vygotsky, teacher wisdom

INTRODUCTION

There is often a great deal of talk amongst teachers and lecturers about whether what we do is 'facilitation' or 'mediation'. If we are facilitators in the classroom, then we need to concentrate on presenting learners with interesting prepared learning environments, evocative learning situations, and learning tasks that allow them to discover new knowledge for themselves. Our role during the learning process is that of a manager (albeit an enlightened, human, laissez faire manager) of the learning process. Leave learners to their own devices, we are told, and they will construct learning pathways for themselves. In the strangely similar claims of the two articulators of disembodied 'learner-centeredness', the behaviourist BF Skinner and the humanist, Carl Rogers, teaching is really not terribly important:

... teaching is a relatively unimportant and vastly overrated activity (Rogers, 1969: 103)
The requirements [of teaching] are not excessive, but they are probably incompatible with the current realities of the classroom. The teacher is out of date (Skinner, 1968: 21-22).

Learning occurs regardless of the presence of a teacher, whose role is to facilitate an optimum environment for humanity (human beings or human behaviour) to flourish. At the same time, though, we are faced with rhetoric about how we should be guiding, or scaffolding, or negotiating, or regulating learning in our classrooms. We are told that we have a responsibility to act as critical mediators of knowledge, to get our 'hands dirty with the messiness and unfinished business of pragmatic knowledge' (Mason, 2000: 343), that is, to deliberately seek to mediate the practices of our culture, its knowledge, skills, values and attitudes, to our learners.

For a practising teacher, there has to be a bit of a tension here! In the thick of the Outcomes-based education (OBE) 'paradigm shift' in South Africa in the 1990s, Emilia Potenza appealed against the strong facilitation lobby: 'To my mind, reducing the teacher to a facilitator greatly oversimplifies the complex roles that most teachers play every day – sometimes facilitating, sometimes mediating, and sometimes doing a bit of good old teaching' (1998: 51). At roughly the same time, one of our government education departments appealed against the strong mediation lobby:

Teacher lectures, demonstrations, audio-visual presentations, and programmed interactions are some of the teaching methods that do not fit in with ... active discovery Children's learning experiences should be planned to facilitate assimilation and accommodation. Children should be allowed to explore, manipulate, experience, and question. Instruction should be individualized. Teachers should just facilitate (Gauteng Department of Education, 1999: 15).

The injunctions came thick and fast at the time, and often confused teachers, already suffering from severe cognitive overload in trying to understand OBE discourse, even more.

In this paper we try to make sense of the issues that are raised by these apparent disputes about teaching as either (or both) of facilitation and mediation. We do so by employing a useful distinction made by Wilfred Carr (1995) between theory as a product of theoretical inquiry and theory as a particular way of thinking that guides practice. This allows us to understand that there are indeed theories of psychological development and learning which suggest a clear analytic distinction between facilitation and mediation as teaching strategies, in this case the cognitive developmental theory of Jean Piaget (1970) (as read through schema theory), and Lev Vygotsky's cognitive development psychology (1978), respectively. It also allows us to suggest that, in the practice of teaching, the working sense that teachers have of facilitation and mediation is of different strategic moments in the process of pedagogy. In the practical wisdom of a teacher, the relationship between facilitation and mediation is a seamless one.

THEORY AS PRODUCT AND THEORY AS PRACTICE

Carr (1995: 32) argues that there are two distinct meanings attached to the notion of theory. On the one hand, theories are 'the actual products of theoretical inquiries', which are conventionally presented as a set of general principles, laws and explanations. These are formal theories, sets of systematically connected, coherent, corroborated hypotheses. For example, atomic theory in physics, Chomsky's theory of transformational grammar (1972), or (as will become pertinent to this article) either of Piaget's theory of genetic epistemology (1970) or Vygotsky's cultural-historical theory of cognitive development (1978). On the other hand, suggests Carr, a theory is 'the framework of thought that structures and guides any distinctive theoretical activity [it denotes] the underlying conceptual framework in terms of which a particular theoretical activity is carried out and provides it with its general rationale' (1955: 32). Teaching is not a theoretical activity in the first sense, 'but a practical activity concerned with the general task of developing pupils' minds ... it is not concerned with the production of theories and explanations'. However, teaching is a theoretical practice in the second sense, in that it is a 'consciously performed

intentional activity that can only be understood by reference to the framework of thought in terms of which its practitioners make sense of what they are doing and what it is they are trying to achieve' (1955: 33). The first kind of knowledge about teaching is abstracted and formal; the second kind is accumulated wisdom. Both are theoretical.

Now let us get one possible objection to this out of the way quickly. This is the idea that teaching has nothing to do with theory, that teaching is 'just' practice. Teaching is the messy, hands-on business that happens in the classrooms of the schools down in the villages, townships, flatlands or suburbs. Theory is the esoteric, removed, protected business that happens in the academy up on the hill. 'It's all very well in theory, but what does it have to do with practice?' is the common refrain. Our experience tells us that for the most part teachers do not like talking, even thinking, about theories of teaching or learning. Sometimes, they do engage in discussions about a particular idea they have encountered – so they might discuss amongst themselves Howard Gardner's distinction between visual, mathematical and bodily intelligences, or B.F. Skinner's objections to corporal punishment (Gardner, 1983; Skinner, 1953: 184) – but they do this only insofar as it allows them to express or to give voice to their own practices as they understand them. But does this mean that practice is not theoretical? Not at all! – we need to recognise that any practical strategy employed by a teacher in the classroom always has an underlying set of theoretical assumptions entailed within it (whether or not the teacher is aware of these); conversely, any theory of learning and/or pedagogy always has implicit within it a conception of teaching practice. There is no 'gap' between the theory and practice of teaching.

Carr provides us with an important insight into this state of affairs:

When 'theory' and 'practice' are looked at in this way, it becomes increasingly obvious that the gaps between them that usually cause concern are not those occurring between a practice and the theory guiding that practice, but rather those that arise because it is assumed that 'educational theory' refers to theories other than those that already guide educational pursuits ... the gaps between educational theory and its practical application can only exist because practitioners do not interpret or evaluate the theories that they are offered according to the criteria used by those engaged in theoretical pursuits. (Carr, 1995: 34; our emphasis)

It follows that one of the tasks of an educational theorist is to bring the insights of formal theories of learning – such as strictly psychological theories of learning – into the theoretical terrain that makes sense to teachers, that of the latter's 'own accounts of what they are doing, [in order to] improve the quality of their involvement in these practices and therefore allow them to practise better' (1995: 37).

Now this is precisely what we seek to do in the remainder of this article. As formal psychological theories of learning and development, the Piagetian and Vygotskian problematics are analytically distinct, and offer quite different accounts of the role of teaching

in the construction of children's learning. It is easy to see how Piaget's theory led to the idea that teaching is facilitation, and how Vygotsky's led to the idea that teaching is mediation. However, it is equally clear how both sets of ideas, when brought into concert with teachers' practical wisdom, offer elaborations of and help make sense of a unified pedagogic practice in which there is both facilitation and mediation of learning.

PIAGET: DEVELOPMENT PRECEDES LEARNING

Piaget's fundamental view is that the 'engine' of cognitive development is biological (for Vygotsky, as will become clear later, this 'engine' is social). As his starting point in the analysis of learning, Piaget posits that development precedes learning. For children to be capable of any kind of learning they must first have developed certain corresponding structures of thought: 'the development of knowledge is a spontaneous

process, tied to the whole process of embryogenesis. Embryogenesis concerns the development of the whole body, but it concerns also the development of the nervous system' (Piaget, 1964: 20). In the quest to justify how and why development precedes learning, Piaget argues that cognitive structures develop in a biological chronological order, which he conceives as four stages of development, namely the sensory motor, preoperational, concrete operational and formal operational stages (Piaget, 1964). He further stipulates that there are four factors that work together in the development process from one stage to the other. These are maturation, experience, social transmission and equilibration. Piaget believes that the first three factors (notably social factors) are all needed for development, but on their own are insufficient to explain how it takes place. He insists that, in the development of knowledge, it is the fourth factor, biological equilibration (the tendency of the organism to adapt to its environment) that is fundamental. Hence, for development to occur, equilibrium between the other three factors must be achieved. The child must first mentally or psychologically mature and develop the appropriate structures of thought in order to deal with environmental or social interactions in acquiring knowledge.

So Piaget views cognitive development as a biologically-driven process on which external forces have no influence, while inversely, learning results from our experiences of social processes and environmental features of the world. The implication that can be drawn from this is that for Piaget, learning is subordinate to development since it is only made possible by already constructed structures of thought. For a child to learn he/she must have matured and have developed the necessary formal structures of thought, but learning is 'provoked by situations or the teacher' rather than 'spontaneous' like development (1964: 8). Now this leads directly to an account of the essence of teaching as facilitation. The role of the teacher is to

set up learning events and learning environments that will 'provoke' the prevailing cognitive structures of the child to learn something.

The strong version of this view is the following: that if children are placed in a carefully designed, conducive (i.e. a facilitated) learning environment and left to their own devices, then they will construct their own new understandings of the world. They are after all active learning organisms seeking to adapt to the knowledge environment in which they find themselves - they continuously seek to assimilate unfamiliar knowledge into their prevailing cognitive structures, and to develop new structures by accommodating themselves to the knowledge they have assimilated. Piaget (1953) used the concept of 'schema' (plural, schemata) to denote a mental structure that assimilates observed environmental patterns. In other words, schemata are intellectual structures that organise perceived events and group them according to common patterns. 'All knowledge of objects is a function of those action schemata to which the object is assimilated; and these range from the earliest reflexes to the most complex elaborations acquired by learning' (Inhelder & Piaget, 1958: 6).

Importantly, it was not Piaget that developed this strong version of the facilitation view of teaching, but rather neo-Piagetian thinkers, particularly in the United States. Broadly speaking, this refers to what is known as schema theory. David Ausubel's assimilation theory of learning seems to have been particularly important in this regard (Seel, 2012a). Ausubel was strongly influenced by Piagetian ideas, particularly during the period he spent at the University of Berne in Switzerland in the 1950s (Seel, 2012b). For Ausubel, new information is assimilated ('subsumed' or 'incorporated') into an 'anchoring structure' (analogous to Piaget's notion of 'schema', an operative unit of cognitive structure) already present in the learner. For example, a child might greet a dog by calling it 'kitty'. At this stage of development she has an operative schema (anchoring structure) for 'kitty', which consists of a set of features such as four legs, fur, tail, and wet nose. She assimilates the unfamiliar creature into her pre-existing knowledge structure, into the schema of 'kitty'. This recognition of the importance of the active structuring of learning by prior knowledge, itself structured, led Ausubel to his central principle regarding teaching: 'If I had to reduce all of educational psychology to just one principle, I would say this: the most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly' (Ausubel, 1968: vi).

Good teaching then is about facilitating a conducive learning environment; it is about presenting a learner with 'appropriately relevant and inclusive introductory materials ... introduced in advance of learning ... at a higher level of abstraction, generality, and inclusiveness' (Ausubel 1968: 148). Accordingly, learning refers to the process of acquiring or

constructing meanings from new learning material. These materials, Ausubel called 'advanced organisers'. In his early work, Ausubel coined the term 'discovery learning' to refer to the most active form of learning produced by appropriately designed advance organisers, which he contrasted with 'reception learning' (where 'the entire content of what is to be learned is presented to the learner in its final form'- Ausubel, 1961: 17). Discovery learning happens when children 'rearrange a given array of information, integrate it with existing cognitive structure, and reorganise or transform the integrated combination in such a way as to create a desired end product or discover a missing means– end relationship. After this phase is completed, the discovered content is internalised just as in reception learning' (1961: 17).

In the neo-Piagetian universe, 'discovery learning' has come to be synonymous with the strong metaphor of teaching as facilitation: it refers to the idea that 'learners are essentially independent, free-ranging problem solvers who construct their own learning pathways.... [that] children learn best when left to their own devices' (Moll, 2002: 18).

However, it is important to recognise that Piaget himself did not hold this strong view of teaching as facilitation. Against the idea that the learner is a solitary centre of knowledge construction, Piaget argues:

The individualist thesis consists in saying that logic is constructed at the heart of individual activities and, once achieved, permits the establishment of co-operation. The problem with this is that it is only by co-operating with others and not beforehand that the individual elaborates his logic. The current sociological thesis opposes a global interpretation to the individualist thesis, that is, social relationships constrain the individual to recognize a logic. While we agree with this, it is on the condition that these relationships themselves present such a logic (Piaget, 1955: 145).

And with respect to the idea that the teacher is merely a facilitator, Piaget chides those who interpret this to mean that teaching is relatively unimportant, or overrated, or out of date:

There is the] fear (and sometimes hope) that the teacher would have no role to play in these experiments and that their success would depend on leaving the students entirely free to work or play as they will. It is obvious that the teacher as organiser remains indispensable in order to create the situations and construct the initial devices which present useful problems to the child. Secondly, he is needed to provide counter-examples that compel reflection and reconsideration of over-hasty solutions. What is desired is that the teacher cease being a lecturer, satisfied with transmitting ready

made solutions; his role should rather be that of a mentor stimulating initiative and research (Piaget, 1978: 16).

It is also important to acknowledge that Ausubel, in his later work, also distanced himself from the strong view, in relation to school learning: while he saw a place for the methods of discovery learning in the classroom, for example in problem-based tasks or in the science laboratory, he argued that they 'hardly constitute an efficient primary means of transmitting the content of an academic discipline' (1978: 26).

Piaget's view is that cognitive development results from the child's individual exploration of the world. The role of the teacher should be to create learning environments or situations that create a state of disequilibrium in thought: 'the child can receive valuable information via language or via education directed by an adult only if he is in a state where he can understand this information' (Piaget, 1964: 23). In summary, it is Piaget's idea that 'development precedes learning' that has led pedagogical theorists to suggest that teaching should be facilitation.

VYGOTSKY: LEARNING PRECEDES DEVELOPMENT

Conversely, in relation to Piaget, Vygotsky is of the view that sociocultural activity is the 'engine' of cognitive development. His point of departure is that human beings learn and develop in specific social and cultural contexts, due to the interplay between them and their social contexts:

...every function in the child's cultural development appears twice ... first it appears on the social plane, and then on the psychological plane (Vygotsky, 1981a: 163).

Psychological tools ... are social, not organic or individual (Vygotsky, 1981b: 137).

...the child's psychological development shows us that, from the very first days ... its adaptation to the environment is achieved through social means, through the people surrounding it (Vygotsky & Luria, 1993: 116).

In what is almost a mirror image of Piaget's argument, Vygotsky argues that while the child's biological maturation and curiosity are vital drives to learn, they do not in and of themselves take him/her very far in a learning situation. To extend these biological forces, a learner needs to recruit the guidance of more skilled other people (parents, teachers, friends, etc.) to acquire the psychological tools that culture provides (Crain, 1992). For a child to develop new cognitive structures, he/she must first learn to use the cultural tools that the environment provides, in shared activity with other, more skilled people. Vygotsky's theory implies that 'our thoughts' are the internalised product of a social historical culture. For him, learning precedes development.

Social activity is the locus of learning, and cognitive development follows learning. Crain elaborates that people manage to create both tools to master both their social and psychological contexts to gain control over their own thinking (1992: 197). The essential tool that individuals use to aid their thinking is language. According to Vygotsky then, we cannot understand human thinking and its development without investigating the signs (tools of thought) that a culture provides. There is wide consensus that his theory insists that learning is systematic co-operation between a learner (or learners) and a teacher, who is thus an active organiser of the frameworks of knowledge of learners (Vygotsky, 1978: 86-90).

Vygotsky views mediation as the means through which successful school learning can happen. According to him, knowledge is constructed through social interactions between the child and the mediator (a parent, a teacher, a more knowledgeable peer); the child internalises the knowledge resulting in the development of more complex mental processes. This mediation takes place in the 'zone of proximal development' (ZPD), which he defines as the 'distance' between the already established cognitive structures of a learner (the 'actual developmental level') and the 'potential developmental level', which refers to the structured thought constituted in the learner's activity under the guidance of a mediator (Vygotsky, 1978: 86). Clearly then, teaching in the ZPD can significantly push development forward.

Strong interpretations of Vygotsky's theory led pedagogic theorists to insist 'that the teacher's role is to lead the learner to higher levels of thinking by interpreting and giving significance to things and events' (Mason, 2000: 346). This idea of teaching as mediation has been drawn from Vygotsky, but also from the work of other educators. For example, John Dewey's idea (1963) of the potential of the 'current knowledge, level of experience, and capacity of the learner', and its 'endless growth through educative experiences', is remarkably similar to Vygotsky's ZPD (Mason, 2000). Both Dewey and Vygotsky have influenced the idea of teaching as mediation. Activity theory has also contributed to this sense of teaching. Stith and Roth (2010), discussing this strand of neo-Vygotskian thinking, argue that the 'classroom is composed of countless overlapping activity systems that must be negotiated [by learners] with the teacher as mediator' (2010: 366). The teacher thus becomes what these authors call a knotworker, an organiser of classroom learning activities through making decisions about what will be done in class, what topics will be given time, which topics will be covered and when, etc. – in short, continuously mediating the complexity of the activity systems of knowledge consumption and production to learners. The important thing, though, is that all of this is done by the teacher in constant discourse with the learners, in active engagement with them through the use of the cognitive tools of language. There is no sense in which the teacher stands back

from the active mediation of learning in the classroom. Or, as Mason puts it, 'such teaching involves intentional mediation, and not facilitation or transmission' (2000: 346).

From Vygotsky's point of view, teaching is achieved through social interaction with learners. For him, good teaching 'should march ahead of development, pulling it along, helping children master material that they could not immediately master on their own' (Vygotsky, 1978: 89). In summary, it is Vygotsky's idea that 'learning precedes development' that has led pedagogical theorists to suggest that teaching should be mediation.

FACILITATION VERSUS MEDIATION?

Wilfred Carr's insistence on foregrounding the practical wisdom of teachers, adduced earlier, had roots in wide-ranging contributions to debate in the philosophy of education in the 1980s which questioned the technocratic orientations to teaching which had long dominated education theory. As one commentator puts it, education was up to then 'largely driven by dominant paradigms in psychology or pedagogy ... [which] limit[ed] both the effective and creative capability of working within that particular domain' (Sale, 2011: 2). Some of the major contributors to these debates provide us with a sense of the intellectual milieu which sought to foreground this teacher effectiveness and creativity:

- Shulman's (1986) account of pedagogic content knowledge (PCK) established a theoretical claim that the most important sources of teacher knowledge come from the 'wisdom of the practice' itself (Shulman, 1987: 233-241). PCK is an amalgam of subject-matter content knowledge and pedagogical knowledge, and is the unique terrain of teacher thinking. It is characterised by pedagogical reasoning, which is a mode of thinking that allows teachers to transform content knowledge into forms that learners will be able to understand. Importantly, pedagogical reasoning is symbolic reasoning, in Bruner's (1966; 1974) terms: teachers reason about their own practices in situationally appropriate and authentic ways. Practical pedagogic concepts are articulated as objects of thought in their own right, and it is cognitively at this level that content knowledge is transformed 'on the hoof' by teachers to render it easy for effective instruction to occur (Shulman, 1987).
- Schön's (1983) notion of reflection-on-action helped to focus pedagogic theorists on the process by which teacher knowledge is transformed through reflection on problematic classroom situations. Schön put forward the notion that teachers, when they think and speak about their practices in context, carry out a kind of thought experiment which he termed a 'frame experiment': we 'name the things to which we attend and frame the context in which we will attend to them' (Schön, 1983: 40). The

knowledge of teachers as practitioners is tacit, and is realised in the 'feel' of what they do.

- Krashen (1982) famously argued that it is the 'ideas and intuitions of teachers', rather than formal linguistic or pedagogic theories that give researchers the best insights into their studies of second language acquisition and teaching. This required, he argued, a concerted effort on the part of education theorists to pay attention to the practical understandings of teachers: 'the word of the teacher is sufficient evidence, often, for a new idea to be at least tried out in different classes' (1982: 4). This is not to say that Krashen suggested that researchers should not pay attention to formal, theoretical research. Indeed, in discussing the applied linguistics of second language acquisition, he acknowledges the major contribution that Chomsky's theory of transformational grammar made to understanding the structure and acquisition of language by human beings. However, Krashen also suggests that such 'strictly theoretical' knowledge is not easily assimilated by teachers, and does not help them produce successful second language learning in the classroom (1982: 5-6). It is to teachers' sense of 'ideas that work' – their practical wisdom, as it were – that we need to look to theorise effective language teaching.
- Carr's own prominent contribution to these debates (Carr & Kemmis, 1986) drew on Aristotle's notion of phronesis or deliberative wisdom (Aristotle, 2004: 209) to argue that the major source of best teaching practices is to be found not in abstracted theory but in the ongoing activities of good teachers. Arguing for the adoption of action research as the pre-eminent research methodology in the study of pedagogy, Carr and Kemmis suggest that deliberative wisdom, the capacity to distance oneself from one's own practice and to reflect on what has occurred within it to reach defensible decisions about one's actions, is the hallmark of good teaching. Teaching is a practical discipline, and 'practical disciplines are those sciences which deal with ethical and political life; their telos is practical wisdom and knowledge' (Carr & Kemmis, 1986: 32). In action research, which is self-developmental and moral in nature, teachers seek to enhance their normal practice by collaborating in groups, and making their new understandings of their work public and available for scrutiny by other teachers.

In general then, researchers within these traditions, instead of seeking to develop and test theories of learning or teaching to apply in the classroom, sought pedagogic theories that emerged from the 'wisdom of practice' (Shulman, 1987) that teachers develop as they engage with and reflect on the ebb and flow of classroom activity. The theory of teachers, their accumulated wisdom, is formed as they reflect on the planning of lessons, the teaching of

specific concepts in immediate context, and the representation of knowledge in the shifting moments of learners' previous knowledge and responses.

The question now arises, are facilitation and mediation mutually exclusive approaches to teaching? Or, to deepen the question in relation to the current argument, could these two descriptors of practical pedagogic actions possibly be circumscribed in teacher understandings in the same way that they are in analytic debate between 'Piaget' and 'Vygotsky'. If we consider the practical course of classroom teaching, then it seems obvious that they are not. When a teacher plans a lesson, conceiving and creating a learning pathway for children in relation to a particular topic, identifying text books and other artefacts that he/she will use to communicate ideas, and specifying (perhaps even designing) structured learning tasks to consolidate new understandings, then it is clear that he/she is facilitating a particular learning environment for learners. However, it is equally obvious that the teacher goes further, in the course of the lesson, to mediate the new understandings required for learners to complete successfully those facilitated tasks. This mediation takes place moment by moment, in constantly shifting discursive exchanges between learner and teacher, as the latter becomes aware of the cognitive spaces within which learners are able to recognise new conceptual problems – the ZPD, as it reveals itself in the richness of classroom life. The mediation also takes place in the way the teacher utilises, again moment by moment, the various texts and artefacts that he/she has brought into the lesson, as learning possibilities arise.

It is apparent that the ideas of facilitation and mediation coexist for a teacher, whether consciously or unconsciously. When the teacher sets up an environment conducive for learning, what he/she basically does is to facilitate (in Piaget's terms, provoke) learning possibilities in relation to the actual developmental level of the child (Vygotsky). During the course of a lesson the teacher does indeed mediate new (in the sense of unfamiliar) knowledge to the learners, which clearly seeks to create disequilibrium (Piaget) in relation to the potential developmental level of a child (Vygotsky). When, in the shifting conversation that a teacher has with a learner, he/she 'assesses the child's present levels of understanding', she makes judgements about the prevailing cognitive structures of a child (Piaget), about the child's established, actual level of cognitive development (Vygotsky). And so it goes, round and round, consciously or unconsciously, Piaget and Vygotsky, in the ongoing practical wisdom of the teacher.

CONCLUSION

This paper has suggested that, within the deliberate practice of teaching and the deliberative wisdom that arises from within it over time, ideas about facilitation and mediation complement each other. Even though their formal theoretical grounds might differ, in a classroom they cannot be separated. Therefore we propose that the focus for a teacher should be on how to best facilitate and mediate learners' new understandings, rather than choosing one idea over the other. At certain points, one of the ideas will be most useful, at other points the other. But this does not mean – going back to Carr's insights discussed earlier – that we should abandon the formal theoretical accounts of each of the notions of facilitation and mediation. At the end of the day, it is this analytic distinction that contributes to teachers' understanding of teaching school knowledge. But teachers know – they know it in their bodies, in their embodied practices – that the facilitation of learning and the mediation of learning in the classroom complement each other. Perhaps what teachers can teach us, as theoreticians of Piaget and Vygotsky, is that there are much stronger grounds for a theoretical synthesis of the two traditions than we might sometimes suspect.

REFERENCES

- Ausubel, D.P. (1961) 'In defence of verbal learning' *Educational Theory* 11 pp.15-25. Aristotle (2004) *The Nicomachean Ethics*. Tr. J.A.K. Thomson. London: Penguin.
- Ausubel, D.P. (1968) *Educational psychology: A cognitive view*. New York: Holt Rinehart.
- Bruner, J.S. (1966) *Toward a theory of instruction*. Boston MA: Harvard University Press.
- Bruner, J.S. (1974) *Beyond the information given*. London: George Allen & Unwin.
- Carr, W. (1995) *For education: Towards a critical education theory*. Buckingham: Open University Press.
- Carr, W. & Kemmis, S. (1986) *Becoming critical: Education, knowledge and action research*. London: Falmer Press.
- Chomsky, N. (1972) *Language and Mind*. New York: Harcourt Brace Javanovich.
- Crain, W.C. (1992) *Theories of development: Concepts and application*. New Jersey: Prentice Hall.
- Dewey, J. (1963) *Experience and Education*. New York: Collier Books.
- Gardner, H. (1983) *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Gauteng Department of Education. (1999) Theories of teaching and learning facilitator guide. Johannesburg: Gauteng Department of Education, Curriculum Directorate.

Inhelder, B. & Piaget, J. (1958) The growth of logical thinking from childhood to adolescence. New York: Basic Books.

Piaget, J. (1970) 'Piaget's Theory' In P.H. Mussen (Ed.) Carmichael's Manual of Child Psychology. New York: Wiley.

Krashen, S.D. (1982) Principles and practice in second language acquisition. http://www.sdkrashen.com/content/books/principles_and_practice.pdf (Accessed 12 January 2016).

Mason, M.B. (2000) 'Teachers as critical mediators of knowledge' Journal of Philosophy of Education 34(2) pp.343-352.

Moll, I. (2002) 'Clarifying constructivism in a context of curriculum change' Journal of Education 27 pp.5-32. Piaget, J. (1953) The origin of intelligence in the child. London: Routledge & Kegan Paul.

Piaget, J. (1955) 'The growth of logical thinking from childhood to adolescence' In H. Gruber & J.J. Vonèche (Eds.) (1995) The essential Piaget. Northvale: Jason Aronson.

Piaget, J. (1964) 'Development and learning' In R. Ripple & V. Rockcastle (Eds.) Piaget rediscovered. Ithaca: Cornell University.

Piaget, J. (1978) To understand is to invent. New York: Grossman.

Potenza, E. (1998) 'Outcomes-based education: will it benefit our children?' Fairlady (21 January). Rogers, C. (1969) Freedom to learn: A view of what education might become. Columbus, OH: Charles Merrill.

Sale, D. (2011) 'The science and art of effective teaching' Paper presented to the International Conference of TVET Educators for the New Generation. December 12-13, Kuala Lumpur, Malaysia.

Seel, N. (2012a) 'Assimilation theory of learning' Encyclopaedia of the Sciences of Learning pp.324-326. Springer Verlag.

Seel, N. (2012b) 'Ausubel, David P. (1918–2008)' *Encyclopaedia of the Sciences of Learning* pp.387-388. Springer Verlag.

Schön, D. (1983) *The reflective practitioner: How professionals think in action*. New York: Basic Books. Shulman, L. (1986) 'Those who understand: Knowledge growth in teaching' *Educational Researcher* 15 pp.4-14.

Shulman, L. (1987) 'Knowledge and teaching: Foundations of the new reform' *Harvard Educational Review* 57 pp.1-22.

Skinner, B.F. (1953) *Science and human behavior*. New York: Macmillan.

Skinner, B.F. (1968) *The technology of teaching*. New York: Appleton Century Crofts.

Stith, I. & Roth, W-M. (2010) 'Teaching as mediation: the cogenerative dialogue and ethical understandings' *Teaching and Teacher Education* 26 pp.363-370.

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

Vygotsky, L.S. (1981b) 'The instrumental method in psychology' In J.V. Wertsch (Ed.) *The concept of activity in Soviet psychology*. New York: Sharpe.

Vygotsky, L.S. (1978) *Mind in society*. Cambridge, MA: Harvard University Press.

Vygotsky, L.S. & Luria, A.R. (1993) *Studies on the history of behavior*. Hillsdale: Lawrence Erlbaum.