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# Understanding the Learner–Environment Relationship

## *A Matrix of Perspectives*

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**ABSTRACT** This conceptual article re-examines the contribution of a contextual perspective to the practice of educational psychology. The two dimensions of environment and learner are placed along a continuum of active to passive. A range of theory is then situated within this matrix. The article explains and illustrates how the matrix encompasses different views on the learner's developmental relationship with the environment and how each perspective leads to specific types of interventions. The model is applied to special education, school curricula and policy making. It is argued that the matrix can facilitate a comprehensive analysis of an individual's situation and inform communication among professionals working in different paradigms. Implications for professional practice are discussed.

**KEY WORDS:** context; ecological; environment; learner; matrix; perspectives

The contribution of a contextual approach to the practice of both pedagogy and educational psychology has become increasingly acknowledged in the global context of the 21st century. Since early-recorded history all theories of learning and development have been grounded in ideas about what it means to be human. In 500 BC Heraclitus, the first Greek philosopher to explore the nature of humanity, described learning as dynamic and interactive 'an attunement of opposite tensions' (Carey, 1964: 415). In 360 BC Plato described an ideal education for responsible citizenship (Lee, 2003). Plato's *Republic* emphasized the role of the environment in 'character training' and recognized different developmental stages. Historically theorists have viewed learners in a

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variety of ways that provide threads to contemporary discussion about the relationship of environment and learning. The 19th century term, *organism*, is currently again being used to refer to humans, reflecting the impact of genome discoveries but the interactions among gene, environment and developing organism remain complex. A reductive approach to the products of those interactions will therefore fail to provide the insights necessary to inform both pedagogy and responsible interventions within the field of educational psychology.

In the 21st century it has, therefore, become imperative to re-examine how theory can best inform dynamic perspectives on growth and development. The main purpose of this article is thus to locate a range of psychological theory within a matrix that offers educational psychologists and educators a framework for evaluating the ongoing usefulness of different approaches. The secondary aim is to encourage further discussion on what is involved in a contextual approach to the practice of educational psychology. To begin, a short historical detour is necessary, in order to reinstate *organisms* as learners.

### **Views of the learner**

The Renaissance educator Comenius presented a developmental perspective of learning as a person-environment interaction (Keating, 1923). A century later, Locke's 1753 notion of the neonate as *tabula rasa*, a blank slate awaiting the imprint of the environment, influenced the educational theory of Rousseau (1911/1762) who proposed that adult views on how children learn were faulty. If learners were freed from adult restrictions and unnatural limitations he suggested, their interactions with the environment would be sufficient to ensure healthy development. In 1859 Darwin's explanation of the variability and adaptability of animal species was picked up by theorists such as G. Stanley Hall (1916), who sought both biological and environmental explanations for adolescent behaviour. In early 20th century psychology the demarcation between biology and environment became territorial, despite an attempt at reconciliation of these positions in the field theory of Lewin (1931, 1935). Lewin's view of behaviour as a function of the bi-directional person-environment interaction was subsequently weighted by psychologists either in favour of the person factor, as in psychoanalytic theory (Freud, 1964/1933) or the environmental factor, as in the operant theory of Skinner (1971). But while both perspectives acknowledge that organism and environment influences are bi-directional, they usually lead to intervention from a uni-directional perspective. Bronfenbrenner (1979) explained bi-directionality. 'If one member of a dyad undergoes developmental change, the other is also likely to do so' (p. 65). In this statement

he emphasizes the significance of the human dyad as a context ‘not merely of reciprocal interaction but of reciprocal development’ (p. 65).

During the mid 20th century operant behavioural theory held sway in counterpoint to heritability research (Eysenck, 1952). At that time psychologists were expected to work within either a behavioural or psychoanalytic model, with both approaches leading to practice that tended towards labelling human functioning as reactive. Diagnostic medical categories were developed to explain behavioural differences but were themselves subject to reinterpretation over time. For example, the 1970s saw a shift away from the category of Minimal Brain Dysfunction (MBD) towards Hyperactivity as the defining characteristic in the DSM-III (APA, 1980), followed by Attention Deficit Disorder (ADD) and finally ADHD, Attention Deficit/Hyperactivity Disorder in the DSM-III-R (APA, 1987). Activity, however, is a basic attribute of humans, even in sleep, and judgements as to its level of normality will always be just that – judgements. In 1990 Bruner noted that psychology was still attempting to understand human behaviour and motives in terms of categories, rather than within the contexts and situations in which they arose. Evidence of this is the relatively new acronym DAMP, that refers to deficits in attention, motor control and perception, a term currently used interchangeably with the older category of MBD (Larsson et al., 1995). The knowledge that invisible phenomena such as MBD are speculative has not stemmed the use of medication with learners given this diagnosis. Questions can be asked about the extent to which applying a category such as ADHD or MBD to a young learner serves to ‘abnormalize’ the very attributes of the human species necessary for learning – movement, exploration, curiosity and spontaneity. In the following discussion the term ‘learner’ is used in preference to organism to emphasize the reciprocity between humans and their environments.

### **Reciprocity – a human need**

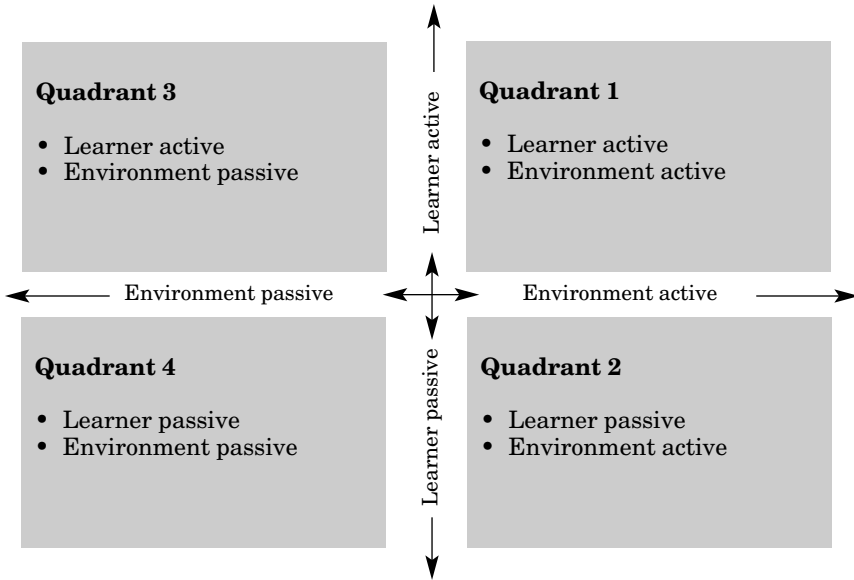
Psychological activity has historically concerned itself with measurement and the norming of developmental levels and abilities. Few standardized measures, however, attempt to discover any contextual aspect of the learner’s experience. Standardized assessment has its own history but inevitably debate over the usefulness of psychometrics veers into discussions on heredity. This is understandable since it is our biological destiny to share most of our DNA with the great apes. But we also share with other species the need to function reciprocally in our specific contexts through interactions that allow us to thrive. It is only in the last few decades that psychology has become seriously occupied with the issue of contextual reciprocity, as in research on

attachment, building on the research of ethologists such as Lorenz (1966) and others who have described how the niche which an animal occupies acts in reciprocal ways to assist survival (Archer, 1992; Pianka, 1983). It has been suggested that niche is a construct of equal importance to humans since it similarly affords us the resources necessary for development (Bowler, 2005). Contextual reciprocity was also researched by Super and Harkness (1986) who examined this theme in relation to the acquisition of culture. In some respects the niche parallels Bronfenbrenner's concept of the microsystem, the primary setting within which the learner functions and learns to recruit resources. Activity within the microsystem has also been described in terms of 'proximal processes', referring to the amalgam of physical, cognitive and emotional contexts that support the individual's learning (Bronfenbrenner and Ceci, 1994). Vygotsky (1978) tackled the issue of what it meant to be an adapting and adaptive human, in the context of a nation undergoing political and social transformation. His socio-cultural perspective further explained the reciprocal processes by which learning is socially mediated and how learning then actively leads development (Bodrova and Leong, 1996). Similarly Feuerstein et al. (1979) suggested that cognitive development was dependent on the mediation of culture through a mediated learning experience. It is timely therefore to scrutinize theory that currently informs the practices of educational psychology and pedagogy in order to investigate what is involved in a contextual approach to learning.

### **Reconceptualizing the learner-environment relationship**

To have current relevance, psychological theory must account for contextual reciprocity. Dent-Read and Zukow-Goldring (1997) have posited a four-by-four matrix in which both organism and environment can be seen as either active or passive. This article elaborates on the explanatory potential of their suggested matrix and shows how a visual representation of this can contribute to our understanding of learning and human development. We begin by visualizing a continuum from active to passive for each of the two dimensions of learner and environment. This results in four quadrants, as shown in Figure 1.

To explore the contribution of this matrix to the practice of both educational psychology and pedagogy some definitions are necessary. To be *active* is to be both moving and effecting, having a causal role, 'causing the event or process' (Collins 1993: 12). Both learner and environment can thus be seen as being engaged with a situation or process where all aspects of the context are both influencing and being influenced by, each other. Where the relationship between learner and environment is active along both dimensions it is thus inherently both

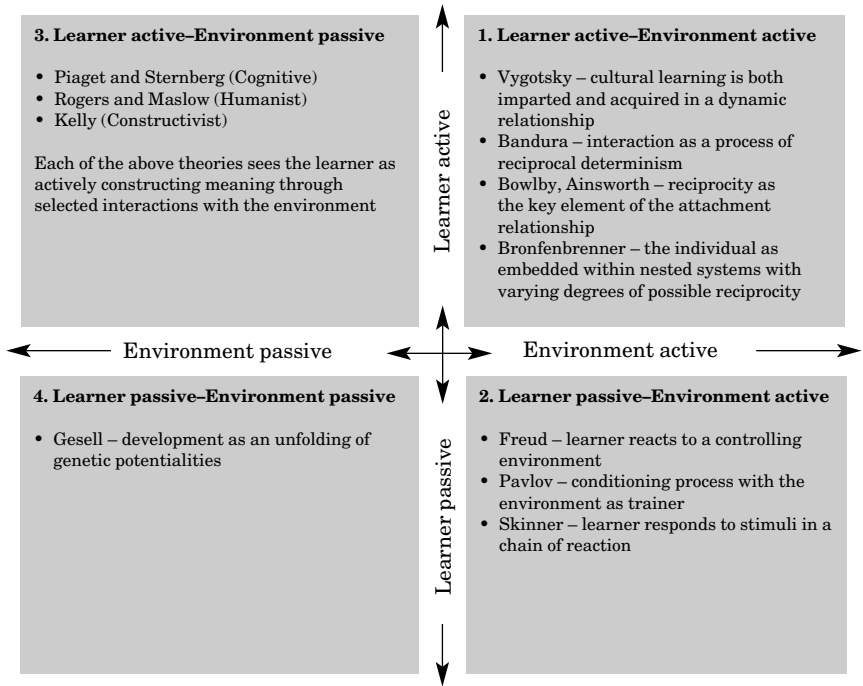


**Figure 1** A matrix for conceptualising the relationship of the learner and environment as they function within specific contexts, based on a comment by Dent-Read and Zukow-Goldring (1997) in the introduction to their edited work

dynamic and reciprocal. The term *passive* on the other hand implies submission. It means to be ‘not active’ or ‘not participating’, to be ‘un-resisting and receptive to external forces’ (Collins, 1993: 976). Either the environment or the learner may be the receptive element that submits to events and processes. On each of these two continuums there will be different degrees of activity and passivity in relation to both learner and environment. In the following discussion the words context and environment have been used interchangeably to include the physical, cognitive, social, emotional and interactive dimensions of any individual’s current setting. Within each setting the nature and degree of reciprocity will also vary.

### Locating theory within the matrix

Theories of learning and development have been located in the matrix to illustrate the shifts in emphasis that theorists place on the activity of learner and environment. A genetic determinist position (Quadrant 4) sees both learner and environment as passive. In contrast, a mutually interactive position (Quadrant 1) sees both learner and environment active.



**Figure 2** *Theoretical positions on learning and development located within the matrix*

The matrix enables a flexible framework for meta-analysing and comparing theories. Early interpretations of interactive theory portrayed learners as relatively passive in relation to environmental factors (Figure 2, Quadrant 2). However, research in the area of interpersonal processes, e.g. attachment, has led to a greater understanding of how humans seek to impact upon their environments. The complexities of the relationship between biology, information processing, child-rearing and environment have been explicated by Siegel (1999) who provides sufficient justification for placing contextual approaches to understanding human development in Quadrant 1.

Cognitive theory is located in Quadrant 3 since it focuses on the activity of the learner and the way in which the outcomes of this activity lead to further environmental exploration. Psychoanalytic theory is situated in Quadrant 2 where the learner is seen as more submissive to both internal biological and external forces. Bandura (1977) suggested that although behaviourism and Piagetian theory are often presented as antithetical they share the assumption that

development proceeds mainly through the effects of one's own behaviour. This argument, however, minimizes the more active role of behaviourism in the process of consequence, in contrast to the less intentional activity of the individual on the receiving end of these consequences. Genetic perspectives on development, as they link with environmentally determined norms, such as the research of Gessell (1933) are situated in Quadrant 4. Genetic predispositions, however, may lead to specific kinds of activity within particular contexts, as exemplified in temperament, and this can be taken into account within the use of the matrix.

Theories that acknowledge the functional relationship between environment and behaviour are found in Quadrant 1. These include the growing body of attachment theory research arising from Bowlby (1957, 1969) and elaborated by Ainsworth (1991), Bretherton (1995) and others. As articulated by Hartup the attachment between a learner and parent 'facilitates the learner's exploration of the environment, but at the same time the wider and wider exploration of the learner forces renegotiation of responsibilities between the learner and mother' (Hartup, 1989: 120).

The humanistic school of psychology, epitomized by Rogers (1961) and Maslow (1954), emphasized the phenomenal world of the individual and the fulfillment of individual potential. Within this model the person was encouraged to assume an active role in her or his development while acknowledging the changing and dynamic nature of one's relationship with the environment. However, it was the person rather than the environment that was seen as having greatest potential. Within the phenomenological school, Kelly (1955) described how humans construct meaning through their interactions with the environment. Phenomenology and humanism have thus been tentatively situated within Quadrant 3.

Cultural practices having a specific view of the learner's relationship to the environment can also be considered in relation to the interactive matrix. For example, reciprocity is implicit in the underlying principles of *Kaupapa Maori* – the world view of the of New Zealand/Aotearoa's indigenous people whose traditional practices involve reciprocity among family, ancestors, people, land, natural and spiritual resources. Durie (2003) has articulated the implications for a Maori approach to the practice of psychology and counselling which locates this in Quadrant 1, along with other indigenous cultures such as those of the Australian Aboriginal, Native Americans, Inuit and many African cultures.



### **Context as a multi-sensory, multidimensional experience**

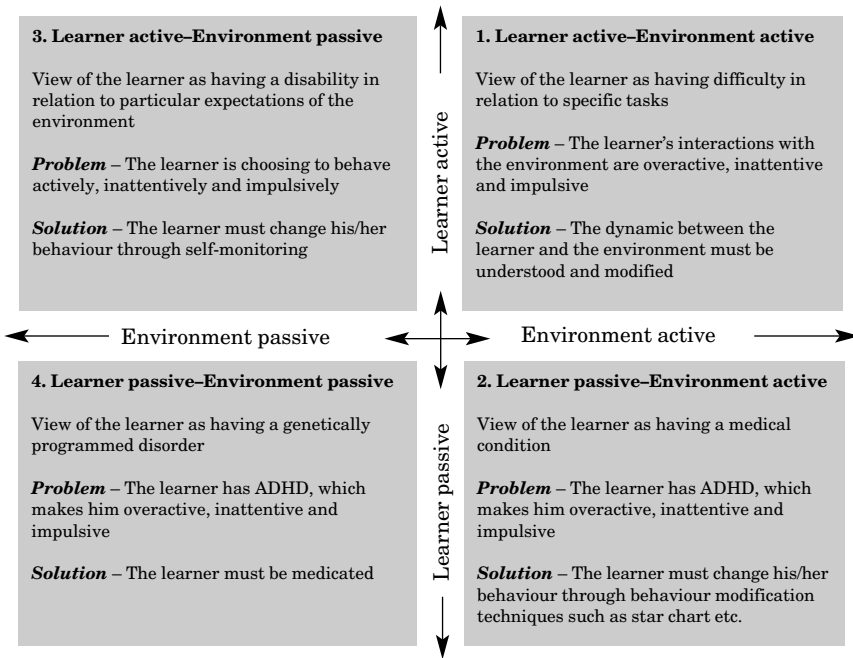
Social learning theory was a prominent strand of psychology at the time Bronfenbrenner presented his theory on the ecology of human development. Social learning theory explains human behaviour in terms of a continuous reciprocal interaction between cognitive, behavioural and environmental determinants.

Within the process of reciprocal determinism lies the opportunity for people to influence their destiny as well as the limits of self direction. This conception of human functioning then neither casts people into the role of powerless objects controlled by environmental forces nor free agents who can become whatever they choose. Both people and their environments are reciprocal determinants of each other (Bandura, 1977: vii).

Bowler (1997) has previously attempted to conceptualize the learner as being embedded in the process of simultaneously experiencing, and acting upon, the environment. In this attempt the term 'contexture' was coined to convey both reciprocity (context) and the sensory-cognitive-emotional elements (texture) of the learner's experience. In order to understand what the learner experiences, and conceive possible directions for change, it is necessary both to map the context and to access the contexture of the individual's experience. Such analysis will inevitably encompass relationships and feelings since; 'What matters for behaviour and development is the environment as it is perceived rather than as it may exist in objective reality' (Bronfenbrenner, 1979: 4). In working with individuals what matters are their own perceptions of efficacy in relation to their situation. Subjective realities are a part of any human context.

### **Perspectives on individual difference**

Perspectives on individual difference, diverse needs and developmental issues can be accommodated within the matrix. One set of circumstances can be assigned different meanings and different labels that lead to various methods of assessment of human activity with different implications for treatment or remedial activity. The interactive matrix allows us to see how the same learning issues can be construed from different perspectives. For example, if a learner is considered to be overactive, inattentive and impulsive, the situation might be conceptualized either as a medical condition of the learner, ADHD, or a relational disparity where an active learner and active family members do not successfully negotiate in the context of the parenting relationship (see Figure 3). The former position may lead to medicating the learner (Quadrant 4) while the latter stance might involve working with the beliefs of the learner and her parents (Quadrant 1). Different



**Figure 3** Individual difference conceptualised within the matrix

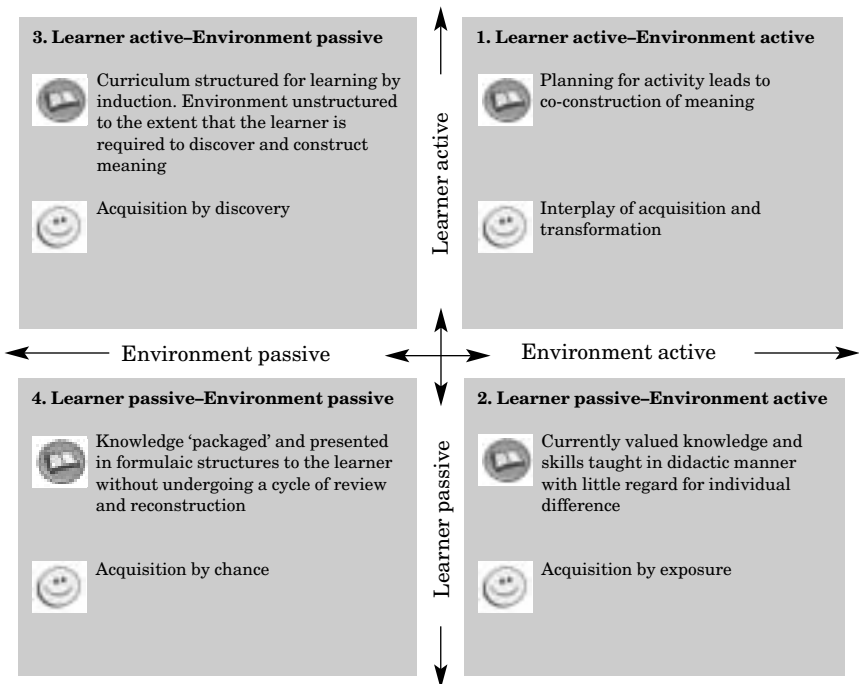
professional perspectives on such situations may locate the same learner in different quadrants, with different implications for both interpreting observations and constructing interventions.

As illustrated, Figure 3 shows how different lenses on the same issues can lead to different perspectives and implications for treatment. The value of this to practitioners is that one’s professional paradigm need not always be rigidly located within one quadrant. The matrix allows for shifts of perspective and for re-construing what might constitute an appropriate intervention. The case of New Zealand novelist Janet Frame provides an example of how different perspectives lead to different approaches to intervention. Doctors who had diagnosed Frame as schizophrenic were on the verge of undertaking brain surgery when her first book, which received international acclaim was published. This caused her psychiatrist to abandon the planned lobotomy and reclassify Frame as a sensitive loner with exceptional and different talents (King, 2000). The possibilities for reconceptualizing a situation, and its potential for action and empowerment are exemplified in the different theories, for example Freire’s (1972), notion of *praxis* – the transformation of humans’ realities through the twin processes of action and reflection.

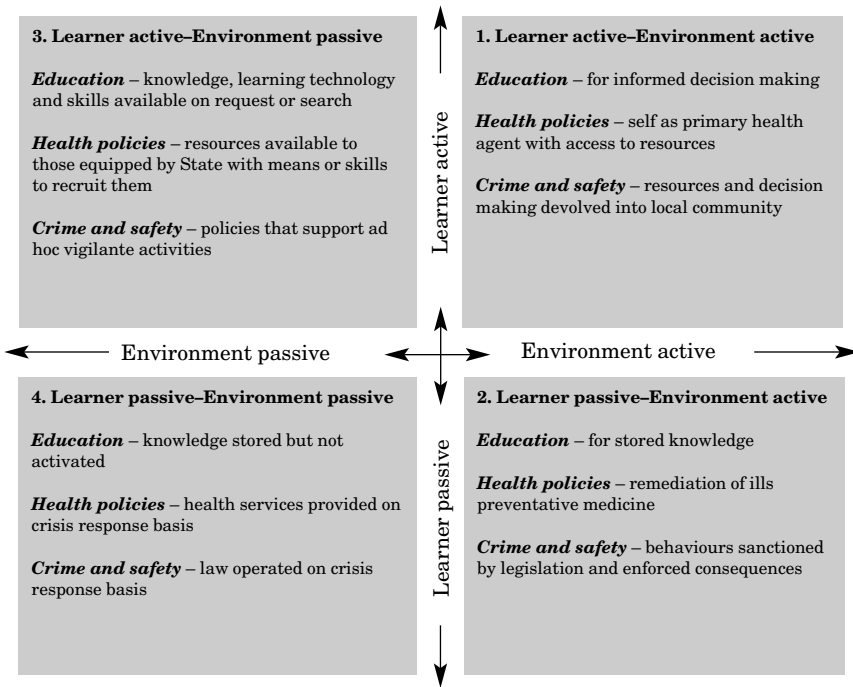
**Developing educational policy**

The matrix also illuminates the relationship between teaching and learning which both informs, and is influenced by, educational policy. The core curriculum of Western nations has evolved and changed in response to economic policies and new sociological and scientific insights. However, the match between curriculum and teaching practice is seldom articulated. Figure 4, below, presents an overview of the possible relationship between learner and curriculum with each quadrant representing different policy and pedagogical implications. The changing philosophy of special education has led to policies that have moved from segregated schooling, to withdrawal for the purpose of remedial teaching, through the mainstreaming movement, to inclusion.

Since the state school curriculum is an artefact of the political macrosystem, it reflects the worldviews of the prevailing ideology embedded in the educational bureaucracy. This is equally true of other institutions as suggested in Figure 5. The matrix encompasses a range



**Figure 4** *The school curriculum in relation to assumptions regarding the learner. Different pedagogical approaches are implicit in each position*



**Figure 5** Using the matrix to understand the implications for institutions and social policies

of social and educational processes. It serves as a lens through which to view and develop the practice of socially responsible psychology and empowering pedagogy. For instance, Quadrant 1 implies a pro-active approach to social issues while Quadrant 4 suggests a more reactive position.

**After analysis – so what?**

The discussion to this point has been general but inevitably we get to the point of intervention in the practice of both educational psychology and pedagogy – the ‘so what?’ question. From the perspective presented here, any intervention must take into account the relationship aspect of a learner’s contextual embeddedness. By applying the interactive matrix to individual difference it becomes possible to understand the perspectives of others when they differ from one’s own. There are many examples of educational methods that have been developed to accommodate a wide range of views, which acknowledges the interaction between learner and environment. One such example can be seen in

the early childhood movement towards authentic assessment, defined as 'the systematic collection of information about the naturally occurring behaviours of young learners and their families in their daily routines' (Neisworth and Bagnato, 2004: 204). The move towards authentic assessment was, in part, an attempt to replace the use of standardized tests that had been neither developed for, nor field-validated on young learners with developmental issues. These tests often served to unfairly limit the learner through predicting future outcomes based on what were assumed to be fixed and unchangeable traits. For Gould (1981) there are 'few tragedies more extensive than the stunting of life, few injustices deeper than the denial of an opportunity to strive or even hope, by a limit imposed from without but falsely identified as lying within' (p. 28). A commitment to analysing the nature of interactions between learners and their environments has significant implications for the development of educational policy, educational structures and systems and educational practice.

### **Summary**

This article provides another lens into the interactive contextual approach. It suggests that the theoretical threads of an interactive matrix are already present in the warp and weft of psychological theory and enlarges the notion of what it means to bring different perspectives to the practice of educational psychology, special education and policy making. In focussing on context it has not been our intention to minimize the impact of heredity but to emphasize that it is the functional interaction of context and genetic predisposition that is most significant in undertaking any analysis. Using an interactive matrix makes it possible to interpret the various ways in which humans respond to their environments. We invite dialogue on the matrix presented in order to extend understandings about learners as they function within and across their range of developmental settings.

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