

## **Exploring conceptualisations of students' interest in learning: The need for a sociocultural theory**

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While sociocultural approaches to learning and development have been increasingly theorised and studied in natural settings in the past decade, motivational constructs such as interest have not been explored from within a sociocultural framework to any great extent. Interest as a theoretical construct has been conceptualised differently within psychology over the past one hundred years and the aim of the present paper is to review and critique some of these conceptualisations. Discussion of prior conceptualisations, including both individual and situational interest together with analysis of the methodological approaches used, will lead to the emergence of a sociocultural approach, in which interest is interpreted as a social construction developing within the dynamic relationship between the individual and the situation. The final section of this paper will consider a central aspect of sociocultural theory, the Zone of Proximal Development (ZPD), focusing upon Valsiner's zones framework (1997; Valsiner & van der Veer, 1993) and interest.

### **Early conceptualisations of interest**

The theoretical construct, interest, is one that has been considered and examined in educational psychology since the late 19th century. Both William James and John Dewey regarded interest as central to educational theory and practice. James (1890/1950, cited in Schiefele, 1991, and Rathunde, 1993) considered two forms of interest: selective interest and momentary interest. Selective interest is described as a wilful, directive force in the mind which orders experience. This suggests that only selected information, to which one chooses to attend, will have an impact on one's experience, thus implying some degree of self-regulation. The active role of the individual is emphasised in selective interest. The other form, momentary interest, is an impulsive, spontaneous and natural force in the mind. This form of interest can be regarded as more ephemeral, and although it may also be considered as somewhat internally oriented, there are possible links between momentary interest and the more recent conceptualisation of situational interest, which emphasises the significance of environmental factors in the generation of more short-lived, spontaneous forms of interest.

The theory of interest developed by Dewey (1913) also distinguished between two different elements of interest, identification and absorption. In emphasising the importance of identification, Dewey (1913) asserted that, 'The genuine principle of interest is the principle

of the recognised identity of the fact to be learned or the action proposed with the growing self' (p. 7). He regarded interest as a form of self-expression that was developmental in nature and therefore varying with age, prior experiences, social opportunities and 'individual native endowments' (p. 67), with the latter incorporating innate individual differences. Dewey regarded children as more likely to be 'social' in their interest than adults, in that he considered children's activities as so embedded in the social that the boundary between the individual and social activity is rarely considered by children, as evident from their play. Dewey argued that the distance between the person, materials and the results of action are 'annihilated' with interest as a sign of 'organic union' (Dewey, 1913, p. 17). 'Genuine interest' is therefore defined as

'the accompaniment of the identification, through action, of the self with some object or idea, because of the necessity of that object or idea for the maintenance of a self-initiated activity' (Dewey, 1913, p. 14).

Through this definition, Dewey recognised interest as a dynamic, active state based on real objects and the pleasure associated with them. He emphasised the place of interest in the maintenance of an enduring activity that develops over time, and also acknowledged the interactive relationship between the individual and aspects of the environment in the creation of interest. The latter has also been incorporated into contemporary developmental conceptualisations of interest, particularly theories of situational interest (Mitchell, 1993; Hidi & Harackiewicz, under review). These approaches have further elaborated upon Dewey's emphasis upon the dynamic, developing nature of interest and his claim that, "It is not enough to *catch* attention; it must be *held*" (Dewey, 1913, p. 91). The following section of this paper will continue and extend upon this discussion by outlining a number of contemporary conceptualisations of interest.

### **Individual and situational interest**

Implications that interest could stem from either internal or external influences have been drawn from Dewey's (1913) earlier theory. Hidi & Harackiewicz (under review) claim that while most interest theorists concur that 'interest is a phenomenon that emerges from individuals' interaction with their environment, motivational researchers assign differing significance to the components of this framework' (p. 4). Schiefele (1991) has distinguished two conceptions of interest: individual and situational interest. This section of this paper will define and critique research based upon these conceptions.

Individual interest is defined as 'a relatively stable evaluative orientation towards certain domains' (Schiefele, 1998, p. 93) or towards particular classes of objects, events or ideas (Krapp, Renninger & Hoffman, 1998). Individual interests have personal significance and are usually associated with high levels of knowledge and value, positive emotions and increased reference value (Krapp, Hidi & Renninger, 1992). In this framework, individual interest develops and remains a stable and enduring factor in one's learning over an extended period of time. It may be considered dispositional and is internally oriented (Krapp et al, 1992; Alexander & Jetton, 1996; Bergin, 1999). While Renninger (1989, 1990 cited in Schiefele, 1998) incorporates stored knowledge and stored value as components of her cognitively-oriented approach to individual interest, Schiefele (1991, 1998) considers individual interest as both a latent and an actualised characteristic. Individual interest as a latent characteristic is further divided into feeling-related valences (ie feelings associated with a topic or object) and value-related valences (ie the attribution of personal significance to an object). Individual interests appear to be more, rather than less, stable in children, although children are also always in the process of consolidating, merging and developing new interests (Fink, 1995; Renninger, 1998a).

Conversely, the basis of situational interest is an external locus, and it is defined as 'an emotional state brought about by situational stimuli' (Schiefele, 1991, p. 302). This form of interest is also referred to as 'interestingness' and is the basis of approaches to studying interest that aim to identify features of a specific context that arouse interest. It tends to be more short-lived and superficial than individual interest (Alexander & Jetton, 1996) and is generally aroused by specific features of an activity or task (Schiefele, 1998). Two aspects of situational interest, 'catch' factors (which trigger interest) and 'hold' factors (which maintain interest), have been studied by Mitchell (1993), while Harp and Mayer (1997) distinguish between cognitive and emotional interest (aroused by 'seductive details' in text).

This conceptualisation of interest, described above, as comprising both individual and situational components is the basis for the majority of recent empirical studies of interest, both explicitly (for example, Mitchell, 1993; Schiefele & Krapp, 1996; Hoffman, Krapp, Renninger & Baumert, 1998) and more implicitly (for example, Anderson, Shirey, Wilson & Fielding, 1987; Wade, Schraw, Buxton & Hayes, 1993). Various types of research approaches have been adopted, with the majority of studies positioned within a quantitative paradigm. The following critique of interest literature will initially consider studies of situational interest, including text-based interest, and will subsequently move to individual interest, highlighting research approaches and methodological issues.

#### *Studies of situational interest and consideration of methodological issues*

Situational factors have been the focus of some researchers, with a relatively large number of experimental studies of text-based interest (for example, de Sousa & Oakhill, 1996; Schiefele, 1996; Schraw, 1997; Harp & Mayer, 1997) providing evidence for relationships between interest and specific learning outcomes, such as depth of learning and recall (Schiefele & Krapp, 1996). An example of the design of a typical experimental study is that described by Schraw (1997) of situational interest in literary text. The purpose was to examine relationships amongst text characteristics, situational interest, two measures of text understanding and personal responses when reading a literary text, and 181 North American Psychology undergraduates participated in the study as a part of their course assignment. The literary text was an 870-word 'highly interpretative' narrative story, 'The Book of Sand', written in 1977, and two interest questionnaires, the 'sources of interest questionnaire' and the 'perceived interest questionnaires', provided measures of interest. The measure of text understanding was a 20 item multiple choice recognition test, while personal responses to and holistic interpretations of the text were measured by a two page reaction written by participants after completion of the recognition test. The participants completed these tasks and measures in a one hour (approximately) single session with a trained graduate student, in groups of 10 to 25 students. Quantitative analyses were then performed on the data collected and generalisations beyond the text, setting and sample of participants were made in the discussion.

Such experimental studies of situational interest can be useful in furthering an understanding of the construct, but also present important limitations. The contrived nature of the experimental settings and the specific focus upon learning from isolated texts or passages of text clearly limit any generalisation to natural classroom settings or other authentic learning activities. Furthermore, the experimental nature of many of the studies of text-based interest provides a short-lived context for the activity that is artificially created by the researchers, removed from the social and cultural activities in which the people in the sample regularly participate. Participants in experiments conducted by interest researchers in tertiary institutions are usually gaining course credit points by participating in the study (for example, Schraw, 1997; Harp & Mayer, 1997; Isaac, Sansone & Smith, 1999), thus their motivations for and involvement in completing the experimental tasks would be varied and not necessarily related to interest in any form. Additionally, these types of experiments

appear to be most suited to examining the *outcomes* of interest from an individual differences perspective, since the study of the *process* of interest development would need to occur over a longer period of time, in the context of activities situated in the social and cultural lives of the participants, where there is potential for that activity to become personally valued.

Attempts to embed a text-based investigation in a context related to the 'real life' activities of participants were made by Ainley and Hillman (1999) in a study of secondary students' situational and individual interest in prescribed English texts. This study has made a significant contribution to interest research, as it is unique in the way that it has examined both types of interest in the context of secondary students' school learning, using prescribed English texts and an innovative computer program. However, the passages from the prescribed English novels were not from texts that the students in the sample had read in their entirety and consequently, students were still reading isolated passages. This detracted from the potential study of interest in an authentic learning activity. Furthermore, these text passages were presented as part of an interactive computer program, which positively facilitated the collection of students' responses as they engaged with the texts, but which presented the novel in quite a different form to that in which it would normally be read, thus introducing a confounding element which may have impacted upon interest.

A study of situational interest by Mitchell (1993) was successful in exploring interest in the context of authentic classroom activity in secondary mathematics. Mitchell's (1993) development of a model of interest was based on a consideration of theory and previous interest research, with a focus upon situational interest as 'an interest that people acquire by participating in an environment or context' (p. 425). While Alexander and Jetton (1996) have criticised Mitchell's (1993) study for confounding situational and individual interest, his definition of situational interest does recognise the need for *participation in an environment or context* in order for situational interest to develop. Interaction between that individual and the environment, which comprises objects, activities and other people, is a central feature of situational interest as defined by Mitchell (1993), through meaningful participation in that environment. This concern for participation in an authentic context and also for students' perceptions of interest was reflected in Mitchell's development of both his measurement instruments and subsequently his model of interest. The former consisted of an interest survey together with open-ended questions and was used in conjunction with focus group sessions. The data gathered through the completion of the interest survey related to the students' experiences in their mathematics classrooms and provided support for a multifaceted construct of situational interest, based on 'catch' and 'hold' facets of secondary mathematics classes.

While self-report measures, especially rating scales completed retrospectively, are most frequently used to identify interest (Hidi, Renninger & Krapp, 1992), not all measures are specified as precisely as Mitchell's (1993) survey. For example, at the end of the presentation of test passages in two experiments focused upon comprehension monitoring and interest of primary students, de Sousa and Oakhill (1996) 'measured' interest by simply asking students which task they had found more interesting. The validity of this approach relies on students in the sample sharing the same understanding of the term 'interest' as the researchers, which is problematic when the same word is used to describe both everyday and psychological constructs. Paris, Yambor and Packard (1998) developed a 40-item questionnaire to measure primary students' interest in science before and after participation in a museum-school-university science program, however the stem for both the curriculum and attitude interest scales was "How do you *feel* about..?" This stem taps only the affective aspect of interest, based on children's *feelings* about the activities in the program, neglecting the cognitive aspect of interest. A further disadvantage of self-report questionnaires, administered on a single occasion, is the apparent inability to capture the *process* of interest

development. Although Paris et al (1998) used the interest scales as a pretest and a posttest in their study, the only conclusion that could be drawn was that interest did increase, without any insight into *how* interest developed. A further difficulty is that in all of these studies, students' responses to questionnaire items are assumed to reflect their perceptions of an experienced reality, and that this reality can be communicated and shared with the researcher. It is suggested that methodological triangulation needs to be employed in future studies of interest to overcome such limitations.

In what appears to be an attempt to incorporate a study of both the actions and perceptions of students, a combination of self-report questionnaires and analysis of video-taped interactions was employed by Isaac et al (1999), in their examination of the impact of social context on students' interest. These authors' conclusion that the social context of an activity can actually be part of that activity signifies a shift from a social influence approach (Rogoff, 1998) towards a social constructivist approach. However, the experimental nature of the study and the nature of the sample (first year psychology students) limit the impact of the results. In addition, the superficial and artificial nature of the social context, and interaction through provision of trained 'confederates' to complete the problem-solving task is problematic. The study of interest as created through social activity should be a study in an authentic context, in which the relationships are not controlled solely by the researcher and the personal meanings created by the participants are genuine. Interest in learning is created in the context of with whom the learning experience is shared, the processes by which learning occurs and the perceived value and meaning of context, colleagues and processes. The situatedness of learning and motivation needs to be reflected in the design of future studies of interest, especially those focusing upon social context.

#### *Studies of individual interest and consideration of methodological issues*

Individual interest does not appear to have been the focus of as many empirical studies as situational interest, possibly because situational interest can be more easily manipulated in the experimental studies that have characterised interest research within educational psychology. A recent collection of conference papers (Hoffmann et al, 1998) is concerned with providing a foundation upon which the role of individual interest and gender in learning and development can be considered. While papers on situational interest are included (for example, Hidi & Berndorff, 1998; Hidi, Weiss, Berndorff & Nolan, 1998), the majority of papers focus upon individual interest across a range of settings and age groups in different countries (for example, Renninger, 1998b; Hoffmann & Hausler, 1998; Athanasou, 1998). Issues of individual interest and school subject choices (Elsworth, Ainley & Ho, 1999), and vocational education choices (Athanasou, 1998) have been considered by interest researchers who regard individual interest as dispositional. While some researchers identify the need for a more qualitative approach to studying interest (for example, Athanasou, 1998), the majority of studies of individual interest have taken a more quantitative approach to research design, including data collection and analysis.

However, there are two studies of individual interest (Ainley, 1998; Fink, 1995) that demonstrate the potential for exploring interest from within a qualitative paradigm. The more qualitative approach taken by Ainley (1998) in a study of individual interest could be used as a basis for future empirical studies in order to provide richer insight into the process of interest development in authentic classroom interaction. Ainley (1998) focused on a student's active state of interest, or an actualised form of individual interest (Schiefele, 1991, 1998), and the personal meaning which characterises interest. Video data from two classroom science lessons was analysed and some elements of interest were observed, with discussion in the paper in relation to interest theories. Ainley (1998) emphasises the importance of an 'integrated data set' through her inclusion, together with video data, of self-report measures as well as interviews with the student while she was watching herself on

the video. It is evident that the teacher of the class had also been interviewed and this provides another source of data in relation to the student's interest. Such triangulation using different methods of data collection should enhance an understanding of the complexity of interest development in classroom settings.

In another more qualitative project, interviews were used by Fink (1995) in a study of twelve dyslexic adults who had overcome initial literacy difficulties and were successful in their chosen field of work. A retrospective study, the adults interviewed by Fink each identified passionate personal childhood interest in a field that required them to read, with some identifying such an interest as early as seven. Reading an intriguing topic enabled them to gain practice, fluency and skill development in reading, as well as increasing the depth of background knowledge in a single, high interest domain (Fink, 1995). Fink emphasises that high individual interest enabled these adults to overcome their learning difficulty and draws implications for teaching practice that emphasises the situatedness of individual interest, with the relationship between the individual and the learning environment identified as crucial for motivation and learning.

This section of the paper has focused upon a critique of previous interest research studies that have developed from the conceptualisation of interest as an individual or situational construct. Interest researchers claim individual and situational interests to be distinct, but argue that they can be expected to interact and influence the other's development (Krapp et al, 1992; Mitchell, 1993; Hidi & Harackiewicz, under review). The next section of the paper will consider theories of the relationship between individual and situational interest.

### **The relationship between individual and situational interest**

Contemporary interest researchers with a focus upon the development of interest have suggested that individual interest arises and develops through experiencing an activity that holds special personal significance (Hidi et al, 1992). These researchers suggest that this probably takes place over time, with repeated exposure to and experience of related topics or activities, as knowledge and value of an initially situational interest increases until it shifts to hold a personal value, or individual interest (Hidi & Anderson, 1992; Alexander & Jetton, 1996; Alexander, 1997).

Interest is incorporated as a critical motivational factor in the Model of Domain Learning, proposed by Alexander (1997), which focuses upon the influence of situational and individual interest in different stages of domain learning. The Model suggests that both situational and individual interest are initially relatively high and gradually decrease as people begin learning within a domain (acclimation stage). As competency develops, individual interest plateaus while situational interest continues to decrease. When learners become proficient or expert within a domain, individual interest gradually increases again to a similar level to the point at which it began and situational interest plateaus at a much lower level than the initial point. This Model is useful in that it attempts to describe the changing roles that situational and individual interest play as competence develops within a domain of learning. However, it has the drawback that situational and individual interest remain distinct, with little consideration given to interrelationships between the two constructs, which would focus more upon the interaction between the individual and the environment that is apparently vital to the process of interest development. Furthermore, the relevance of Alexander's (1997) claims for studies outside of text-processing is questionable and further empirical research is required to establish whether the Model is generalisable to authentic learning environments.

It is evident that the relationship between individual and situational interest is an issue that has not been thoroughly explored, as researchers have generally focused upon one of these

conceptions of interest at the expense of the other in their empirical studies (with the exception of Ainley & Hillman, 1999). However, since the expectation is that these two types of interest interact and are influenced by the other (Krapp et al, 1992; Mitchell, 1993; Hidi & Harackiewicz, under review), it may be necessary to return to Dewey's (1913) definition of 'genuine interest', which incorporates notions of activity and identification with activity, in order to consider the interrelationships between the individual and the environment. These latter notions are central to sociocultural theories and thus it is suggested that approaching the study of interest from within a sociocultural framework would suit the task of exploring the relationship between individual and situational interest, as the boundary between the individual and the environment or context is brought into debate.

### **Conceptualising interest within a sociocultural framework: initial theorising**

The issue of whether such a sharp delineation between individual and situational interest is indeed possible from a sociocultural perspective is one that requires further attention from both a theoretical and an empirical perspective. The separation of the individual and the situational in more contemporary theories of interest weakens the focus upon the dynamic and interdependent relationships between the self and the environment through meaningful activity, which were central features of Dewey's (1913) much earlier theory and which appear to be central to a sociocultural theory of interest. Interest, as defined by Dewey (1913), is accompanied by high personal meaning which is created through the identification of the self with a developing activity, its subject-matter and methods.

"Anyone who has grasped the conception of an interest as an activity that moves toward an end, developing as it proceeds thought of this end and search for means, will never fall into the error of thinking of mind (or the self) as an isolated, inner world by itself. It will be apparent that mind is one with intelligent or purposeful activity - with an activity that *means* something and in which meaning counts as a factor in the development of the activity" (Dewey, 1913, p. 92).

Implications for a sociocultural theory of interest can be identified in Dewey's claim, as it incorporates social interaction and the notion of active internalisation through a focus upon meaningful, purposeful activity, with development through participation in socially and culturally situated activity. The concept of 'catch' and 'hold' factors of interest, originating from Dewey's (1913) theory and developed by Mitchell (1993), also highlights the central role of meaningfulness and involvement to hold and sustain interest, which are vital elements from a sociocultural perspective. The following section of this paper will consider studies of motivation and interest within a sociocultural framework.

### **Sociocultural theories, motivation and interest**

Sociocultural approaches to learning and development, first systematised and applied by Vygotsky and his colleagues, are based on 'the concept that human activities take place in cultural contexts, are mediated by language and other symbol systems, and can be best understood when investigated in their historical development' (John-Steiner & Mahn, 1996, p. 191) While sociocultural theories of cognitive development have been prevalent within the educational psychology literature, it has only been recently that some consideration has been given to motivational constructs, such as interest, from a social constructivist perspective (Sivan, 1986; Forman & McPhail, 1993; Hickey, 1997; Wells, 1999). Rather than considering motivation as a social process, the vast majority of studies of motivation have focused upon the individual and individual functioning, with distinct separation of extrinsic and intrinsic factors that determine motivation. Accompanying this distinction has been a large body of research that assumes that extrinsic motivation and external rewards for

success are not conducive to meaningful learning (Hickey, 1997). The notion of 'situated motivation', proposed by Paris and Turner (1994), signifies a positive attempt to consider the interaction between the individual and the environment in which the learner is motivated, identifying the need to examine motivation in context. However, the conceptualisation and study of the interaction between the individual and the sociocultural context in which motivated learning occurs needs further consideration, with development and extension of some of Paris and Turner's (1994) ideas. This claim is further supported by increasing calls within the literature to reconsider the 'polarisation' of intrinsic and extrinsic aspects of motivational constructs and the role of situational factors in motivational development (Hickey, 1997; Athanasou, 1998; Hidi & Harackiewicz, under review), especially in classroom settings.

Conceptualising and studying motivation from a social constructivist perspective has the potential to overcome the polarisation of intrinsic and extrinsic factors, through reframing these notions and focusing upon the interrelationships amongst individuals who are engaged in learning in sociocultural settings. While Sivan (1986) indicates that Leont'ev's notion of motive was the only explicit mention of motivation in the early social constructivist writings, she suggests that the focus within social constructivist theories on context and cultural issues, interpersonal relations and relationships between intraindividual cognition and affect, is suited to considering motivation. In addition to these factors identified by Sivan (1986), it is also suggested that social constructivist perspectives recognise the blurred boundaries (or from some theoretical standpoints, indistinguishable boundaries) between the individual and the context, with the individual and the social world mutually constitutive of the other (Wells, 1999). Thus motivation, from a social constructivist perspective, is a socially negotiated process that is developmental in nature and both fostered and constrained (or 'canalised' (Lightfoot, 1988; Valsiner, 1992)) by the sociocultural-historical context, including interpersonal relations.

To our knowledge, two researchers have specifically considered interest from a sociocultural perspective. Lightfoot (1988) and Valsiner (1992) have each considered developmental theories of interest, with Lightfoot drawing upon Valsiner's (1987; 1997) previously articulated theoretical framework. Lightfoot (1988) defines interest as 'a joint function of the caregiver's enactment of cultural meaning systems and the child's zone of proximal development' (p. 51), and has studied the interaction between an infant and her mother in the negotiation and canalisation of interest as the infant gained competence in climbing up and down a step in the home. The relationship between the child and the environment was highlighted by Lightfoot (1988) as a 'co-constructed totality' (p. 63), with the mother responding to clues provided by the child's affective and sensorimotor actions in order to ascertain how she could transform and structure the child's environment so as to create interest and foster the development of competence. In observing this natural process through the lens of Valsiner's theory, Lightfoot (1988) was able to explore this convergence of theory and method in a study of interest.

In a theoretical paper, Valsiner (1992) highlights the problem posed by the use of commonsense, everyday language to refer to the psychological construct, interest. The personal sense with which the term "interest" is used by a participant in a research study may not be the same as the more 'general shared meaning' in which the psychologist is using the term. This is problematic in terms of the operationalisation of interest in empirical investigations, in which the assumption is often made that self-reports of "interest" directly represent the psychological concept. Thus Valsiner (1992) claims that 'in order to study interest one cannot study "interest", but something else from which recognizable "interest" emerges' (p. 33). Thus interest is conceptualised as being 'not in the object, nor in the mind of the child, but it emerges as a result of processes that link the two in irreversible time' (Valsiner, 1992, p. 33); in other words, it is dynamic and evolving. The study of interest

becomes the study of developmental processes that give rise to what is labelled as "interest" in every day terms. 'A move to a process-oriented theoretical view of "interest" is based on the recognition of the process of constant irreversible person  $\beta$  à environment transaction. Once an emphasis is placed upon the process aspects of transactions, the question of "interest" is no longer limited to an ontological issue ("what *is* interest?"), but acquires a developmental focus as well ("how does whatever is interest *emerge* from whatever interest is not?")' (Valsiner, 1992, p. 33). Thus rather than placing emphasis preferentially on either the individual or the situation when conceptualising interest, as has been the underlying approach in most previous studies, interest is conceived as a dynamic, developmental process of interaction between the individual and the situation.

Within a sociocultural framework, Valsiner (1992) considers the social processes that limit and focus the activities of an individual. He distinguishes between canalisation by the social world and self-canalisation, with the latter referring to the developing person's construction of 'his or her own psychological functions in the process of social experiencing' (Valsiner, 1992, p. 34), a process which he terms internalisation. According to Valsiner, when an individual translates internalised information and functioning into externally observable actions, "interests" emerge. "'Interest" can be described as emerging from the structure of my "personal senses" in my personal culture at a given time' (Valsiner, 1992, p. 35), a description which recognises the changing and self-constraining nature of interest. However, it appears that internal canalisation takes place simultaneously with canalisation through interaction with others within the communities of practice in which the individual participates. These communities of practice encourage channelling of activities and interest consistent with their values and goals, as exemplified by Lightfoot's (1988) study of an infant and her mother. Further consideration of the framing of interest within a sociocultural approach will be made in the next section of this paper. Discussion of motivation and interest will be specific to a notion central to sociocultural theory, the zone of proximal development (ZPD), with further consideration of Valsiner's theoretical system.

### **The Zone of Proximal Development**

The concept of the zone of proximal development was created by Vygotsky as a metaphor to assist in explaining the way in which social and participatory learning takes place (John-Steiner & Mahn, 1996). The most commonly cited definition of the ZPD is that difference between a learner's "'actual development level as determined by independent problem-solving" and the level of "potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers"' (Vygotsky, 1978, cited in Sivan, 1986, p. 215). This definition highlights the ways in which peers and adults can 'scaffold' the participation of young learners in cultural activities, but argues in favour of a ZPD *created through negotiation* between the more advanced partner and the learner, rather than for scaffolding to be regarded as a 'one-way' process (Newman, Griffin & Cole, 1989; Renshaw, 1998). The definition also provides a basis for the idea of 'teaching as assisted performance', in those stages of the ZPD where assistance is required (Gallimore & Tharp, 1990).

Many different researchers have interpreted and developed the notion of the ZPD (for example Tharp & Gallimore, 1988; Valsiner, 1993; Rogoff, 1998; Matusov, 1998; Wells, 1999), with the result that various models have emerged which apply, extend and reconstruct Vygotsky's original conception. This paper will focus upon Valsiner's reconstructed notion of the ZPD, as it is one that has been clearly articulated in theory, and considers both interpersonal and intrapersonal developmental processes within the sociocultural environment of the learner, with an emphasis upon the interdependence of the individual and the environment (Klaue, 1989) in socio-cognitive development.

This reconstructed notion of the ZPD developed by Valsiner (1997) is part of a zone system, which extends beyond other notions of the Zone of Proximal Development. This reflects Valsiner's concern that the use of the ZPD concept in contemporary psychology has not been well-explained and complications have arisen through its operationalisation (Valsiner & van der Veer, 1993). Zones are described by Valsiner (1997) as transient, abstract organisational devices that provide the framework for present constraint systems to development and possible directions of nearest future development. It is within these zones that paths of action and development are constrained (*Zone of Free Movement - ZFM*) and promoted (*Zone of Promoted Action - ZPA*), and through which possibilities for action within the *ZFM/ZPA system* become actualised (*Zone of Proximal Development - ZPD*). Valsiner (1997) proposes that the zones are useful in explaining regulation of the ongoing *developmental process*, through the restructuring of the zones and the relationships between them.

Furthermore, it is suggested in this present paper that this emphasis upon the social origins of the developmental process is a key feature that may be of potential use in studying the emergence of interest through participation in authentic activities. An enriched understanding of the processes by which interest develops may be gained through considering the interrelationships between the individual and the environment, rather than primarily focusing upon one (individual interest) or the other (situational interest) as in previous contemporary conceptualisations of interest.

The next sections of the paper will further consider the three dynamic, co-constructed zones proposed by Valsiner (1997; Valsiner & van der Veer, 1993): the Zone of Free Movement (ZFM), the Zone of Promoted Action (ZPA) and the Zone of Proximal Development (ZPD). Some implications of the utility of these zones in the study of the processes of children's development of interest will be suggested, and Valsiner's (1992) consideration of interest (as previously discussed in this paper), will be extended.

### *The Zone of Free Movement (ZFM)*

The ZFM is a means to describe the structuring of a child's access to different aspects of his or her environment, the objects that are available to the child within this accessible area and the ways in which the child acts with those available objects within the accessible area (Valsiner, 1997). The zone is socially constructed, in that it is based on the cultural meaning systems of the child's caregivers, who lead the organisation of the ZFM for the developing child, and is formed in interaction with them. When a new setting is entered by the child and caregiver, the ZFM is reconstructed through the caregiver's analysis of the possible actions afforded by the new environment and a knowledge of the previous action of the child. Thus, the organisation of the dynamic relationship between the child and the environment is on the basis of the cultural meanings of the communities of practice in which the child participates, and the caregiver's knowledge of the specific child's actions and development. Valsiner (1997) argues that as the child develops, the ZFM becomes internalised, providing a structure for personal thinking and feeling through semiotic regulation.

The main implication of the ZFM for interest is that it promotes canalisation through the constraints created on the possible child-environment interactions. The child's access to areas of the environment, which includes the social environment, and the objects within it, along with the possible actions with those objects, will guide the interest of the child that is co-constructed within the setting. The relationship between the child and the caregiver, including perceptions of interest and participation, and the caregiver's knowledge of the child's skill development, will also be crucial factors in the co-construction of this zone. For example, one of the main aims of the teachers (caregivers in this school learning context) for the weekly visit of the pre-school class to the school library is to foster an interest in books

and the activity of reading. However, the children's access to the library is limited to this half hour weekly visit, during which time they are expected to sit and listen to a story that is read to them and engage in class discussion, before they borrow their own two books. The books from which they can choose to borrow are displayed on a table, having been selected by the librarian as suitable for the pre-school class to read, and the teachers, librarian and pre-schoolers talk with one another during this borrowing time. Whilst in the library, the pre-schoolers are only allowed access to the downstairs level, as the mezzanine area contains the senior fiction section. This example demonstrates how the developing interest of the children in the activity of reading and in books is being limited by the ZFM constructed by the caregivers of the pre-schoolers in this context. The ZFM established on this occasion does require the children to conform to the limits on their actions set up by the teachers and librarian. However, it may be challenged if a child seeks to borrow a book on a topic that is not included in the books on the table, or if a child refuses to sit and listen to the story being read and reads a book silently on his or her own. Both of these actions by a single child may change the ZFM for the whole class, with the ZFM expanded to include borrowing from the shelves, or the choice to read a book silently rather than listening to the story read by the teacher.

Co-construction of the ZFM within the cultural meaning systems of the participants is a central aspect when considering the processes of the development of interest. The meanings and values of the caregiver will canalise the process of the young child's development of interests through placing constraints on the settings and objects with which the child may interact. The child may choose to act in ways that cross the limits, however the participation within the particular communities of which the child is a member is the sociocultural-historical context in which interests are developed. Valsiner's (1988) argument that children transcend the culture of the caregivers, especially parents, in the process of learning, through actively transforming promoted cultural messages in novel ways as they internalise structures, can also explain the observed similarities and differences amongst children's and parents' interests within a family. For example, children may share their parents' interest in reading, but the reading of texts on CD-ROM to develop an interest in reading may differ from the reading activities, and interest in these types of activities, of the parents.

Within the ZFM, there are areas of which the participants are unaware, as they encounter 'the ZFM (set up in joint construction) *not by exhaustive sampling of all their content, but by detecting and creating boundary areas in an unsystematic way*' (Valsiner, 1997, p. 191). Within the ZFM, however, orientation and encouragement towards certain subareas, objects and activities within the environment are provided through the efforts of the caregivers. This creates the Zone of Promoted Action (ZPA), which will now be discussed.

### The Zone of Promoted Action (ZPA)

The ZPA is conceptualised by Valsiner (1997) as mutually intermapped with the ZFM to constitute a functioning system, with the ZPA focused upon the promotion of new skills, and the ZFM on constructed constraints. The ZPA is conceptualised as those actions of the child with a set of activities, objects or areas in the environment that are encouraged by the caregiver (Valsiner, 1997). As a zone, it can include areas currently outside the ZFM to focus upon development across boundaries, but has a non-binding nature. As a consequence of the latter, the child may reject the promotional efforts of the caregiver and choose to act in other ways within the ZFM. However, in common with the ZFM, the ZPA provides canalisation of the process of development and an internalised or semiotic level of the ZPA emerges, 'constructing a new personal relationship with the action - ZFM/ZPA domain' (Valsiner, 1997, p. 194) within the cultural meaning system.

The ZPA may be co-constructed in order to promote interest in an activity, object or aspect of the environment, with actions encouraged that are within and contribute to the cultural and personal meaning systems. To return to the example of the pre-schoolers in the library, the books selected for inclusion on the table are part of the ZPA, as these are the titles that the librarian is promoting as interesting for pre-school borrowers, based on her knowledge of the group. If a sub-group of children express disinterest in borrowing from this selection, the librarian may extend the range of titles to include new topics and authors the following week. Furthermore, the ZPA may also be created through the teacher's suggestions to browse through a book or ask peers if they have read the book and enjoyed it, before the child makes a decision about whether the book is of interest for borrowing. In their interactions with the books, the teacher may sit down with a child and focus his or her attention on the links between the text and illustrations, encouraging the child to do the same as they read. The role of the caregiver as a guide to and model for actions with objects within the activities of the setting that might create interest appears crucial to the process of interest development.

Intersubjectivity appears a vital notion for the ZFM/ZPA system and the development of interest. Child development is considered by Valsiner (1988) as a co-constructive social process, taking place within the cultural meaning systems of environments. These cultural meaning systems are co-constructed by the participants, mediated by the child and others in the social interaction, and also serve to physically structure those dynamic environments. Central to the co-construction of zones for development are the interrelationships between an individual and the environment, including social others and the cultural meaning systems within that environment.

Furthermore, it is suggested in this present paper that it is through these interrelationships between the individual and the environment that interest is co-constructed and canalised. The caregiver's perceived interests of the child and relationship with the child, and vice versa, are important in the interpsychological processes, including the ways in which the child and caregiver interact within the zones as they are co-constructed in a range of authentic settings.

Intrapsychological development (personal sense system, semiotic) is also central to Valsiner's zones theory. 'In the context of intersubjective processes of child-other interaction, the child constructs his or her own personal sense system under the guidance of other people: parents and other adult relatives, older siblings, peers and even younger siblings' (Valsiner, 1997, p. 175). As the ZFM/ZPA system, which has socially canalised the child's development, becomes internalised by the child (with internalisation as an active, transformative process) there are implications for interest as a self-constraint to development. The personal meaning system/culture at a given time guides an individual towards perseverance in acting, thinking and feeling (Valsiner, 1992). Self-canalisation systems (Valsiner, 1992), or internal canalisation, can provide limitations as well as create novelty in an individual's personal culture, with interest both guiding and constraining this development. Changes in the personal culture are externalised as what is recognised in lay terms, and in many educational psychology studies, as 'interest'.

To provide an illustrative example of self-canalisation within the ZFM/ZPA system, a pre-school child may have borrowed Pamela Allen books from the borrowing table for the past three weeks. When the ZFM created by the librarian is extended, so that the children can borrow directly from the shelves rather than being limited to books selected by the librarian, this child seeks the Pamela Allen books and borrows more titles by this author/illustrator for the next few weeks. The teacher, child's parents and peers would probably conclude that this child has an interest in reading Pamela Allen's books. The ZFM/ZPA structure initially constructed for all of the pre-school children by the provision of books on the borrowing table

which were regarded as interesting and appropriate for pre-schoolers, was internalised by this child. This emerging interest in Pamela Allen's books also constrained the child, providing a form of self-canalisation, in that he then only sought books by this author/illustrator. However, the following week, the teacher might read a John Burningham book to the pre-school class, discussing features of the book that she finds interesting, and this same child may seek other John Burningham titles on the shelves during borrowing time. The ZPA, an aspect of the cultural meaning system in this context and co-constructed by the teacher, may be internalised by the child, in time, to become a part of his personal meaning system. Interest, as a descriptive term, may then be used again by others to label the externalisation of the child's self-canalisation processes. The previous interest in Pamela Allen books has 'disappeared', and a new one, interest in John Burningham books, has been constructed, reflecting a reorganisation of the structure of self-organisation. Such intrapsychological processes act as mediating devices for use in future experiences, a concept which is further developed in the next section of this paper, which considers Valsiner's conceptualisation of the Zone of Proximal Development.

### *The Zone of Proximal Development (ZPD)*

While Valsiner (1997) uses the notion of the Zone of Proximal Development, it is reconstructed with the aim of fitting it with his other two zone concepts, ZFM/ZPA. Thus, the 'ZPD becomes a zone that denotes the range of possible nearest-future transformations of present psychological processes, conditional on the present organisation of the ZFM/ZPA structure. It is obvious that the ZPD in that system becomes subservient to the present-state field-theoretic explanation and is oriented toward explaining the social roots of individuals' experiences' (Valsiner & van der Veer, 1993).

While the ZFM/ZPA structure describes the present constraints and promoted actions in the child's development, the ZPD is the zone that contains all of the possibilities for development, given the present, and as such the ZPD is 'empirically unaccessible' (Valsiner & van der Veer, 1993, p. 57). If field observations are the basis of a study, then it will only be an actualised subset of the possibilities within the ZPD which are studied. For example, in the pre-school library visit setting, a child who has been reluctant to borrow for many weeks may have been spending time with the teacher during library borrowing time. The teacher may have been sitting down near the table of books and talking with the child, modelling how to browse through books and interested reading behaviour, that is, co-constructing a ZFM/ZPA structure. The following week during library borrowing time, the child may be observed displaying some of the behaviours the teacher was engaging in with her during the previous weeks, but this time with a peer and at the initiation of the child herself. In this example, there is some overlap between the ZPA and the subset of the ZPD which is actualised and observed in this field setting. However, the ZPD contained other possible actions and these cannot be the focus of observational studies because they are not actualised. However, this could explain why there is a range of actualised interest behaviours observed and reported by students within a classroom setting where all of the children are engaging in similar activities, with similar constraints and promoted actions within that setting. The ZPD extends the immediate present constraint structures of the ZFM/ZPA structure out toward the immediate future and may be useful for a theory of interest in its focus upon explaining the social origins of an individual's experience.

### *Some implications of Valsiner's theoretical framework*

- 'I am very far from trying to operationalise the zones because...the zones are constantly changed and redefined by both the adult's action and the child's action' (Valsiner, interviewed by Klaue, 1989, p. 343). Valsiner does acknowledge that the

zones could be useful as frameworks for observational studies (Klaue, 1989), as in the example of Lightfoot's (1988) study of an infant and her mother.

- A qualitative approach to research design, data collection and analysis seems necessary in considering the processes of interest development within Valsiner's zones framework. Classroom ethnography (Hammersley, 1990), including participant observation, appears an appropriate approach, with observation through the lens of Valsiner's zones, as well as in-depth interviews with participants, who would also keep journals. This multi-method approach to data collection should provide insight into both interpsychological and intrapsychological processes of interest development.
- It would be of interest to consider the processes by which peer groups co-construct ZFM/ZPA and ZPD in the absence of adults, in small groups in classroom settings, in informal learning environments and in play.
- In the context of classrooms, the breadth or range within the ZFM/ZPA system offers opportunities for choice, in contrast with the restriction and narrow range of options if the ZFM is the ZPA. This links with the importance of students being given opportunities for challenge, control, collaboration and choice in Paris and Turner's (1994) theory of situated motivation.

## **Conclusion**

Through consideration and critique of interest research to date, it has been argued in this paper that interest needs to be examined from a sociocultural perspective to enhance an understanding of the developmental interrelationship between individual and situational interest. Hidi and Harackiewicz (under review) claim that 'less is known about *how* such [individual] interests develop, why some early interests lead to long term interests and others do not, and how one could best nurture and utilise students' individual interest in the educational process' (p. 5). From a sociocultural perspective, the co-construction of interest, the creation of intersubjectivity and active internalisation within the zones of free movement, promoted action and proximal development, in the context of participation in a community of practice that values that interest area and interest in learning, can explain the process of interest development. Canalisation of interest, with personal value and meaning of social origins, is a key notion for future empirical studies considering developmental processes, with the situated nature of learning and motivation crucial in considering the constraints on interest. Concern for the *processes* of interest development, not only the learning and motivational outcomes, in the context of participation in authentic activities in various settings is vital. As Valsiner (1992) has identified, capturing this process in empirical studies will be the challenge.

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