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Sharing Meaning, Creating Culture: Peer interactions in literacy learning.

Our schools are shaped by theories of cognitive growth which place the individual at the centre of importance. The role of interaction between social partners has typically been conceptualised as a means of achieving growth in the individual learner, and little attention has been paid to the possible role of interaction in shaping the broader social context. However, if children are not considered as solo entities embarking on the learning process by themselves, but are viewed as a group negotiating and sharing meaning within the context of their own cultures, including the culture of the classroom, then we can conceptualise social interaction as a means for creating new cultures rather than transmitting existing ones.

This paper is based on the results of a study which examined the nature of peer assistance in young children's self-selected writing tasks, and the role of social interaction in literacy knowledge construction. Based on extensive observations in a Year 1 classroom, the study highlights the importance of encouraging and facilitating interactions among peers engaged in literacy-related activities.

Prevailing Views of Social Interaction: Piaget and Vygotsky

For many years, Piaget's theory of cognitive development was the most commonly accepted view of learning. Over the past fifteen years, however, the work of Vygotsky has had considerable influence on research into development in general and language development in particular. In Vygotsky's theory, the role of social interaction is seen to be crucial to cognitive and language development. However, relatively little attention has been given to Piaget's view of the role of social interaction (Rogoff, 1990).

Both Vygotsky and Piaget subscribe to a constructivist view of learning which contends that young children actively construct a view of reality through interacting with the people and objects around them. The processes through which social interaction is believed to facilitate learning, though, are quite different in the two theories.

Vygotsky suggested that, for any child, there exist two levels of development: the actual level of development (which is the level at which the child can achieve without assistance) and the potential level of development (which is the level at which the child can perform or achieve in collaboration with an adult or more capable peer) (Vygotsky, 1978). He termed the distance between these two levels the Zone of

Proximal Development and suggested that this is the level at which learning occurs. Vygotsky's theory suggests that the role of social interaction is to enable the child (through structuring the learning situation) to move from the actual to the potential level of development.

Piaget's view of the role of social interaction was quite different, and was given much less prominence than in Vygotsky's theory. Piaget suggested that social interaction could facilitate learning when cognitive conflict occurred between individuals (Piaget, 1950; see Rogoff, 1990, for a full discussion of the two theories).

Both Piaget and Vygotsky suggested that for social interaction to

result in cognitive growth, several conditions must be met. Apart from the achievement of "intersubjectivity" or joint attention to the task, the conditions differed in the two theories. The theories also resulted in different views on the most effective social partners, and the age at which learning through interaction could occur.

Table 1. Comparison of Piaget's and Vygotsky's Views of the Conditions for Learning through Social Interaction.

Piaget Vygotsky

Conditions to be met 1. Intersubjectivity

2. Each must recognise that the other has a different point of view
3. Each must 'hold to his opinion' and not be swayed on the grounds of higher authority.

1. Intersubjectivity
2. Interaction must occur within the Zone of Proximal Development of the learner

3. Some structuring of the situation occurs so that the learner is achieve at a 'higher level' than previously.

Most effective social partners Peers Adult/child

Expert child/novice child

Age range of learners 7+ years Any age

Rogoff (1990) suggests that the differences between the two theories may be a result of differences in the aspects of cognitive development which the two theorists were trying to explain and that, in fact, they may both be right. She suggests that Piaget's view of cognitive conflict may accurately characterise the role of social interaction in learning when a shift in perspective is required. She suggests further that Vygotsky's view of social interaction enabling a learner to move through the Zone of Proximal Development may accurately describe the role of interaction in learning skills and knowledge that enable the child to use the intellectual and technological tools of the culture.

Previous Research

A large body of research into the role of social interaction in learning has been conducted in the Vygotskian tradition and has focused on interactions between adults and children (Cazden, 1983; Heath, 1983; Snow, 1983; Teale & Sulzby, 1987; Woodward & Serebrin, 1989). It has tended to focus on white middle-class mother/child dyads interacting in researcher-controlled situations. The focus has been on infants or very young children, observations have been relatively few, and learning has been measured by evidence of increased understanding or skill. In both traditions, little attention has been paid to the wider social context and the role of adults in managing that context.

Most research into the role of social interactions among peers has been conducted in the Piagetian tradition (Rogoff, 1990). It has tended to involve older children working on teacher (or researcher) set tasks over one or a few sessions, and learning has been measured by evidence of a shift in perspective. Rogoff suggests that this entire body of research suffers from limitations which must be overcome if we are to understand the role that interaction plays in learning. Building on several other studies of interactions among young children engaged in literacy-related activities (Allen & Carr, 1989; Dyson, 1989; Neuman & Roskos, 1991; Rowe, 1989), this study sought to overcome some of these limitations.

Table 2. Limitations of Previous Research on Social Interactions.

Previous Research	Current study
1. Relies on observation of one or a few sessions;	1. Involves many observations over a relatively long period of time;
2. "Focuses on dyadic situations";	2. Focuses on interaction patterns among groups of learners;
3. Involves situations in which "adults are in charge and are focused on interaction with children";	3. Involves situations in which children control their activities within a broad framework;
4. Overlooks the larger social context and "ignores the nature of the cultural tools used in the skills studied";	4. Takes account of the wider social context in the form of framework set by the teacher; focuses on learning the use of a specific cultural tool;
5. Relies on "speed of development as a measure of the impact and excellence of social interaction";	
6. Investigator sets problem, goals and rules, thus "limiting the roles of the participants".	

5. Focuses on processes of learning rather than products as measures of impact;
6. Participants set problems, goals and rules and delineate own goals within the context of cultural activity; researcher selected from 'naturally occurring' activity rather than 'setting up' situations.

The Present Study

Methodology

The study sought to explore the ways in which young children interact with each other to construct their knowledge of written language, with a view to understanding the nature of peer assistance in literacy learning. It also sought to map the patterns of interaction amongst young literacy learners, in an attempt to understand how these patterns of interaction facilitated learning for the research group in general, and for individual group members in particular.

The site selected for this study was a Grade 1 classroom in a Catholic systemic primary school in the western suburbs of Sydney. The school serves an area of diverse ethnic and socio-economic backgrounds. The class was selected after the researcher had visited a number of Grade 1 classrooms in the same and other schools within a small geographic area. The particular classroom selected was one in which the teacher expressed a belief in the importance of allowing children to interact freely within the classroom. She was supportive of the aims of the research, and willing to accommodate a regular visitor intruding during the Language Arts program.

The literacy program in this classroom involved a ninety minute block each day devoted to shared and individual reading activities, teacher-directed group and individual writing activities, and share time. The last thirty minutes of this each day was devoted to "Story Writing Time" in which the children chose what they would write about, the manner and form in which they would write, where they would sit, with whom they would interact, which stories should be 'published', etc. The teacher maintained control of the overall context by determining the time available, non-acceptable forms of writing (eg, lists of names for no apparent purpose), physical constraints (such as

remaining within the classroom), and procedures for revision and publication of texts. The rules and procedures were well-established and known by all of the children. "Story Writing Time" in this classroom was selected as the most appropriate activity for intensive study, as it was during this time that children had most opportunity to move around the room and interact freely with their peers.

Data collection involved the ethnographic techniques (Ball, 1982) of

participant observation, field notes, audio-taping of classroom interactions, collection of written artefacts, and informal interviews.

The study proceeded through a number of different phases characterised by variations in the focus of data collection, amount of time spent in the classroom, and data analysis techniques.

Data analysis consisted of a form of discourse analysis (Cazden, 1984) in which the observed children's talk was categorised by function, form and content. In the first instance, children's utterances were categorised by function. In analysing the data, however, consideration was given not only to the specific utterance to be categorised, but also to the context of the utterance (in terms of prior and subsequent utterances by the speaker and other participants), to non-verbal cues noted during the observation, and to the intentions of the speaker (as determined by the researcher at the time of data collection). Through repeated readings of the complete set of transcript/field note data and the use of constant comparisons, twelve discrete functions of children's talk during "Story Writing Time" were identified, and teaching/learning episodes defined. Teaching/learning episodes which resulted from requests for or offers of assistance were examined to determine the forms of assistance provided.

Guided Participation

The forms of assistance found in teaching/learning episodes in this study conformed to Rogoff's view of "guided participation" in cultural activity (1990). Through such processes as structuring tasks, modelling effective strategies, and providing direct instruction, learners assisted each other to participate in the culturally-valued practice of producing written texts. Peers helped each other to make links between the known and the new, guided each other in structuring tasks, and learners maintained control of their own participation and the level of assistance they received. Several examples from the transcript data illustrate these processes.

Adam has written "On Sunday I played sooca and I won a match and it was 12-nill, and tar goleey was hoplss." He then proceeds to draw a detailed picture of a soccer match with a large goal at each end of the field. James has written "I like a farm and I like to play on a farm."

Adam (to James): Wanna hear my story?

(James nods, goes on writing.)

Adam (reading): On Sunday I played soccer and I won a match and it was 12 nil and their goalie was hopeless.

James: 12 nil! Who was the other team?

Adam: Croatia, they're hopeless.

(Adam decides to add to his story. He changes the fullstop into a comma and writes "and thar teme is cold crasa." James watches as Adam writes.)

James: It should be 'sh' - you forgot the H.

Adam: What?

James: Croatia's got a 'sh' - you have to put a H.

Adam: Where? There? (Points to the 'r' in "crasa".)

James: No, there, after the S. (Adam adds the 'h', then goes to join the line of children waiting to show their work to the teacher. James wanders off to speak to other children.)

In this interaction, James has guided Adam's performance of the task in a number of ways, not all intentional. First, James' willingness to listen to Adam's story provided Adam with an immediate and responsive audience. Second, James' query as to the identity of this "hopeless" team enabled Adam to extend his text by adding further information. Third, James' feedback on Adam's attempt to spell "Croatia", and his subsequent more detailed explanation of the "error", enabled Adam to produce a closer approximation to the standard spelling. Thus, the interaction resulted in James assisting Adam to produce a higher level text, while still allowing Adam to manage the level of support needed.

In the following example, Richard models letter formation at Christopher's request. Richard's assistance with this particular aspect of the task (ie. of creating a written text) allows Christopher to continue his participation in the task.

Christopher: I'll write all down here, get a little paper, draw the sentence "to Sizzlers". I went to Sizzlers.

Sarah: Siz-R.

Christopher: (trying to write "Sizzler") What's a R look like?

Richard: R?

Christopher: Yeah.

Richard: Like this. (He leans over and writes an "R" on Christopher's picture.) Line down. Lucky I had the yellow.

Christopher: R. What else?

Richard: That's all.

An example of the ways in which learners maintained control of the assistance they received can be seen in the following exchange. Christopher initially seeks help from Sarah, who is sitting nearby. However, Sarah's status as a helper in this class is not particularly high, as she often fails to give appropriate assistance when asked, and rarely requests assistance herself. Christopher apparently wants to verify that the information Sarah provided is correct, so he selects the peer whom he considers is most likely to know the correct spelling of "picnic" - Nicolas.

Christopher: How do you spell 'picnic'? P-I-C?

Sarah points out that 'picnic' is one of the words written on the wall

chart. She looks across the room, finds the appropriate word, and spells it for Christopher. Christopher then calls out across the room to Nicolas:

Christopher: Nick, is that how you spell 'picnic'? P-I-C-N-I-C. Is that how you spell pic-nic?

Argumentation and Joint Problem Solving

Piaget's view was that social interaction among peers could lead to development through the recognition and resolution of cognitive conflict. Two of the processes through which this might occur are argumentation and collaboration (Rogoff, 1990).

Argumentation is a process through which social partners can move from differing individual perspectives through the negotiation of shared meaning to a perspective valid for all (Miller, 1987). In the following account of interactions among a group of children in the present study, it is evident that various participants have differing

perspectives on what constitutes "copying" - which is universally acknowledged (in the culture of this classroom) as unacceptable. However, through the process of argumentation, the children negotiate the extent to which texts and illustrations can be similar without being "copied".

James (To Luke): You have to draw hills.

Madeline: Hills - h - h - H.

Thomas (To James & Luke): Oh, youse two are copying each other!

James: He copied me.

Madeline: No, no. You told him to copy you.

James: No I didn't.

Madeline: Yes you did. I saw you.

Luke (To James): You just said - you just said "D'ya wanna copy me?" and I said "Yes".

Thomas: So youse both are told on!

James: Why?

Madeline: Yeah, they both cheated.

James: No, he's gonna make something different.

Luke: Yeah.

James (To Luke): Yeah, but you can't do people like that and (to Madeline) plus he's not gonna do that part in grey, he's gonna do all the grass green, aren't you, Luke? Like, Luke's (...)

Madeline: Is that how you do the writing (...)? He's got the people on the grass.

James: Look, look! Did I do them hills like that?

Thomas: Of course you didn't!

James: But that's good because they're far away. That's good, hey Madeline? So he's not copying.

Madeline: James, (...) the writing but if it looks the same (...)

James: I haven't got that many hills on my farm.
Thomas: You got three. You haven't got five hills!
James: (Counting hills in Luke's drawing) 1-2-3-4-5-6-7!

Through pointing out subtle differences between his own text and illustration, and Luke's version of the same text, James is attempting to establish the validity of his view of what constitutes "copying". Thomas' view seems to be that "copying" the text is unacceptable regardless of differences in the illustrations. Madeline, however, is prepared to accept a broader view, with differences in illustrations and even letter formation enough to make the work original rather than "copied". The possibility, though, that James is aware of the tenuous nature of the newly accepted view of copying is evident in the following extract, which occurred several minutes after the previous exchange.

Bell rings to signal lunch time. A child across the room squeals.
Thomas: (Loudly) That's lunch time!
Several children cheer.
James: Know that 'saved from the bell'? What they say 'saved from the bell'?
Thomas: Saved by the bell!

Collaboration is a process through which a group of children achieve a joint solution to a problem which none of them may have been able to solve on their own (Rogoff, 1990). An example of this collaborative process can be seen in the following example from the transcript data.

James: How d'ya spell 'over'?
Madeline: Over - 'e', 'e'
Thomas: 'o', 'o'
Madeline: A-

Thomas: O, O
Kate: Just wait, wait wait wait, I've got it in my dictionary.
She looks through her personal dictionary to find the 'O' page. Thomas and Madeline recite the alphabet to help her find the correct page.
Thomas & Madeline (Singing) LMNOP-NOP-LMN-NO-LP-OP-R-O.
Kate finds the correct page and looks down the list of words until she finds 'over'.
She spells O-V-E-R to James, who repeats each letter aloud as he writes it down.

In this example, none of the three children working with James is able to immediately solve his problem (ie. how to write the word 'over'). However, Madeline and Thomas model a 'sounding out' strategy, Kate models the strategy of finding the required word written elsewhere, Thomas and Madeline structure Kate's attempt to find the correct page and subsequently the required word, and Kate structures James' efforts

to write the word correctly in his text. Thus, through the combined efforts of all four children James arrives at a satisfactory solution to his problem.

The Importance of Intersubjectivity

Both Piaget's and Vygotsky's views of the role of social interaction in cognitive development contend that intersubjectivity between social partners is a necessary condition for learning to occur. Achieving intersubjectivity between peers isn't always unproblematic however, nor is the failure to achieve intersubjectivity always unproductive.

In the data for this study there are many examples of explicit requests for help or offers of assistance which do not result in teaching/learning episodes because intersubjectivity is not established. Rogoff suggests that the "interactions of young children with their peers may challenge them to stretch their understanding and take account of one another's perspectives in order to use shared frames of reference with partners who are similarly unskilled in supporting others' communication" (1990, p. 202). An example of the cognitive stretches involved can be seen in the following exchange between two of the children in this study.

James: Look, I've got a problem, I've got a ending and I've got a ... what's my name?

Sarah: Penguin. Penguin.

James: What's my name gonna be?

Sarah: You chicken, bark bark. You chicken, bark, bark.

James ignores Sarah's comment and resumes his drawing.

James: What's the name of my story gonna be?

In this example, James is requesting assistance with choosing a suitable title for the story he has written. Sarah, however, has failed to understand James' request and is engaged in verbal play, suggesting alternative names for James himself rather than his story. James, in turn, fails to understand Sarah's humorous use of language and appears to ignore Sarah's comment altogether. However, he is aware that Sarah's failure to understand his request is in some way connected to the way in which he phrased it. He therefore repeats his request, but this time explicitly indicates that he is seeking a name for his story. Through his failure to establish intersubjectivity in this instance, James has learned to communicate more effectively by making his request for assistance more explicit.

Content of Peer Assistance

Analysis of the content of children's interactions during writing activities showed that their assistance to each other covered a range of skills and understandings. They helped each other with aspects of

the mechanics of writing such as letter formation, spelling, punctuation and the finer points of mass production through the use of technological tools. They discussed the meaning and use of literary conventions such as the copyright symbol and ways to signify the origins of texts (such as "Written by" and "Illustrated by"). The children's interactions with each other also provided avenues for learning how to choose appropriate topics and forms of writing, and to understand the relationship between text and illustrations.

Implications

The results of this study suggest that children as young as six or seven years can and do assist each other to learn written language in a number of ways. Evidence was found of interactions consistent with Vygotsky's view of social partners structuring learning situations, as well as with Piaget's view of cognitive conflict promoting learning. The results also support the view that children may differ in their interactive skills and strategies.

There are at least two ways in which the investigation of peer interactions in literacy learning may have significance for our understanding of literacy development, both in theory and in practice. The first relates to the literacy development of individual children, while the second is concerned with language diversity and cultural reproduction.

If, as this study shows, interactions among peers can facilitate literacy development in individual children, then this has implications for how teachers structure the classroom environment. If we structure classrooms and learning programs in ways which restrict social interaction among peers, then we deprive children of access to one important avenue of learning language and learning about language. Instead, we need to actively promote interaction among peers, and structure situations so that all children have an opportunity to develop effective strategies for both seeking and providing assistance among peers.

At a time when cultural and language diversity within individual classrooms is the norm rather than the exception, it becomes crucial to find ways to allow all children equal access to experiences which will facilitate language and literacy learning. Any avenue which has the potential to minimise differential student achievement deserves closer scrutiny.

A pedagogy that views children as solo players on a journey towards knowledge, literacy, adulthood, enlightenment, views the cognitive growth of the child as a replaying of the same journey traveled by those who went before. The only possible result is a transmission of culture. When the culture of the school matches the culture of the child, then the child experiences "school success" and when this is not

the case, then it is the culture of the child "at fault". Even theorists who recognise the role that cultural differences play in different school outcomes for different children, see at least part of the answer as lying in somehow providing the "disadvantaged" child with the means to participate more fully in the culture of the school. The danger here is that the culture of the minority child or group becomes subsumed within the culture of the majority. While the "school performance" of the minority child may well improve, it is at the expense of the minority culture. This may well be seen as an

acceptable trade-off within our existing pedagogy (which emphasises the importance of the individual), or there may seem to be no alternative.

However, if we view the situation from an alternative pedagogical stance, which emphasises the importance of negotiated and shared reality, then the trade-off is not only unacceptable but unnecessary. If all members of the culture (in this case, the classroom) are allowed to interact to negotiate and create shared meaning acceptable to all, then culture is not merely transmitted but recreated.

The importance, then, of promoting peer interactions of young children, isn't as simple as increasing the opportunities that a young child has to learn in the classroom (given that the time in which children can interact individually with teachers is limited) but that children's interactions can constitute a way of changing pedagogy and changing the role that schools play in the development of culture from one of mere cultural transmission, to one of cultural recreation.

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