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AUTHOR Martini, Mary
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ABSTRACT

This paper discusses cognitive communicative training in preschool and reports on a study of 11 Hawaiian preschoolers that examined how these children interacted with others, used language, manipulated objects, and solved problems at home and at school. The study observed the children at school and at home over a 5-month period, collecting videotape and audiotape records which were coded according to interaction setting, interaction, and communication. The study found that children interacted with adults a larger proportion of the time at home than at school, and most were not hesitant around teachers, parents, or observers. It did not find the expected split between adult and child realms in Hawaiian households. It did find that children tended to use objects in complex, goal-directed ways more frequently at home than at school, and tended to encounter and solve more problems by themselves at home than at school. Overall, the study found that the children grew up in widely diverse family settings, with no evidence for a prototypical Hawaiian family type or environment. (MDM)

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Home and School Language

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**Encountering Problems at Home and at School:
Language and Cognition in Two Settings**

Mary Martini

Department of Human Resources
University of Hawaii at Manoa

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Paper presented at the Third International Conference on Thinking, Honolulu, HI. Author's address: Mary Martini, Department of Human Resources, University of Hawaii at Manoa, 2515 Campus Rd., Honolulu, HI, 96822 (808) 956-2249.

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Encountering Problems at Home and at School

Last Spring and Summer we studied 11 ethnically Hawaiian preschool children at home and at school. Our purpose was to record how children interact, use language, manipulate objects and solve problems in the two settings. We wanted to gain a better understanding of the cognitive and communicative problems children encounter at home and at school and how they try to solve these.

We have analyzed four hours of behavior transcripts for each of 6 of the children. Our most general finding is that several of our initial assumptions concerning what goes on in preschool classrooms and what goes on in Hawaiian homes, are not supported by our data.

I would like to spell out these assumptions, show how our findings point in more complicated directions and speculate about those directions.

Background

Cognitive/communicative training in preschool

Descriptions of preschool curricula, tests administered to children at the beginning of Kindergarten and theories of language and cognitive development in the early school years, present an image of preschool as a place where children learn to think and talk in specialized ways. Our observations support

these descriptions in many ways, but point to some constraints on complex thinking and talking due to the interactive complexity of learning in a large group setting.

According to the descriptions and observations, preschool teachers expose children to the basics of formal thought and speech. They model formal processes, structure the environment to elicit these, and encourage children to use them.

First of all, they expose children to a broad range of new experiences, provide labels for these new experiences and encourage them to think and talk about them in new ways. For example, they encourage children to look at objects in terms of their component features - to attend to the shapes, colors, sizes and functions of objects. They ask them to compare and arrange objects in relation to these features - to note similarities and differences, and to place objects in sequences and sets according to shape, color, size and use. They encourage children to invent means to an end, and to describe how things happen and why.

Teachers also expose children to the basics of formal language. Children will encounter decontextualized speech when they begin to read and write in later grades. Formal language is believed to differ from informal speech in several ways. Formal language is said to be more explicit, semantically and syntactically. Preschool teachers expose children to elements of formal, written speech in the oral mode.

In activities such as sharing-time and dictating stories about drawings, they encourage children to speak explicitly in order to communicate to others who are not already familiar with the reported event. They encourage them to explain who did what to whom, when, where and why.

By the questions they ask, teachers encourage children to structure their stories, reports and demonstrations in chronological and logical order. They model the precise use of vocabulary and grammatical markers.

Teachers also expose young children to the more traditional school-readiness skills. They teach some mechanics of reading and writing, by introducing letter recognition and production and early phonics such as sound-matching. They expose children to numbers and early principles of computation.

Teachers also socialize children to engage in learning as it is structured in schools and encourage them to develop good learning habits, such as organization and perseverance.

Preschool curricula and descriptions of teaching techniques encourage the procedure of scaffolding - determining the level at which a child is functioning and modifying input to match and slightly exceed that level. Techniques are suggested for getting around the constraints of large-group instruction to perform this individualized function.

Cross-cultural studies indicate that these topic areas, and valued ways of thinking, talking, learning and teaching are culturally specific and geared to produce a particular kind of thinking person.

One set of questions in our study was: how are these procedures carried out in the preschools we studied and how did these compare with the cognitive/communicative procedures occurring at home.

Expectations derived from these models

According to the models, we expected children to encounter more complicated problems at school than at home. We expected teacher to set up situations which called for complex reasoning skills. We expected children to use objects in more complex ways at school than at home. We also expected them to encounter more complex communicative situations at school than at home. We thought children would spend more time attending to the teacher than to peers. And we expected teachers to spend most of their time conveying or eliciting information rather than directing or monitoring children.

On the other hand, we were aware of a number of ethnographic studies of classrooms which indicated that personalized instruction, information exchange and complicated dialogue are difficult to achieve in the large group, school setting and that these may occur more spontaneously in the home setting. We wanted to

attend these possibilities and examine the possible complementary of school - and home-forms of learning.

Cognitive and communicative training at home

It is often assumed that if the cognitive/linguistic socialization that goes on at home resembles the training that goes on at school, children will have an easier time adjusting to school demands.

Several studies describe tendencies of middle class American parents to read to their children, teach labels, ask cognitively complex questions, and accept children as interactive partners. According to the descriptions, parents provide educational toys and books, and encourage fantasy play. Children are encouraged to perform functions they will encounter later in school - to label colors, shapes and functions, to note and talk about similarities, differences and sets, and to report, describe, explain and demonstrate their knowledge and experience.

According to the descriptions, middle-class children are exposed to a wide range of experiences and learn to think and talk about these in specific ways before they enter school. These ways seem to relate directly to the cognitive/language demands they will face in school. According to the model, middle class children enter school with an advantage over children who have not been trained in these ways.

Images of language and learning in Hawaiian homes

Ethnographic studies of interactions in Hawaiian homes suggest that many of the school-associated patterns occur less frequently. Intensive adult-child interactions of a didactic nature are not common. Children learn a wide range of sophisticated communication routines, but many of these may not match what they are asked to do with language and thought at school.

In these reports, researchers attributed interaction and learning differences to differences in family structure and the role of children in families.

The Hawaiian families studied in these projects were large, extended units. Children lived with both parents, numerous older and younger siblings, one or two grandparents, and in some cases, aunts, uncles and their children. Many families lived in single-family dwellings on Hawaiian homestead lands, in semi-rural areas. Children played outdoors and in many cases, roamed the neighborhood.

Parents tended to be in their thirties or older and to already have several children. They had relatively low educational levels, but were stable workers and good providers when opportunity permitted.

Children were part of a large, well-organized peer groups, consisting of older and younger siblings, cousins and, in some cases, neighbor children. The group were age-graded, with older children directing the activity of younger ones.

Children were responsible members of the household, with regular tasks and sibling-caregiving responsibilities. Unspoken procedures guided household coordination and children, once cognizant of these routines, were expected to fulfill their duties without moment to moment negotiation.

Distance existed between the peer and adult realms and parents expressed the belief that it was inappropriate for children to be involved in adult affairs. Parents were task-oriented and authoritarian sometimes, and affectionate and supportive at other times. They wanted children to follow rules, but respected "racial" qualities which indicated autonomy of thinking.

Parents expected children to learn skills by watching and doing and rarely engaged in didactic teaching. Toughness was a respected quality and children were taught to stand up to teasing and joking, without becoming upset by it.

In spite of ethnic mixing, parents seemed to embody and transmit to their children values associated with the Hawaiian component of their background - including respect toward elders, a sense of responsibility toward the family unit, and qualities such as empathy, compassion and tolerance, yet strength of thought and conviction.

Stemming from these values and social-structural features, parents interacted with children in specific ways. On the one hand, they told children what to do and corrected them when

necessary. On the other, they showed affection, joked with and teased them. Children interacted cautiously with adults perhaps experiencing them as changeable authority/support figures. They were watchful for parents' changing moods. They maintained distance, in respect of elders and with the understanding that they were not to be part of adult affairs. They accepted adult-imposed constraints without trying to negotiate a different course.

Expectations derived from descriptions

From these descriptions we expected children to live in large, stable, extended families, in single-family dwellings in semi-rural areas in which children had much room to play. We thought children would have numerous older and younger siblings and be part of a well-organized peer group. We expected them to interact mainly among themselves, controlling and being responsible for younger siblings and being controlled by older children.

We expected distance between the adult- and child-realms. We thought parents would direct, correct, joke, tease and show affection toward children but that they would not treat them as conversational partners. We thought a large part of adults' talk to children would consist of social regulation - commands and correctives.

We expected children to interact tentatively with parents as authority figures and to be watchful of adults' changing moods. We thought they would interact more with peers than with adults.

Summary of expectations

In summary, we held four major sets of assumptions at the beginning of this project: 1. assumptions about what goes on in preschool classrooms; 2. assumptions about life in Hawaiian homes; 3. assumptions about how children interact at home and at school; and 4. assumptions about how children use objects in the two settings.

1. We considered preschool to be a place where children learn to think and talk in specialized ways. We thought children would be encouraged to think and talk in more complicated ways at school than at home, although we were aware of the situational constraints of large group vs. one-to-one interaction, and felt homes might provide more opportunities for the latter. We expected teacher-child interaction to involve a high degree of information exchange, as opposed to social regulation.

2. We expected ethnically Hawaiian children to live in extended families with numerous siblings and a network of parents, grandparents, aunts and uncles. We knew that half our sample came from urban areas, but had no previous model for family adaptations to living in small apartments and spaces.

3. We assumed children would interact more with peers than adults at home, and that adult-child interaction would involve a high degree of social regulation.

4. From studies of Hawaiian children adapting to demands of traditional, Western classrooms, we expected children to be uncomfortable in intense, one-to-one teacher-child interactions. We expected them to avoid situations in which they were singled out or asked to perform in individualistic, competitive fashion. We expected them to interact tentatively with unfamiliar teachers, aides and other adults.

5. From studies of peer interactions in classrooms, we expected children to experience a high degree of social conflict in school. We expected they would need to establish and maintain place in a peer-group in which there were few differences in age to clarify the hierarchy. We expected much of their talk with peers to consist of trying to control others or being controlled by others.

We knew, from the outset, that our sample differed in many ways from samples used in previous studies. Once we began to note differences in patterns at the day to day level, we became interested in clarifying these differences to point out the richness of variation in home- and school-lives and to broaden our understandings of children's adaptations to home and school.

Method

Our goal was to describe how these children interacted with others, used language, manipulated objects and solved problems at home and at school.

We selected 11 children, 5 boys and 6 girls, from three pre-schools on O'ahu. Five children lived in a rural area; six lived in Honolulu. We will report findings on 6 children in this paper: 2 boys and 4 girls. Three lived in a rural area: three lived in the city.

We studied each child for five months - from April to August, 1986. We visited the child at home 7 to 9 times, for 1 1/2 to 2 hours each. We collected 4-6 hours of audiotape and 10-12 hours of video-tape on each child. Children carried tape recorders in backpacks for the audiotaped sessions.

We observed children in their classrooms four times, for 1 1/2 to 2 hours each. We collected 2-3 hours of classroom videotape per child.

We wrote behavior records while viewing the videotapes to describe how children interacted and manipulated objects. We then coded each contact the child had with objects and people in these records. We developed a coding system to record information about 6 aspects for each contact. For each contact we asked:

1. What is the activity setting in which the child is engaged when she makes this contact? (Is she at story-time, recess, dinner?)

2. With whom does she interact? (the teacher, group of peers, younger sibling).

3. Does the child communicate with others or simply manipulate objects? Does she communicate verbally or nonverbally? Does she initiate this contact, or is she responding to contact initiated by another?

4. What is the interactive function of the child's communication? Does she try to control the other? Monitor the other's actions? Convey information? Elicit information? Or, help the other?

5. What is the interactive function of the other's communication? Does the other try to control the child? Monitor the child's actions? Convey information? Elicit information? Or, ask for or offer help? How does the child react to the other's communication? Does she accept the other's purpose? Ignore it? Resist it?

6. In the case of object-use, how complicated is the child's use of the object? Does she manipulate the object aimlessly? Does she follow a simple plan? A complex plan?

The categories we used to code the interactive function of communicative acts, are presented in Table 1, (page 2 of the

handout). We observed three major functions. Children used language and gestures: 1. to control others or to react to others' attempts to control them; 2. to convey or ask for new information; and 3. to support others or to react to their support.

The categories we used to code complexity of object-use are presented in Table 2, (page 3 of the handout). We distinguished three levels: 1) simple object manipulation such as tapping blocks together, flipping pages, or putting toys away; 2) simple goal-directed use such as coloring, cutting or putting puzzles together; 3) complex goal-directed use, such as building castles, engaging in fantasy play and inventing new uses for an object.

For this paper, we coded 2 hours of taped behavior at home and 2 hours at school for each of the 6 children.

Findings

We will present preliminary findings concerning: 1) the diversity of home life; 2) how children interacted at home and at school; and 3) how children manipulated objects.

The diversity of home life

From previous ethnographies we expected children to live in large, extended families in single-family dwellings in semi-rural areas. The image stemmed from descriptions of well-established families living on homestead lands 15-20 years ago. Parents, in these descriptions, tended to be in their mid-thirties and to have several children.

In contrast, the 11 children we studied lived in diverse social worlds. Our demographic expectations were not supported by our findings. Characteristics of the six families described here are presented in Figure 1 (page 1 of the handout).

Household size, family stability, the number of older and younger siblings, and whether parents work or stay home all influence the kinds of interactive situations children adapt to. Some children interact with numerous adults, older and younger siblings. Other live in small units and interact mainly with a single parent and her adult friends and infants. Some children spend most time at home, interacting with members of the nuclear family. Others are taken on daily visits to relatives and friends.

Where children live influences the cognitive problems they encounter. In this sample, the urban children live in small apartments in relatively dangerous areas. They play mainly inside, watching t.v. and entertaining themselves. Adults are usually nearby. The rural children live in houses and have yards to play in. Some roam the neighborhood.

As indicated in Figure 1, parents range in age from 19 to 40. Level of schooling for mothers ranges from 6th grade to 2 years of college. Level of schooling for fathers ranges from 8th grade to two years of graduate school. Household incomes range from a low bracket of \$1,000-6,000 to a high bracket of \$15,000-25,000.

None of the families own their homes. The three urban families rent apartments. One rural family rents a house. The other two families live in the households of a parent's parents - along with other adult siblings and their children. Families do not seem to live in extended units by choice. Parents describe this as a temporary, economic necessity. In these cases, they do not like the constraints of the 3-generational situation. The grandparents continue as heads of the household and the parents assume subordinate roles which resemble those of their own children rather than those of parents.

The parents of child 4, for example, are the youngest in the sample (19 and 21). They are separated. The mother and two children live in an apartment in public housing and receive assistance. They spend much of the day, however, at the maternal grandmother's house, where the mother visits with her mother, sisters and their babies.

The parents of child 2 are next youngest (25 and 28). They also have two children. They have the second highest level of schooling and level of household income since they both work. Currently they live with the father's grandmother, who cares for their children (and those of four other adult relatives who live in the house), while the parents work.

Household size ranges from 3 to 15. (See Figure 1, d.). Household size does not necessarily reflect the number of people

the child interacts with daily. The number of people present during home observations ranges 3.5 to 11. Children live in diverse social worlds. Some interact with older and younger siblings as well as numerous adults. Others interact solely with younger or with older children. Children develop different interactive skills and expectancies depending on their experience.

The 6 children are exposed to a variety of cultural patterns. Two of the 12 parents are Caucasian; another is of Portuguese descent. Children live in ethnically mixed neighborhoods and have close relatives from different ethnic groups. Parents seem to choose cultural strategies which fit their practical situations. They do not adhere rigidly to one or another set of practices. In this way, children's upbringing and patterns of adult-child and interaction seem eclectic.

These six children are growing up in widely different family groups. We did not find a unitary ethnically Hawaiian family structure nor a unitary set of interactive and cognitive conditions at home. Although previously described patterns seem to apply strongly in some households, adaptations to these patterns seem to occur in other households as children and adults face different social conditions. One aim is to spell out some of these differences to broaden models for describing the processes.

How children interact at home and at school

At the beginning of the project we had five assumptions concerning children's interactions at school and at home.

1) We considered school to be a major arena for adult-child socialization. We expected passive but pervasive child-adult contact in that setting. We expected children to have contact with teachers in group settings, rather than in one-to-one interactions. But we expected group contacts to occupy most of the schoolday.

2) We expected Hawaiian children to interact more with peers than with adults at home. We thought they would spend less time with parents than with siblings, cousins or friends.

3) We expected teacher-child interactions to focus on information exchange rather than on social regulation.

4) We expected Hawaiian parents to act toward their children in authoritative ways. We thought they would spend more time directing and monitoring their children than conversing with them.

5) We expected Hawaiian children to interact cautiously with parents, teachers and other adults. We thought they might watch carefully for changes in the adult's mood. We did not expect them to talk-back, taunt, or make fun of parents. In general, we thought children would be more concerned with peer attention than with that of adults.

Children varied greatly in how they interacted with people at school and at home. But some generalities did emerge.

Interactions with adults

As indicated in Figure 2, children interacted with adults a larger proportion of the time at home than at school. This surprised us. Although there were more adults at home to interact with, we thought children would gravitate toward peers. Instead some tried to monopolize adults' attention. We also expected teacher-child contact to pervade the school-day.

Most children were not hesitant around teachers, parents or observers. During initial visits they showed observers toys and friends, explained games, talked about experiences and asked about the equipment and observer. And observers we tried not to be engaged. But children conveyed information and asked questions. They initiated 77% of the 254 observer-child contacts.

Three children interacted informally with their parents. They talked-back, joked, teased and ordered them about. These parents, in turn, conversed with the children freely. In particular they asked the children to report on household events which they had missed while at work.

As indicated in Figure 3, children exchanged information with adults more at home than at school. They used language to communicate new information more at home than at school. At school they answered didactic questions with short phrases. The teacher

wanted to know how well they were following the train of thought, and these answers helped. School seemed to provide children with somewhat fewer opportunities to convey complex information. Parents treated children as conversational partners some of the time. They seemed to do so more frequently than teachers.

Children may best assimilate complex discourse structures by using them to communicate. They seem to have more opportunities to give long reports and explanations at home than at school.

As indicated in Figure 4, children were controlled by adults or tried to control adults a larger proportion of the time in school than at home. Teachers followed careful, planned agenda. They needed to coordinate the actions of 20 children, to move them through these plans. They needed to evaluate how well each child understood the material in order to adjust the complexity of input. It is not surprising that many of their interactions involved monitoring and keeping children on track.

Parents, on the other hand, interacted with fewer children at a time. They often had the time to follow a child's train of thought. The social context of the classroom may not be conducive to open-ended discourse. However, children may use their most complex language in such situations. In this case, they practice their discourse skills more at home than at school.

Interactions with peers

As indicated in Figure 5, children interacted with peers a larger proportion of the time at school than at home. We expected the opposite. There were, of course, more children to interact with at school. But we expected children to be more peer-oriented at home.

As indicated in Figure 6, children exchanged information with peers an equal proportion of the time in the two settings. Child 3 was the exception to this trend. He talked frequently with his year-younger brother. They exchanged information as they planned fantasy games.

We expected children to try to control each other in school. We thought they would want to establish and maintain position in the peer group and would do so by ordering each other about. We thought this might occur more at school than at home because we assumed the peer hierarchy at school was less stable than that at home. Peer hierarchies at home are based on differences in age. In homogeneous classes at school, children are the same age and may need to find other ways to establish rank.

Children engaged in control relations less at school than at home. One possible reason is that they did not need to negotiate extensively in well-structured classrooms. One teacher, for example, assigned well-defined tasks to children to do in parallel ways in peer groups. They chatted while doing these tasks. They did not have to figure out who should do what.

In summary, we did not find the expected split between adult and child-realms in the Hawaiian households we studied. Children sought adult attention and adults treated them as conversational partners. Preschool children, however, may be too young for such a split. Alternately, home life may be more complex than our stereotypes.

We found school to be a complex social situation requiring extensive group regulation. We concluded that children may have more opportunities to communicate true information at home than at school due to differences in the two interactive contexts. In this way children may develop and practice skills in discourse structuring more in the home setting.

Object use

We assumed object use would be more complex at school than at home. We expected teachers to pose complicated problems and demand high level reasoning.

Children varied greatly in how they used objects. They used objects in simple goal-directed ways the same proportion of time at home and at school. But they used objects in complex goal-directed ways more frequently at home. (See Figure 9).

Children encountered and solved more problems by themselves at home than at school. They needed to understand what the problem was, remember past strategies, imagine new strategies, organize how to solve it and do the steps of the solution.

Problems at school were digested. To model and encourage specific skills, teachers limited what the child needed to do. They often defined the problem, broke it down into doable chunks, suggested strategies and showed children how to apply the strategies. They did much of the thinking. The child was able to complete the rote, final steps. Children may be cognitively on their own more at home but they also have more room to innovate at home.

Natural problems (such as sorting the trash into objects which will burn and those which will not), are usually multifaceted. Constructed problems emphasize only one facet. Teachers seem to structure children through the basics of formal thinking. They give them labels and show them routines for thinking in specific ways. Children follow the teachers through the thinking process. They seem to apply the full complexity of their skills mainly at home.

Conclusions

In conclusion we did not find prototypical Hawaiian families. Each of our assumptions about home life was contradicted by at least one of the 11 families. Hawaiian parents, like parents everywhere, adapt to a wide range of stresses and demands. They borrow strategies from many sources to try to meet their own standards of responsible parenting. Parents, as people, have different priorities at different stages of life. Young parents

may organize family life differently than middle-aged parents. Socio-economic and contextual features affect the strategies families apply to remain organized. Family life is complicated and changeable. It was perhaps unrealistic to expect stereotypes to hold across most families.

Hawaiian children grow up in diverse situations. They learn to interact and think in these contexts. There are country and city children; children from large and small families; children who learn roles as older or younger children; children who receive mixed cultural messages.

School may be a more consistent institution than home. School systems and teachers have specific agendas. Curricula encourage teachers to expose children to the accepted thinking and talking practices of the time. School calls on the child's ability to attend to, understand and follow the train of thinking suggested by the teacher. School also provides for some guided practice of the acquired skills. But it may be that children practice their most complex skills in the less constrained context of home.

TABLE 3
THE NATURE OF INTERACTIVE EPISODES WITH ADULTS AND PEERS AT SCHOOL AND AT HOME

Interactive Episodes with Adults	Child 1 at school home		Child 2 at school home		Child 3 at school home		Child 4 at school home		Child 5 at school home		Child 6 at school home		Total at school home		Adult Peer contacts		Stimulus contacts		
	at school home	at school home	at school home	at school home	at school home	at school home	at school home	at school home	at school home	at school home	at school home	at school home	at school home	at school home	at school home	at school home		at school home	
<u>Social Control</u>																			
Child tries to control adult	3%	5%	21%	6%	14%	10%	32%	12%	25%	25%	21%	19%	19%	19%	42%	19%	42%	4%	
Adult tries to control child	67%	53%	34%	20%	77%	31%	48%	49%	38%	31%	58%	43%	53%	34%	44%	17%	17%	4%	
<u>Information Exchange</u>																			
Child tries to convey or elicit information from adult	13%	14%	29%	25%	3%	28%	9%	15%	15%	21%	18%	14%	15%	22%	19%	15%	15%	67%	
Adult tries to convey or elicit information from the child	12%	16%	6%	20%	8%	26%	5%	6%	15%	22%	1%	4%	7%	15%	11%	7%	19%	19%	

Interactive Episodes with Peers	Child 1 school home		Child 2 school home		Child 3 school home		Child 4 school home		Child 5 school home		Child 6 school home		TOTAL SCHOOL HOME		LEVELS OF OBJECT-USE				
	school	home	school	home	school	home	school	home	school	home	school	home	school	home	1	2	3		
<u>Social Control</u>																			
Child tries to control peer	57%	13%	22%	42%	61%	33%	44%	41%	44%	33%	56%	34%	45%	34%	42%	42%	42%	28%	
Peer tries to control child	53%	5%	46%	17%	10%	14%	4%	11%	10%	36%	6%	5%	10%	44%	17%	17%	17%	49%	
<u>Information Exchange</u>																			
Child tries to convey or elicit information from peer	92%	22%	19%	32%	10%	14%	4%	11%	19%	33%	9%	6%	17%	13%	15%	15%	15%	24%	
Peer tries to convey or elicit information from the child	46%	25%	33%	20%	36%	22%	4%	11%	19%	33%	1%	4%	6%	8%	8%	8%	8%	55%	
TOTAL SCHOOL HOME	47%	27%	41%	27%	41%	27%	41%	27%	41%	27%	41%	27%	41%	27%	41%	27%	41%	27%	
HOME	35%	19%	35%	19%	35%	19%	35%	19%	35%	19%	35%	19%	35%	19%	35%	19%	35%	19%	