

## **Social Interactions of Orang Asli Preschoolers in Malaysia**

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### **Abstract**

This study examined the patterns of socioculturally appropriate social interactions of Malaysia's Orang Asli children in an educational computer environment. The socioculturally appropriate collaborative interaction were identified and classified into seven dominant categories. Factors facilitating and inhibiting the verbal and non-verbal interaction were examined and analyzed by using the sociocultural appropriateness framework. Rogoff's Sociocultural Theory and the three foci of analyses: personal, interpersonal, and community or contextual planes were utilized in this study. A multi-method case study design was employed to identify the patterns of socioculturally appropriate social interactions unique to the Malaysia's Orang Asli preschool children in Selangor. 12 preschool children were observed and interviewed using a semi-structured questionnaire. Seven dominant interaction patterns related to socioculturally appropriate social interactions of Orang Asli preschool children were examined. Factors facilitating and inhibiting the social interactions were identified using the application of Rogoff's three foci of analyses and series of semi-structured interviews with Malaysian preschool teachers and Orang Asli preschool children. Malaysian preschool educators will be informed to socioculturally integrate the information and computer technology into their preschool classrooms and to promote positive prosocial interaction among Orang Asli children whilst engaged with the computer.

Keywords: Orang Asli children, social interactions, computer, sociocultural and preschool environment

### **1. Introduction**

Computer technology plays a major role in children's development and learning. With appropriate use of computer technology, early childhood teachers have access to more innovative and improved teaching methods that allow them to promote learning and create an active learning environment for children. Appropriate computer technologies among young children allow for development, adaptation, and delivery of tools that may facilitate more effective thinking, problem solving, and learning (Haugland & Wright, 1997a;1997b;1997c;; Papert, 1993). Together with an appropriate program, children can experience enjoyment by playing games in education (Haugland & Shade, 1988; Haugland & Wright, 1997; Papert, 1993; Teng, 1997). The computer provides us with the view that it is not an end in itself (a new task for children to master), but one more tool for children to use in discovering and mastering the world of familiar experience (Hohmann, 1994). Previous researches demonstrated that teachers who are involved in integrating computers into their early childhood classrooms often believe that with appropriate strategies and techniques, computer activities can support autonomy and facilitate the normal activities of early childhood classrooms (Hohmann, 1994). Early childhood educators often develop effective learning techniques and devise appropriate strategies to incorporate computers into the classroom. Such strategies are comfortable for teachers and in harmony with the social and emotional needs of young children (Haugland, 1997b; National Association for the Education of Young Children, 1996; Shade, 1994).

## **2. Significance Of The Study**

Research has indicated that the computer area in the classroom is rich ground for social interaction, as children frequently prefer working with a peer to using the computer alone (Bergin, Ford, & Hess, 1993; Haugland, 1997a, 2000a). According to Haugland (1997a), speculations on characteristic patterns of interacting with computers may serve to organise distinctive patterns of interacting around computers. Thus, it is argued that there is a need to research task structures and the way in which they promote different styles of interaction (Crook, 1994). However, in Malaysia socioculturally appropriate task structures are seldomly given much emphasis, particularly classrooms that involve indigenous or Orang Asli children. Clements and Nastasi (1988) state that the investigation of social interactions within different educational environments is significant, not only because social development is a fundamental educational goal, but also because these valuable interactions are essential components of children's cognitive growth. Literature also confirms that the social effects of using computers in the classroom are "overwhelmingly positive" (Bergin et al., 1993). It is important to ensure that future educational computer software packages are structured and developed in such a way as to best maximise young children's collaborative behavior, so they may scaffold one another's learning. Moreover, it is up to the teachers of young children to ensure that computers live up to their potential. The educational goals of computer usage can only be achieved, however, if the teachers, early childhood educators, and researchers are informed of the relevant sociocultural appropriateness issues, demand that computer programs used with children are appropriate (developmentally and appropriately), and contribute to both theoretical and experimental databases to guide computer use with children (Silvern & Silvern, 1990).

## **3. Review Of Related Studies**

This study is guided by a sociocultural perspective model by Mohamad Ibrani Shahrinin (2019) and Mohamad Ibrani Shahrinin and Mohamad Maulana Magiman (2020). According to this model, central to this perspective is the notion that children's cognition, and their preceding actions, are constructed and constantly evolving because of social interaction environment or culture (Mohamad Ibrani Shahrinin, 2019; Mohamad Ibrani Shahrinin and Mohamad Maulana Magiman, 2020; Berk, 1994; Rogoff, 1994). Edwards (2000) postulates that the sociocultural perspectives emphasizes relationships between people, actions, contexts, meanings, communities, and cultural histories. Furthermore, the sociocultural model by Mohamad Ibrani Shahrinin (2019) and Mohamad Ibrani Shahrinin and Mohamad Maulana Magiman (2020) seeks to describe the appropriate classroom computer integration by examining how the phenomenon is experienced and exhibited through the children's collaborative interactions. Thus, by enabling the researcher to build an extended model of social interaction pattern as it relates to computer integration among Orang Asli preschool children, it will also be possible to construct an image of how these interactions, and the nature of the classroom itself, are linked to the larger sociocultural context of the participants.

A mismatch between cultures and teaching styles may lead to learning difficulties, confusions over identity, lowered motivation and under academic achievement of children of ethnic minorities (Mathews, 1996). Thus, an examination of social and cultural contexts in which learning is embedded is critical for addressing the inequalities in school-related outcomes, particularly within the computer learning environment, for children from diverse backgrounds. The purpose of this study is to investigate and identify the socioculturally appropriate social interaction patterns exhibited by Malaysia's Orang Asli preschool children in an educational computer environment. To support the country's ICT master plan and in line with the country's drive to the digital economy, the education system has to be transformed (MCMC, 2016; MCMC, 2017; MOE, 1998; NITC, 2001). An example of a previous catalyst for this transformation was the ICT-enabled Smart Schools (MCMC, 2017; MOE, 1998; NITC, 2001). In addition to the Smart School project, the Malaysian Ministry of Education had attempted to reduce the digital divide that exists in the different parts of the country by providing computer laboratories to thousands of schools (MCM, 2016; NITC, 2002). Other ICT-related projects involve the training of teachers, school administrators and other school staff (MOE, 1998; NITC, 2001). Innovative projects like the use of electronic books and e-learning were also implemented to ensure their feasibility before any roll-out to all the schools in the country (MCMC, 2017; NITC, 2002). Non-governmental agencies are also very much involved in the drive to introduce ICT into schools (MCMC, 2017; NITC, 2001).

#### **4.Objectives Of The Study**

The current study employs comparisons across communities (indigenous and non-indigenous children contexts) and using quantitative as well as qualitative approaches. Rogoff and Angelillo (2002) and Rogoff, Ministry, Goncu and Mosier (1993) acknowledge that both quantitative and qualitative tools are important towards understanding the nature of cultural processes. Rogoff and Angelillo (2002) argue that "close analysis of small numbers of cases can be used to compare larger numbers of cases while retaining the meaningful relations among interrelated aspects of the functioning of each case or each community studied" (p. 221). The authors stress that the analysis tools should be tailored to questions, rather than allowing customary tools to limit research questions or allowing the assumptions

on which they are based to organise our own conceptions of how the phenomena themselves function (Rogoff and Angelillo, 2002).

## **5. Population And Sample**

This research employed a multi-method research design. The research paradigm was primarily qualitative in nature, but a quantitative component was also employed “as a convenience for analysis, not a reflection of the organization of the world or the only appropriate way to focus research on complex processes” (Rogoff & Angelillo, 2002, p. 217). With the increasing use of computer-based interactive technologies in education and industry, educational technologists have issued a call for the use of more qualitative research methods to explore training and school processes (Mercer, 1994; Mercer, et al., 1999). The present study conducted a multiple case study (Denny, 1978; Stenhouse, 1981; Yin, 1994) of six pairs of Orang Asli preschool children, whilst engaged with the computer in dyads, within the naturalistic classroom environment. It was conducted within a naturalistic inquiry paradigm (Guba & Lincoln, 1982), involved the use of both inductive and interpretative data analysis. Subjects for the study were six pairs of children, aged 5 years, from one rural preschool in Selangor, Malaysia. Six children were randomly selected by the classroom teacher and assigned to the study. Each of the six randomly chosen children in turn subsequently chose a partner with whom to collaborate and interact with the computer.

### **6.1. Data Collection Tools**

The participants were observed and interviewed using a semi structured questionnaire to guide the researcher to ascertain data from four recurring themes in relation to the research questions. The themes were: attitude and experience towards computers at home and preschool; knowledge about software (computer games and educational software); accessibility of computer(s) at home and preschool; and cooperative activity with friends in relation to computer activity. The classroom teacher was also informally interviewed to gain relevant information on the children’s general social skills, computer experiences, and her educational philosophy and beliefs in relation to computer use in the early childhood environment. Each child was videotaped once, with their partner, for a total of 10 minutes. All the observations took place during the children’s daily classroom activities. Interaction patterns observed within the study involved a process of verbal discourse and non-verbal interaction between the participants, whilst working in dyads at the computer. This study was concerned with capturing relevant and significant socioculturally appropriate social interactions exhibited by the Orang Asli children

6.2. Research Process An observational scheme based on the study of Nastasi & Clements (1993) was employed to distinguish all collaborative and non-collaborative behavior. All verbal discourses and utterances were represented in selected transcripts and coded using the constant comparative method by Glaser & Strauss (1967). Initial codes were constructed and compared with new data until each emerging individual code was mutually exclusive. Codes were constructed to represent each new behavior and verbalizations made by the children within their respective groups. Furthermore, all codes were constructed to represent the objectives of each child’s verbalizations and/or actions. Finally, the percentages of the occurrence of the ten children’s interaction patterns are presented in selective cases. Subsequently, three categories of verbal interaction were chosen to code all the interactions. The categories of verbal interactions (referred to by Mercer (1994) as talks) were as follows: (1) disputational talk; whereby speakers challenge other speakers’ views, but without attempting to justify

their challenge by building on previous utterances or offering new information; (2) cumulative talk; whereby speakers contribute to discussion by taking up and continuing a previous speaker's utterances, without explicit comment; (3) exploratory talk; whereby hypotheses are proposed, objections are made and justified, and new relevant information is offered.

### 6.3. Analysis of Data

It is acknowledged that the basis of the analytical model of the current study is partially premised on the functional pattern analysis, as suggested by Rogoff and Gauvain (1989), which were applied in the study of Rogoff, Ministry, Goncu and Mosier (1993). The analytical model also acknowledges the study by Mercer (1994) and the System for Observation of Children's Social Interactions (SOCSI) by Brown, Odom & Holcombe (1996). The three foci of analysis by Rogoff (1995, 1998, 2003): personal, interpersonal, and community or contextual planes, is acknowledged as a major contribution towards developing the model of analysis. Originally referred to as planes of analysis (Rogoff, 1997, 1998), it is argued the underpinning assumption is that within sociocultural activity, people, contexts, actions, meanings, communities and cultural histories are all mutually constituted (Rogoff, Topping, Baker-Sennett & Lacasa, 2002). Thus, using Rogoff's sociocultural perspectives delineates the analytic approach as not to examine only the child, as a single unit of analysis, nor a group of children, as if in a vacuum (Rogoff, 2003). She points out that the three foci of analysis may present a more complex and thorough view of children's understandings (2003), where she emphasise that while one of the lenses may be in sharply defined, the others remain involved but in the background (1995, 1998). The data analysis had revealed patterns unique to the sociocultural context of Malaysia's Orang Asli preschool children at the personal, interpersonal, and community or contextual perspectives. The identification of such interaction patterns may lead to a greater appreciation of the connection which exists between appropriate computer integration into early childhood education, and the larger society. Thus, it is argued that an overarching assumption of this study is that the sociocultural scripts play a major role in identifying inherent values within a diverse society.

### 6.4. Findings

To illustrate Rogoff's ideas of the three foci of analysis and the transformation of participation perspective, a series of images from the findings are presented in the results section of this paper. In Figure 1 below, an image is shown without any research lens or focus of observation. The image depicts an example of a computer session undertaken in a Malaysian rural preschool classroom environment. Each child was paired in dyads, and has their own mouse device, utilising a collaborative software program. As shown on the image below, one of the children was initially not interested with the activity, where she maintained to observe other children (two girls at the computer- on top left corner of Figure 1) for a prolonged duration of time (approximately 18 minutes of the computer session). This child is an Indigenous Malaysian - Orang Asli child and was reported by the classroom teacher to be a keen observer of novice activities in the class. However, in relation to the analytic model of the current study, the research lens of the three foci analysis by Rogoff (1995, 1998, 2003) were adapted when the child begins to participate within the dyadic context of the computer environment, which involves the observation of her partner under the guidance of the teacher assistant, thus initiating the process of transformation of participation in her immediate context (see Figure 2).

Figure 1: An image of a preschool computer environment



Figure 2: Community or contextual focus of analysis (adapted from Rogoff, 1997, 1998) or cultural-institutional aspects of analysis (Rogoff, 2003)



Based on these adaptations of the three foci of analysis, Rogoff (2003) stress that:

“Together, the interpersonal, personal, and cultural-institutional aspects of the event constitute the activity. No aspect exists or can be studied in isolation from the others. An observer’s relative focus on one or the other aspect can be changed, but they do not exist apart from each other” (p. 58)

However, Rogoff (2003) also warns that failure to recognise culture together with the “equally important role of the people who constitute cultural activities” (p. 61) may pose certain limitations and analytical problems. Figure 3 portrays a problem that is common in many studies, where Rogoff argues that “it does not make sense to try to study cultural processes without considering the contributions of people involved, keeping them in the background of a focus on cultural, institutional community processes” (Rogoff, 2003, p. 61):

Figure 3: Research lens that recognise culture, but without people who constitute the cultural activities (Rogoff, 2003)



Thus, this study acknowledges the sociocultural perspective model by Mohamad Ibrani Shahrinin (2019) and Mohamad Ibrani Shahrinin et al (2020), with the view that individual, social and cultural

processes are interrelated (Rogoff, 1995, 1998), and adapt the proposed use of the three foci of analysis (Rogoff, 1995, 1998) as the analytical model. Four cases were analysed, and seven dominant patterns emerged from the interaction analyses. Case 1, Case 2, Case 3 and Case 6 were analysed and identified the interaction patterns as: Asking for information/explanation; Directing partner's actions; Providing information/explanation; Terminal response; Defending control; Showing displeasure; and, Defending competence. A positive environment for collaboration was identified within two cases, which were Case 2 and Case 5, in contrary to Case 3 and Case 6 which exhibited the interaction patterns of conflictual behaviours, which may inhibit collaborative interaction among children. The fact that children had to demand and seize control from their peers has important implications for the effective functioning of collaborative activities in early childhood settings. This conflictual situation is more apparent when the group of children involves indigenous and non-indigenous students. Further interaction analyses report that high status children (high socio-economic background) appear to initiate and offer guidance to their partners (for example, displaying interaction patterns of directing partner's actions, suggesting ideas, and providing information). These interactions were demonstrated by exhibiting high frequencies of positive behavior (as illustrated in Cases 2 and 5). The children's social goals whilst engaged with the computers were also examined. It was found that their preexisting computer competencies and attitudes, and mutual friendships among their classmates and peers are associated with the patterns of interactions exhibited. All Orang Asli respondents have similar low socio-economic backgrounds, thus demonstrated less computer competencies. This study found that the current behavioral patterns has implications towards the effective integration of computer technology into early childhood settings.

## 7. Discussions

The concept of cultural apprenticeship in the frame of socialisation practices mediated by cultural traditions and norms is supported by the results presented in the literature review section. For instance, the differential use of linguistic acts and contrasting guidance patterns among Malaysian children's social interactions in this study, typically resonated their own cultural values and beliefs. The directive speech of Malaysian teachers reflects interactions orientations to guidance and role segregation between adults and children. Interestingly, this was also exhibited by the Malaysian Malay and Orang Asli children's interactions whilst engaged at the computer. In contrast, the explanatory discourses that characterised the socioculturally-sensitized teacher's expectations and the children's interactions appear to convey the cultural preferences for expression of views and scope for individual expression. Although the current study examines a different context of interactions, the variations in discourse orientations of Malaysian children and their respective teachers are partially similar to the differences in discourses of rural and urban families, that reflected their cultural orientations of 'interdependence' and 'independence' respectively (Martini, 1996; Crossley & Watson, (2003); Ismail (2007)). The use of directives in Malaysian teacher's expectations on the children's collaborative assistance further implied the age based hierarchical approach to guidance. Age and gender are the ordering principles of the hierarchical system of traditional Orang Asli and Malay-Malaysian society and family. Formal superiority of people is established through the age differences and men and adults, in general, have greater authority than women and children (MOE, 2016; Morris et al, 2005; Soto, 2011). The principle of a hierarchical ordering of social dependencies is pervasive, even today, in every aspect of social interaction. Malaysian teachers mentioned that adult control in children's problem-solving was

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essential for sustaining children's attentiveness on tasks as well as sharing children's task responsibilities. The Malaysian teachers' views and expectations reflected traditional Islamic philosophical notions, according to which child in the early childhood years is considered as a gift of God, to be welcomed, cared, and indulged (MOE, 2016; Hashim & Langgulung, 2008; Sulaiman et al.,(2015). Furthermore, Malaysian teachers valued modelling as an important form of adult guidance. There was more emphasis on fostering children's explicit thought processes combined with affective processes of guidance (e.g., emotional appeals and use of endearments). In the process of collaborative guidance, the more socioculturally-sensitized Malaysian teachers' expectations of their students were that they tended to rely on modelling techniques and encourages their peers to learn through repetition. The selection of demonstration as a method of guidance by Malaysian children seems to coincide with their willingness to assume greater share of responsibilities among the students and their peers in their problem-solving tasks, whether they be physical or collaboratively cognitive in nature.

Similarly, the teachers' views of encouraging individual responsibility and providing guidance upon requirement reflected their cultural beliefs and goals of child development that value development of individuality in children. These beliefs were clearly exemplified in the following statement of a preschool teacher from a rural preschool centre in Selangor, Malaysia, who mentioned that:

'Children need encouragement. Independence needs to be promoted in them and that can be done by encouraging them to take up things on their own. Children can derive a sense of enjoyment and satisfaction if they do things on their own and on their own effort'.

(Extract from field note: 14/04)

The socioculturally-sensitized educated teacher's communication reflected an egalitarian style of guidance as well as cultural transmission of values such as choice, individuality, and encouragement of individual efforts. The use of explanations reflected a pattern of collaborative interactions that is conversational, child centred, less controlling, and more supportive of children's initiations and on-going task activities. Teachers supported children's mastery of cognitive skills through sharing of information, transmitting knowledge in explanations, and expanding on children's prior knowledge, a process that resonated child centred style of interaction. These findings are consistent with the observations of Western socioculturally-sensitized communities reported in literature (Keats, 1997; McDonald, 1995; Niles, 1998, Ray et al.,(2010), where interactions reflected development of initiation and individuality in children and encouragement of their participation as conversational partners. Concomitant with variations in teacher's beliefs of adult and knowledgeable peer guidance and problem-solving, there were cultural differences with respect to the goals of children's development. As per the results of interviews, most Malaysian teachers' emphasised development of academic skill and a more socioculturally-sensitized teachers' emphasised development of social skills as valued goals of child development in the early school years. In their interviews, Malaysian teachers mentioned education and academic achievement as preferred goals of child development. They also regarded education as an investment in their student's future and to their happiness and economic prosperity. These views are consistent with reports in literature that documented Asian family's emphasis on formal education or academic achievement of their children (Chao, 1996; Fulgini, 1997; Anders et al., 2016). In contrast to some Malaysian teachers' strong focus on development of academic skills in preschool and early primary-aged children, the socioculturally-sensitized early childhood teachers

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emphasised development of social skills as valued goals of development for preschool children. The variations in socioculturally-sensitized and non-sensitized teachers' goals of child development indicated in this investigation are consistent with the findings of other cross-cultural studies where urban-based parents emphasised educational achievements and goals for young children as opposed to mainstream teachers' major expectations of social skill development (Ebbeck & Glover, 1998; Goodnow, 1988; Papps et al., 1995; Pomerleau et al., 1991; Watkins et al., 2017; Otto, 2017). As discussed previously, the variations in teacher's preference for praise as a motivational technique also reflected cultural values associated its use. The lack of praise among peers of Malaysian Orang Asli children is due to a common classroom belief that praise reduces the focus of their long term goals and be satisfied with intermittent achievements. In a socioculturally appropriate contexts on the other hand, use of praise is associated with promoting self-esteem in children, leading to its frequent use in adult interactions with young children.

## 8. Conclusion

Socioculturally-sensitized teachers, in contrast emphasised that they would expect the children to delegate responsibility among themselves while they interact with their peers. They further mentioned that children should take a major responsibility in their problem-solving rather than themselves. Accordingly, along with sharing of task responsibilities during the problem-solving activities, socioculturally-sensitized teachers encouraged their students, and the students are also encouraged their peers, explicitly to take responsibility in problem-solving, which could be argued, reflects the cultural value of promoting independence and individual responsibility. These findings on differential interactions and assistance and guidance of Orang Asli Malaysian children and their peers, and the views of their respective teachers reflected their cultural beliefs and values of child development and are synonymous with the observations of Trommsdorff & Friedlmeier (1993) and Blake et al., (2016) who indicated that adult control of children's behaviours and adult responses to interactions are mediated by culturally based differences. As all the children in each individual Case Studies in this study came from the same classroom, their pre-existing relationships undoubtedly affected their interactions. The computer environment should be structured to engender collaboration, self-selection of problems, and exchange of information between collaborators (Nastasi & Clements, 1993; Bayerlein & Jeske, 2018). Overall, the efficacious use of an educational computer environment, which integrates technology and collaborative learning, depends on multiple factors related to structuring of task-related and social-process variables (Nastasi & Clements, 1993; Mercer, 1993, 1999; Cho & Tobias, 2016). Furthermore, sociocognitive conflict, or at least argument, may represent a valuable condition for progress in peer interaction situations (Littleton & Hakkinen, 1999; Sato, 2017). Moreover, Crook (1995) emphasised settings that afford concrete manipulation and experimentation. As cited in Crook (1995, p.546), "ideally, an individual's interaction with the problem domain might be witnessed by peers, who thereby more easily enter into collaborative engagement. Computers may have a special potential in creating such settings for joint activity". The results of the present investigation have important implications for early childhood education and practices. For instance, the findings on the implicit forms of assistance indicated that even simple coordination and reorganisation of the physical learning environment, for example, by providing additional computer mouse-device in the Computer Time settings can enable children to facilitate their peers' cognitive thinking. The findings on situatedness of cognitive learning in peer-based guidance call for more

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teacher interventions in children's learning to support and scaffold their cognitive or collaborative learning. The importance of directives for advancing children's cognitions into higher levels of functioning through a cognitively comfortable route (indicated by the present findings) highlight the need for teachers to disassociate their use with "working class behaviours" and to employ them in their guided or scaffolded interactions. In reflecting on the local perspective of Malaysia's Orang Asli preschool children, this study addressed an important issue of socioculturally appropriate social interaction in collaborative guidance. However, questions can be asked as to what this study on Malaysia's Orang Asli children's peer guidance in classroom contexts means to early childhood educators and what are its theoretical implications in terms of advancement of knowledge. The theoretical contributions are that this study expanded the limited set of observations on collaborative interactions of cognitive development carried out with monocultural groups. The findings of this study have been examined and discussed in relation to the broader sociocultural and sociocognitive contexts that shaped and produced the interactions of the children. These social behaviours, particularly the socioculturally appropriate collaborative social interactions, did not always reflect accepted developmental theory. This highlights the need for research which investigates the relevance and suitability of sociocultural and neo-Vygotskian, and activity theories, in a range of socially and culturally diverse early childhood settings.

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