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Report

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Intergenerational learning between children and grandparents in East London

End of Award Report

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Background

Grandparents are taking an increasing role in childcare in Britain (Guardian G2, 14/12/2000: 8) and their contribution to children's early learning is therefore crucial. Meanwhile, there is a need to widen older people's participation in lifelong learning (DfEE, 1999). When young children and grandparents jointly participate in events ranging from storytelling to computer activities, the exchange of knowledge has the potential to enhance learning for both generations.

The study investigates the learning exchange between 3-6 year old children attending Hermitage Primary School, Tower Hamlets, and their grandparents, in Sylheti/Bengali-speaking families of Bangladeshi origin, and 'Anglo' families (UK monolingual English-speaking, some of mixed race).

Relevant concepts from sociocultural theory include guidance through 'scaffolding' provided by caregivers (Wood, Bruner & Ross 1976), transmission of knowledge or 'prolepsis' between generations (Cole 1996), 'syncretising' of knowledge and experience from different sources (Gregory and Williams, 2000), 'synergy' leading to mutual benefits for the young child and others involved (Gregory, 2001), and 'funds of knowledge' within communities (Moll, 1992). The study applies these concepts to a new area: intergenerational learning between children and grandparents.

Objectives

1. To explore the reciprocity of teaching and learning taking place between grandparents and grandchildren from different cultural backgrounds in East London

2. To investigate the further potential of intergenerational exchange

3. To consider the implications for theories of sociocultural learning

4. To investigate the particular role of the computer as a tool for intergenerational learning

5. To facilitate family involvement in children's learning, and to facilitate lifelong learning through intergenerational involvement in computer tasks

These objectives were met (see Results for Objectives 1-4, Activities for Objective 5)

Methods

Survey
To gain an overview of the learning activities taking place at home between grandparents and children, a questionnaire was distributed to families with children in nursery, Reception and Year 1 at Hermitage School, thought by the school to have contact with grandparents (see Appendix I). 20 families answered, 17 Bangladeshi and 3 Anglo, giving information about 23 children at Hermitage and 8 grandchildren elsewhere. The questions concerned the amount of contact with grandparents, the range of activities taken part in together, and the languages used in the course of these activities.

The families of twelve children agreed to take part in the next stage of the research, an in-depth examination of the intergenerational exchange. We were eventually able to obtain data on eleven children, six Bangladeshi British and five Anglo. Six were boys and five were girls. Four were in Year 1, four in Reception and three in nursery (see table, Appendix II).

Interviews

Grandparents were asked about their role in grandchildren's learning, aspects of learning taking place in the different activities carried out together, and any links with the school. Children were also interviewed about learning with grandparents (see interview questions, Appendix III).

Video-recording

Families were asked to suggest typical activities which children and grandparents enjoyed doing together. For each family, two or more of these were video-recorded, typically lasting around 15 minutes. For most families, one activity involved the computer. In cases where the family did not possess a computer, the researchers took a laptop to homes. This enabled grandparents and children to explore a new learning tool in a familiar environment.

Scrapbooks and photographs

To gain additional data from the families' perspective, scrapbooks and disposable cameras were provided to record activities grandparents and children enjoyed together. Families used the scrapbook in a variety of ways (Appendix IV).

Analysis

The questionnaire showed that grandparents and grandchildren engaged in a wide range of learning events. Figure 1 concerns children at Hermitage School; a similar spread was found for grandchildren elsewhere.
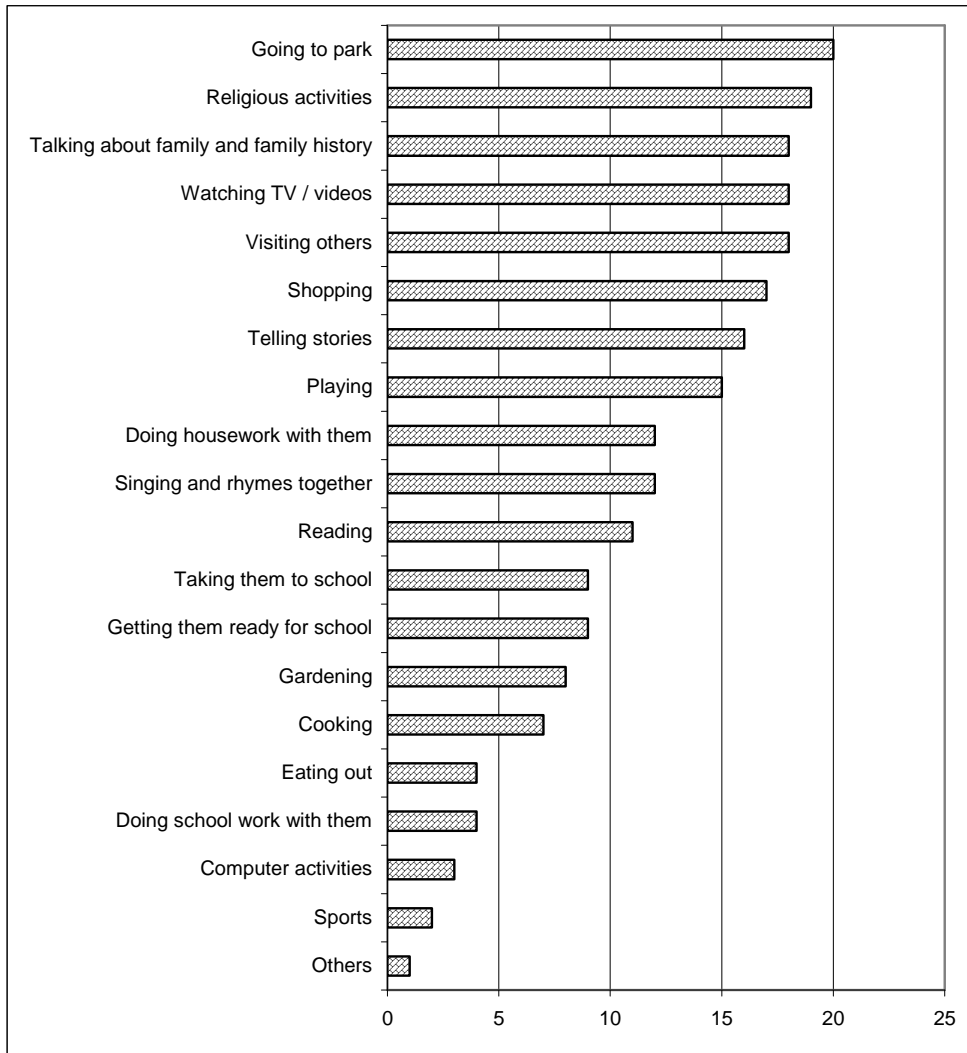
Figure 1: Number of grandparents reporting each activity with their grandchildren

Figure 2 shows that only a small proportion of grandparents reported doing 1-5 activities, over half reported 6-10 activities and over a third reported 11-15 or 16-20 activities. Figure 3 shows that when children at schools other than Hermitage were included, a quarter of grandparents reported 1-5 activities, a third reported 6-10 and over a third reported 11-15 or 16-20. Since 7 of the 8 other children lived elsewhere in the UK or abroad, this emphasises that grandparents and grandchildren carry out many activities when they are together, even if contact is less frequent.
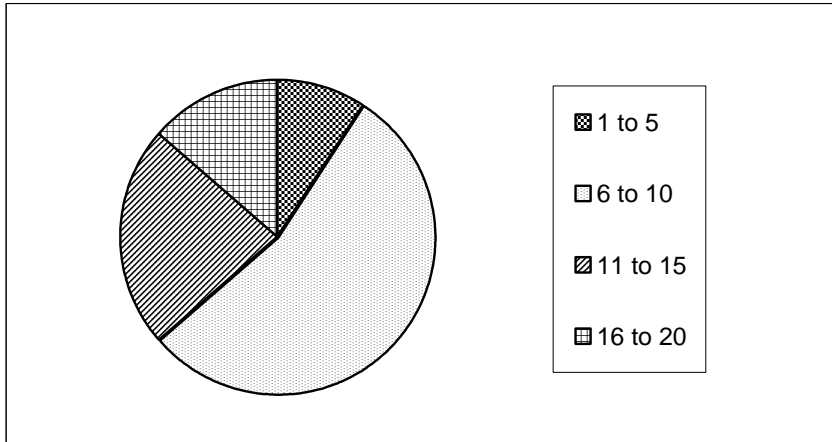
Figure 2: *Proportion of grandparents doing number of activities (Hermitage children)*
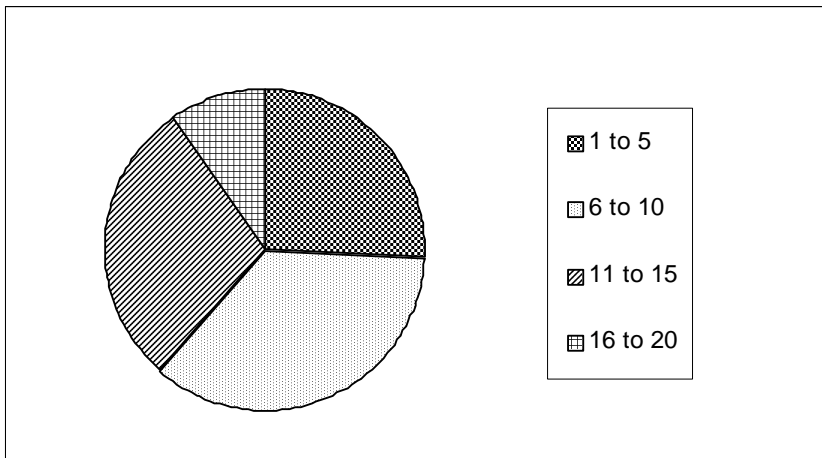

Figure 3: *Proportion of grandparents doing number of activities (all children)*

Figure 4 shows that in Bangladeshi families, most grandparents stated they used only Bengali with grandchildren. Some also used English, or Arabic for religious activities including prayer and recitation of the Qur'an.

Languages	Number of families using
Bengali	8
Bengali, English	4
Bengali, Arabic	4
Bengali, Arabic, English	1

Figure 4: Languages used by grandparents with grandchildren in Bangladeshi families

Having obtained this overview, we used the videodata and interview material to generate a detailed understanding of the intergenerational learning exchange. Videodata was transcribed to show different channels of communication – language, gaze, touch/action (see examples in Appendices VI and VII).

Qualitative analysis was conducted to look for common themes and patterns in the data, in the following ways:

- Learning interactions were examined to find out how participants built on each other's meanings through talk and non-verbal interaction

- An inventory was drawn up of different concepts and skills featuring in the discussions and activities shared by participants

- The particular characteristics of interactions around the computer as a mediating artefact were identified.

Triangulation

Triangulation of participants' views with those of the research team was accomplished by inviting children and grandparents to watch the video material with the researcher and comment on aspects of the events (see questions in Appendix V). Grandparents commented on different facets of children's learning and on the contexts in which learning took place. Children's comments completed an all-round perspective.

Results

Our research questions were as follows:

1) In what ways do grandparents and children take the lead in the learning interactions?
2) In what ways are the learning interactions co-constructed by the participants?
3) What kinds of knowledge are exchanged between the younger and older learners?
4) What is the role of the computer in the cultural, linguistic and technical aspects of learning?

In the discussion of findings below, representative examples have been chosen from our substantial body of case-study data in order to illustrate each point.

Questions 1 & 2: How grandparents or children take the lead in the learning interactions, and how these are co-constructed by participants

Learning interactions take place within a relationship of mutuality specific to children and grandparents, complementing children's learning relationships with parents and teachers

In most families, grandparents played an important role in caring for their grandchildren, since parents were occupied with the demands of large families and/or paid employment. For example, Gloria would cancel other appointments to look after grandson Steven, and often collected him from school even though she had to catch two buses to do so. Sumayah's grandmother was the main babysitter for her grandchildren and passed on childcare knowledge to her daughter-in-law. Abida's mother was busy with a newborn baby, so Abida spent a great deal of time with her grandparents.

Grandparents described the enjoyment they gained from interacting with grandchildren. Anayet's grandmother spoke of how 'they fill our hearts with love and belonging' and explained that she and her grandson contributed to each other's sense of well-being: 'he phones me and lifts my spirits - we help each other'. Sumayah's grandmother noted the energy provided by the younger generation to the older - 'grandchildren keep the house alive'.

According to grandparents and children, their interaction had a different quality from the parent-child relationship. Sumayah's grandmother commented that grandparents 'show a different sort of love', a key aspect being that children 'get a sense of security and comfort from us'. Several Bangladeshi British children shared a room with their grandmother, which gave a particular closeness. Some children treated grandparents as playmates; Abida role-played being teacher with her grandparents as pupils, whilst Pam said grandsons Oscar and Cosmo 'tend to think I'm like a big four-year-old'. Grandparents tended to show more indulgence; Steven rushed to investigate Gloria's handbag as soon as he saw her, knowing that it would contain a little bag of biscuits for him since 'my Granny gives me what Mummy doesn't', and Sumayah said 'they buy us presents; they call it 'surprise present'.'

Another factor in the relationship was children's recognition that the difference between youth and age sometimes gave them an advantage. Comparing his own hands to those of his grandmother, three-year-old Sam declared 'I'm not getting old…I've not got old skin'. The ageing process also meant that grandparents sometimes needed their grandchildren's care. When Gloria came off the slide in the park awkwardly and hurt her head, Steven was distressed that he had insisted on her joining him in the activity and realised that 'Granny was getting too old for these things'. Sumayah recounted that 'when dada (grandpa) was ill we were very sad, we asked him what's wrong with his eyes'.

The mutual vulnerability of the grandparent-grandchild relationship meant that it operated as a relatively equal interaction. Combined with a sense of freedom and playfulness, this created a context for learning which encouraged risk-taking and exploration. Anayet's grandmother emphasised the two-way nature of the interaction:

'we learn from each other'. She saw her contribution as complementing her grandchildren's learning at school: 'the work we do at home, the time we spend together is so important, it's extra'.

Intergenerational learning interactions show the following characteristics

- ***The child is treated as an equal partner in learning***

- ***Support from grandparents makes the child an expert in tasks s/he could not accomplish alone***

- ***Joint participation is constructed by an interplay between the communicative modes of language, touch, gesture and gaze***

To exemplify these characteristics, we present an analysis of two extracts from video-recorded learning events (see Appendices VI and VII for transcripts).

Anayet and his grandmother Mayarun using the computer (Appendix VI)

Mayarun suggests Anayet writes his name. She reinforces this suggestion through gaze, looking at him directly. Anayet nods in agreement. Asking 'what's first?', Mayarun points at the keyboard and then to the letter 'A' to encourage him to begin. However, she does not press any key herself. Anayet's mother joins in, also switching between English and Sylheti.

However, Anayet decides the letter needed is 'N'. His grandmother checks 'is that first?', using gaze to emphasise her query and pointing at 'A' again. Gradually, Anayet moves to press 'A' and is rewarded with 'good' from Mayarun. She then asks for the next letter and Anayet says 'Y', pointing at it.

Mayarun questions this ('A…N next isn't it?') and Anayet returns to 'N'. He then decides to look for 'Y' and his grandmother supports him verbally ('Y – can you find it?') and by moving her finger around the keyboard to participate in the search. Anayet's smile as he presses the letter is mirrored by an answering smile from his grandmother, as he exclaims 'Oh!' in satisfaction.

Anayet continues to take the lead, refusing his grandmother's offer to press the 'E' key. Finally she sounds out his entire name to remind him of the last letter, 'T'. Anayet presses this letter with a smile and his accomplishment is confirmed by his grandmother saying 'T' and his own remark 'T – finished'.

This subtle and sensitive support develops Anayet's ability to spell his name, using the keyboard as a tool. Mayarun code-switches into English to highlight concepts used ('name', 'letter') and signal sequence ('first', 'which one').

Steven and his grandmother Gloria cooking (Appendix VII)

The multimodal transcript highlights the complexity of action taking place, with relatively little verbal input. Steven is learning how to control and manipulate the wooden spoon in stirring, sometimes using his right hand and sometimes his left, or

both together. The only talk is Gloria's comment 'put it in' and Stephen's 'ohhh!' as an ingredient is added, followed by Gloria's answering 'ohhh!' which reinforces their joint enjoyment of the activity. Their gaze is on the tools being used to accomplish the task. At one point Gloria's gaze turns to Steven and he makes a remark about the consistency of the batter ('it's sticky'), which she acknowledges with 'yes'.

Gloria then places her hand below her grandson's on the spoon handle whilst verbally signalling why: 'you put the flour in now and let granny stir it'. Steven puts in an unexpectedly large amount of flour but Gloria only comments 'oh…there's lots'. She indicates his turn to stir again, by making the offer verbally and by letting go of the spoon and mixing bowl. Meanwhile she takes over the tricky task of putting in the rest of the flour.

When the batter becomes too stiff for Steven to stir alone, Gloria offers to help, placing her hand on the spoon too. Grandmother and grandson stir together, Gloria's hand between both of Steven's. Although Steven maintains 'I can do it' and 'it's not stiff', he allows Gloria to continue. She gently persuades him to accept her aid: 'let granny help you…right'.

Steven receives adult supervision throughout this event, and is given responsibility and treated as a successful participant. Rather than using verbal criticism, Gloria takes supportive action to remedy any difficulty. Joint activity is embedded in a relationship of mutual warmth and trust, giving a relaxed tempo in which Steven can find his own rhythm.

Touch is a particularly significant means of communication, used by grandparents and grandchildren to build a secure and confident relationship and to negotiate kinaesthetic learning

The role of touch emerged as key in intergenerational learning events, used for the following purposes:
- Confirming the grandparent/child relationship
- Constructing the event
- Guiding
- Shadowing
- Enabling
- Disciplining

Confirming the grandparent/child relationship

The videodata emphasises the physical closeness between the older and younger generation. For example, Sahil and his grandmother interlaced their fingers after they had been reading Bengali poetry together. Lizzie rubbed her cheek on her grandmother's arm as they looked at a webpage on the internet. This is a flexible form of touch used for reassurance by both generations, which flows into physical guidance as described below.

Constructing the event

Adults and children used touch to organise aspects of their joint activity. For example, Hazel held Sam more firmly as he became tired during a computer game, encircling him with her arms and patting his tummy to maintain his concentration.

Anayah's grandmother pointed and tapped letters needed for making up words in a jigsaw game, and ran her finger along the whole word when it was completed. Meanwhile, Anayah placed her hand on her grandmother's arm to stop her breaking up the puzzle.

Guiding

Grandparents often placed a hand over their grandchild's in order to physically demonstrate an action, and children sometimes guided their grandparents in a similar way. This was a negotiated form of touch that ebbed and flowed according to the need gauged by the participants. Razia guided Sahil's hand as he wrote in Bengali, enabling him to experience the flow of the pen on the page to inscribe the pattern of each letter. He pushed her hand away when he was writing a letter he felt confident with, and also when he changed to writing in English. A few moments later, Sahil placed his hand on top of his grandmother's to guide her in moving the mouse for the computer.

Plate 1: Razia guides Sahil's hand.

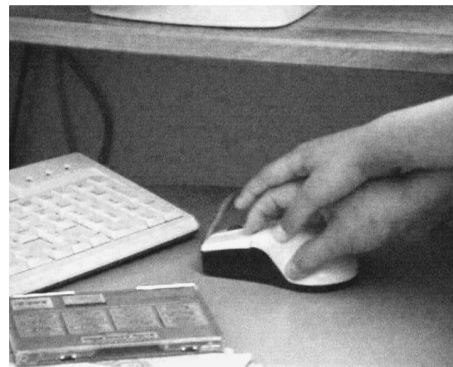**Plate 2:** Sahil guides Razia's hand.

Shadowing

Grandparents would 'shadow' children's actions with their hands poised alongside the child's, ready to guide when necessary. Abida's grandfather moved his hand in synchrony with his grand-daughter's, just alongside her as she pressed keys on the computer keyboard. Gloria's hand hovered next to Steven's as he practised breaking eggs into the mixing bowl.

Enabling

Physical help was sometimes needed by children to accomplish a task. Hazel lifted Lizzie up when the copier was out of reach. Gloria helped Steven to stir dough when it became too stiff for him to do alone. When grandchildren perceived their grandparents as frail, enabling could go the other way; Oscar helped his grandmother to the top of the slide because she was terrified of heights, and showed her how to position herself for the descent, saying 'big people go down like this'.

Disciplining

Grandparents tended to use touch rather than talk to re-orient children's behaviour. When Sam began to dig a pencil point into the mousemat, Hazel moved his hand away gently and replaced the pencil on one side of the desk. When Steven wanted to use the guillotine to cut paper in a classroom, Gloria put her hands around his waist and moved him away from the table, without verbal comment.

Younger siblings take an apprenticeship role during the learning events

The videodata captured the frequent presence of even younger children as our 3-6 year olds did activities with grandparents. Siblings or cousins observed closely and acted as apprentices in the event. Anayet's cousin watched a computer task from his grandmother's lap, leaning forward and gazing attentively at Anayet and at the screen. Sahil's sisters leaned on their grandmother's lap and listened to their brother reading a Bengali poem. Often the whole family participated jointly to accomplish activities as part of everyday life, particularly in Bangladeshi British homes where the extended family lived together. Abida's grandfather provided different vegetables for Abida and her younger sister to chop, according to their capabilities, as the family prepared a meal together. Meanwhile, the new baby lay in her baby relaxer on the kitchen table, part of the group.

Question 3: The kinds of knowledge that are exchanged between the younger and older learners

Grandparents pass on knowledge of family history, language and culture to their grandchildren

Grandparents had a sense of maintaining continuity for a new generation by passing on their experience of family history. Hazel brought family experiences into a computer game on the history of transport which she was playing with Sam, pointing out that she or his uncle had been born in the era when particular kinds of plane first appeared. Sumayah's grandmother commented 'we pass on a lot to them…we tell them stories of Bangladesh, how we live there, what we grow, what we eat, how we do things… things have changed a lot, we tell them stories of times that have gone, about our lives, the way we were brought up'. Such information was particularly important to build links for children with their families' country of origin.

The Bangladeshi grandparents were a key resource for developing children's knowledge of Bengali, thus retaining a connection with heritage and culture. Sahil's grandmother Razia spent time reciting Bengali poetry with her grandchildren and reading them books brought by her daughter-in-law from Bangladesh. Many Bengali-

speaking grandparents introduced grandchildren to Arabic for the purposes of reading the Qur'an: 'Anayet loves to watch me and copy me when I'm praying'.

Monolingual grandparents also took steps to widen their grandchildren's cultural knowledge. Hazel had grandchildren living in Italy as well as London and brought back artefacts from an Italian festival to re-create that celebration with Lizzie and Sam. Gloria took Steven to different kinds of restaurant including Italian and Chinese; she kept a pair of chopsticks from the latter for him in her handbag.

The intergenerational learning exchange involves both continuity and change

In some aspects, activities done with grandchildren emphasised the link between generations. Anayah's grandmother said she followed the ways and practices of her own grandparents: 'It comes to mind a lot'. Sahil's grandmother remembered putting henna on her daughter's hands, just as her daughter now does with the grandchildren, and Hazel remembered the enjoyment of looking through her grandmother's jewellery box, just as she herself now does with Lizzie and Sam. In other aspects, grandparents discerned a change in the grandparenting role between generations. Hazel noted that the 'action-packed visits' of her grandchildren contrasted with her memories of more formal interaction with her own grandmother in the 1940s, whilst Anayet's grandmother felt that 'the level of respect, love and obedience has changed from my time'.

The kinds of knowledge now considered important had changed: Pam pointed out that for grandsons Oscar and Cosmo computer skills were 'like learning to read and write…the three R's, it's the fourth one'. Abida's grandfather said 'a lot of things have modernised and computerised, they have a lot more global knowledge than us'. However, Sahil's grandmother felt that 'in Bangladesh children learn so much more especially in the villages watching the animals and having hands-on experience'. She had spent a year in Bangladesh with Sahil and bought him a goat so he could benefit from this experiential learning.

Activities with grandparents develop concepts and skills that complement children's school learning

Whilst some activities were designed for tuition of children in school-defined knowledge, others such as cookery and gardening involved situated and authentic learning rather than being set up for educational purposes. The latter activities were equally a source for curriculum-related learning, as shown in the table below.

A broader definition of learning, going beyond curriculum targets, is required to encompass the rich variety of knowledge children gain from spending time in family settings. Activities such as talking about family and family history, along with visiting others, are not always recognised as significant in the National Curriculum. Yet the resulting formation of a sense of identity and the development of social skills make a key contribution to citizenship.

Activity	Concepts	Skills
Gardening	Conditions of plant growth: different amounts of light and water needed	Motor control: tipping watering-can at different angles, pushing broom to

	Classifying plants Cultural knowledge about fruit and vegetables grown in different countries Vocabulary for fruit and vegetables in English and Bengali	sweep up
Reciting Bengali poetry	Rhyme Literary language Cultural understanding eg respect for elders – through subject matter of poems	Memorising Reciting with cadence and rhythm Accurate pronunciation
Writing in Bengali and English	How different writing systems operate	Kinaesthetic skills of handwriting in different scripts
Playing sports and physical games	Rules of games	Developing fitness, suppleness and hand-eye co-ordination
Cooking	Finding way round recipe book – recognising appropriate section Ingredients that make up a recipe Weighing and measuring Texture and consistency of different materials	Knowing names and functions of kitchen implements Techniques involving fine motor control: chopping, stirring, rolling and plaiting dough, cracking eggs
Reading the Qur'an	Appropriate preparation for religious ritual (change clothes, wash, spread out prayer mat) Religious values Literary language: classical Arabic	Memorising Recitation Intonation
Storyreading and storytelling	Story structure Developing imaginative response Vocabulary and syntax in English or Bengali	Bibliographic knowledge: title, directionality of book
Playing word jigsaw game in English	Sound-symbol relationships Spelling: letter combinations and order	Familiarity with letter shapes and sounds
Writing name in English on computer	Sound-symbol relationships, spelling	Word processing skills
Playing games on computer	Topic information (eg types of transport) Literacy and numeracy Ordering and categorising (eg Solitaire card game)	Hand-eye co-ordination: manipulating mouse Fine motor control: clicking mouse

Looking up information via internet	Topic information (eg types of moth) Intertextual links (compare to information found in books) Connections between categories (conducting searches)	Techniques of word processing Navigating around hypertext
Talking about family and family history	Kinship relationships Understanding historical time Sense of own history and identity	Appropriate greetings for people of different ages / relationships
Visiting others	Understanding social networks	Appropriate behaviour in a social group

Grandparents' involvement contributes to lifelong learning
The above chart includes new learning and the maintenance of skills for the older generation. As John said of playing football with grandson Steven: 'Having the grandchildren around keeps you healthy and fit…you run after the ball together…you fall but you get up and go again'. Sahil's grandmother stated that her grandchildren 'introduce me to new things and new ways'. Hazel also felt Lizzie and Sam helped her to keep 'a fresh and open mind', and hoped Lizzie would teach her about word processing. Several Bangladeshi grandparents mentioned learning English through interactions with grandchildren. Anayah's grandmother said 'she compliments me when I speak English', whilst Anayet corrected his grandmother's pronunciation.

The knowledge of grandparents and children is combined in a syncretic process, leading to new forms of linguistic and cultural learning

The older and younger generations used their different capabilities to create shared understandings. This could occur around a text that was itself a new cultural blend, such as Sahil's Snow White storybook produced in Bangladesh. Illustrations showed both Western and Asian aspects (Appendix VIII), whilst the storyline referred to moral virtues admired in Bangladeshi culture. Sahil's grandmother read the book with her grandchildren, giving them access to the text in Bengali. When the dwarves appeared in the story with the Bengali translation 'little men', Sahil explained the fuller meaning in Bengali from his knowledge of the English version.

When gardening with her grandparents, Sumayah learnt names of fruit and vegetables such as different types of pumpkin in Sylheti/Bengali. Videorecorded in the garden, she referred to pumpkin and potato in Sylheti, and pointed out the new leaves on a lemon tree in Sylheti to her grandmother. She also described the size and colour of apples on the trees in English when addressed in English by her mother. Sumayah's learning was a syncretic process, combining her conceptual knowledge in English with knowledge gained from interactions with her grandparents in Sylheti.

Question 4: The role of the computer in the cultural, linguistic and technical aspects of learning

Learning on the computer enhances the joint activities grandparents and children already do together

In families where grandparents and children had joint access to a computer, this provided an additional dimension to their learning. Hazel and grand-daughter Lizzie used the internet to look for information on an unusual moth they had found in the garden. When playing a computer game about transport with grandson Sam, Hazel linked information on steamships with a storybook they had already read together. Games involving literacy and numeracy were another source of joint learning; Sahil showed his grandmother Razia how to play Solitaire on the computer.

Computer activities show a greater balance between child and grandparent involvement

Grandparents were often introduced to computer activities through the expertise of their grandchildren. At the same time, young children needed the support of their grandparents to structure the learning event, maintain concentration and accomplish tasks relying on linguistic and cultural knowledge. When the grandparents of Steven, Anayah, Amani, Abida and Anayat had their first opportunity to work with their grandchildren on the laptop provided by the research project, they let the children take the central role of operating the mouse and using the keyboard. The grandparents encouraged exploration, made suggestions for what to do next, and helped with spelling.

Hazel, who had her own computer, still deferred to grandson Sam when encountering a new computer game at his house (Sam pointed out 'You never seen Dynamo have you?'), but Sam then needed her help to navigate through the activity. Grand-daughter Lizzie was ready with the keyboard to type in a search item on 'Google' before Hazel had realised this was the next step. The combination of input from older and younger participants enabled both to profit from this powerful learning tool.

The computer becomes a 'third participant' in the learning interaction

The contribution of the computer as participant was highlighted during the use of interactive games or the worldwide web, such as when Hazel and grandson Sam played 'Dynamo', and Hazel and Lizzie worked on the internet.

Rhythm of event is set by computer responses
While waiting for the 'Dynamo' game to set up, Sam and his grandmother chatted. Their attention was drawn back to the screen when pictures started to move across it. Their talk about each type of aeroplane was structured by each new image appearing on the screen.

Action and noise of computer evoke 'talkback' to screen
As the computer was connecting to the internet, Hazel imitated the noise with Lizzie, saying 'it goes mmm'. When the image of a car appeared on screen for the Dynamo

game, Sam responded: 'brm brm chik chik', and he and Hazel made suitable noises when a train appeared.

Computer interaction takes precedence over other interaction

Events on screen were so compelling that external verbal gambits were ignored. Would-be communicators had to resort to action and the visual mode to compete with the interactive images. When Hazel was playing Dynamo with Sam, Lizzie finally elicited a response from her grandmother at the third time of asking by waving a sheet of paper in front of her. Once it was Lizzie's turn on the computer, Sam only regained Hazel's attention by placing his finger in front of her with a flashing ring on it, and hailing her loudly several times.

Emergence of information is a 'revelation'

The activity of the computer or printer/copier evoked an excited response from the children. Lizzie waited eagerly for a copy to emerge from the machine, even though she knew what the original looked like, and she jumped out of her seat to see a print-out from the internet, saying: 'I always jump up when I hear it print'.

Whilst computers are a cultural tool opening a new world of learning for younger and older generations, their use also changes the nature of social interaction. Sahil's grandmother Razia commented of her experience playing 'Solitaire' on the computer: 'I really found it fascinating….we used to play cards together sitting around a table laughing and talking, but now everything is on the computer'.

Meeting objectives 1-4

The above results demonstrate reciprocity of teaching and learning between children and grandparents from different cultural backgrounds (Objective 1), revealing similar aspects in all the families: mutuality of the learning relationship, grandparents passing on linguistic and cultural heritage, and children offering new knowledge to the older generation. However, the detail of the intergenerational exchange differs according to each family's linguistic and cultural background.

With regard to the further potential of intergenerational exchange (Objective 2), our research suggests implications for educational practice. Schools need to be aware of the special relationship between children and grandparents and how this contributes to learning at home. Teachers can build links with grandparents by inviting them into school to share their knowledge and experience. When involving grandparents in family learning initiatives, value must be given to their existing expertise.

Our findings extend theories of sociocultural learning (Objective 3) by highlighting the unique learning relationship of grandparents and grandchildren, to which each generation brings particular knowledge and skills. 'Funds of knowledge' are thus held by both generations rather than by adults only, and 'prolepsis', the handing down of experience from the older generation, now involves adaptation to the input of very young children. 'Synergy' between grandparents and grandchildren is mediated

through touch and gaze as well as verbally, as participants blend or 'syncretise' their respective knowledge to produce new forms of linguistic and cultural learning.

Finally, examining the role of the computer in intergenerational learning (Objective 4) has highlighted its potential as a cultural tool encouraging interactivity and exploration of knowledge, made accessible to both generations by mutual collaboration.

Activities

With users:
Our Grandparents' Fair at Hermitage School in November 2004 (Appendix IX) enabled teachers and representatives of LEAs and family learning organisations to increase their understanding of intergenerational learning. Meanwhile, grandparents had the opportunity to try out the school computer suite, and further ICT sessions for grandparents are planned. This event addressed Objective 5: to facilitate family involvement in children's learning, and to facilitate lifelong learning through intergenerational involvement in computer tasks

With the academic community:

Seminars and conference papers include:

European Framework 5 Network on Grandparenthood (Waassenaar, March 03; Madrid, October 03; Paris, October 04)

ESRC Language Brokering Seminar Series (October 03, February 04, June 04)

CIIMU International Seminar, Barcelona (January 04)

Pennsylvania Ethnography Forum (March 04)

Sociolinguistics Symposium 15, Newcastle (April 04)

Participation, Inclusion and Equity Research (PIER) Network Seminar on 'Communities Learning', Stirling (May 04)

Joint meetings with:

Martin Hughes and research team, ESRC Home-School Knowledge Exchange project, Bristol (March 04)

Susi Long and Dinah Volk, US editors of Many Pathways to Literacy, Goldsmiths (November 04)

Outputs

'Children and their grandparents at home: a mutually supportive context for learning and linguistic development'. To appear in *English Quarterly*, an international journal based in Canada.

'The role of grandparents in children's learning'. *Primary Practice*, December 2004
'Gaining a foothold: grandparents' contribution to children's early learning in Bangladeshi families in East London'. To appear in proceedings of the seminar 'Between diversity and inequality: children's experiences of life and schooling in multicultural Europe' (Barcelona, January 2004).

Impacts

Training on videodata analysis for researchers on project 'Vivre demain au Luxembourg', Luxembourg University (October 04)

Presentation at ESRC Multilingual Europe Seminar Series, Goldsmiths (November 04) attended by practitioners and researchers from UK and Europe

Participation during 2003/04 in NALDIC Special Interest group for EAL teachers running family learning courses

Grandparents' Fair was attended by local papers *East End Life* and *Tower Hamlets Recorder*. Contacts were made with *Daily Express*, *TES* and Radio 5 Live for future features.

The Basic Skills Agency has invited us to place materials on their website for family learning practitioners. We are also contributing to the TTA *Multiverse* website for teacher education on diversity and achievement.

Future research priorities

We are planning a larger project on 'Family participation in learning', linking our findings with those of previous ESRC projects on children's learning with parents and siblings, and moving on to investigate the dynamics of the whole family as a learning resource.

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Cole, M. (1996) *Cultural psychology: a once and future discipline*. Cambridge, Mass: Harvard UP.

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