

# Tamariki's Promotion of Play and its Connection to the Ministry of Education Curriculum

Bob Gibbons

This paper was presented at the International Democratic Education Conference, Sydney, Australia, 14 July 2006.

## ABSTRACT

The purpose of this paper is to report on observations of a group of Tamariki boys' play and to investigate the extent to which this play fulfils both the Tamariki philosophy and aspects of the Ministry of Education curriculum.

## BACKGROUND TO THE STUDY

Tamariki School was established in Christchurch, New Zealand in 1967 by a group of parents dissatisfied with aspects of the established teaching theory and practice. They were particularly concerned about emotional and social growth and self directed learning. Tamariki is now an integrated state primary school with a Special Character agreement that is binding on both the school and the government. The Special Character statement has two aims and eight main areas of emphasis. ( A copy of the Special Character statement is included in the appendix ) This means that we get the same funding as state schools along with three yearly inspections by educational review officers<sup>1</sup>. A major and reoccurring issue arising from these visits is that of curriculum coverage.

Our children are free to choose each day whether they attend classes or spend the day playing. No child spends all day doing classes and many children spend all day playing. Most children attend some classes by choice. It is possible for a child to spend years playing. However, children are expected to come to classes every day in the last two years at school in preparation for high school. The school sees literacy and numeracy as the major areas of formal learning. Any other topics covered are largely due to directions coming from the children. That is, the children ask for a class about a topic that they are interested in.

When the review officers check the children's records they point out that the children have not uniformly covered the curriculum as set out by the Ministry of Education. Our response to this is at various levels. The primary one is to point out that since the school as its very foundation has the stated aim of placing learning under the child's control, this is not surprising. The statement of Special Character, paragraph four, states that, 'The child's learning is to a very great extent under its own control. In this way it can genuinely advance at its own pace in response to its unique developmental sequence..... The child's learning belongs to itself, and it is responsible to itself, not its teacher for its learning.'

A secondary response is to claim that the children cover areas of the curriculum during their extensive play. This view is usually dismissed by the review officers because it lacks evidence. This is what prompted this present research.

As a teacher at Tamariki it is part of my job to keep records of children's progress. Because paragraph five of our Special Character rejects norm-referenced tests and examinations, we write learning stories and often take photos to support these. The activities are then linked to curriculum objectives. While doing one such learning story I took photos and observations of a group of boys who took the hose to the top of the dirt mound and let the water run down the side of the mound. The dirt mound is part of the playground and is a substantial pile of dirt about two and a half metres high. To my surprise the same group continued this activity on and off over the space of about a month. This report is the result of my observations of the group during this time using photos and notes, and links the children's play to curriculum objectives. The group was made up of six year three boys with the occasional inclusion of older boys.

## RESEARCH QUESTION AND AIM

What is the value of play across the two contexts of Tamariki School's philosophy and mode of operating and the curriculum as set out by the Ministry of Education?

The aim is to investigate the connection between children's play under Tamariki's philosophy and the Ministry of Education's curriculum by analysing the observations of a group of Tamariki children who carried out a specific play activity over a period of time.

## DEFINITION OF PLAY

The British study, *The value of Children's Play and Play Provision: a systematic review of the Literature* (2001) defines play as, 'activities which children choose to undertake when not being told what to do by others. The activities are freely chosen, personally directed and may take place with or without adult involvement. Such activities may be undertaken by the child on their own or with peers.'

Johnson, Christie and Wardle (2005) state the following characteristics of play;

- Positive affect. Play is usually fun and enjoyable; it is usually accompanied by smiles and laughter. Even when play is more serious and intense, children still value the activity.
- Nonliterality. Play events are characterised by a play frame that separates the play from everyday experience.....Within this frame, internal reality takes precedence over external reality.
- Intrinsic motivation. The motivation for play comes from within the player, and play activities are usually pursued for their own sake. Play offers its own rewards.
- Process orientation. When children play, their attention focuses on the activity itself rather than on the goals of the activity. In other words, process is more important than product. The lack of pressure to achieve a goal frees children to try many different variations of the activity and is a major reason play tends to be more flexible than product-orientated behaviour.
- Free choice. Free choice is an important element in young children's concept of play. Older children put more emphasis on enjoyment.

## FUNCTIONS OF PLAY

The literature supports three major functions of play. Play promotes imaginativeness and problem solving, it creates and sustains identity and self-expression and it promotes social belonging and bonding between people. The British study quotes analysis to the effect that play is an important part of children's participation in society and that it helps cognitive development. These points are put forward to support the latter statement.

Play is an active form of learning that unites mind, body and spirit.

- Play allows children to consolidate previous learning.
- Play provides the opportunity to practice new skills and functions
- Play allows children to retain their playful attitudes, a learning set which contributes to flexibility in problem solving.
- Play develops aesthetic and creative appreciation
- Play enables them to learn through learning- through curiosity, invention and persistence.
- Play reduces the pressure or tension that otherwise is associated with having to achieve or need to learn.
- Play provides a minimum of risks and penalties for mistakes.

Further work is summarised that gives play an important role in complementing schooling by giving children the chance to review, absorb and give personal meaning to what they have learned. It also develops a general mind set towards problem solving. Play is central to the development of good mental and physical health. It provides exercise, encourages co-ordination and skill development. Play is also helpful in developing resilience to stress. Play offers opportunities for testing boundaries and exploring risk.

Research has linked the vital role play has in the developmental phases of brain development and in promoting cognitive development as well. Research (Shore,1997 ) shows that most of our brain cells and synapses develop before birth and during the first three years. Together these make up our neural network. The synapses in our brain that are used on a regular basis during the first ten years of life through stimulation become permanent; those that are not used are eventually eliminated through a process called terminal synaptogenesis. Furlow (2001 ) quotes Marc Bekoff from the University of Colorado that “ There's enormous cognitive involvement in play.” He points out that play involves complex assessment of playmates and the environment as well as rules and signals. This creates a brain that is more flexible and with greater potential for learning in later life.

## TYPES OF PLAY

The research is confused around the issue of the different genres of play. For the purpose of this study I adopted these genres.

Object exploration—using an object, exploring its uses and effect on other things.

Construction---putting things together to make an assemblage with a function.

Physical activity—movement for the enjoyment of it

Imaginative --- pretend play using objects and, or, roles

## DATA COLLECTION

Data collection was mainly of the passive observer type with the occasional brief participant observer type event as noted in the observations. The dirt mound is next door to the sand pit which in turn is up against the veranda. The veranda has seats against the wall and it is quite natural for people to be sitting there within earshot of those playing on the dirt mound. Notes were taken as well as photographs using a digital camera with a zoom lens. The observations would then be written up as a narrative and placed with the digital photos. I would then write up the curriculum links for the day's activity. The resultant learning stories were placed in the children's progress folders.

I would sometimes leave the veranda and wander over to get a closer look at what the children were doing if there was some small scale intense activity that I could not understand from sitting on the veranda. Also, since I was constantly nearby, the children would invite me from time to time to come and look at what they were doing and to listen to their explanations and thoughts. These were the times when I became a participant observer.

The children noticed my constant attention to their play and asked what I was doing. I explained that I was writing learning stories about their play and was that alright? Since they are used to learning stories they agreed to me doing so. At this stage I thought that these stories might be a useful basis for research but was unsure of how long the play activity would go on for.

## DATA ANALYSIS

At the end of the tenth play session it was obvious that water play on the dirt mound was at an end for the time being. I then decided that the observations were suitable as a basis for research. Since I was investigating the interplay between two different curricula, that of Tamariki School and the Ministry of Education, I would need two different coding systems. The codes are included in appendix two.

What were the distinctive features in the observations that pertained to Tamariki's philosophy and mode of operation? The first was the obvious fact that Tamariki allows unrestricted play time at school. Each play event took place over about a two hour timescale so the entire sequence took about 20 hours.

Tamariki's aims are summarised in the Special Character statement as follows, "To equip each child according to its nature and talents to lead a personally satisfying life, and to be an effective and contributing member of a democratic society." From this I took two themes ...

1 ) children learning according to their own needs in a manner satisfying to themselves.

2 ) children contributing to a democratic society, in this case Tamariki school in the first instance but connected to the wider society.

## CHILDREN LEARNING ACCORDING TO THEIR OWN NEEDS

The Special Character statement supports this aim in four of its eight paragraphs. The first one starts with this, ‘emotional and social growth are regarded as the base for cognitive development and strategies which support these growths have priorities over all other activities.’ If a child is upset or unhappy or is in conflict with others then they will not be giving their learning their total attention and involvement. Play contributes to emotional and social growth and hence to promotion of learning.

Paragraph four states, ‘the child’s learning is to a very great extent under its control. In this way it can genuinely advance at its own pace in response to its unique development sequence...a child always works at its individual level of competence.’ That play is a form of learning is supported by many authors ( New Policy Institute U.K. 2001, Power 2000, Jaipaul L. Roopnarine 2002, Elizabeth Dau 2001, Johnson Christie and Wardle 2005 )

Paragraph five states, ‘the children are encouraged at all times in all areas to compare their work and skills with their own previous achievements and their own goals. Self-examination is constantly fostered and the capacity to use a skill and generalise it is taken as demonstrating its possession. ‘ It is the child who makes the determination as to how useful and successful a learning experience is, not an adult.

Paragraph six is the major statement on play. It states, ‘ Play is regarded as children’s work. By playing with ideas and objects they develop functioning cognitions about their world. The children may and do use all the materials in the school for their own purposes. We require an environment in which unstructured play freely occurs, with access to trees, sand, water, mud and junk materials.’

Paragraph seven states, ‘The children have a very large measure of control over the environment, which the adults at the school recognise as a most important resource for the children’s development in all areas.’

The content of the Special Character statement, especially paragraph six, make it abundantly clear that play is considered of major importance in the learning experienced by the children at Tamariki. This is not to deny the importance of formal learning but a demand that the two are seen as of equal value.

## CHILDREN CONTRIBUTING TO A DEMOCRATIC SOCIETY

Paragraph three states in its entirety, ‘The children are deeply involved in creating and maintaining the social structures by which the school functions. This involves rule-making, and dispute resolution through the mechanism of whole school and small meetings, which, when called, take priority over all other activities. The school rejects punishment as a source of control or a response to inappropriate behaviour.’

Tamariki is a functioning democracy. The children make the rules through the whole school meetings. These can be called at any time by children, teachers or other adults. Everyone present at school must attend, although five year olds can choose to opt out. They are chaired by a child and follow standard committee procedure. One person speaks at a time at the direction of the chairperson. Motions are proposed, discussed and voted on, adults and children have one vote each. Rules can be changed at a later date by the same process. The principal does have the power to make rules about safety without consulting a whole school meeting but this power is used sparingly. Children are thus directly involved in making rules to govern the school society and in changing or amending them. Even the youngest child can chair a whole school meeting if they wish and it surprises me how quickly children become attuned to the process. It obviously involves at the individual level children's abilities to express themselves clearly, to listen carefully, to argue their case, and think about the issues under consideration and to follow the meeting rules.

When conflicts arise small meetings are used to resolve them. Like whole school meetings a child chairs these meetings. It is the chairperson's responsibility to assemble all the people involved. A teacher is also required to be present at a small meeting in case there is a power difference between the children involved due to such things as an age difference or a more powerful personality imposing on a quieter one. Both sides are heard and witnesses can be called. It is up to the chairperson to decide the outcome of the meeting. Often after an issue is aired there is nothing further to be done and the meeting is declared closed. At other times there may be consequence put in place to deal with the issue.

Taking the above considerations as set out in the Special Character statement on learning and experiencing democracy I reflected on the major impressions I gained from the observations. These were...

1 ) the sociability of the group. Although there was the occasional disagreement in the main it was a very amiable group

2 ) the experimental approach to things they were doing. Time and time again they would clearly describe a problem, discuss solutions, decide on one, put it into action and evaluate it.

3 )the level of speaking and listening skills involved in their play

4 ) the intense concentration and focus that the children brought to their play

I developed two sets of codes, one for Tamariki and one for the Ministry of Education's curriculum. These are included in appendix ii.

## ANALYSING THE OBSERVATIONS

The major thrust of the children's play concerned the properties of water and its effect on other materials. On the first day the children were immediately faced with the problem of water's behaviour under pressure. If they turned the tap on far

enough to get a volume adequate for their purpose then the hose would thrash around and not deliver the water where they wanted it at the top of the dirt mound. Discussion followed and a solution was proposed which was put into effect. One child volunteered to go and adjust the water pressure while the others observed the results. The group conclusion was that this was not workable because by the time you reduced the pressure to stop the hose moving there was only a trickle of water coming out. Further discussion took place and a second solution was proposed, that of placing a weight on the end of the hose to hold it down while the tap was adjusted to give a good flow. Various objects were tried but were thrown off by the water pressure. One of the boys found a large rock that was heavy enough to overcome the pressure.

At the end of the day the hose was left out. A small meeting was called by one of the teachers. The rule for the hose is that who ever takes it out controls its use and is responsible for putting it away. The meeting decided that if people didn't put the hose away next time then the people responsible would not be able to use it again. The hose was always put away after this.

Day two presented the group with new problems to do with the behaviour of water. They wanted to work in two groups. This meant that the flow of water had to be divided into two roughly equal streams. The hose fed water into a hollow at the top of the dirt mound. The first group dug a gap in their side of the mound and the water flowed down their side. The second group dug a gap in the opposite side of the hollow and water poured down their side. This robbed the first group of its water and there were shouts of disapproval. All the boys stood around the summit of the dirt mound looking down at the water pouring out of the hollow. There was a great deal of discussion. They could all see how the water was behaving and agreed that persisting with the previous efforts would not get them what they wanted. Eventually one of the boys got a piece of wood and placed it so the stream of water fell onto it in such a way that it split into two separate streams. Once the boys saw the intention of this move they co-operatively dug around the walls of the hollow to improve the water flow in two directions. The boys split up again into their two groups, one on each side of the dirt mound.

They had decided to try and filter the water running down the sides of the mound. One group used a three stage system that used vegetation as the first filter followed by the water flowing through a kitchen sieve and finally into a settling pond. This system was initially successful but failed after a time because fine silt clogged the vegetation and sieve. The other group directed the water into a funnel and then into a settling pond. This group found like the other one that fine silt blocked their system up. They soon abandoned their aim of filtering the water and concentrated on digging out the pond to hold the maximum amount of water so they could release it in one go to flood down the mound.

Day three involved a new problem. The boys formed a watercourse that ended in a dam. The water found the easiest path down a previous bed and this diverted the water from the dam. They solved this by finding a piece of wooden channel and used it as a sluice to bridge the old water bed and direct the water back down to their dam. Two of the boys started to experiment with placing objects at the head of the sluice and observing how fast they travelled. There was a great deal of

discussion, with predictions being made and evaluated and statements made about the outcomes.

These examples of play from three of the daily observations demonstrate the multi-dimensional nature of play in relation to both Tamariki and the ministry's aims. Their play certainly fulfilled Tamariki's aims of children learning according to their own needs and being part of a democratic group and coded for learning by doing, and social play. The same play events were coded for the ministry as physical groups one and two-- social development and movement, science group one—investigating physical phenomena, and English—listening and speaking.

The children took part in activities that encouraged participation, co-operation and negotiation. They used guidelines and practices that contributed to a socially healthy environment. They modified and extended their movement skills according to the play environment. The photos show the children standing, crouching, bending and kneeling while carrying out the activities and there was constant movement as they surveyed each others handiwork and standing around discussing ideas. This also involved them in working alongside others, sharing space and equipment. They spent a lot of time in serious investigation of physical phenomena, in this case water and its effect on other materials. They discovered that water travels the path of least resistance downwards under the influence of gravity. That water when restricted to a narrow aperture exerts pressure resulting in movement unless restrained by sufficient weight and that water always finds its own level. That water erodes soil and carries fine silt that can block up small holes in vegetation, sieves and funnels. That water can move objects at various speeds according to their size, shape and composition. All this discussion, negotiation, observing, giving and receiving instructions and making decisions involved talking clearly in small groups about experience and ideas and attending to other's responses. They also had to listen to and interact with others to clarify understandings. These achievement objectives of the ministry ranged across levels one, two and three. Levels one and two would be appropriate for this age grouping.

Day four was an entirely different genre of play. One of the boys had brought to school a set of army figures and a jeep with a multiple rocket launcher mounted on it. The boys set up the hose to create a river and pretended that the soldiers were going to fire the rockets but that some of the soldiers were on the other side of the river. There was a lot of ongoing discussion amongst the boys about the best place to launch the rockets from, the nature of the terrain and its suitability for the jeep to drive over, and the nature of the river and where it was safest for the soldiers to cross over. Eli was in charge of the jeep. He made such comments as, "it can't go on this steep bit, it would fall over," and, "it won't be able to climb over a rock that big." When I suggested to Eli that he could just brush the rock aside with his hand he replied, "No Bob that's not how you play this game." The other boys were walking their soldiers up and down the bank looking for a safe place to cross. They tried several places and each time released the plastic figures and when the current carried them away the boys returned the figures to the bank with comments about it not being safe because the soldiers would drown. At one point Eli drove the jeep to his side of the bank with the declared intention of driving across to pick up the other soldiers. He chose a site that had flat banks

and made the comment that another site was unsuitable because the jeep would fall over the cliff into the water. He pushed the jeep out into the river until the current started to carry it down stream. "Oh oh" said Eli, "it's not safe we'll get washed away." He reversed the jeep and drove away. Bob suggested that Eli could reduce the flow from the hose so the jeep could cross safely. This was greeted with a silent look of scorn. On the other side of the river the boys had decided to build a bridge so their soldiers could cross. They collected twigs and stones and discussed where to build the bridge. The first site chosen had cliffs on both sides of the river because the boys reasoned that would be safe out of reach of the current. Unfortunately the twigs weren't long enough to bridge the gap. Bob suggested that they go further afield to collect longer sticks. Oscar replied, "We can't do that Bob"

Bob asked, "Why not?"

Solomon states, "Because you have to use the stuff near us." Next they decided to build the bridge in the shallows. Several attempts were unsuccessful as the current washed the twigs away. They collected small stones and used these to anchor the twigs. They ended up with an untidy line of twigs and stones across the river with water going through them. The boys discussed whether this was safe for their soldiers and in the end walked them across the bridge to join the jeep. There then ensued a conversation about where was the best place to position the jeep so as to fire the rockets over the river. This included the necessity of having the jeep on a flat surface and pointing in the right direction and adjusting the angle of the rocket launcher to achieve the desired distance. Finally the rockets were pretended to be fired. The play session then finished.

At first sight I thought this would be a clichéd army make believe game with lots of shooting and strenuous action but this was not so. Rather it was a co-operative problem solving session with quiet concentration and much discussion. Play was based on a realistic interaction with the environment using a constant scale based on the size of the plastic figures. E.g. lumps of dirt that were bigger than the jeep could not be jumped over but had to be driven around. Also the success or otherwise of crossing the river was determined by the actual water flow's effect on the plastic figures. There was a set of rules and a scale of activity that the boys adhered to despite Bob's occasional suggestions.

Although this play was of a different genre from that previously described the coding revealed that it fulfilled much the same objectives as above. Once again the Phys ed, groups one and two—social development and movement and English—listening and speaking were covered. In addition two other codes were applied. The phys ed group three code has to do with creative play. As specified in the curriculum the children responded in their own individual way to a variety of stimuli and worked co-operatively, respecting other's ideas, while maintaining their individual creativity. In addition they practiced a level 6 maths objective, that of applying scale factors for length. The scale appeared to be determined by the size of the plastic figures. Science was covered by the topic Planet Earth, achievement objective one, level two, investigate easily observable physical features and patterns. The children discussed features of their miniature river such as the banks, cliffs and shallows and observed the effects of river depth and current speed. Further, they covered the technology curriculum strand, knowledge and understanding, achievement objective one, ask questions and offer ideas about

the use of every day technologies, in this case the jeep, rocket launcher and bridge building.

Day six exhibited a feature of play that I have seen before on one or two occasions. It is a striking event that seems to occur when the children have established the initial boundaries of their play and are intent on an activity that does not require talking. A child will introduce a topic and this is explored in various ways, one of which is to extrapolate a situation to an extreme. They then move onto another topic. The conversation is often punctuated by long silences while each child gets on with their activity, then another statement is made and discussed. The conversation observed was as follows.

‘As they worked they began to discuss ideas. One such idea was about how your hearing works or in this case how it doesn’t work. One of the boys said, ‘If you can’t hear then the sound can’t have reached your ears and if it can’t reach your head then it can’t reach your brain and you don’t hear. Another boy said, “even if you block your ears you can still hear,” and the other boys agreed. There then ensued a discussion how you could get people banned from rooms or activities. They went over some of the actions that could get you banned and the fact that you would have to call a meeting before this could happen. There was further discussion about whether you would get a warning before getting banned. It ended when someone asked if you could get banned from coming to school. The general consensus was that this would not happen. Next they moved onto the booking system and how that gave people who made the booking certain rights over that activity. Dylan spoke up saying, “this is our booking, you have to ask permission.” The boys agreed but commented that none of them had actually asked to join in the activity that they were presently engaged in but Solomon acknowledged that he hadn’t minded and that if he had, he would have had the right to refuse them. They played and talked all afternoon and at the end of the day put the hose away.

This session was coded for Tamariki as social development and exploring knowledge. The children were exploring facts and experiences already known to them in a playful manner. Not only were they discussing important positive aspects of their school community but they were doing so in a positive social atmosphere.

The codes for the Ministry were phys ed one—social development and English—speaking and listening. As stated above this was a particularly social session both in its atmosphere and the discussion content. They covered important issues about using the rules and acknowledged positive feelings towards others. They expressed themselves clearly and listened and interacted with others to clarify understanding in a group situation.

## DISCUSSION

One of the characteristics of play stated above is that of intrinsic motivation. This motivation can be very powerful. During my observations I was impressed with the focus that the boys brought to their play. They were fully and completely absorbed in their play. For Tamariki this aspect of play is important. We have used learning stories as our major means of recording children’s progress. This method is taken from the Play Centre hand book Te Whariki. As part of assessment Te Whariki looks to observe in children a constellation of connected

actions and attitudes. These are; interest—involvement—learning new skills and / or knowledge—overcoming difficulties—taking responsibility for own learning. This combination of actions and attitudes is a powerful force for successful learning. If any one of these features is missing then learning is less than successful.

In play I observed all these things in operation. The boys were interested in what they were doing. They went beyond that to being actively involved, they did not stand at the edge as spectators but were active in the processes being carried out. They learnt new facts about water and its behaviour. They overcame difficulties in dealing with water and they expected no one else but themselves to mediate their learning. For Tamariki play is of crucial importance in fostering this important and powerful learning set.

These observations of play have been found to have its relevance to employment in later life. Carr quotes a survey of industrial employers by Coviello and Kirk ( 1987 ) that found that the top five skill/abilities desired of science and technology graduates were:

- Ability to learn on the job
- Problem solving skills
- Written communication skills
- Oral communication skills
- Ability to work in a group

This play group were observed and recorded as strongly demonstrating these qualities with the exception of written skills which were not appropriate in this setting.

When we present accounts of children’s play linked to the curriculum to the reviewers, they always come back with the suggestion that we use the topics that arise from the play and plan further lessons based on this. The word motivation is often used. We would deconstruct this term as meaning. “to trick children into doing something that is good for them.”

We do use the information gleaned from such play encounters to further learning but in a very circumspect way. We do not impose suggestions on the children about what they should do next. Rather, further down the track we may refer back to a play incident during a learning interaction where we think there is a connection. It is up to the child validate the connection as we do not always get it right. I have experienced a child telling me, “No Bob, I don’t want to know that stuff” too many times to assume that what I am presenting is what the child needs at the time.

Implicit in the reviewer’s suggestion is the idea that an adult always has to be present for worthwhile learning to take place. We would reject this proposition based on years of observations of children’s learning in the Tamariki setting. Children can learn from other children, children can learn on their own. We would hasten to add that yes, much of learning does need to be mediated by someone with more knowledge and skills than the learner, but would contend that children

learning in concert during play is a very powerful method of learning on a par with adult mediated instruction.

## CONCLUSION

Throughout the ten play sessions both Tamariki's and the Ministry of Education's curricula were well served. Tamariki's aims of children learning according to their own needs and children contributing to a democratic society were clearly met. The ministry's curriculum areas of Physical Education and Health, English and Science were covered in each of the ten sessions and in some depth and at the appropriate levels for the age of the children. Technology and Maths were covered to a lesser degree.

## ACTION PLAN

1 )Offer this research to ERO on the next inspection to inform them on some of the important aspects of play and its relationship to both the ministry's aims and those of Tamariki. This is important as past experience shows that the officers appear unaware of the theoretical and practical aspects of play.

2 ) Both myself and another teacher are doing follow up studies on how our students achieve when they go onto high school.

## REFERENCES

- Carr, Margaret—May, Helen. ( 1993 ) Te Whariki—curriculum papers, Early Childhood Curriculum Project, Waikato University
- Dau, Elizabeth ( 2001) Child's Play, Revisiting play in early childhood settings, MacLennan & Petty
- Docket, Sue & Fleer, Marilyn ( 1999 ) Play and Pedagogy in Early Childhood: Bending the Rules. Harcourt Brace & Company
- Furlow, Bryant ( 2001 ) Plays the Thing.-- New Scientist 9 June 2001 p 28
- Johnson, James E.—Christie, James F.—Wardle, Francis ( 2005 )Play, Development, and Early Education. Pearson Education
- Monighan-Nourot,Patricia-- Scales, Barbara—Van Hoorn, Judith—Almy, Millie ( 1987 ) Looking at Children's Play. Teachers College, Columbia University
- New Policy Institute ( internet October 2005 ) The Value of Children's Play and Play Provision: A Systematic Review of the Literature
- Power, Thomas G. ( 2000 ) Play and Exploration in Children and Animals. Lawrence Erlbaum Associates
- Van Hoorn, Judith—Scales, Barbara—Monighan-Nourot, Patricia—Alward, Kieth Rodriquez. (1999 ) Play at the Centre of Curriculum. Merrill/Prentice Hall

## Appendix ii

### CODES

#### Tamariki codes

1 )LEARNING BY DOING...direct experience during play. This was the major activity

During the observations there were three isolated examples of different types of play. These were imaginative play and action play and exploring knowledge in a playful manner.

2 ) IMAGINATIVE PLAY....'let's pretend', involving scenarios and role play

3 ) ACTION PLAY...play that is usually noisy and involves a lot of large body movements

4 ) EXPLORING KNOWLEDGE...children discussing information that they already have and extending and playing with it verbally often in the manner of thought experiments

5 ) SOCIAL PLAY...co-operative decision making, taking responsibility, following rules, dealing with conflict, attending meetings

#### Ministry of Education codes

There were six areas of the curriculum that covered the activities of the observed group. They were Physical Education And Health, Science, English, Maths and Technology. The curriculum is set out as achievement objectives with broad levels of performance attached to them. The levels for primary school go from one to four. Each code uses more than one achievement objective where appropriate.

1 ) PHYS ED group one...social development

Strand C, relationships with other people, achievement objective #1, level 2  
Take part in activities that encourage participation, co-operation and negotiation by all members

Strand D, healthy communities and environments, a.o. #3, level 2

Students will use simple guidelines and practices that contribute to physical and socially healthy schools and environment.

2 ) PHYS ED group two...movement

Strand B, movement concepts and motor skills, a.o.#3, level 1&2

Modify and extend their movement skills according to the play environment and the equipment used.

Strand C, a.o.#2, level 1

Move alongside others, sharing space and equipment.

3 ) PHYS ED group three...imaginative play

Strand A, personal health and physical development, a.o.#4, level 1  
Respond spontaneously, in their own individual way to a variety of stimuli

Strand C, a.o. # 2 & 3, level 1

Work co-operatively, respecting other's ideas, while maintaining their individual creativity.

4 ) SCIENCE group one...making sense of the physical world

Investigate physical phenomena, achievement objective #1, level 2

5 ) SCIENCE group two...making sense of planet earth

a.o.#1, level 2

investigate easily observable physical features and patterns and consider how the features are affected by people

6 ) TECHNOLOGY... knowledge and understanding

a.o.#1, level 2, ask questions and offer ideas about the use of every day technologies.

7 ) ENGLISH

Oral language: speaking

Achievement objective...interpersonal speaking, level 3

Talk clearly in small groups about experiences, events and ideas, organising material effectively and attending to others' responses

Appendix i

TAMARIKI'S SPECIAL CHARACTER STATEMENT

---