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Textbooks and Teaching Resources: A Case Study from the Early Childhood Classroom – Australia

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Abstract

In 2008, the Australian Federal and State Governments developed new educational goals to support and guide the development of a new Australian National Curriculum, which is to be implemented in 2013 in all Australian educational settings.

As part of this Australian National Curriculum, the early childhood sector is to follow an Early Years Learning Framework (EYLF) that reflects a play based, negotiated curriculum that sharpens the focus of intended learning outcomes in a framework of classroom pedagogy and practice.

This new national curriculum requires major structural reforms in early childhood education which will affect the roles of teachers and families and their expectations of teaching and learning in early childhood education settings. The development of the Early Years Learning Framework, as part of the Australian national curriculum, has presented an opportunity for publishers to produce teaching and learning materials to support the new curriculum and the pedagogy underpinning it.

This paper will explore a case study centred on how early childhood teachers resource their teaching and learning and plan the use of teaching and learning resources. The paper will use two research methodologies to provide data for this case study. The paper will use the TEXTOR observation tool (Walker & Horsley, 2003) to gather data on the resources used in the observed lessons. The case study will also use the Learning Design Sequence (Selander, 2007) framework to explore the planning and learning design processes that the teacher used in the preparation of the unit of the work and the way that the teacher prepared teaching and learning materials to support the teaching and learning plans.

The research focused on methodologies that involved classroom observations and teacher interviews, and provided data on the exploration of the effectiveness of teaching and learning materials used in the early childhood classroom. The results from the study indicated that publisher and teacher consultation is essential to the creation of valuable, relevant, skill based teaching and learning materials that complement the pedagogical approach of the teacher and align with curriculum requirements of the new Australian national curriculum.

Keywords: early childhood education, teachers and learning resources, play based learning, learning design, Australian national curriculum

Changing priorities in EC education

This case study was undertaken to explore the implications of changing priorities in Australian early childhood education.

Similar to developments in the UK, in late 2008, Australian federal and state governments developed new national goals for schooling and early childhood education. Prior to 2008, curriculum had been the constitutional responsibility of Australian state governments. However, a national curriculum in early childhood (EC), primary and secondary education is being developed by the federal government, to be trialled in 2011 and implemented in 2013.

These proposed changes in learning goals and pedagogy have significant implications for both pedagogy, and the types of teaching and learning materials being prepared by the publishing industry to support the new early childhood national curriculum. It seems that some EC educators, however, see the use of textbooks as a means to impart the essential declarative knowledge and skills required to be successful in primary classrooms, to be more important than in the past. This is because it is perceived by some early childhood educators, that textbooks present more formal and explicit teaching and learning strategies and may assist students to enhance results on the new national testing regime introduced in Australian schools as part of the curriculum reform.

These developments in curriculum, national testing and a changing school structure for early childhood education, raises issues of aligning play-based, negotiated curriculum and a national testing regime that is causing teachers to adopt primary teaching pedagogy in early childhood play based settings.

Framing the case study

The case study research was framed through the application of The Learning Design Sequence (LDS) developed by Selander (2007) to the development of teaching and learning resources in an early childhood classroom. The LDS framework was used to explore the way that the teaching and learning resources were used by the teachers as a result of negotiation with the early childhood students. The LDS provided the theoretical framework for exploring the teaching and learning planning sequences explored in the case study (see figure 1). The LDS framed how the teaching and learning resources were planned, constructed, used and developed and then assessed in the classroom

According to Selander (2007) the LDS “is a theoretical map for the purpose of analysing critical incidents in (a creative) learning process, in a process of meaning-

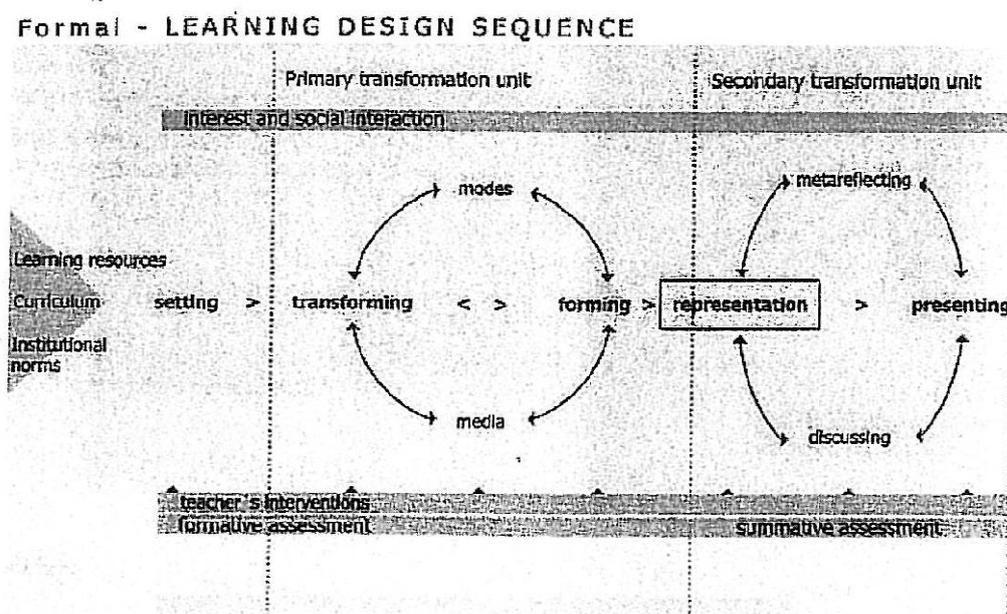
making” (Selander, 2007). The design sequence explains the process used to transform knowledge and learning from the ‘primary transformation unit’ to the ‘secondary transformation unit’. To begin the sequence the teacher creates the setting or environment for the learning to take place, then considers aspects of teaching and learning resources, curriculum requirements and institutional regulations.

The primary transformation unit incorporates the variety of modes (words, gestures and other clues for learning) and media (books, computers, pictures) that are provided by the teacher, from which students make meaning from semiotic clues in the teaching and learning material supplied or gathered. Knowledge is formed or transformed into new knowledge working from what is already known, and can be represented in different forms. For example the students could construct an object, draw or tell a story related to the context for learning. During this process the teacher gauges the students’ interest and interaction, adapts content and resources, and monitors the students’ progress as part of formative assessment strategies.

The secondary transformation unit in LDS model moves to the students discussing their representations of their learning and presenting their learnings to others as part of summative assessment strategies. This component of the model recognises the epistemic agency that learners bring to the learning environment, their construction of meaning and emphasises shaping the learning environment, including the teaching and learning resources in the learning environment. Opportunities for reflection on the teaching and learning that has taken place occur throughout the process for both the teacher and students are a feature of the LDS framework.

The next section of this paper applies the Learning Design Sequence to a case study of an Early Childhood classroom to generate qualitative data on the pedagogical processes at work. In addition, observational data was collected on the use of teaching and learning materials that took place in supporting the learning in the case study classroom

Figure 1 Learning Design Sequence (Selander, 2007)



A case study in the EC classroom

Background to the study

An Australian EC classroom was observed in this study. The participants included the EC teacher, 25 five year old preparatory students and a part-time teacher's aide. The teacher was observed 4 times a week at various times of the day for the 5 week duration of the investigation.

The observation of this classroom provided insight into the planning process, designed with young children, guided and facilitated by an EC teacher. The teacher had over 20 years experience in teaching young children, and had a considerable bank of pedagogical knowledge from which to draw when planning and guiding the learning of the class.

She had completed a number of professional development in-service workshops centred on young children's learning, literacy development, play based learning and inquiry. The teacher had also completed a Master's Degree on the diversity of learning approaches of young children in an early childhood setting.

The EC teacher was interviewed twice, at the beginning and end of the observations, to ascertain the planning and assessment processes used. Observations of the lessons also included collecting the teaching and learning resources, exploring their use in the classroom, and the way that the teacher used them. The first interview occurred prior to the observation of the classroom interactions. This interview with the teacher revealed that she had finished a unit of work (an investigation), previously designed by the students, that focused the content on 'outer space'.

The *setting* (Selander, 2007), or context of the learning, was created by the students, but facilitated by the teacher in the EC classroom. This contrasts to Selander's (2007) LDS framework (see figure 1), where the setting is primarily structured by the teacher who instigates the learning to follow. The teacher used open ended questioning techniques to initiate a teacher led discussion with the students, leaving the learning contexts and content to be shaped by the students' responses. Teaching materials to assist in the initial planning discussions were gathered, including large sheets of paper and pens that the teacher used with the class to brainstorm ideas and create a planning web.

In a primary school classroom, units of work may be completed over a period of up to 8 weeks and focus on particular key learning areas (KLAs) as mandated by the curriculum. These KLAs may overlap, or be taught in isolation for identified periods of a day or week. In comparison, an EC classroom has a totally integrated approach, where learning and teaching the key learning areas related to a topic of interest is negotiated in the classroom. This integrated approach to learning highlights the importance of using appropriate teaching and learning materials that cover the many key learning areas that overlap each day. The EC curriculum defines the skills that are to be embedded in the teaching and learning of the students, but the content is not prescribed.

Teaching and learning strategies: How was the topic initiated?

During a group discussion, the teacher structured open ended questions to enable the students to contribute ideas around the next topic to be explored. One student

responded with “hippies” (a term used by the child’s older brother), whilst another suggested “pippies” (a mollusc found at the local beaches). This promoted an open-ended discussion facilitated by the teacher to establish what was understood by these words. Through teacher questioning in an initiation, response and evaluation sequence it was identified that the students had a limited understanding of what a hippy was; “hippies wear bright clothes and have gardens;” whilst a pippy is a “shell found at the beach”. Using a voting system, the children decided to learn about hippies first; and then move onto pippies. The degree of interest in the topic was evident, with the children claiming ownership of the content choice and subsequent teaching and learning resources, and the teacher designing teaching materials and strategies to satisfy individual learning needs as well as to align with curriculum documents.

Discussions with students centred on the broad understandings of what hippies feel like/sound like/look like. The teacher began to “plant the seed” and guide the learning toward demonstrating understanding and knowledge of this particular topic. Cultural bias was evident from some of the students, along with a low level of awareness of the hippy culture. The assessment possibilities for this topic was discussed at this early stage of planning, with the students, so that students could be involved in the development of how they would show the knowledge and skills they had learned by studying the topic of hippies.

The beginning structure of the modes and media within the LDS was formed through the use of a KWL graphic organiser (what I know, want to know and have learnt) during the setting stage of the sequence with the students. The materials used to promote the learning were teacher designed, based on previous teaching experience and pedagogy. The teacher offered some information about hippies that contributed to prompting further discussion with the class cohort. The teacher gauged that the students were sufficiently interested to continue the discussion, whilst monitoring interest and behaviour levels. The teacher-class discussions provided the setting for the LDS.

An adaptation of the LDS to align it to the EC classroom is at the setting stage, where the teacher-child negotiation of the context of the learning drives the unit of work to follow. Selander’s LDS (2007) can be modified to suit the pedagogy of the EC context, but this is beyond the scope of this paper. The LDS offers the researcher guided stages of lesson and assessment development whilst working through the primary and secondary transformation units.

The other analytical tool that enabled data to be gathered was observations on the use of teaching and learning resources used in the lessons by the teacher and students. It was evident that, over the time that the unit of work (investigation) was studied, a variety of teaching and learning materials were used and supplied from different sources.

Access to text and teaching/learning resources

In the early phase of the investigation the teacher accessed and distributed all material that was then used individually or shared among student peers. These comprised reading materials sourced from the school or local public library. This occurred over 8 lessons.

As the investigation became more focused, students also contributed to the learning by bringing in artefacts and resources from home and other sources, and contributing to the community of practice evident in the classroom. This took another 8 lessons. The teacher designed worksheets that were photocopied and featured literacy and numeracy concepts to enhance the limited teaching and learning resources that were available from commercial publishers. Lessons in which teaching and learning resources were accessed were analysed to ascertain their source, access by teacher and students and use. An early feature of the observations was the degree to which the teacher used photocopied materials from a variety of sources.

How were the materials used by students and teacher?

The students' level of pre-literate or early reading ability determined the level of guided and independent reading activities. It was observed that focused teaching and learning, coupled with explicit scaffolding, promoted the variety of methods used to allow students to read any texts that were either published or teacher designed and produced and used in the teaching and learning sequences. These included the teacher reading to the class, students 'reading' or looking at fiction books, students discussing with peers aspects of the limited numbers of reference books available.

The teacher sourced craft materials (paper, pens, ribbon and recycled boxes) were used as stimuli for student learning and to enhance the teacher designed worksheets by allowing students the opportunity to manipulate 'concrete' materials before completing numeracy or literacy based worksheets photocopied for each student. Students' literacy knowledge was scaffolded using early writing templates that were implemented after reading a focusing text or using manipulative objects to stimulate discussion and planning opportunities.

Selander's LDS model framed the researcher's view of the sequence of the pedagogical approach by the EC teacher. The case study enabled the researcher to see the teaching process as a sequence.

What was the teacher's purpose in using the texts?

The texts were used as a learning resource. The teacher reported a number of purposes in using the teaching and learning materials. These included; knowledge sources for activities (60% of use time); sources of explorations of linguistics and genre and language conventions (20%); independent reading sources for student use (10%); collaborative reading – especially for enjoyment through teacher led shared reading (10%). The purposes inferred by the teacher in interviews were validated through observations. The experience of the teacher was evident when teaching and learning materials were adapted and linked from published sources to meet the learning needs of this class. Adaptations included; substitution of language to make the source materials more easily understandable for students (20%); production of collages which included collections from multiple sources (20%); planning and structuring building with tactile cardboard materials (40%); and rewriting through shared writing experiences.

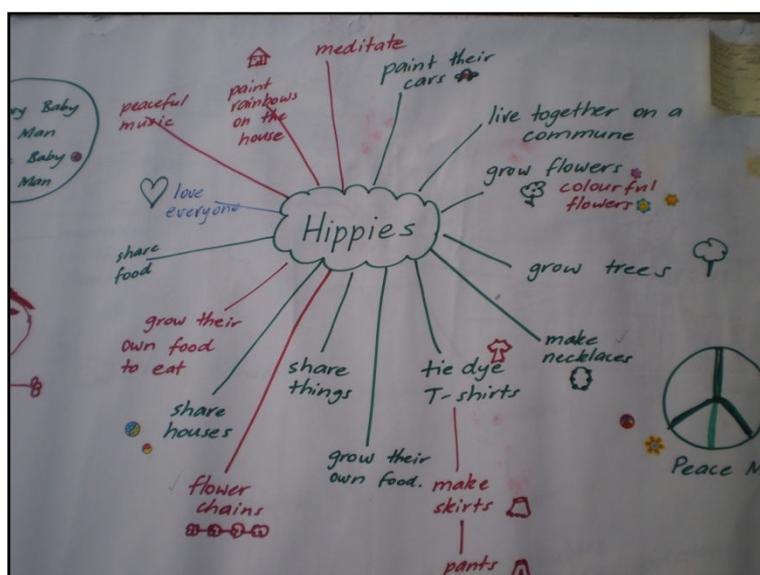
As the teacher progressed the learning to incorporate science concepts, the availability of published teaching and learning materials related to the topic became more accessible (4 science lessons related to plant growing and monitoring were accessed from Primary Connections; a major publication for teachers prepared by

the Australian Academy of Science, and written for primary students) due to the content matter moving toward mainstream KLA (science) material.

How did students use texts and teaching and learning materials?

The teacher instigated brainstorming to produce a planning web, incorporating student dictated ideas to demonstrate learning. Modelled and shared writing strategies and quick drawings catered to the literacy level of the students (see Figure 2). This approach provided joint construction of literacy and subject meaning – and is the preferred approach in the early childhood classroom.

Figure 2 planning web for hippies



Forming and representing knowledge learnt

The students continued suggesting different methods that could be used to contribute to the new learning focus of the classroom. It was suggested that bright paintings would decorate the classroom to complement the learning that “hippies like bright colours.” The teacher demonstrated the drawing of a peace symbol, and many students chose to include this in the classroom paintings. Language commonly attributed to hippies was introduced and built upon by the students (eg groovy baby, peace man, cool man).

It appeared that the students enjoyed using this language in the play experiences that followed, which included the design and creation of paper gardens. The teacher built upon this over the next 4 to 5 weeks by planting flower and vegetable seedlings with the students. The monitoring of the plants became a science and mathematical project, with the developing plants being drawn to indicate plant growth over the following days. A teacher designed recording chart was implemented, based on an example from a published teaching and learning textbook. The teacher assisted the students to make a watering roster to care for the plants. The real-life learning goal of this project was to grow vegetables and flowers that could be used in the class “Hippy Show” that would showcase the learning to parents.

The students knowledge was being transformed, using a variety of modes and media as used throughout the unit of work, and drawn from new discussions and tasks, with

the teacher implementing them through the class pedagogy. A key aspect of this was the use of a wide variety of media that reflect a multimodality of media modes. However, unlike secondary classroom research; each media was heavily scaffolded by the teacher, who encouraged to the students to explore different ways of representing the knowledge that they were learning.

Representation of learning occurred in a variety of learning contexts throughout the classroom, giving rise to meta-reflection on the learning that occurred, discussion of ongoing tasks and the presentation of new understanding and knowledge. The students' learning was moving from the primary transformation unit to the secondary transformation unit.

Informal and formal methods of data gathering were used to collect formative, summative and diagnostic information from the students. This assessment spanned the primary and secondary transformation unit supported by teacher interventions. The teacher offered explanations of tasks or redirected children's discussion contributions to an achievable project or task.

The teacher continually recorded the evolution of the project with the use of a digital camera, web cam recordings, photo stories, planning webs and reflection notes to inform future planning. Comments and interactions between children, anecdotal observations and notes made by the teacher and teacher's aide were recorded by the teacher. Parent comments, work samples, teacher designed checklists focusing on expected outcomes and the general climate of the classroom all combined to pave the way for future negotiation and planning, with consideration given to the children's changing interests and developing skills.

How did the teacher modify teaching and learning materials?

The teacher identified that appropriate internet resources for young children were non-existent for this topic of investigation. This necessitated the sanitising of factual material and pictures found on the internet. The teacher managed this by previewing web page content prior to class viewing. Information that accompanied the internet pictures was not read to the students, but was summarised and linked with existing prior knowledge. Information resources outside of the web were not prevalent, with only limited numbers of books or posters available from the school and public libraries. Fiction and non-fiction books that loosely linked to the topic were used, with the teacher elaborating on the content to make links to the current teaching and learning foci. This approach links to the **teacher interventions** outlined in the LDS (Selander, 2007) to ensure that teaching and learning materials are relevant and appropriate to the students.

How were teaching and learning materials used in the classroom?

Classroom resources of paint, paper, collage material and glue were available and were used by the children to design, plan and create props, signs and resources for the Hippy Show.

A variety of modes and media were incorporated to extend and refine the class knowledge. The semiotic signs for meaning making were visible, with all children participating in role play experiences, searching for knowledge, using new vocabulary in everyday experiences.

To offer examples of hippy life to the children it became necessary to rely on parent information and memorabilia from the 1960s. The teacher's colleagues from other teaching year levels also became involved, offering samples of tie dyed clothing and suggestions about the availability of the dye, beads and other hippy related articles. The children contributed to the growing bank of knowledge with the support of the parents. Textbooks were used for reference when learning how to tie-dye t-shirts. Skilled and knowledgeable parents were used as a resource for learning to supplement the text materials that described the tie-dying process.

The community of practice that became evident during the Learning Design Sequence enhanced the learning within the classroom and wider community. The varied forms of social communication that occurred during formal and informal discussions, role play situations and peer conversations indicated the learning that was taking place. Selander (2007) supports these communication methods by commenting on the new learning taking place when activities are completed without too much effort – using new terminology, problem solving, using resources or equipment in a new way, gathering meaning from textbooks or digitally. The way children represent their learning is a good starting point for reflection. “Productive reflections” are referred to by Selander (2007) and were used to demonstrate the meta-learning that occurred, and gave opportunity for the teacher to assess the learning that took place after the reflection of individual students’ work in relation to their peers. These reflections inform the continuation of the learning experiences negotiated between student and teacher.

All class members were engaged in the learning taking place and there was a buzz of excitement within the classroom, as children were engaged in learning and demonstrating knowledge. As the curriculum unfolded, individual children demonstrated hidden talents related to various tasks. Some children demonstrated advanced leadership skills, sharing abilities, creative problem solving strategies, communication skills, development of fine and gross motor skills and flexibility in the learning environment. These skills are inherent in a play based, negotiated EC curriculum. These attributes are considered highly important for the achievement of success at school and beyond. Although the LDS was designed for older students, it became clear that the pedagogy of the EC teacher could be seen to follow the sequence of learning with some variation to the setting, as described previously.

What are the implications for homework in the EC setting?

The unsolicited participation in homework activities by the students became evident. Over the 5 observation weeks, it was noted that the students researched at home and brought to school artefacts and information supplied by parents, extended family or friends (15 of the 25 students). This was instigated by the students, who then shared their developing knowledge with peers in an oral language session at school. This self directed learning encouraged the design of teaching and learning materials by students and the teacher.

It was evident that parents became the primary sources of after school hours teaching (ie homework) to supply artefacts and stimulate conversation and discussion about the hippy topic studied at school. Textbooks were not the primary source of information for homework tasks that developed from class discussions.

Teaching and learning resources in the context of play based early childhood curriculum.

The development of teaching and learning resources to support the new Australian curriculum in early childhood education has been problematic due to the emphasis that publishers have previously placed on supporting primary and secondary curricula.

The Australian Curriculum and Reporting Authority (ACARA) plans to support the implementation of the new early childhood curriculum with a dynamic curriculum digital education resource repository, by providing online access to teaching and learning resources for early childhood, primary and secondary teachers and students. The curriculum will be provided online and hyperlinked to teaching and learning resources, sample units of work and teacher reference material that will be regularly updated. These extra resources were not available in the initial trials of the new curriculum, but are expected to be trialled prior to the first year of its implementation in 2013.

The development of the Early Years Learning Framework (EYLF) presented an opportunity for publishers to develop teaching and learning materials, specifically developed to support the new curriculum and its underpinning pedagogy, to meet the learning needs of early childhood education teachers and students. The provision of such teaching and learning resources will be an important factor in the successful implementation of the play based national curriculum and will assist teachers to plan and implement new approaches required by curriculum initiatives.

However, in their initial response to this opportunity, publishers have tended to adapt and modify existing primary materials in an attempt to deliver resources appropriate for the new EYLF initiatives, the Australian curriculum and early childhood teachers.

The teaching and learning materials adapted by publishers from primary materials are often inappropriate for pre-literate, young children. To be effective, these teaching and learning materials must be developed to align with the play based teaching and learning pedagogy underpinning the new Australian national curriculum.

Early childhood teachers espouse the belief that the understanding of literacy, maths, social skills and problem solving and physical understanding are taking place concurrently in a play based learning environment. The difficulty occurs when EC teachers feel the need to demonstrate this to sceptical parents and administrators, who see this approach as less oriented toward formal learning opportunities than focused teaching and learning experiences typically seen in primary classrooms.

For most EC education practitioners, the use of textbooks in a play based environment is seen as a complement to the learning that is already occurring, rather than a replacement for it.

What is the role of teaching and learning materials in the EC classroom?

In a play-based, negotiated curriculum planning is conducted with input from the children in the classroom. This planning informs the subsequent development of the unit of work. Consequently, it is very difficult to develop teaching and learning materials for a play based curriculum from a process that emerges as the interests of the children become evident through classroom dialogue.

It is suggested here that prefabricated teaching and learning materials can be developed in a constructivist way to be used as a springboard for a teacher and student negotiated, play-based curriculum. Colleagues, publishers and parents sometimes are unaware that textbooks can be developed to provide multiple pathways that will support constructivist based learning, or to provide multiple resources that meet the needs of learning that is driven by questioning and investigation; and that both teachers and students are involved in the process. This is essentially an inquiry-based pedagogy that underpins the negotiated learning in EC classrooms. However, the literature indicates that teachers mediate all prefabricated teaching and learning materials (Walker & Horsley, 2006; Zikarova 2003; Sartor, 2004). As well, teachers often improvise and design their own teaching and learning materials, such as worksheets, to suit cohorts and learning requirements.

In EC education, some handwriting books are used to promote the correct formation of letters, but again, adaptations may need to be made for use in the context of the play situation; otherwise very artificial learning experiences, with no relevance to the topic, are the result. In addition, if the texts contain material that is not of interest to the students, they may become disengaged from learning. In order to maintain student engagement, a negotiated curriculum ensures that students have ownership of their learning and are more likely to invest emotional and cognitive interest in it.

In this case study the teacher demonstrated three ways of using textbooks; as knowledge sources and resources; as activity sources and resources; and as extension resources. Teachers or students may refer to textbooks to supplement their own knowledge base in order to promote higher order thinking, using open ended questioning techniques. Declarative and procedural knowledge can be extended when teaching and learning materials are adapted by the teacher to meet the needs of the learner.

Textbook pedagogy?

Walker and Horsley, (2006) identified textbook pedagogy as the process of linking aspects of the access, use and characteristics of texts that afford or constrain learning. The research in this paper centres on an EC environment where the play based, negotiated curriculum dominates the evaluation, selection, access and use of teaching and learning materials and resources. Previously, almost all research focusing on the use of teaching and learning materials has been conducted in primary and secondary school learning environments.

A range of current teaching and learning materials in early childhood have been designed to incorporate collaboration and shared inquiry into their development, and they reflect this approach to student learning. A constructivist approach to learning in the design of teaching and learning materials is also evident in many teaching resources. There are two main pedagogical approaches evident in primary school texts; expository (Walker & Horsley 2006), where the text gives information about specific topics and the students then use them for research; and collaborative promoting shared inquiry and cooperative learning. Typically collaborative materials provide multiple pathways of knowledge construction, and promote self regulated, independent learning.

These different approaches to the design of learning and the design of teaching and learning materials imply different roles for teachers, learners and learning materials during the learning process.

The use of both kinds of texts was evident in the EC classroom in this study. The teacher became a facilitator, questioner and an activator of knowledge, and collaborated with the students to negotiate the content to be studied. Prior knowledge is used to scaffold learning and link the new content matter, forming new knowledge and understandings.

Conclusions

The case study revealed that there were multiple approaches used to support the learning through the use of:

- published material (very limited on this topic of investigation) sourced from the school or public library (15 lessons used mainly fiction books that loosely linked to the topic)
- teacher designed worksheets photocopied for individual use and focusing on literacy and numeracy concepts (8 lessons)
- graphic organisers used to plan, assess and reflect on planning and activities (daily)
- internet information and pictures adapted or read by the teacher to pre-literate or early literate children (6 lessons)
- internet communications to school administration and parents, dictated by the students and prepared by the teacher (3 lessons)
- verbal information sourced from colleagues, parents and community members (6 lessons)

Due to the scarcity of appropriate and related teaching and learning resources that were commercially produced and targeted at the hippy context, the teacher found it necessary to adapt or invent teaching and learning resources to support the classroom topic and the play based way of teaching.

In this case study, the LDS (Selander, 2007) performed the role of an overarching framework to explore and explain the teaching and learning processes of the students. After observations of the teaching pedagogy it became clear that, although the teacher followed the sequence of learning that is explained in the LDS, the sequence was woven through the 5 weeks of the unit of study. Different modes and media were used at various stages in the teaching and learning process to redefine learning or highlight points of particular interest to the children. Children were encouraged to represent their learning at all points of the learning, with discussions dominating the student-teacher negotiations of learning content.

To promote a play based curriculum and pedagogy, experienced teachers have the ability to instil confidence in a young child to create his or her teaching and learning materials based on their current learning environment. It could be argued that the most important finding from this study is the flexibility and adaptability shown by the

teacher when designing teaching and learning materials to suit the child centred context for learning. The number of photocopied literacy and numeracy worksheets designed by the teacher indicates the considerable lengths to which she went to establish related teaching and learning materials and to mediate prefabricated and material designed for other purposes.

Commercial or web based texts were predominantly used as a basis for “constructive student learning activities and cooperative learning” (Horsley & Walker, 2010). Exercises or activities were not photocopied from any published teaching and learning materials, but were designed by the teacher to deliver the skills and knowledge required to enhance student learning.

Published texts were used in a variety of ways by the expert teacher in each lesson observed. She varied her approach from reading from text, to including students in shared reading experiences, to writing experiences based on the content of a text, to dissection of the types of texts and their uses. She used texts as the objects of group focus, for individual viewing and stimulation of ideas, as teacher references and as a basis for designing student and content appropriate worksheets.

Students’ learning was constantly scaffolded through the use of textbooks and teaching and learning resources by the teacher’s clever use of materials. Although there were no commercial materials specifically designed for this negotiated curriculum content, the teacher and students found these materials important to the process of learning.

Through the teacher’s scaffolding and by posing problems, the students developed play sequences that required specific teaching resources that were not commercially available and had to be made or adapted to suit the context for learning. The expert teacher ensured the availability of craft and ‘junk’ materials to facilitate creative problem solving and teaching and learning resources to facilitate the play experiences in the curriculum.

The teacher, textbooks and teaching and learning resources stimulated learning and acted as activators and facilitators of the acquisition of new knowledge. This is evidenced in the quality of completed activities and the active participation of the students in the “Hippy Show,” the culmination of the unit of work that demonstrated to parents and carers the knowledge learnt by the students.

What are the implications of the study?

The effective use of textbooks in the EC classroom requires that textbook tasks/activities are open ended, focusing on skills rather than predetermined content. For example, a textbook that suggests the manipulation of objects to satisfy a predetermined outcome, that could be adapted to suit the current context for learning, would be useful to a teacher when designing learning experiences. This would enable the development of skill sets appropriate to a variety of content.

If textbooks are to be used in EC classrooms, the underlying pedagogy of the texts must be examined. The use of complex textbooks necessitates that the teacher leads the lesson as an instructor to guide pre-literate children through the tasks to be completed. With so much teacher input, the value of the play based pedagogy is blurred. The EC play-based pedagogy, that is the focus of the EYLF, may suffer if

the focus for teaching lies in a textbook. Rather than establishing and developing social skills and confidence as outlined in the EYLF, children will be completing structured and focused learning tasks led by the teacher.

The Learning Design Sequence, developed by Selander (2007) as a tool to analyse the sequence of learning and knowledge transformation, occurs in EC classrooms when students are engaged in problem solving, gathering information and participating in semiotic activities. It has the potential for adaptation for more effective use in the EC environment to assist in the design of learning experiences in a co-constructed, play based learning environment.

The case study clearly indicates the success of effective, open ended questioning strategies and learning opportunities that can be supplemented with a variety of modes and media.

This research, demonstrates the broad range of learning and teaching that is typical of an early childhood classroom. During the research observation period, it was evident that, as the curriculum unfolded through teacher and student direction, the Learning Design Sequence (Selander, 2007) was present throughout the teaching episodes that were built upon from one day to the next. The sequence supported the design for the learning but also indicated that in an EC classroom the learning is not linear but moves back and forwards between the primary and secondary transformation unit in a cyclical manner.

The children were involved in a variety of contexts for teaching and learning throughout each day, for example, in play situations, in focused teaching and learning situations, in the discipline required in the movement around the classroom or other areas when transitioning, in the investigation of information and problem solving and in relating to real life situations when producing the Hippy Show for an audience.

As indicated earlier, to achieve results in learning it is important that the teacher look at each child holistically and use the Learning Design Sequence to frame teaching environments to support and facilitate each child's learning and development. The use of curriculum materials, teaching and learning resources and the focus on play based learning in the Early Childhood classroom gives the teacher the opportunity to frame and guide young children's learning. The role of teaching and learning materials in the EC classroom is that of a supportive medium to supplement the hands-on, investigative learning that is taking place. This can be achieved whilst implementing the cycle of planning, assessment and reflection to complete the Early Childhood mantra of Plan, Do, Reflect.

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