SCHOOL TRANSITION FROM YEAR 6 TO YEAR 7: A FOCUS ON MATHEMATICS

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Abstract

Moving from primary school (Year 6) to the next stage in schooling (Year 7 intermediate or middle school) can provide challenges for students, teachers, and parents. A study was carried out to investigate these challenges with a focus on mathematics for 65 students from six different urban primary schools in New Zealand. Qualitative data were collected from school and teacher documents, questionnaires, and interviews pre and post transition. Attention was paid to classroom practices and curriculum continuity, students’ preparedness for the transition, and the kinds of support provided for the students. Students experienced a change in the mathematics classroom from a task-orientated perspective to a performance-orientated perspective. There were commonalities and differences among the students, teachers, and parents about the transition process and in particular preparedness, support, and mathematical practices.
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INTRODUCTION

In the New Zealand setting, students commonly experience three different school transitions. These are from early childhood education services to school at five years of age, Years 6 to 7 at eleven years of age (intermediate, middle, or Years 7-13 school), and Years 8 to 9 at thirteen years of age (intermediate to secondary school). Students experience a variety of changes and challenges with this move from one type of school to another which may cause a drop in motivation in core curricula activity in subjects like mathematics. A body of literature (e.g., Anderson, Jacobs, Schramm, & Splittgerber, 2000; Cox & Kennedy, 2008; Demetriou, Goalen, & Rudduck, 2000; Galton, & Hargreaves, 2002; Jindal-Snape & Foggie, 2008) although not specifically focused on mathematics signals the many challenges which students may encounter at this important time in their schooling. Broadly, these include challenges with changes in school systems, teaching styles, teacher expectations, subject matter, friendships, and possible discontinuities in learning; all factors which may contribute in important ways to students’ possible future disengagement with mathematics. This article examines how a group of students are prepared for, and experience the transition from Years 6 to Years 7 in mathematics. To date there appears to be limited research available which examines and explores the transition practices and processes which best support the successful transition of this specific age group of students in mathematics.

LITERATURE REVIEW

Successful transition is not only important for students’ social and learning trajectories (Noyes, 2006) but also to maintain their motivation to continue to engage with their learning in curricula areas such as mathematics (Athanasiou, & Philippou, 2006). One reason Akos, Shoffner, and Ellis (2007) suggest students lose interest in mathematics is due to the increased focus placed on performance-oriented teaching and learning as students move up the schooling system. This performance orientation emphasises student demonstration of mathematical skills and increased competition at higher levels of the education sector and contrasts with the more task-orientated focus of primary school classrooms. Within a task-orientated focus, emphasis is placed on students working to improve their mathematical competencies (Zanobini & Usai, 2002). In recent times, certainly in New Zealand, primary mathematics classrooms have been strongly orientated towards task-focused teaching and learning through the New Zealand Numeracy Development Projects (NDP) (Ministry of Education, 2008). Within the NDP the students experience learning environments in which clear mathematical learning goals and trajectories are established. These trajectories are designed to increase student competencies in mathematical knowledge and strategies. However, as students move into higher sectors in the New Zealand school system the focus shifts towards more assessment-driven pedagogies in which the students need to demonstrate through a range of performance tasks their mathematical skills and knowledge.
Noyes (2004) describes this shifting emphasis in pedagogy as schools being responsive to political influences within “mathematics learning landscapes” (p. 28). While policy has a broad influence on what happens in mathematics classrooms other more local factors impact on the transition process in individual schools and classrooms. The barriers and enablers to successful transitions vary depending on differing contexts and situations. They involve more than individual students. Teachers (Pietarinen, 2000), parents (Cox & Kennedy, 2008; Mizelle, 2005), and peers, (Wentzel & Caldwell, 1997) all play a key role in the transition process (Jindal-Snape & Foggie, 2008) and may determine whether students are to continue to engage with mathematics.

The practice of *tabula rasa* or fresh start is acknowledged as another key factor in the transition process (Galton, Morrison, & Pell, 2000). This practice means that schools may question the accuracy of the information passed on about students’ previous performances in mathematics and student records may be considered as vague and sometimes misleading. An outcome of this process may cause some students confusion or disengagement with mathematics when they are asked to repeat previous mathematical learning (Bicknell & Hunter, 2011; Hunter & Bicknell, 2009). Nevertheless, as these researchers illustrated, the schools the students transitioned to often prefer to begin again and use their own assessment methods and data. Galton and Hargreaves (2002) raise the question whether, if this is the case, curriculum continuity (for example, in a subject like mathematics) is taken seriously and is an achievable goal.

There is an expectation that schools will prepare students well for schooling in the next stage of the hierarchical educational system (Galton, 2000). In New Zealand, the research has mainly focused on the transition to secondary school (e.g., Cox & Kennedy, 2008; Education Review Office, 2006; Hawk & Hill, 2001; Ward, 2000) and there appears to be little research on the transition of students from Year 6 to 7 and particularly in mathematics. However, much of the findings for the secondary would appear to hold true for the earlier transition. The Education Review Office (ERO) (2006) found that there was a lack of focus on preparing students for the transfer to secondary school. The ERO report stated that for the diverse groups of students, there were “limited or no opportunities to develop awareness of their strengths and abilities” and the students were “at risk of being unprepared for the transition to secondary school” (p. 2). This lack of focus on preparedness by teachers is supported in another New Zealand study. In this study Hawk and Hill (2001) found that many teachers were so focused on curriculum coverage and filling what they perceived as gaps that they did not take the time to prepare students for school transition. However, Anderson and colleagues (2000) argue that students were more likely to experience successful transfers if attention was paid to student preparedness and support, before, during, and after the transfer.

Schools do not have sole responsibility to provide support – friends and family are also a part of the process. When students move from one school to the next, they often join a new peer group, have new teachers, and encounter a more complex social organization. Therefore, it is important that they receive support not just from the school but from significant others particularly as the complexity of mathematical learning increases. Parental involvement and support contributes to a successful transition in core subjects like mathematics (Mizelle,
When parents are involved in the transition process they tend to stay involved with their children throughout secondary school (Mac Iver, 1990). School transition is also associated with an intensification of supportive relationships with school friends (Cantin & Boivin, 2004; Whitton & Perry, 2005). Both the characteristics of the friends and the quality of the friendships affect this school adjustment (Berndt & Keefe, 1995). If a child is having some difficulties with friendships then the transition to a new school may provide opportunities for a new start (Cantin & Boivin, 2004). Research has also shown that friendship, peer acceptance, and group membership has an established link with students’ academic achievements (for example, in the core curriculum subjects like English and Mathematics) (Wentzel & Caldwell, 1997).

The theoretical perspective taken in this study adopts an ecological view suggested by Bronfenbrenner (1979). Taking an ecological view requires that the student’s mathematical development needs to be seen within the context of the systems of relationships which form their environment. This includes all the interactions the student has across the range of people in their personal, social and academic world. In this cultural frame the different social environments are recognised as directly impacting on students as they prepare to make an “ecological transition” (p. 26) across school sectors and make adaptations on multiple levels to the perceived changes in roles and settings they will encounter as they learn and engage interactively in mathematics.

CONTEXT AND METHOD

In this study we address the transition from Year 6 to Year 7 (intermediate or middle school) in New Zealand with a focus on mathematics. A framework developed by Anderson and colleagues (2000) was used to address the following research questions:

(i) To what extent do the systems and structures as they relate to the provision of mathematics education employed at a given sector, reflect the approaches taken at the following sector?
(ii) How do pedagogical provisions, offered at consecutive sectors, influence the mathematical achievement and identities of students?
(iii) How are students prepared for the transition from Years 6 to 7?
(iv) In what ways are students supported in the transition process?

The conceptual framework proposed by Anderson and his colleagues (2000) consisted of three key concepts that influence school transitions. The concepts are: transitional success or failure, preparedness, and support. Transitional success or failure is indicated by grades, post-transitional classroom behaviour, relationships with peers, and academic orientation. Preparedness is multi-dimensional and includes academic preparedness, independence and industriousness, and coping mechanisms. Support may be provided by information systems, parents and siblings, peers and friends, and teachers. These key concepts were adapted and used as a broad frame to examine the influences of school transition, for a group of students in mathematics specifically.
The design of the research involved a collection of data that covered the end of one year and a portion of the next year. Six weeks before the completion of Year 6, 65 students and their teachers (n=6) from six different urban schools in New Zealand were asked to complete questionnaires. In the first phase of the study the students completed a questionnaire that included both open-ended and Likert scale questions. This was supplemented by focus group interviews in each of the six schools. The teachers completed an open-ended questionnaire and participated in semi-structured interviews. Teachers also shared any school documents related to the transition process including assessment data in mathematics. The parents (n=34) completed a Parent Involvement Questionnaire (PIQ) developed by Cai (2003) to assess the level of parental involvement in students’ learning of mathematics. The questionnaire items relate to five roles: motivator, monitor, resource provider, mathematics content adviser, and mathematics learning counsellor.

The students moved in the following year to three large intermediate schools (Years 7 & 8) and one Year 7-10 school. In New Zealand the four term year means that the students have a shortened summer break of five weeks and therefore what is commonly called internationally ‘a summer slide’ would not be anticipated.

All of the intermediate schools and the Year 7-10 School had an on-going relationship with the contributing primary schools. In the second phase of the study, after students had made the transition, semi-structured focus group interviews were held with the students who had completed the Year 6 questionnaire. These interviews were conducted six weeks after the students had begun their Year 7 school year. The parents completed a second questionnaire focusing on their child’s post transition experiences. A semi-structured interview also took place with the four lead mathematics teachers in the intermediate and Year 7-10 School.

To determine the key themes and the commonalities and differences in perceptions about the transition from the multiple sources, all the responses from all the data sources were systematically coded, initially based on Anderson and colleague’s (2000) conceptual framework. This was followed by a second level of coding which examined the themes which emerged across the three target groups. Tables were then created for some of the pattern codes to give a quantitative view of the data from the multiple sources (Cohen, Manion, & Morrison, 2007).

RESULTS

The results have been analysed and presented based on the adaptations made to Anderson et al’s (2000) conceptual framework for understanding and improving school transition success. The three major concepts of transitional success or failure, preparedness, and support are applied in relationship to mathematics.

Transitional Success or Failure

One of the factors contributing to the determinants of transitional success or failure is curriculum continuity and classroom practices. We examined curriculum continuity and

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1 The PIQ is a reliable and valid instrument that has been extensively trialled and revised. (See Cai, 2003; Bicknell, 2009)
classroom practices in mathematics from three perspectives; namely teachers, students, and parents.

Teacher Perspective

The Year 6 teachers reported that their mathematics programme focused mainly on the content strand of number and algebra (between 60-100%) with less emphasis placed therefore, on the other strands which include measurement and geometry, and statistics (Ministry of Education, 2007). In these classrooms the teachers invariably used groupings based on the strategy stages within The New Zealand Number Framework (Ministry of Education, 2008a). One teacher used co-operative groups when teaching new concepts. The usual structure for lessons was a ‘hotspot’ activity (a whole-class knowledge game, sharing of mental strategies to solve problems, or basic facts practice); this was followed by a group rotation with the teacher working with one group whilst the other three groups worked on worksheets, tasks from mathematics resource books, or played games. The lesson concluded with a plenary session where each group reported on what they were doing. Three of the teachers related this plenary session back to the day’s learning intention (they referred to these as WALTs, an acronym commonly used for ‘We Are Learning To…’). Only one of the teachers addressed her learning and teaching approach and the importance of questioning. The teachers did not talk about their use of textbooks or worksheets as a regular part of their programme.

Four of the six teachers used predominantly Individual Knowledge Assessment for Numeracy (IKAN) and Global Strategy Stage (GloSS) assessments from The Numeracy Development Projects. These assessments were used primarily for their summative results and were part of the information shared in the record transfer. Only one teacher used assessment practices that were designed to give formative feedback.

May do a worksheet we mark together and decide what we don’t know/who doesn’t know it (grouping). This may end up in ‘sharing books’ (sample books) for parents – shows progressing and next steps learning. Through conferencing I know what children know

For every school in this study written or electronic Teaching-Assessment-Planning (eTAP) records were prepared by the Year 6 classroom teacher to pass on to the next school. The format varied for every school but the common elements were current reading age or Supplementary Test of Achievement in Reading (STAR) results, Progressive Achievement Test (PAT) results for reading and mathematics, and Numeracy Project data (Numeracy Project Assessment (NUMPA), IKAN, and GloSS), and social and behavioural factors (recorded on a scale). None of the placement forms made provision for the dating of assessment data.

Despite the sharing of records, the Year 7 intermediate teachers described how they conducted their own numeracy and mathematics re-assessments immediately in Term One of the new school year. These assessments included Progressive Achievement Test (PAT), Assessment Tools for Teaching and Learning (asTTle), and Numeracy Project testing
(NUMPA, GloSS, IKAN). Two of the intermediate schools used exactly the same GloSS interview as had been used in Year 6 by the student’s previous primary school. One intermediate school had developed a joint cluster project with their three contributing primary schools which aimed to develop consistency in the transition data. However, despite this initiative, they continued to reassess all their Year 7 students on entry. The Lead Teacher commented:

One thing we have noticed is we cannot believe the data but we have our own tests too…we start again to see what they can do and go from there.

This message was confirmed by all of the intermediate schools in this study. The intermediate school teachers reported that their retesting for numeracy placed many students on lower strategy levels on The Number Framework than that reported in the Year 6 data. They believed that the overall students’ results for the Numeracy Stages were at one or two stages lower than that recorded by the Year 6 teacher. This generalised view further justified their reasons for fresh start practices.

We will just take the fresh start rather than looking at the old data but I guess there would be a way perhaps of not having to do that…if we learnt to trust that the Year 6 teachers had done it properly. But we always feel that we need to start fresh and so we do.

The Year 7 teachers described classroom practices in mathematics that reflected a difference to the Year 6 teachers’ practices. Although students were still grouped for some of their class work, the Year 7 teachers encouraged more independent work. These teachers also placed an emphasis on the content strand of number and regularly used textbooks. There was less use of equipment to support students’ modelling and development of conceptual understandings. The teachers consciously maintained a steady pace to ensure coverage of the mathematics curriculum.

*Student Perspective*

The students consistently described that working in groups and working with the teacher were key components of their mathematics lessons in Year 6. The majority of the students also noted that learning basic facts was a focus of these lessons. Other common practices in their mathematics lessons included working from textbooks and worksheets (in preparation for Year 7), and explaining their strategy solutions. According to the students, homework was not a regular part of their programme in Year 6.

Post transition, the Year 7 students faced challenges and disappointments in their mathematics classes. The students were surprised at the continued emphasis on whole number computations. There was an expectation that the work would be a lot harder and that they would be learning more about fractions. For some students, the increased level of challenge did not manifest. Several students were surprised that they had to remember and were expected to use previously learnt strategies (from Year 6) and talked about the continuing emphasis on strategy development in number.
Well I do find it hard because I have forgotten the strategies that I had to use last year and then there are the new ones this year and it is all confusing and I am still trying to remember them.

The Year 7 group of students described their perception that the quantity of work given that had to be completed “quickly” and an emphasis was placed on more independent work. There was also less opportunity and encouragement by the teacher to ask questions or to learn from mistakes.

We have been doing more maths work like more sheets of maths and more pages in the book and less time.

However, despite the emphasis on independent work, the students spoke positively about still having some opportunities for working in groups. According to the students, this group work provided opportunities to explain and talk about their strategies to others. They believed that they learnt more in this situation compared to working from worksheets and textbooks. Collectively, they expressed some concerns about the quantity (too much) of written work and the fast pace of the lesson content which led to limited time for them to understand and practise their old and new strategies. This also led to less time for question asking and answering, and a fear of getting the wrong answer.

I do not like it [Year 7 mathematics] because you cannot ask questions because the teacher thinks you are not listening and other kids look at you like you are weird.

Parent Perspective

The parents’ roles in their children’s mathematics education at Year 6 included them making statements in the questionnaire which indicated that they saw themselves in the role of being a motivator, monitor, resource provider, and content and learning adviser (see Cai, 2003). The willingness of parents (n=34) to participate in the first phase survey showed their interest and support in their children’s learning and their interest in their impending transition to a new level of schooling. The parents expected the Year 6 teachers to emphasise number, specifically basic facts and computations. The majority of parents wanted their children to enjoy mathematics and experience success so that they would move to the next phase of schooling with confidence. One parent described what she thought would enable a smooth transition:

Basic and fundamental mathematics which will be taught in Year 7 should be taught before transition. This will enable them to enhance their mathematics ability.

However, when questionnaires were sent to the parents six weeks after the students had completed the transition from Year Six to Year Seven the response rate was so low (n=5) and so we cannot draw definitive conclusions from their responses. The only comments from these parents related to curriculum continuity, classroom practices, and the role of homework and worksheets. Homework and worksheets provided parents with some information about their children’s achievement and progress in mathematics but the parents relied upon forthcoming parent interviews for greater insights.
**Preparedness**

Preparedness is the second key concept that influences successful school transition in mathematics. As above this concept is examined from the perspectives of the teachers, students, and parents in relationship to the mathematics preparedness.

**Teacher Perspective**

The Year 6 teachers had some differing perceptions about preparation for the transition in mathematics. The majority of the teachers described the importance of the students holding strong knowledge of their basic facts. The teachers took a task-orientated focus and described an emphasis placed on improving aspects of their students’ competencies across mathematical skills and strands. For example, one teacher described a broad emphasis across the mathematics strands:

> Ensure that they have basic facts ‘down pat’. Lots of exposure to a variety of strategies and problem solving skills. Experience in all maths strands. Above [all] give them the confidence to take risks with their thinking.

Other teachers described a central focus on the teaching of numeracy strategies. They stated that they wanted to ensure that the students had a repertoire of strategies. They also outlined how they wanted the students to have had experience with the written standard algorithms for the four operations before meeting it the next year at the new school level. Other themes the teachers described included ensuring student knowledge of place value and developing a range of problem solving strategies. Some teachers also demonstrated that they were aware of a need to make mathematics relevant to their students’ lives, to developing student confidence to take risks with their thinking, and have the skills and confidence to use textbooks. One teacher specifically focussed on her goal to increase her students’ awareness of their own levels of achievement and weaknesses so they could take shared responsibility in identifying the next steps in their learning. She stated:

> My transition approach is the same with all areas [curriculum]. I ensure the child is aware of their level, what they can do, what their next steps are. Some children take this on board many don’t.

The general focus of the teachers’ preparatory steps was directed towards ensuring that the students had ‘no gaps’; they also reported other aspects of preparedness such as the need to develop independence, industriousness, and coping mechanisms in mathematics.

**Student Perspective**

The students presented their ideas about their preparedness for the transition in a written questionnaire. Table 1 below provides a summary of student responses to the question: ‘How important do you think each of the following are in preparing you to do well in mathematics?’
Table 1. Student Responses to Question 4 (above)

<table>
<thead>
<tr>
<th>Stage of Learning</th>
<th>Extremely important</th>
<th>Very important</th>
<th>Somewhat important</th>
<th>Not important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working in a group with other students</td>
<td>8</td>
<td>37</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>Working alone</td>
<td>15</td>
<td>19</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>Working with the teacher</td>
<td>31</td>
<td>20</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Sharing your ideas in a large group</td>
<td>23</td>
<td>26</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Working from a textbook</td>
<td>13</td>
<td>20</td>
<td>27</td>
<td>5</td>
</tr>
<tr>
<td>Working from a worksheet</td>
<td>7</td>
<td>30</td>
<td>22</td>
<td>6</td>
</tr>
<tr>
<td>Learning using games and activities</td>
<td>20</td>
<td>19</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td>Knowing your basic facts</td>
<td>44</td>
<td>12</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Being able to use a calculator</td>
<td>21</td>
<td>27</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Explaining your strategy solutions</td>
<td>30</td>
<td>25</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Convincing others about your mathematical thinking</td>
<td>17</td>
<td>31</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Writing your own word problems</td>
<td>11</td>
<td>28</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>Learning from your mistakes in mathematics</td>
<td>42</td>
<td>18</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Learning from the mistakes of others</td>
<td>20</td>
<td>27</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Being able to ask for help in mathematics</td>
<td>40</td>
<td>21</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Taking part in competitions</td>
<td>16</td>
<td>24</td>
<td>19</td>
<td>6</td>
</tr>
</tbody>
</table>

Those factors (from Table 1) which related to students’ attitudes towards and ways of participating in mathematics drew the most positive responses. The strongest placed factor ranked by the students as either extremely important or very important was ‘being able to ask for help’ (94%). This was followed closely by ‘learning from your mistakes in mathematics’ (92%) and ‘knowing your basic facts’ (91%). The selection of these factors suggests that the students had a sense of responsibility and autonomy towards themselves as mathematical learners. The second group of responses included: explaining your strategy solutions (85%); working with the teacher (78%); sharing your ideas in a large group (75%); convincing others about your mathematical thinking (74%); learning from the mistakes of others (72%); and working in a group with other students (69%). The selection of these factors by the students reflects a focus on them taking personal responsibility for their mathematical learning and at the same time illustrates the importance the students placed on ways of communicating about, and participating in, mathematics. However, only half of the students believed that working from a worksheet (51%), working alone (52%), and working from a text book (51%) were important in preparing them for mathematics in their next school setting. These three factors more closely represent mathematics learning within performance-orientated settings.
The responses (see Table 1) were triangulated using additional data from an open-ended question in the questionnaire and focus group interviews. The students’ responses provided further evidence that they believed that they needed to improve their mathematical competencies, be able work hard, by themselves, and stay on task without direct teacher supervision. A student commented:

...make sure that I know my basic facts well, know how to do word problems and work well with new people.

Other important aspects of preparedness stated by the students included the ability to work in groups, work with other students, show their ways of thinking (publicly), know how to use different methods and strategies, and learn from mistakes. Other students outlined how they recognised that their current ways of working would change in the next setting. These students identified that part of their preparation required that they worked independently, worked harder, and were prepared for challenges in mathematics. For example one student recorded a need to:

...be prepared for a challenge, new types of working and working with your new teachers and classmates.

The students were asked how they thought their teachers were preparing them mathematically for transition to the next schooling sector. Most of the students stated that they were encouraged by their teachers to work alone and to work from worksheets and text books as specific preparation for Year 7. Accepting greater challenge, taking personal responsibility, and increased homework was also mentioned. As one student stated:

Our teacher challenges us and gives us different work nearly every day and we either get a maths book like a text book or just a sheet and we work off those and each time there are different levels and challenging levels for your group and, like for homework, it will be hard for us and so we do quite hard questions now.

Many students also described how their teachers were focusing on teaching them more numeracy solution strategies (NDP mental strategies) in preparation for what their teachers perceived would be required in the new school. However, despite their perceptions that this aspect was important to their teachers, the students stated that they did not see the learning of multiple strategies as an important part of their preparation for transition.

**Parent Perspective**

The Year 6 parents wanted their children to succeed at the next school level in their mathematics education. This included mastery of basic facts; they saw this as a shared responsibility between the school or teachers and themselves. They also placed importance on coverage of the curriculum and wanted no gaps in their child’s mathematics learning. The parents wanted the mathematics lessons to be targeted at the child’s level with clear progressions.
The parents, like the teachers, recognised a need to develop a range of coping skills as well as a sense of independence and industriousness. These included helping the children to work in a variety of ways: to work from worksheets and textbooks; to work independently; and to work under pressure. One parent stated:

I know he has the ability to grasp new concepts easily, although he hasn’t pushed himself in Year 6, he is quite capable of doing harder work. I feel he will either ‘sink or swim’ depending on how he starts the year [Year 7]. I am hopeful he will do well and am preparing him and myself to get into the next year’s studies as I think he might need help initially to settle into a work routine.

Other aspects raised by the parents included the need for their children to have a positive attitude, self-confidence, and a willingness to ask for help in mathematics. They also identified the importance of listening to the teacher, asking questions, risk-taking, and good work habits including accepting and working towards an increasing workload including homework.

Most of the parents believed that the responsibility for the preparation rested predominantly with the school and teacher. However, they acknowledged that their support and encouragement would help the transition process. When mathematics was valued at home and links made to real life contexts, they believed, their children’s preparedness for the transition was strengthened. Not all parents felt that preparedness had been successful for their children; some had ‘no idea’ about the preparedness and one parent acknowledged concerns. According to four parents, their children had not been prepared to succeed in mathematics in the following year. However, they did not articulate reasons why.

Support

The third concept for successful transition is support from information and others. For the Year 6 students transitioning to Year 7 social emotional support was provided by others such as siblings, friends, and parents although this did not pertain directly to mathematics.

Informational support for the Year 6 students was provided in tangible ways such as information brochures, record sharing, and visits. All six primary schools supported their students in the transition by school visits and written material (prospectus) about the new school’s structure and practices. A senior management representative from all of the intermediate schools visited each of the primary schools to talk with the Year Six teachers. The aim of this visit was for the Year 6 teachers to have an opportunity to talk about specific students such as the gifted and talented students and those with specific learning and behavioural needs. These visits were deemed valuable because teachers shared information about individual students that they were reluctant to put in writing on the placement forms.

Support for students in the transitional process also came from others. These were siblings, friends and peers, and parents. Siblings and whānau [wider family members] helped the process by sharing information about school uniform, first day expectations, school practices, classroom norms including seating and grouping practices, and specific teacher expectations.
My brother has told me all about what the school does and everything that goes on and how the teachers are, so I am not as scared as I was before.

My sister tells me a lot about the teachers and all the different opportunities we can use but I am still a bit nervous about the first day where you just go into the hall and they say what class you are in, but now that I know the teachers it makes it a bit easier.

For most of the students, moving with a friend to the new school assisted a smooth transition. Peers and friends were seen as valuable support especially in the early stages of the move to the new school.

    I think for the first few days it is good to have your friends because if you are scared about it and they are scared about it, you can help them or you they can help you and eventually you start getting new friends and then you can play with both of them.

Many of the parents showed a real sense of commitment towards supporting their children. This was evidenced in discussions related to school choice and the opportunities provided by a new school. The students explained during the focus group interviews at the end of Year 6 the reasons for their choice of school. The most favoured reasons for choosing their new school were because of siblings (27%) or accessibility (27%). Other reasons (given by at least 3 participants) included a choice made in collaboration with parents based on curricular activities, friends, individual student choice (citing computers or music as perceived school strengths), and schools their parents had attended.

**DISCUSSION AND CONCLUSION**

The transition from Year 6 to Year 7 when students often change school sectors in New Zealand is a significant event in students’ educational lives. Successful transition involves careful preparation on the part of management staff, classroom teachers, parents, and students. Pre transition, the teachers, students, and parents in this study considered transition from Year 6 to Year 7 as a necessary *rite de passage* which was generally viewed positively. However, post transition the immediate experiences of some of the students in terms of levels of challenge, pace, time pressures, and the discontinuities they experienced in their learning context may cause their possible loss of motivation to continue to engage in mathematics.

Evidence is provided in this study of the serious approach all the schools took to develop cohesive systems and structures for supporting the students to make the transition in mathematics. Careful attention was given to the transfer of relevant data both in oral and written form. The consistent use of Numeracy Project assessment tools and the schools’ teaching and learning practices premised in the Numeracy Development Project had the potential to support a seamless and successful transition of students from one mathematical system to the next. However, the changes in the learning context and the use of fresh start (Galton & Hargreaves, 2002) interrupted the continuity of the students’ mathematics learning. The mistrust of the numeracy data sent from the primary schools to the next school caused many of the Year 7 intermediate schools to retest. Although the evidence, cited by the Year 7 teachers, about students’ lower achievement levels could be accounted for by both the
early timing of testing the reduction in confidence caused by the transition and a natural hiatus post-transition and post-summer holiday period, it resulted in some negative outcomes. The students reported a delay in their grouping for mathematics, the problems they encountered with issues with levels of challenge (both too hard and too easy), and being re-taught previous learnt numeracy strategies. All these consequences may potentially disrupt the students’ continued interest and motivation to learn mathematics.

Clearly, unspoken assumptions held by the Year 7 teachers towards the validity and reliability of the primary (Year 6) sector assessment data and reports of curriculum coverage caused discontinuities for the transitioning students. The problems with mistrust between sectors are an enduring problem, described in an international study by Galton and his colleagues (2000) more than ten years ago. They suggest that some students disengage from mathematical learning as a result and this appeared possible for some of the students in this study. Adding to the problem are assumptions made by students about the mathematics teaching and content in the next sector. This was evident in this study as the students described their confusion related to learning new or previously learnt numeracy strategies. Given the common landscape (in the form of a national curriculum and national numeracy projects) within the wider political influence (Noyes, 2004) across sectors we suggest that open dialogue with students, teachers, and parents across school sectors could go some way to address these unvoiced assumptions and allay the problems they cause. Students are owed an explanation of what aspects of their learning will continue and provided with reasons for changes in their mathematical learning.

The teachers, students, and parents anticipated some differences in classroom practices in mathematics from primary school to the Year 7 Intermediate or middle school. Most of the anticipated differences were realised and meant that there was a change in the classroom climate. Many of these differences which include increased independence, quantity of work, and an expected faster pace for task completion are linked to what Zanobini and Usai (2002) describe as a change in focus from a task-orientated perspective to a performance orientated mathematics classroom. A shift towards a performance orientated perspective shaped teacher, parent, and to some degree the student’s view of what was needed for preparedness. We can infer that parent understandings of mathematics learning, most likely connects to their own most recent experiences in performance-orientated mathematics classrooms. Therefore, the parents’ and the students’ emphases on the importance of being able to work alone and to ask for help when needed can be understood, given the powerful influence Noyes (2004) suggests parents have on the attitudes of their children. At the same time, these factors and the value placed on mathematical homework by parents and students reflects notions of improving competencies (Zanobini & Usai) and curriculum coverage (Hawk & Hill, 2001) as well as ensuring what Anderson et al., (2000) describe as academic preparedness. Other factors Anderson and his colleagues drew our attention to in their research (independence, industriousness, and coping mechanisms) were also evident in what the teachers and parents considered important for preparedness for transition. It was evident too, that the students after the transition were aware of a shift towards a more individualised and independent form of
learning in mathematics but retained knowledge of the positive outcomes towards more collaborative group work.

There was evidence of a range of orientation practices used to provide support and information for students moving across the school sectors. The students described how visits to the receiving school, information from their siblings, friends, whānau, and their current teacher’s various preparatory strategies which emphasised specific concepts and skills, positively prepared them for the shift. We reiterate what other researchers (e.g., Berndt & Keefe, 1995; Wentzel & Caldwell, 1997) identify; that such support is critically important for students’ academic success in mathematics and needs to be considered carefully.

These findings, albeit in the context of a transition in middle schooling, suggest that there should be a shared understanding and recognition of the part that all stakeholders have in the process. The mathematics curriculum needs to be presented and understood so the progressions across the various sectors are seen as seamless. Differing pedagogical practices need to be respected and understood so that students can be prepared for any change in the learning landscape. Conversations and classroom observations across sectors could strengthen understanding and respect for the changed landscapes to support smooth and positive transitions for all students. In conclusion we use the words of Anderson and colleagues (2000) to caution that without paying attention to supporting a successful transition, the transition may become “the beginning of the end rather than a new beginning” (p. 336).

References


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