

Evaluation of Home–School Partnership: Numeracy

Jonathan Fisher

New Zealand Council for Educational Research

<jonathan.fisher@nzcer.org.nz>

Alex Neill

New Zealand Council for Educational Research

<alex.neill@nzcer.org.nz>

This paper is an evaluation that follows on from the findings of the 2007 exploratory study about Home–School Partnership: Numeracy (HSPN). This evaluation explored the roles of the lead team and the sustainability of the initiative. It included: a survey of principals and lead teachers at 2006 and 2007 HSPN pilot schools; case studies of three HSPN schools; and, at one school, an analysis of student achievement data linked to parent HSPN attendance. This paper discusses three key themes that emerged. One theme centres on the role that the lead parents play in HSPN, the challenges of recruiting lead parents, and the need for further consideration of the training and support needs of these parents. A second theme explores the nature of the partnerships that develop through the HSPN and the processes that support or hinder a partnership in which the skills and expertise of both parties are utilised. Longer-term sustainability is the third area that is discussed. Although many schools did not have the resources to continue the complete HSPN model, the findings suggest that HSPN acted as a catalyst that supported schools to reframe and improve the way they connect with parents.

Introduction

This evaluation of Home–School Partnership: Numeracy (HSPN) follows on from an exploratory study in 2006 (Fisher & Neill, 2007). As with the previous study, this evaluation is formative and seeks to identify features of the HSPN model that schools maintain or adapt and the reasons for this. Other key purposes of this study are to consider the roles of parents and teachers in the partnership and the integration of HSPN into the school programme in the longer term and to identify important components for sustaining parent involvement in their children’s education through partnerships. It is hoped that this study will inform any further development of HSPN.

The HSPN model is intended to be more than a parent information evening about mathematics. Its purpose is: to encourage parents to recognise their importance in their children’s learning; to increase parents’ understanding of the contemporary mathematics classroom; to find and share ways that parents can help their children at school and at home; and to develop a mutually beneficial partnership between families and schools (Ministry of Education, 2004). Underlying HSPN is the intention of bringing parents and teachers together, sharing the responsibility for common goals, and supporting children’s learning.

In addition to 40 schools that began HSPN in 2006, another 40 schools nationwide opted to implement HSPN in 2007. The funding for schools in HSPN covers the first year, but subsequent years are not funded directly. The initial funding is intended to support the school to adapt the HSPN model to suit their school and embed HSPN into the school programme. Although some facilitators did have a limited amount of time available to support schools in the second year, this time was not extensively drawn upon in 2007.

One feature of the HSPN model is flexibility. The model was designed in such a way that it could be adapted to suit the needs of the school community. A typical implementation of HSPN in a 2007 case study involved training workshops run by the HSPN facilitators for a team of lead teachers and selected lead parents. The lead team were given a Home–School Partnership (HSP) resource folder that contained information on links to a range of online support activities.

As part of each workshop, the facilitators modelled how a community session could be run and included time for the lead team to begin planning the ensuing two or three community sessions. These community sessions, which took place at the schools, were based closely on the training workshops and were run for parents by the lead team. Both the workshops and the community sessions involved activity-based learning, small group discussion, feedback, refreshments, and an explanation of the Number Framework strategy stages. The mathematics content suggested for the community sessions aligned with Numeracy Development Project (NDP) mathematics, and the learning focuses involved counting strategies, part-whole thinking, grouping, place value, the use of multiple strategies, sharing ideas, visualising, and developing number sense (Ministry of Education, 2004).

These small-group discussions provided a structure that could enable sharing and discussion in the participants' first languages. The HSPN facilitator also provided support at each of the community sessions.

Methodology

Evaluation Questions

The main focus of this study is the sustainability of HSPN in the longer term, taking into account the developing relationships and how HSPN is implemented. The study drew on a range of sources in an attempt to gather views from many stakeholders, including parents, teachers, and principals. It involved a combination of qualitative interviews and brief targeted surveys. These were aimed at gathering the views from the participants and possible participants, developing a picture of HSPN implementation, looking at HSPN beyond the first year, and exploring the nature of the developing relationships. Two schools also provided achievement data on their students (only one of which was complete enough to use for analysis).

The main questions that the researchers posed for the 2007 case-study schools relate to the outcomes for HSPN: its impact on the students and the relationship between the school, the parents, and the families.

- How well do the processes of Home–School Partnership: Numeracy deliver intended outcomes to parents, families, and schools?
- In what ways is Home–School Partnership: Numeracy perceived to have an impact on the students' attitudes, and what measurable impacts can be made upon the learning of mathematics in and out of school?
- What issues are there in the implementation and sustainability of Home–School Partnership: Numeracy and its integration into the school programme?
- What are key areas of Home–School Partnership: Numeracy that require further exploration or evaluation?

2007 Case-study Schools

In 2006, three case-study schools were visited. Similarly, in 2007, three different urban schools from Auckland and Wellington were selected, based on their willingness to participate. These schools are referred to as schools E, F, and G. All three supported significant ethnic mixes, including 31–44% Pasifika, 14–47% Māori, and 6–25% New Zealand European. The case-study schools were mid to low decile. Two were medium-sized schools (about 200 students), and one was larger (about 500 students). Two were contributing schools, and one was full primary. One school provided data that showed that the distribution of students whose parents attended the programme was roughly uniform across

age groups. Compared with the 2007 case-study schools, the 40 schools beginning the HSPN in 2007 had a wider range of deciles and roll sizes and included a number of rural schools.

Parents, lead parents, and lead teachers came from a wide range of cultural backgrounds, including Sāmoan, Māori, Tongan, Cook Island Māori, Middle Eastern, New Zealand European, and European. In one school, the lead teacher and several other staff members were Pasifika, while in the other two schools, the lead teachers were Māori and NZ European.

Gathering Information

At each case-study school, researchers attended an early and a later community session. At the later visit, interviews were conducted with parents who attended the community sessions, lead parents, and lead teachers about their views of the HSPN sessions, the impact of the programme on their children, and the relationship between the school and the parents. For the 2007 case-study schools, the principal was also interviewed to gather information about how HSPN fitted into the big picture for the school and how the principal envisaged sustaining HSPN in subsequent years.

Surveys

Survey of other teachers in the school

All the teachers from two of the 2007 case-study schools, schools E and F, were sent brief, voluntary surveys. The aim was to provide an opportunity for teachers in the school who were not involved in HSPN to express their views about the HSPN sessions. Eight teachers returned their surveys, which represented about 40% of the teaching staff approached. Accordingly, this information is of a more qualitative nature and cannot be considered to be representative of all the teachers in the schools.

Parents

The parents from two of the 2007 case-study schools, E and F, were sent brief voluntary surveys via their children. From a student base of approximately 200 students in School E and almost 250 students in School F, only 26 surveys were returned. At less than 6%, this is a surprisingly low response rate, especially as many of the responses at one school were collected at a community session. The low response rate illustrates the difficulties that schools can face in communicating with some of their parents to find out suitable times to hold community sessions. Funds available for the study did not stretch to translating the surveys into appropriate languages or to interviewing, face to face, parents who did not attend, both of which would probably result in a more effective response rate.

Survey of schools that had been involved in Home–School Partnership: Numeracy

Schools that had been involved in HSPN in 2006 or 2007 were sent a brief survey to ascertain what they had gained from the HSPN, what features of HSPN, if any, they were continuing, and how they felt about sustaining HSPN beyond the initial year. This survey went out to the schools that had completed HSPN but were not case-study schools and had not been part of a recent Home–School Partnership: Literacy survey. Thirty of the 55 surveys were returned (54%), completed in some cases by a combination of the principal and the lead team.

Revisiting the case-study schools from Home–School Partnership: Numeracy, 2006

The principals from the three 2006 case-study schools were also interviewed to ascertain what specific attributes, if any, from the 2006 HSPN were being maintained at their schools and whether HSPN had an impact on their school's engagement with the community.

Student Achievement Data

The study also included an exploratory analysis of student achievement to ascertain if there were any possible impacts from HSPN on student achievement. This involved collecting the community session attendance details of parents/caregivers and identifying the students they were connected with (thus including extended but close family) from two schools. Achievement data on the initial and final numeracy diagnostic results (stages) were gathered for all students. Complete attendance and achievement information that could be analysed was obtained for only one of the two schools.

Results and Discussion

Home–School Partnership: Numeracy in the Schools

Through the interviews, surveys, and general observations, the researchers identified a number of important themes that relate to implementing co-ordinated and useful community sessions, developing partnerships between schools and parents, and sustaining aspects of HSPN in the longer term. Many of these themes are an extension of the findings from the 2006 case-study schools.

Almost all participants in the 2007 case-study schools felt strongly that the HSPN combined socialising and fun with learning activities in a positive way and brought parents into contact with the schools. This positive engagement in the community sessions reflected the findings from the 2006 case-study schools, which are discussed in more detail in the exploratory study by Fisher and Neill (2007).

Running the community sessions

The three 2007 case-study schools visited for this study ran their community sessions using a very similar dynamic. The sessions began with food, drink, and conversation mainly amongst parents and their children. The sessions then continued with a welcome and introduction that involved the principal and sometimes a performance from the students. After this, the students went off to take part in an activity elsewhere, and the facilitator or lead teacher outlined aspects of numeracy, including showing strategies that students use at different stages of the Number Framework. After this, the parents could make their way around a number of stations where a teacher or, in a few instances, a lead parent would explain the specific activities in more detail. Parents would move around, spending approximately 5–10 minutes at each station, and then come back to their original seats. In some of the sessions, the students returned to participate in the activities at the various stations. The dynamic at each of the stations was still highly social, and the parents shared thoughts about the activities amongst themselves, sometimes in their first language. In common with the 2006 case-study schools, almost all the community sessions were run in the evening – although some very well attended sessions were held during the day. The content of the 2007 community sessions was broader than the 2006 sessions that the researchers had visited and included basic facts, multiplication and some division, as well as addition and subtraction.

Parents at the sessions

The parents commented that the sessions were helpful, fun, and social, but all identified that the primary reason they attended was for their children. They came to the sessions to find out “what is happening in class”, to “learn maths”, and to “meet the teachers”. The parents identified that, at the sessions, they learnt about their children’s classroom mathematics and got ideas about ways to help their children. They also noted the importance of their children’s involvement and participation in motivating them to attend the community sessions. Some parents stated that the sessions helped or reminded them about their own learning of mathematics. At all of the case-study school sessions, the parents were given equipment and mathematical games that they could take home and work through with their children.

Variation in levels of parent attendance

The number of parents that attended the sessions varied widely. An early session at School F, using the activity “Jump Jam”, attracted approximately 60 parents, while the next two sessions had 15 and 20 parents respectively. The lead teachers at all the case-study schools noted that they did not know how many parents would be attending each session. This affected the supply of refreshments and staffing for the organisation of the activity stations – if an activity station was too crowded, it became less personal and engaging.

Parents from School F indicated that smaller groups are more fun and social, which is an important hook for encouraging them to come back. After a very large turnout, School E organised two stations for each activity for the next session, giving a total of eight stations. Each station was still attended by quite large groups of parents, and the teachers helped lead parents to introduce and support the activities.

Getting parents to the sessions involves a considerable amount of work, so it would make sense to ensure that their time at the sessions is utilised well and that they are encouraged to return, particularly as parents and teachers identified word of mouth as being an effective way of promoting the sessions.

First language

Another feature of the HSPN model is that community sessions can support the use of first languages other than English. The small-group structure and the use of bilingual lead parents can support languages from the community. Although one school translated their invitations to the sessions, the community sessions (including the activity stations) visited were all run in English. This may be because the sessions tended to be run by the teachers rather than bilingual lead parents. A number of parents and teachers commented on the reality of language as a barrier. Most schools responding to the school survey felt that it was crucial to have a lead parent involved who could speak another language or at least could connect with the culture of the community.

School F had already taken steps to cater for a number of language groups in the community, and they had identified another language group that they still needed to address by appointing an appropriate lead parent. However, a number of schools that were surveyed indicated that language was the least important feature of HSPN (see Figure 1) and was the least likely feature to be considered in future sessions. This is somewhat concerning because the schools in the HSPN initiative tend to include more bilingual parents than schools in general.

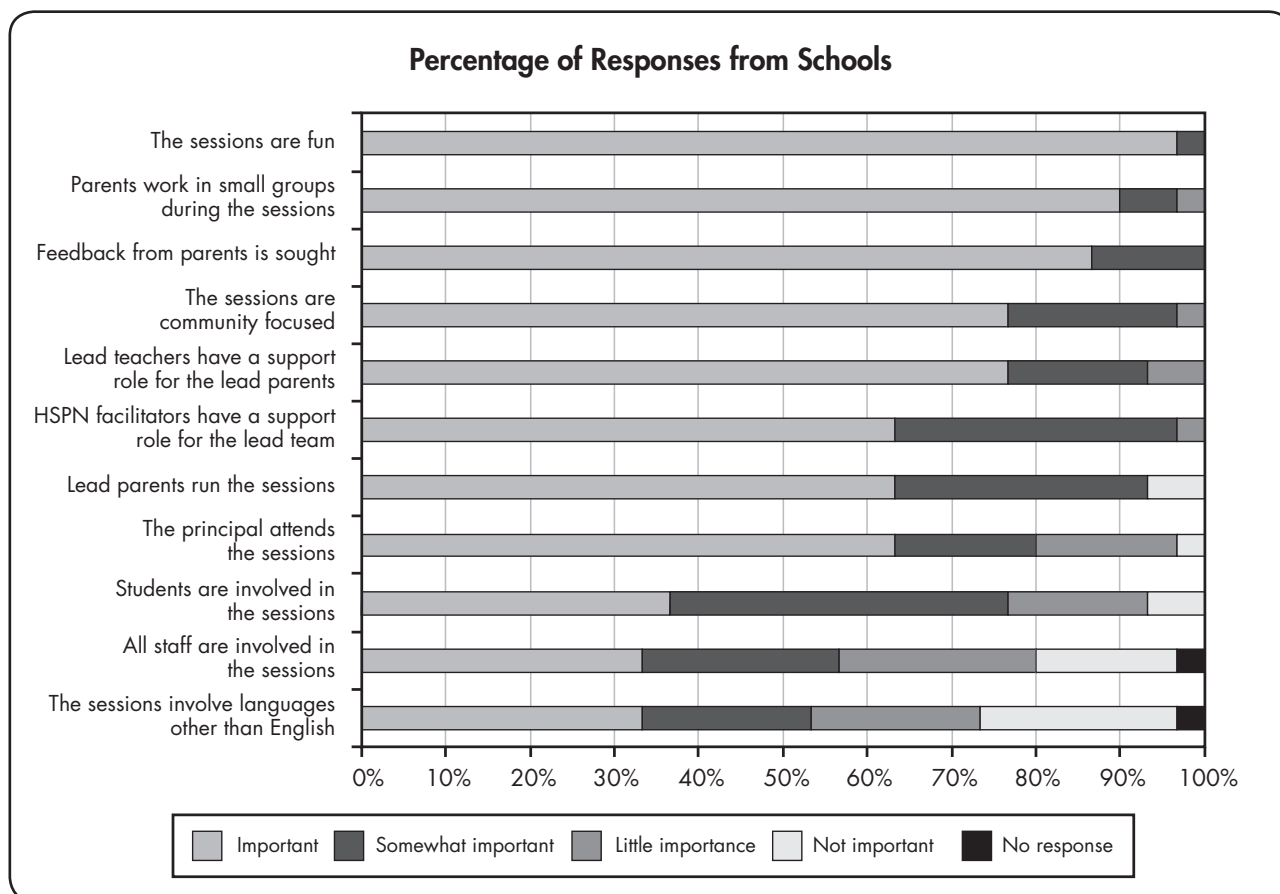


Figure 1. Importance of features of the HSPN model

Selecting and Supporting Lead Parents

The 2006 study identified that the lead parents were a fundamental part of running the HSPN community sessions (Fisher & Neill, 2007). Furthermore, the HSP resource folder identifies that “without them, it [the partnership] cannot begin, and will not be sustained and expanded” (Ministry of Education, 2003, p. 18). In all three 2007 case-study schools, rather than advertise or making a general invitation, the principals consulted with the teachers and then selected parents to be invited to become lead parents. (Some lead parents were selected because they represented groups in the community that needed to be catered for.) The principals stated that this method of selection was the best way to get lead parents who had the skills and commitment to HSPN. Many lead parents were selected in a similar way in the 2006 case-study schools.

The role of the lead parents is to provide a link between the school and the community, and, together with the lead teacher, to lead HSPN in the school. The ability to do this depends upon the skills of the lead parents, the opportunities available to them, the training they receive, the support they get from the school, how they are perceived in the community, and their ability to connect with other parents. The types of specific tasks that lead parents may be required to perform can be inferred from the criteria for an “ideal” lead parent included in the HSP resource folder (Ministry of Education, 2003). Some of these criteria include: being bicultural and bilingual; being an effective communicator; having the ability and willingness to understand and discuss key educational issues; having children (preferably at the school); having the potential to develop the confidence to provide leadership and model activities; being able to effectively co-lead the community sessions; showing initiative; and being flexible. This is an extensive list of qualities!

Many lead parents stated that they felt comfortable helping as “parent experts” or co-ordinating the activities once the activities had been explained but found talking to groups of their peers more challenging, and answering questions or explaining the underlying mathematics even more difficult. In two of the 2007 case-study schools (E and G), the researchers noticed that the lead parents provided more background support and roved as parent experts rather than introducing or leading activities.

In schools E and G, the activity stations were predominantly run by the teachers. The lead teachers from School E identified the need to support lead parents in facilitating small parent groups. Only in School F did the lead parents begin to run activity stations. The lead teacher at this school identified that there was still room for lead parents to take more responsibility.

Such a low level of lead-parent leadership of the activities at the community sessions is at variance with the importance that the schools placed on lead parents running the sessions (see Figure 1). However, lead parents stated that they were involved in many aspects of the leadership, including planning, decision making, and preparing the sessions, which indicates a sharing of the responsibilities.

In the 2006 case-study schools, the lead parents grew into their role as small-group facilitators but not into the role of co-leading the community sessions (Fisher & Neill, 2007). This may have been due to their low levels of confidence in addressing larger groups, their standing in the community (and therefore the way other parents would respond to them), or the fact that they viewed the teacher as the professional and it could be seen as disrespectful to take over their role. Some of the lead parents interviewed indicated that they were keen to lead sessions in the future. It seems likely that in the second year of being a lead parent, with more experience, ongoing support, and understanding of the sharing of roles, their confidence to front the sessions would continue to grow. However, there were no lead parents from the previous year in the three revisited 2006 case-study schools. It is also important to bear in mind that some of the content presented in HSPN involves a degree of professional knowledge that many teachers are only now beginning to develop, and the expectation that lead parents will stand up in front of their peers and talk about this information may be unreasonable.

Training lead parents

The lead teachers as well as some lead parents indicated that more training was necessary to help lead parents build their confidence in leading the activities. Many of the case-study schools from 2006 and 2007 also employed the lead parents as teacher aides (either before or after HSPN). A teacher aide can train for a year to receive their qualification. Lead parents receive three days of training and attend a number of team meetings to develop an understanding of mathematics concepts and parent facilitation skills, amongst many other tasks. It was felt that the training workshops prepared the parents to some degree for the community sessions but not for the broad range of tasks that lead parents may be called upon to perform. This raises the question of whether there is a need for a parent–facilitator course, or some other in-school training about adult facilitation, and possibly further support for training lead parents in mathematics.

Lead Teachers

Lead teacher workload

The lead teacher is another vital member of the lead team. Their role is to co-lead HSPN and support lead parents. The amount of time that the lead teachers put into the community sessions was considerable at all the 2006 and 2007 case-study schools visited. Most lead teachers received some release time, but some indicated that they exceeded that many times over, with the role requiring a significant workload on top of their everyday classroom teaching. All staff at the three 2007 case-study

schools commented on the amount of time and support needed to organise the community sessions, and the community sessions observed by the researchers obviously required a lot of organising and preparation work as well as the work on the night. Lead and other teachers identified release time as being a critical factor for a successful HSPN.

Whole-school involvement

The HSP resource book states “All staff need to take ownership of the HSP programme if it is to be a success” (Ministry of Education, 2003, p. 17). Todd and Higgins (1998) suggest that the added responsibility of building partnerships with parents and families, on top of the complexities of classroom teaching, may lead to teachers developing “coping strategies that reinforce the divide” (p. 231) between teachers and parents. More teachers were involved in the 2007 case-study schools than in the 2006 case-study schools. In two of the 2007 schools, most of the teachers helped out as required and the researchers observed several teachers leading activity stations and supporting a parent group. In the third school, there were fewer teachers at the sessions. Furthermore, members of the lead team commented that they would have liked more teachers to attend the sessions and develop relationships with the parents – an important ingredient in any partnership. Interestingly, all the teachers surveyed indicated that they had attended at least one community session. Having whole-school involvement was identified by all members of the lead team at School E as being very helpful in sharing the load among a range of people.

Training for lead teachers

It is important to recognise that although teachers may be experts in teaching and learning with students, they are not necessarily trained in adult facilitation or in organising large events. Additionally, many teachers will be learning mathematics from the NDP alongside the parents. Teachers receive extensive training to prepare them to become educational professionals, as well as receiving ongoing professional development through school-based numeracy and literacy programmes. Interestingly, the Ministry of Education (2006) identified community involvement as a vital outcome for all New Zealand schools, but there is no training for primary teachers in the realm of adult learning theory, engaging parents, or facilitating parent groups. Epstein (2001) suggests that this could be remedied by offering such training in colleges of education.

The Realm of Numeracy

The language of the Number Framework

Mathematics that has arisen out of the NDP is different to the more procedural mathematics that many adults associate with their mathematics learning. It has some differences in philosophy and uses a different language to traditional mathematics. The HSPN community sessions help develop numeracy concepts and language for parents and also reinforce these concepts for teachers. In fact, several school staff identified HSPN as serving as additional professional development for classroom teachers.

The Number Framework uses many terms of reference and some very specific learning concepts, such as *part-whole* thinking, *early additive* thinking, *imaging*, and *visualising*, and strategies such as *tidy numbers*, *partitioning*, and *compatible numbers*. Before the NDP, these terms and concepts were unfamiliar to classroom teachers. One desirable outcome of HSPN is that parents and teachers are beginning to learn, develop, and communicate in this common mathematics language as well as to understand some key messages of numeracy, such as the use of multiple strategies and the idea that talking about mathematics is “doing maths”. There was less focus on the key numeracy issues in the 2007 community sessions than there had been in 2006 and more focus on the activities.

Many principals and lead teachers commented that numeracy was different from literacy because of the parents', and teachers', fear of mathematics. This issue is also identified by Young-Loveridge (2003). At several of the case-study schools, the principals noted that HSP literacy lead parents from the previous year declined to become HSP numeracy lead parents because it was mathematics. In order to develop the conceptual understandings and progressions of student knowledge and strategies of the Number Framework, teachers have been involved in extensive numeracy professional development. This raises two questions: How much mathematics do parents need to know to support their children? and How much mathematics do lead parents need to know to support parents?

Developing Partnerships

Views on the purpose of Home–School Partnership: Numeracy

When the parents were surveyed about the purpose of HSPN, they identified the key purposes as “getting parents more involved so that they could learn about how to help their children” and “parents getting together with the teacher” to build relationships. Parents did not mention the other side of a two-way partnership, namely, teachers finding out about home practices and using this knowledge to support students in the classroom.

Similarly, it became clear from the interviews with the parents that their experiences mostly involved finding out how to help their child, getting first-hand experience of classroom mathematics and activities, taking activities home, and incorporating the activities and the new understandings into their home practices. These were the elements that parents identified as critical to the partnership. The common goal was to have their children do well, and the parents sought to find out what they could do for their part of the partnership so that they could work with teachers to reach that common goal. Absent from this one-way exchange is teachers finding out from parents how they could work toward this goal.

Overall, most school staff noted that the main reasons they became part of HSPN was for the relationship-building aspect of the partnership and the potential for information to be shared by the school with the parents (see Figure 2). School staff also rated these two aspects of HSPN as successful or highly successful (see Figure 3).

Like the parents, the teachers and principals mostly emphasised the value of developing a partnership where the parents could find out from the school how to help. Although the community sessions provided a place and opportunity for mutual exchange, most teachers (surveyed and interviewed) identified these main aims of these sessions: to encourage parents to spend time with their children on mathematics; to provide parents with information about how to support their children; and to strengthen relationships between the school and the community. As one lead teacher noted:

Partnership? Yeah ... if they're willing to do the work at home with their kids and do the talking and a little bit of extra at home, then they're giving back to us because they're supporting our role as educators.

This view of partnership was prevalent amongst the parents, the lead parents, and the teachers.

Looking at the nature of partnership

The concept of a democratic partnership encompasses cultural inclusion, sharing power and decision making, having a common shared goal, and developing relationships and trust over time (see Merttens, 1999; Epstein, 2001; Timperley & Robinson, 2002). The HSPN model includes many of the above traits and focuses on a partnership between the student, their parents, and their teachers. Around this basic unit, the partnership can grow, based on how the parties work together and contribute to supporting a student's learning and personal development.

The concept of a two-way mutually beneficial partnership is encouraged by HSPN. As noted in the HSP resource folder, the expectations for teachers and parents are explicitly identified:

Teachers learn about the children's language and culture and how to incorporate this prior learning in school programmes. The parents learn the culture of the school, its processes, and its expectations.

(Ministry of Education, 2003, p. 8).

The reality is that "the development of partnership is a process, not a single event" (Epstein, 2001, p. 420), and it can involve different people with different beliefs. Therefore, it is important to ensure that the idea of partnerships also be explored by parents and teachers together to develop a shared vision of partnership that caters for their community, their school, and their children.

Incorporating home practices

The other side of the effective partnership involves teachers incorporating home practices and cultures in the classroom (Coxon, Anae, Mara, Wendt-Samu, & Finau, 2002; Biddulph, Biddulph, & Biddulph, 2003). Although approximately half the teachers who completed the teacher survey noted that community sessions supported them "hearing about home maths practices", there was no indication from either the teacher or lead teacher survey responses of practical ways that teachers had changed their classroom practice in light of this information.

Overall, other than feedback and some increase in conversations with parents, there was no mention of integrating the students' or parents' ways of doing things into the classroom programme. Additionally, finding out about home numeracy was not identified as a significant reason for becoming part of HSPN (see Figure 2), and the lead teachers identified supporting teachers to adapt their classroom practices to accommodate home practices as the least successful of the HSPN features (see Figure 3). This feature of HSPN would appear to be one aspect of the partnership that requires more attention.

As well as learning about home numeracy practices, there is a range of literature (Biddulph et al., 2003) that emphasises the importance of learning about home-cultural practices. Coxon et al. (2002) suggest that teacher awareness of home cultures could help address possible barriers to parental involvement. The HSP resource folder identifies that teachers can reduce such barriers by:

getting a better understanding and insight into the backgrounds, cultures, and home numeracy practices of the children they teach.

(Ministry of Education, 2004, p. 7).

Finding out about each other would appear to be a very important factor in supporting HSPN as a more culturally appropriate two-way partnership.

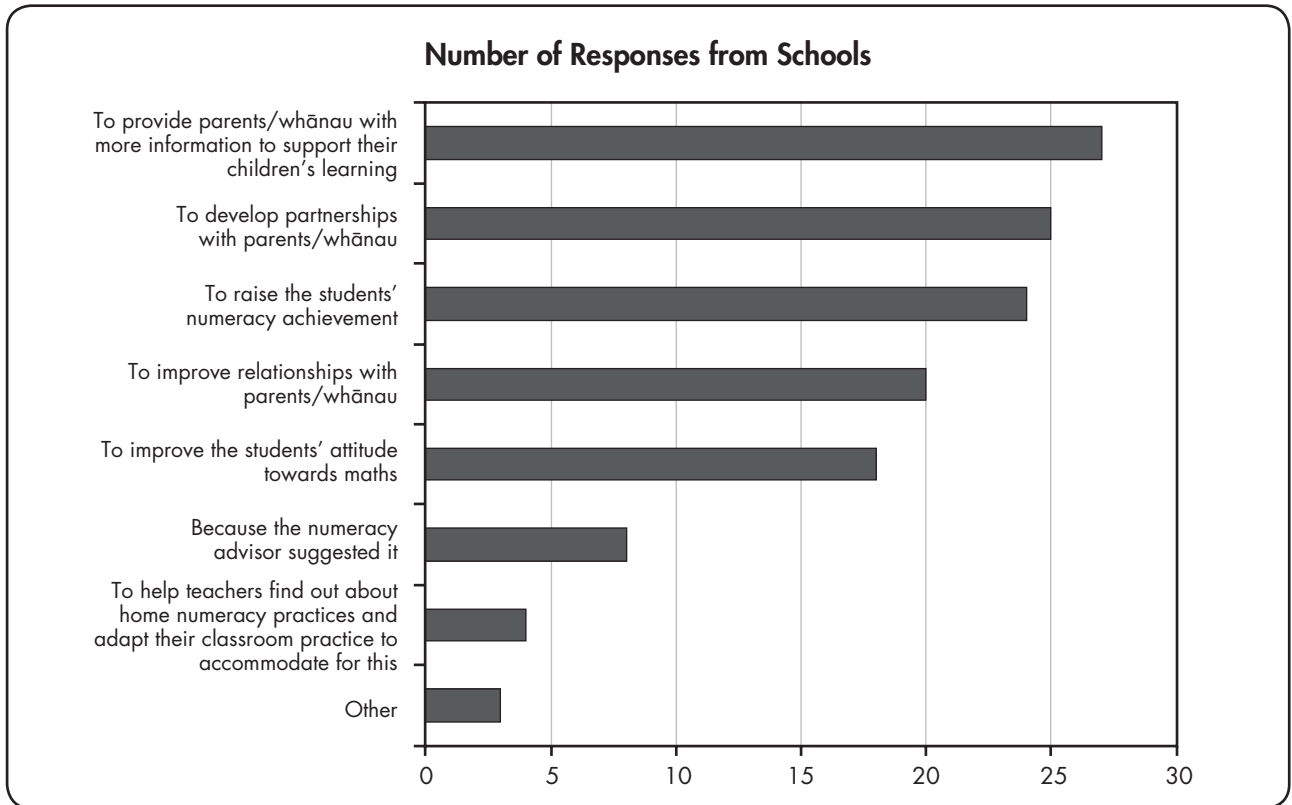


Figure 2. Reason the school decided to become a part of HSPN

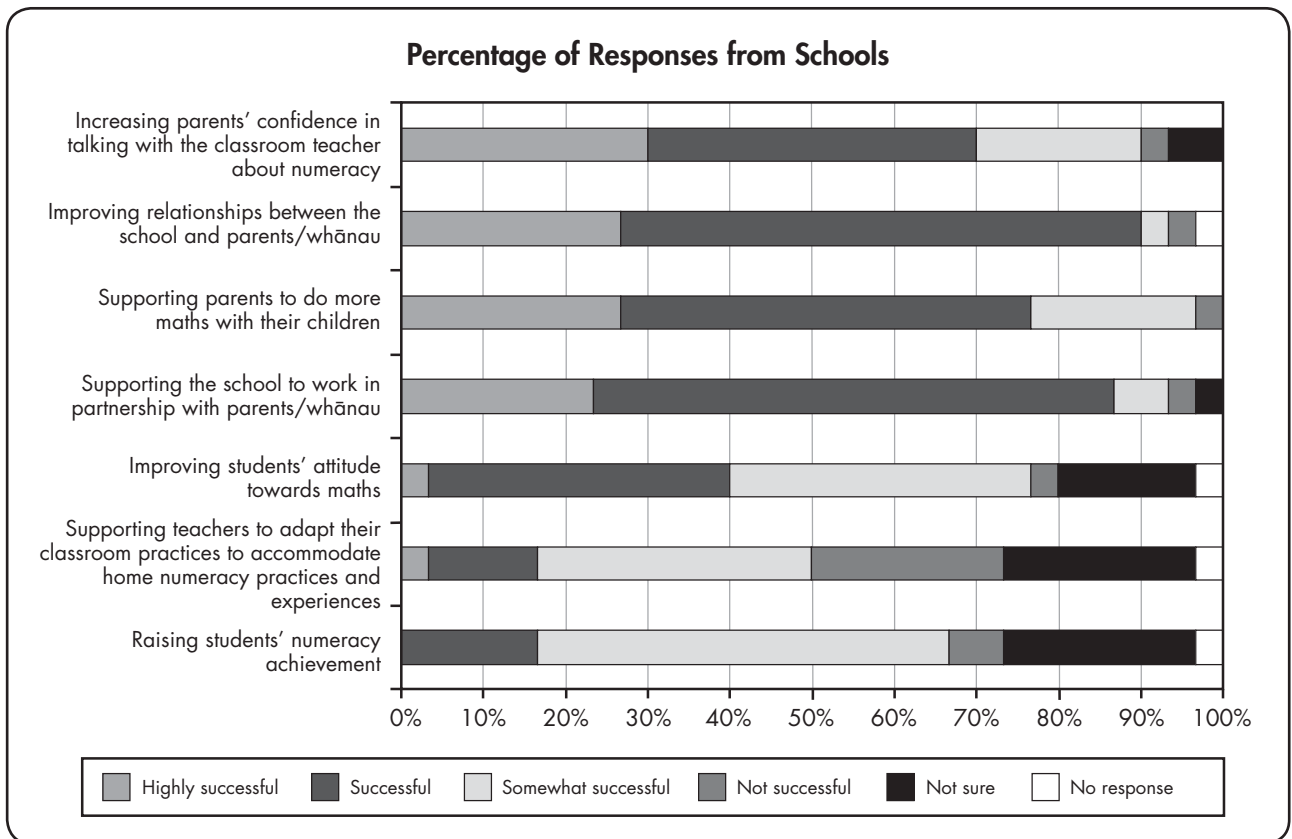


Figure 3. Success of HSPN to support outcomes

One lead teacher raised an important element – attendance – that underlies the roles that the teachers and the parents have in the partnership. The teacher asked “How could a partnership be developed if either the parent or the teacher were missing from the community sessions?” The lead team may organise the community sessions, but the partnership fundamentally involves all the teachers at the school and all the parents of the students at the school. As noted previously, the teachers attended many sessions for most of the 2007 case-study schools. Whether the teachers sought out and conversed with “their parents” at the sessions (or the parents sought out the teachers) was up to the individuals and was not an explicit part of the structure of HSPN. There is a real benefit gained from the parents and the teachers sharing their expectations of each other and talking about their roles in relation to the students and the learning. Such communication may help to identify any conflicting views of roles and barriers that hinder the parents approaching the teachers, and vice versa.

Amongst other things, involving people in an effective partnership involves respecting, listening to, and valuing their contributions (Biddulph et al., 2003; Timperley & Robinson, 2002). All the 2007 case-study schools provided significant opportunities for parent feedback. This feedback was recorded and used to inform the development of subsequent sessions. Additionally, some lead teachers commented that more parents were talking with them about learning rather than about behaviour, indicating a possible shift in focus to the students’ learning.

Moving forward: shared goals

One important feature of a partnership is a common explicit goal that is developed and shared by all participants (Timperley & Robinson, 2002; Biddulph et al., 2003). Parents and teachers identified very similar aims for HSPN, indicating a shared understanding of purpose. But how does this shared purpose match the intent of HSPN in fostering two-way partnerships? The findings from this study suggest that the concept of partnership that underpins HSPN may need to be explored in dialogue between the school and the community. If the intention is to encourage two-way sharing, then additional supports may be needed. These could include processes that support school staff as they examine their beliefs about the value of community involvement, set up an expectation of two-way sharing between teachers and parents, and facilitate teachers to access and incorporate home numeracy or cultural understanding in the classroom. As a result, it may be that each school will develop a view of partnership that is unique to their community.

Student Achievement

This study also aimed to assess parental attendance data and analyse the gain in student achievement data (as measured using the diagnostic interview). Only one case-study school provided data that was suitable for such an analysis. This school had two community sessions, and at each session, the staff kept a record of the parent or family members who attended. This allowed a comparison to be made between students whose parents attended and those whose parents did not.

Community sessions attendance was the only factor being compared from this data, so there is a danger of attributing any change purely to attendance. Therefore, the attendance data cannot be used to identify any causative relationship between HSPN and student achievement.

Table 1 includes the average gain of students at that case-study school in the various measures of student strategies and knowledge. The results have been separated into students who are still at the counting stages (stages 1–4) and those who are at the part-whole thinking stages (stage 5 and above). It is clear from this table that student achievement in the 2007 case-study school increased in all domains (except in proportional thinking for stage 1–4 students).

These figures can be compared with the results from a study by Young-Loveridge (2007, p. 19), which showed gains in the 2005 and 2006 years for year 5–9 students, most of whom would have been at stage 5 or above. Typically, Young-Loveridge reported gains of about 0.5 to 0.9, which are of similar magnitude to those in this study. If anything, the students at the 2007 case-study school showed greater gains than the students in the Young-Loveridge study, indicating that the whole school had experienced encouraging growth in student achievement. However, these results do not indicate whether this has been as a result of HSPN or as a result of other factors, such as the continued implementation of NDP.

Table 1
Gains in Student Stages in Strategy and Knowledge

	Addition and Subtraction	Multiplication and Division	Proportions and Ratios	FNWS	BNWS	Number Identification	Fractions	Place Value	Basic Value	Number of Students
Students initially at stages 1–4	0.74	0.42	–0.13	0.76	0.90	0.84	0.58	0.41	0.80	90
Students initially at stage 5 and above	0.80	0.83	1.06	0.57	0.58	–	0.82	1.25	1.07	115
Year 5–9 students ¹	0.49	0.70	0.86							

There was no consistent pattern of growth for students whose parents attended either one or both community sessions, except possibly in the addition domain. The researchers therefore cannot conclude that there is a relationship between parental attendance at HSPN sessions and student achievement based on figures from two HSPN sessions at one school.

It is important to recognise that there are many other measures that can affect student achievement, such as the students' attitude to school work, the teacher, peer influences, and so on. Epstein (2001, p. 230) also warns "There is little reason to expect that these practices would have direct and immediate effects on students' maths skills." The other reservation that must be borne in mind is that the results are for just one school, and the sample size within this school is relatively low, with only 76 students having a related adult attend one session and 36 students having a related adult attend both sessions. However, other studies present some limited indication of increased student achievement in some areas of numeracy as a result of parental involvement in their children's education (Henderson & Berla, 1994; Sheldon & Epstein, 2005; Biddulph et al., 2003; and Anthony & Walshaw, 2007).

Sustaining Home–School Partnership: Numeracy

The researchers used a number of different data sources to assess sustainability of HSPN. The survey of HSPN school staff showed that 75% of the schools were continuing HSPN in some form. Of these, around half were using the HSPN model and around half were adapting the model. To gather more detailed information, the researchers interviewed the principals of the three 2006 case-study schools about their reflections on the 2006 HSPN and what their schools were doing in 2007. None of these schools were continuing the full HSPN model, but all were continuing some features of the model and had used HSPN processes to improve connections with their school community. The principals identified several key factors that influenced their decision not to continue the full HSPN model.

¹ Figures from 2006 students from Young-Loveridge (2007, p. 19)

These are discussed below.

1. *Retention of lead parents*

One school had lost all of its lead parents from 2006 due to issues beyond the school's control. In another school, two of the four lead parents had decided to access further education opportunities for themselves and were no longer available to take part in the programme.

2. *Importance of HSPN facilitators*

One principal commented that they had underestimated the importance of the HSPN facilitator's role. Lead teachers need the support of the facilitator because of the facilitator's in-depth knowledge of numeracy and because the lead teachers are not necessarily skilled or confident at adult (parent) education, whereas the facilitators have training and experience in this role.

3. *Resourcing (in particular, money and time)*

Some schools provide funding for their lead parents. Continuing to find sources of funding was identified as a difficulty for some schools. In general, the teachers identified the need for some kind of ongoing funding to sustain the HSPN. One lead teacher from a 2007 case-study school expressed a keen desire to continue the HSP model but noted:

[We] are planning for 2008 and beyond. Without funding for 2008, this will be hard. [We] would have to fundraise for it, [and we] need release time for organising it. It is worthwhile to keep going, [but] can we sustain this format? [We had] 80 families at the last one.

Additionally, the classroom teachers found the extra workload of HSPN added to the already considerable demands on their time.

4. *Succession planning*

The principals recognised that they needed to put systems in place to further embed the community sessions in their school culture. They noted the need to set up processes for planning, goal setting, and establishing the sessions.

Home–School Partnership: Numeracy as a Catalyst for Change

As a result of the factors discussed above (such as lead-parent retention and resourcing issues), the community sessions that did take place in 2007 in the 2006 case-study schools were led by school staff, which no longer encouraged such a close relationship between the school and families. Notwithstanding this, one principal noted "The community is calling all things we do 'home–school partnership', indicating a change in mindset." This emphasises the influence of HSPN in changing parents' perceptions. The principals felt that HSPN had been a catalyst for a key shift in focus, with schools and parents connecting in regard to core learning issues rather than just to administrative issues or other activities such as fundraising or working bees.

In general, in most of the case-study schools, HSPN had also been a catalyst for schools to improve community engagement processes. Almost all 2006 and 2007 case-study and surveyed schools had used aspects of the HSPN model to strengthen connections with their community. In summarising the wider impact of the initiative, one principal noted:

[HSPN] is an effective catalyst for some schools; in other schools, it's going to be an effective tool; in [yet] other schools, it's going to be an effective, sustaining model. It sometimes depends where the school is at. Some people will use it for community relationships; other people will use it for numeracy.

Integration: Alternative Models

Although not continuing with the full model, most schools had used some HSPN features, such as catering for first languages or using lead parents to run sessions. Other schools had committed to more extensive partnership programmes with their parents. Some of the alternatives or adaptations to HSPN that the case-study schools had developed are discussed below.

1. Nurturing lead parents

One school encouraged ten parents to be involved in a local year-long Family Literacy Programme designed for adults and their children. The principal of the school stated that this “provides the adult learner with valid credits for ongoing learning or future employment”. The school saw significant advantages in this model, and the principal commented on how this would empower parents and support the school:

[Parents] are on site every day. It’s a different model being used. There is more regular interaction with specific parents on site. They have also become ambassadors for what is happening in the school. We plan to use these parents who graduate [by] providing a pathway straight into being tutors for children and going on to being teacher aides. So we are constantly generating our own lead parents and teacher aides.

2. Language-based focus groups

One school had developed a model that they were about to implement. This involved a group of parents from one cultural group who were being upskilled by the school in literacy (including statistical and assessment literacy). These parents would then share their knowledge with several small groups of other parents from their cultural group. This model might be repeated with other cultural groups.

One of the 2007 case-study schools had a new principal who discontinued HSPN. She commented, “We are drowning in initiatives.” This school was already involved in the Te Kauhua Pilot Project, which they saw as sharing at least two of the key values of HSPN: strengthening relationships between teachers and parents/whānau and enhancing literacy and/or numeracy outcomes. It may not be feasible for schools to be simultaneously involved in several initiatives. This highlights a need for deliberately aligning common goals between various initiatives as well as providing guidance for schools about the choices open to them and the big picture surrounding the development of home–school partnerships.

Longer Time Frames for Home–School Partnership: Numeracy

Sustaining the HSPN initiative beyond the first year is clearly a challenge for schools, though the desire to continue is strong from both the school and the parent community perspectives. The fact that all three 2006 case-study schools were not continuing the full HSPN model suggests that there may be difficulties in maintaining HSPN in the longer term. Without ongoing support from people with significant skills in numeracy professional development and without ongoing resourcing, schools may either discontinue the model or adapt it to a model that is more school-led rather than partnership-based.

Some principals and lead teachers commented that they thought the funding should continue for more than one year to consolidate HSPN in the schools. Several principals identified that HSPN has many elements of professional development for teachers’ practice that could be further developed, such as numeracy learning and working with parents, as well as finding out more about the students they taught.

These suggestions are supported by research findings that show that initiatives are likely to be more effective if they are implemented over a longer time frame (Russell, 2003), particularly if they involve fundamental changes to school culture (Mitchell & Cubey, 2003), and particularly if they are about mathematics (Young-Loveridge, 2003). Additionally, time is important for developing relationships. Moving from enhanced relationships through to partnerships takes time (Merttens, 1999; Timperley & Robinson, 2002; Anthony & Walshaw, 2007; Brooking, 2007) and needs ongoing input from within and outside the school community.

Conclusion

School staff and parents found the HSPN community sessions a positive experience. The sessions supported the desired outcomes of sharing ways to work together and increasing the parents' understanding of numeracy. The parents commented that the level of mathematics at the community sessions was good and that the sessions helped them understand how to support their children at home. The teachers appreciated the alignment of the parents' understanding of the key mathematics ideas with contemporary classroom mathematics. Looking at the desired outcome of reinforcing the parents' sense of their importance in the success of their child, it is clear that the parents in this study were well aware of their importance in their children's learning.

The partnership envisaged by the HSPN model involves teachers and parents working together towards the common shared goal of helping their children. The HSPN community sessions provide opportunities to bring together teachers and parents in a social setting where they can develop their relationship and learn in a fun way. Another desired outcome of developing a "caring working partnership between parents and teacher" has some way to go in developing two-way sharing of ideas and leadership responsibilities. However, developing a partnership is complex, and at this stage the partnership may be more about relationship building than about fostering the two-way exchange as advocated in the HSP resource folder. Processes could be developed to further support this aspect of the partnership.

The lead parents in the 2007 case-study schools were less confident in leading small groups than the parents in the 2006 case-study schools. Additionally, the re-visit to the 2006 case-study schools found that the exodus of lead parents meant that schools had to find new lead parents and start the relationship again. All this has implications for developing the type of partnership advocated in HSPN and in current literature (Timperley & Robinson, 2002; Biddulph et al., 2003; Brooking, 2007) and suggests that consultation with the community about expectations and beliefs about roles in partnerships may be needed, especially if a shared understanding of an inclusive partnership is sought.

Getting, retaining, upskilling, and funding lead parents were central issues for schools. The fact that the lead parents' role is so comprehensive and so crucial strongly suggests that, as well as being carefully selected, lead parents need more support to grow into the role. The three days' training, although sufficient for the lead parents' own introduction to contemporary classroom mathematics, could be further supplemented by some training in adult learning, how to run groups, and further numeracy concepts. Both the parents and the schools may need a longer lead-in time for HSPN support and funding, and HSPN may need to be part of a more committed ongoing relationship with the community that becomes embedded in school practice.

Running HSPN requires a considerable amount of resource, and many school staff expressed the need for ongoing support beyond the first year. The three 2006 case-study schools had not continued the HSPN model in 2007, and approximately one-third of the HSPN schools from the survey indicated

that the demands on staff to continue the complete model might be unsustainable in the longer term. Even the schools that continue might need to make changes to the partnership dynamic to consolidate costs and workloads. The schools acknowledged that the main challenges were the workload on the lead teachers, the difficulty of maintaining lead parents, and funding.

However, as identified previously, all the schools have used their HSPN experience in some way, either to continue the complete HSPN model, to use a number of the HSPN features, or to develop their own ways of building community relationships. How schools choose to engage their communities depends upon many factors of school practice, teacher belief, the community, and the type of support the school receives.

Given all the challenges outlined above, this study suggests that HSPN helps schools to address many aspects of relationship building with their communities and, as a model, is flexible for each school to adapt to suit their own and their community's needs. Ultimately, it is how schools and communities can bring their expectations together and adapt HSPN to their needs that can determine its success in the longer term.

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