

New Zealand Teachers' Use of the Mat in Year 2 Classrooms

Anita Mortlock¹⁾ Vanessa A. Green Mary-Jane Shuker Michael Johnston
Victoria University of Wellington

Abstract

Despite its ubiquity in junior classrooms, the use of the mat as a pedagogical strategy is surprisingly under-researched. Little is known about when and how it is used, its purpose, and perceived learning outcomes. The current study included 296 anonymous responses from Year 2 teachers in New Zealand primary schools. Results showed that children spent between one and two hours on the mat each day, in blocks of 10-20 minutes. Perceived learning outcomes included social understanding and a sense of group cohesion. However, the types of activities that would promote this type of outcome were not frequently used, which suggests that there may be a disconnect between perceived learning outcomes and dedicated activities. Teachers must carefully examine typical mat time activities in order to evaluate whether or not they achieve what they set out to accomplish.

Keywords: mat time, circle time, pedagogy, junior classrooms, whole-group practices

Corresponding author, ¹⁾ anita.mortlock@vuw.ac.nz

Introduction

Effective pedagogy involves dynamic interactions between teachers and students, with teachers using a range of teaching strategies, including whole-group practices (Eggen & Kauchak, 2006). One commonly used whole-group practice in New Zealand junior classrooms is *mat time*, which suggests that there are perceived benefits compared to children sitting at their desks (Mortlock, 2015). McGee and Fraser (2012) suggest that the mat “promotes a sense of the class working together that would not be afforded through the use of other areas of the classroom” (p. 132). Although McGee and Fraser (2012) do not provide a rationale for the potential sense of togetherness afforded by it, from a practical point of view, it increases the likelihood that children face their teachers, more so than, say, if they were seated around small-group tables.

Use of the mat features in schools and early childhood settings internationally; typically, studies report on the use of circle time, which has a specific pedagogical focus on children’s socio-emotional development (e.g., Cefai, Ferrario, Cavioni, Carter, & Grech, 2014; Lown, 2002). A second focus is sharing time whereby children talk about an aspect of their life (Danielewicz, Rogers, & Noblit, 1996). In each case, it is commonplace, first, for researchers to report on the dialogic and linguistic aspects of the mat times (Gallas, 1992), and second, the relational aspects of interactions between children and teachers (Leach & Lewis, 2013). Teachers desire children’s compliance at mat time; therefore, a final and often-reported topic is strategies that teachers use to encourage children’s compliant behavior on the mat (e.g., Ling & Barnett, 2013).

A less-researched topic is that of teachers’ goals and pedagogies at mat time and the efficacy of these goals. Gibbs and Wilks (1991) issued a questionnaire to kindergarten teachers in New Zealand and found that enhancing the children’s sense of belonging and group cohesion and providing opportunities for group discussion were predominant aims. In addition, encouraging children’s interests in specific topics at mat time was ranked as being of high importance for these teachers, whereas enforcing rules and routines was generally ranked as being of low importance. Hong (1995) conducted an ethnographic study in one North American preschool where the teacher wanted to include instructional material and discussion, but had to balance her planned topics with the children’s interests.

Similarly, Eirich (2006) also conducted an ethnographic study of a North American Kindergarten classroom and found that though the teacher aimed to foster a democratic culture through the use of mat time, she had to be mindful of how some children's competitive strategies for attention impacted the others. Finally, Duman (2009) compared two Turkish preschool classrooms; one with the specific aim of teaching children academic concepts at mat time, whereas the other did not. Parents assessed whether their own children had learnt the concepts and they reported that the learning occurred more readily with use of the instruction at mat time.

In summary, there are key gaps in the extant literature about use of the mat. For instance, there is little known about whether teachers meet their own pedagogical goals although international research suggests that teachers have wide-ranging goals. For example, the mat may be used for fostering and enhancing children's communication skills (Eirich, 2006), self-esteem, group cohesion (Collins, 2013), or academic skills (Duman, 2009). Studies have demonstrated that there are pedagogical tensions when teachers have both social and academic goals at mat time (Gallas, 1992). Moreover, there is very little known about instructional pedagogies on the mat, as opposed to those used in the overtly socially- and linguistically-oriented mats such as "circle time" and "sharing time." Almost none of the research reports use of the mat in Australasia or Pacific countries (with the exception of Gibbs & Wilks, 1991; Piters, 1995). Finally, much of the extant research is dated; therefore, it is not empirically known how relevant it is to contemporary classrooms.

The paucity of research is concerning given that the mat might be a core component of a child's school day. An incidental finding from a small-scale study on classroom design suggested that the children spent between 21 and 43 per cent of classroom time on the mat (Alsaif, 2011). In an earlier study involving 118 kindergarten teachers, Gibbs and Wilks (1991) found that between 8 and 20 per cent of time was spent on the mat. Finding out whether the mat is indeed a core aspect of a child's classroom learning is crucial in understanding it. Given how commonplace mat time is in junior classrooms, it is important to develop a better understanding of whether teachers' pedagogies reflect their aims for children's academic and social outcomes. For example, if teachers report that mat time achieves the sense of togetherness espoused by McGee and Fraser (2012), then it could be expected that their choice of activities would reflect that. The present study is the first part

of a wider project that seeks to understand the efficacy of teachers' pedagogies at mat time. Thus, the aim was to gather some preliminary data on teachers' experiences of using the mat in junior classrooms. The specific research questions were:

1. How much time do children in Year 2 classrooms spend on the mat?
2. According to teachers of children in Year 2 what does mat time contribute to children's learning?

Method

After ethical approval was granted by Victoria University of Wellington Human Ethics Committee, an email with the survey link was sent to 1914 schools (all eligible schools on the New Zealand (NZ) Ministry of Education's email contact directory), along with a request that the email be forwarded to Year 2 teachers (approximately 2500 teachers fit this category). In the New Zealand school system, Year 2 is the first year in which the class-membership is typically stable (i.e., children typically start school when they turn five; therefore, their first class has growing membership over the year as more children turn five. However, those children are able to enter their second year as a single cohort and are generally aged between 5.5 and 6 years).

Survey Development and Distribution

The measures discussed here are part of a larger survey designed by the first, second, and fourth authors. Questions for the survey were developed by the first author after an extensive literature review in which key topics pertaining to mat time were identified; for example, the benefits of mat time. For the purpose of the current study, responses to questions pertaining to the use, purpose, and developmental goals of mat time are presented. Specific questions about the frequency and duration of mat time, as well as questions about the benefits for children's learning and development, were taken from a questionnaire developed by Gibbs and Wilks (1991) that focused on preschool-aged children and adapted to reflect more contemporary contexts. For instance, in the present

study, respondents were asked about the use of the mat for classroom management in line with contemporary notions of classroom culture and control (McGee & Fraser, 2012).

To begin, respondents were asked to provide demographic data to establish how representative the respondents were to the overall teaching population in New Zealand. Next, they were asked how many mat sessions they had in a single day and how long these sessions lasted. A third section elicited information about mat time use. In particular, respondents were given 13 different purposes (e.g., news, games, discussion, music, etc.) and were asked to indicate how often they used the mat for each purpose on a five-point Likert scale (Never to three-or-more times per day). A fourth section provided respondents with a list of nine possible benefits of mat time (e.g., group cohesion, development of children's motor skills, enhancing self-esteem, etc.). Finally, open-ended questions that asked respondents to list any further activities, goals, or benefits were issued. Analysis of the responses indicated that there were no additional activities, goals, or benefits that should have been included in the survey. Nevertheless, two respondents indicated that they used the mat for classroom prayer, which was not an activity included in the survey.

Demographics of Participants and Their Schools

There were 425 responses; however, survey responses were excluded if (1) essential demographic information was missing or (2) if the participants had answered a question set insufficiently. By only using responses that either addressed all of the items or missed two questions or fewer, a more reliable analysis could be made about the connections between goals and pedagogy compared with the analysis of surveys that only addressed one of the two areas adequately. A total of 296 usable responses were submitted during the three-month data collection period, representing 11.8 per cent of the target population. It follows that a substantial number of responses were missing from the data. It was difficult to assess what factors inhibited a full response as there was large variation in which questions respondents missed; however, selecting the forced answer option in on-line questionnaires might mitigate this issue for future research.

Table 1 shows that the sample included a cross-section of schools that were largely representative of school decile distributions. A school's decile rating in New Zealand determines what degree of funding that school receives. Census data is used to determine the extent to which that school's community resides in low socioeconomic communities. A low decile rating (1-2) is allocated to schools located in low socioeconomic communities (Ministry of Education, 2015). The respondent sample was similarly representative of the teacher population in terms of gender, ethnicity, and experience of teachers (Ministry of Education, 2005).

Table 1. *Distribution of the Demographic Characteristics of the Sample and the Characteristics of Respondents' Schools*

Characteristics	%
Gender (n = 296)	
Female	93
Male	7
Number of Years Working as a Teacher (n = 295)	
1-2	10
3-5	16
6-10	21
11-15	17
16-20	12
>20	24
Type of School (n = 296)	
State Primary	86
Private	3
Māori Immersion	2
Affiliated to a Religion	9
Decile Ranking (Proportion of Students Living in Poverty; n = 296)	
1-3	24
4-7	38
8-10	38

Results

As Table 2 shows, 64 per cent of mat times ranged between 10 and 20 minutes in length,

with approximately a third lasting for 10 minutes. Just over half of the respondents reported using mat time 4-6 times per day, with a further 26 per cent indicating that they used it 7-9 times per day.

Table 2. *Length of Typical Mat Times as a Function of the Number Used per Day*

	Number of Mat Times per Day					
	1-3	4-6	7-9	10-12	13+	
Average Length of Mat Time	%	%	%	%	%	
Less Than 10 Minutes	1	16	11	2	1	31%
10-20 Minutes	7	39	14	4	0	64%
More Than 20 Minutes	2	2	1	0	0	5%
Total	10%	57%	26%	6%	1%	

Principal Component Analyses

Principal component analyses were undertaken in order to understand the dimensionality of the data and as a preliminary to calibrating measurement variables. Use of the principal component analyses enabled identification of items in relation to associated traits. The Kaiser criterion (see Osborne, Costello, & Kellow, 2008) was used, meaning that factors were retained if they had eigenvalues greater than one. Varimax orthogonal rotation was employed to maximise the variances of factors (as described by Osborne et al., 2008). Scales were calibrated for the groups of items associated with each factor using Rasch modelling (see DeMars, 2010), including both dichotomous items (for example, whether or not respondents used mat time for a particular activity) and polytomous items (for example, the level of agreement with certain statements). Thus, the Rasch modelling located respondents on scales reflecting specific relevant traits (Eggen & Verhelst, 2011).

What Happens at Mat Time?

Teachers were asked to indicate the frequencies with which they used various activities at mat time. As illustrated in Table 3, three components emerged from the principal component analysis, two of which comprised curriculum and social items.

Table 3. *The Three Principal Components, Depicting Loadings >.3, for the Mat Time Activities Item, Comprising of Respondents' Reports on the Frequency with Which They Facilitate Social and Academic Activities at Mat Time*

Activity	Component		
	1	2	3
Percentage of Variance	31	11	10
Games	0.739		
Music	0.71		
Discussion of Social Issues	0.71		
Discussion of Rules	0.678		0.308
Classroom Management	0.632	0.301	
Explaining Activity		0.829	
Transitions		0.713	
Curriculum Knowledge		0.662	
Acknowledgements	0.378	0.578	
Reading Books		0.495	
Farewell			0.743
News			0.729
Welcome		0.374	0.549

The first principal component, with an eigenvalue of 4.07, included games, discussion of social issues, classroom management, music, and discussion of rules. A commonality between these items is that they relate to the social climate of classrooms; they establish boundaries and promote cooperation (Harmon-Jones, 2011; Mary, 2014; Svinth, 2013). The second component, with an eigenvalue of 1.49, was associated with activities related to teaching the curriculum. And the third component, with an eigenvalue of 1.25, comprised of social rituals: welcomes, news (also known as “sharing time” or “show and tell”), and farewells.

Figure 1 depicts the distribution of responses to items associated with the first principal component, relating to the social climate. Discussion of rules was the most frequently occurring activity, with the majority of respondents using it every day or more often (N: Never; OS: Only Sometimes; E: Every day; 2-3: 2-3 times per day; >3: More than 3 times per day).

New Zealand Teachers' Use of the Mat in Year 2 Classrooms

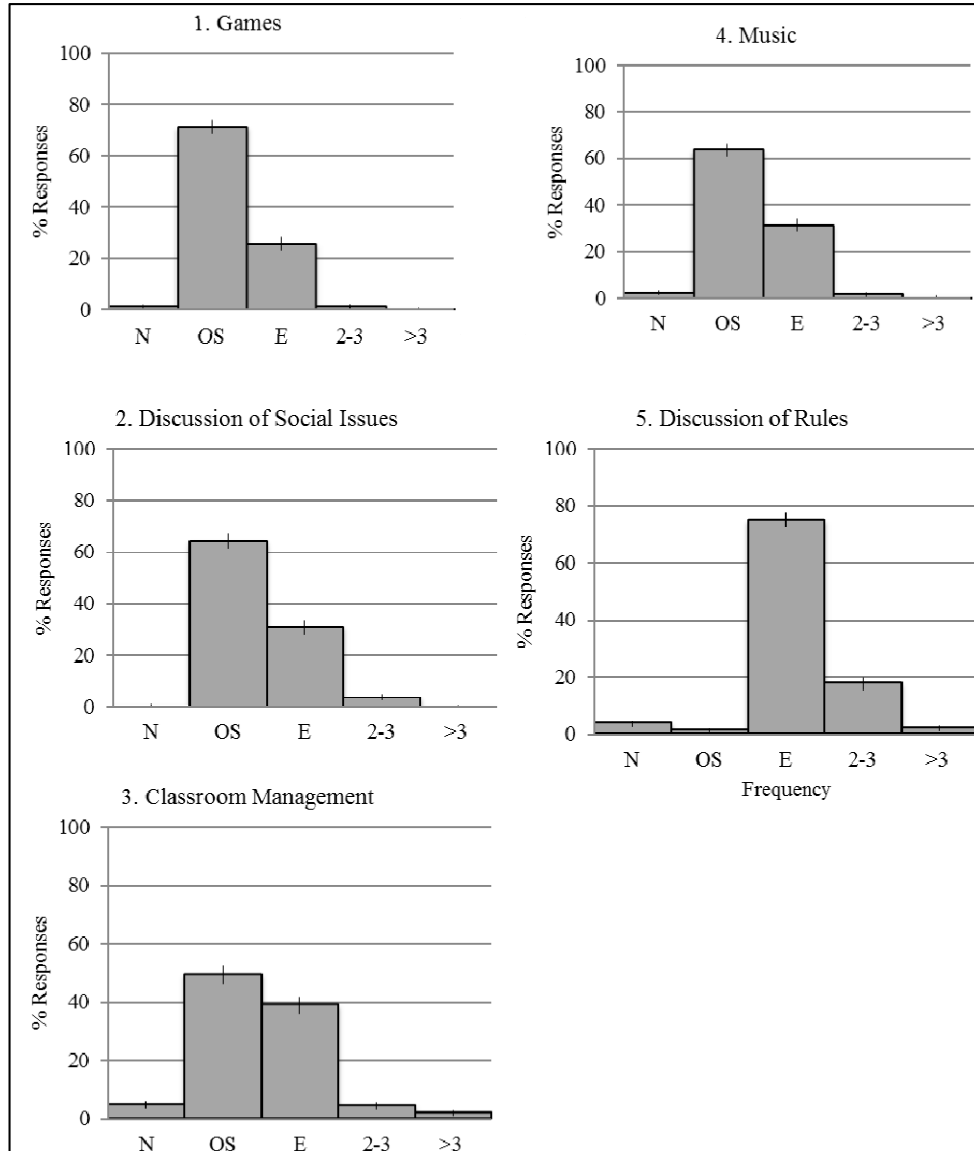


Figure 1. Respondents' Use of Activities Presented as Percentages with Error Margins, and with Activities Shown in the Order to Which They Comprise the First Principal Component for Mat Time Activities: The Social Climate

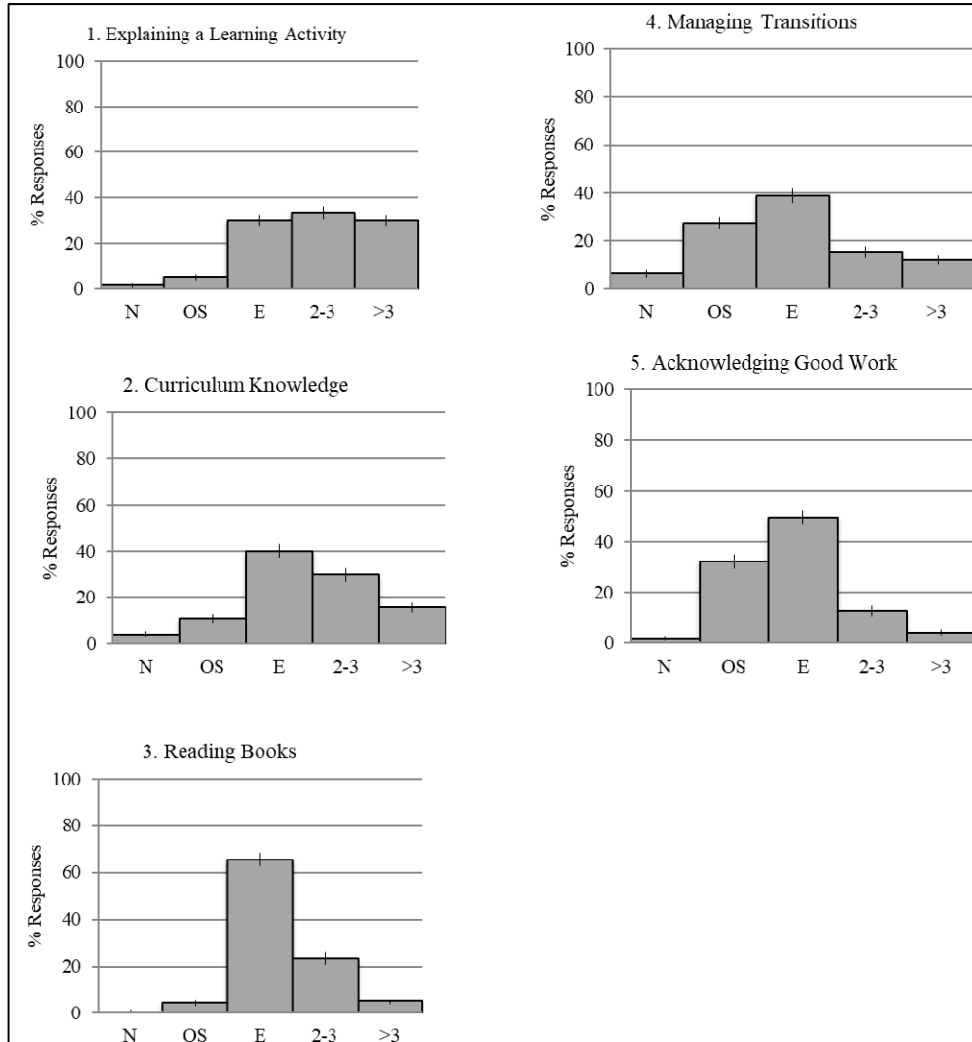


Figure 2. Respondents' Use of Activities Presented as Percentages with Error Margins, and with Activities Shown in the Order to Which They Comprise the Second Principal Component for Mat Time Activities: Teaching the Curriculum

The reported prevalence of activities associated with the second principal component—teaching the curriculum—is presented in Figure 2. These activities all occurred with high frequency; teaching curriculum knowledge, reading a book, and explaining a learning activity were the most common uses of mat time apart from welcomes and farewells (see Figure 3).

New Zealand Teachers' Use of the Mat in Year 2 Classrooms

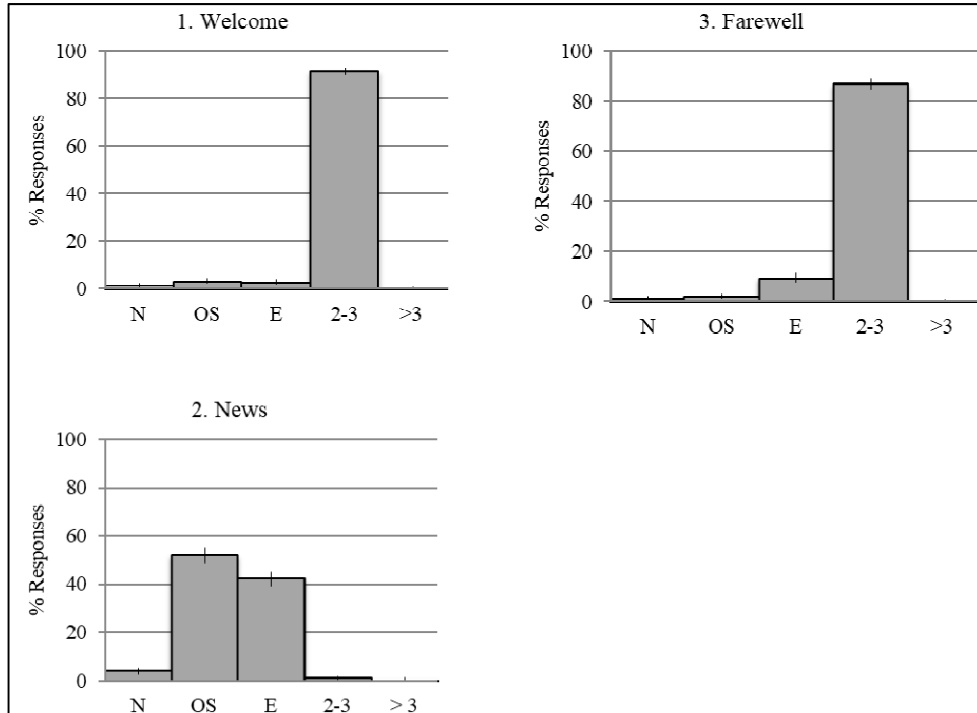


Figure 3. Respondents' Use of Activities Presented as Percentages with Error Margins, and with Activities Shown in the Order to Which They Comprise the Third Principal Component for Mat Time Activities: Social Niceties

The reported frequencies of activities associated with the third principal component are depicted in Figure 3. Respondents predominantly reported that they used the mat for welcomes and farewells two-three times per day. By comparison, mat times were used for “news” significantly less often.

Pedagogical Goals of Mat Time and Benefits to Children’s Learning and Development

In addition to the questions probing the uses of mat times, teachers were asked to indicate the extent to which they agreed that mat time achieves specific pedagogical goals. The principal component analysis of the responses to these items revealed a single substantial component with an eigenvalue of 5.00.

Figure 4 shows high agreement amongst the respondents that mat time helps with all of the listed goals and benefits to children’s learning and development. The exception was the development of motor skills, which is not surprising given that physically-active games are not commonplace on the mat (SD: Strongly Disagree; D: Disagree; N: Neutral; A: Agree; SA: Strongly Agree).

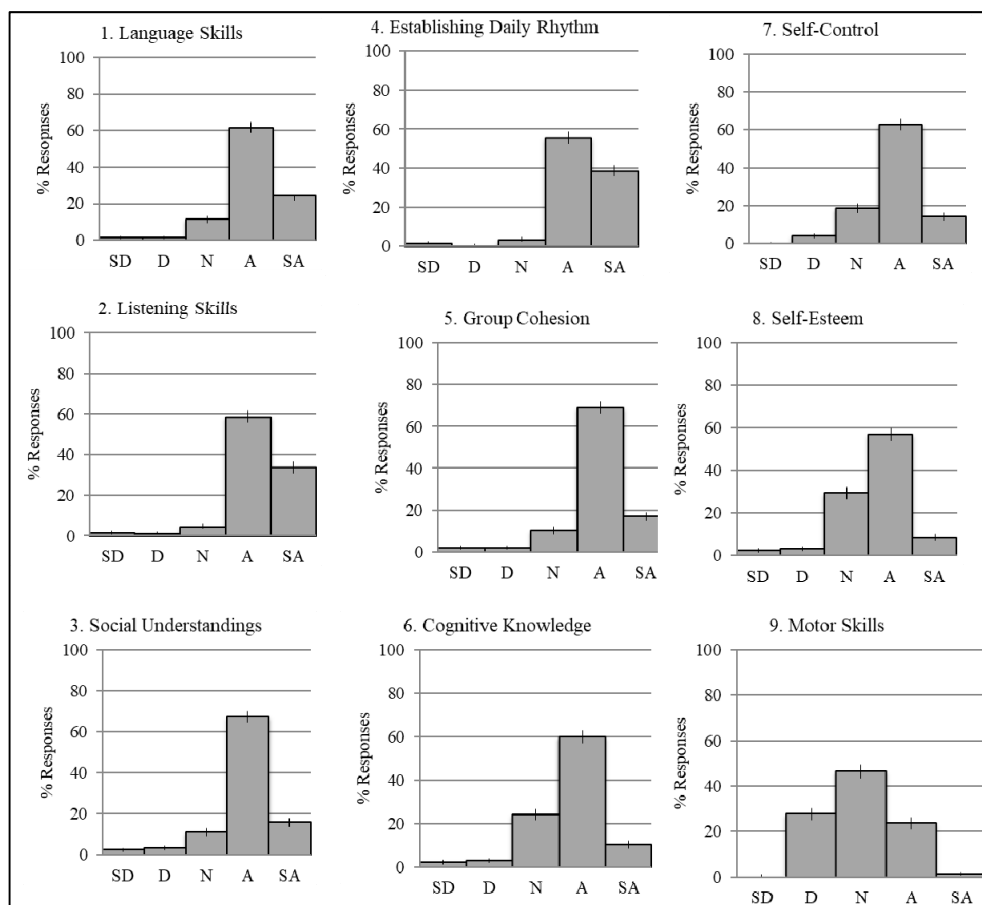


Figure 4. Respondents’ Agreement that Mat Time Achieves Pedagogical Goals, Presented as Percentages with Error Margins, and with Pedagogical Goals Shown in the Order to Which They Comprise the Single Principal Component

Discussion

Respondents indicated that they typically facilitate mat sessions of 10 to 20 minutes, consistent with Mosley's (1996) recommendation for mat time being 20 minutes or less, in order to maximise children's engagement. Nonetheless, the present results suggest that mat time is held several times a day and most children probably spend a cumulative one-two hours per day on the mat; therefore, it comprises a significant proportion of a child's school day. The data also revealed that a wide range of activities are utilized. It was unsurprising to see the high use of activities that align with a focus on literacy, given its prioritisation by successive New Zealand Governments (Clark, 2010). Similarly, activities that promote social conventions were prominent; for instance, using mat time for greetings and farewells. Likewise, discussion of rules was highly nominated. This is perhaps to be expected, given that considerable research has shown that classroom disruptions and challenging behavior can be partially mitigated through establishing and discussing rules around appropriate behaviors (Sugai & Horner, 2002).

Respondents nominated a range of learning goals and associated benefits. They were more likely to rate improvement to children's language and listening skills than cognitive knowledge despite their emphasis on academically-oriented activities. This might be because there was a strong onus on children's skills in answering questions, listening, and sharing ideas. Other highly rated outcomes were children's social understandings and sense of group cohesion. Group cohesion is notoriously difficult to measure (Greer, 2012; Miller & Moran, 2007) and is poorly defined within the mat-time literature (Cefai et al., 2014; Collins, 2013; Miller & Moran, 2007). General definitions allude to togetherness as well as to shared orientations to the task (Greer, 2012).

In the specific context of the mat, some researchers suggest that certain activities might contribute to group cohesion, particularly news, music, and cooperative games because they potentially require children to work together or support each other (Gallas, 1992; Harmon-Jones, 2011; Mary, 2014). Indeed, these activities might facilitate children's understanding of their peers. For instance, some of these activities call for children to share things that interest them, thereby fostering the potential for peers to recognize common interests. In addition, games and music might encourage cooperation, further enhancing a

sense of togetherness (Cefai et al., 2014; Leach & Lewis, 2013; Lown, 2002; Mary, 2014).

Although respondents in the present study indicated that they used mat time to promote social understanding and group cohesion, it was unclear how they went about achieving this, given that the activities associated with group cohesion (i.e., well-facilitated cooperative games, music, and news [Cefai et al., 2014; Lown, 2002]) were among the least nominated activities.

Despite the teachers' reports, it would be unwise to assume that mat time contributes positively to specific outcomes without knowing more about the content of the activities, the facilitation, and the specific effects they have on children. For instance, although games are linked with group cohesion, Svinth (2013) observed some competitive games, which had a detrimental impact. Similarly, Leach and Lewis (2013) noticed that activities focused on social issues unintentionally led to bullying whereby some children breached the confidence of others or set them up to be reprimanded for things they had no hand in.

Teachers must carefully examine typical mat time activities in order to evaluate whether or not they achieve what they set out to accomplish. Blank (2009) suggests that teachers tacitly follow some practices inherited from previous generations of teachers. If such practices are followed unquestioningly, teachers might not notice undesirable outcomes (Sikes, 2003). It is possible that mat time could be such a phenomenon.

Many of the activities listed in the present study could easily occur anywhere, not just the mat; therefore, the question about why the mat is such a focal point in junior classrooms remains unanswered. Indeed, Leggett and Ford (2016) assert that any well-facilitated large group activity has potential to foster children's belonging and cohesion, especially so when facilitation fosters acceptance, equity, and responsiveness. Notwithstanding, they state that much of large group teaching occurs indoors, such as the mat, and is more likely to include instruction and managing behavior than small group experiences or those that occur outdoors.

Despite representative, the current sample of teachers was relatively small. It is likely to have been biased toward teachers who are particularly cognizant of their use of mat time, and therefore, interested in responding. This is an innate limitation of self-report survey data. Future research, including classroom observations of mat time behavior, would most likely provide a more comprehensive picture.

The present study provides a preliminary snapshot of how the mat is being used in Year 2 classrooms in New Zealand. The data shows that it is a frequently used whole-group activity that is believed to have a wide range of benefits for children. However, it appears that there may be some disconnect between the pedagogical strategies being used and the perceived outcomes. It is anticipated that these findings may facilitate a more careful consideration of the use and purpose of the mat in junior classrooms, both in New Zealand and internationally.

References

- Alsaif, F. (2011). *Intelligence-friendly environments: A study of New Zealand primary school classroom design in relation to multiple intelligences theory* (Master's thesis, Victoria University of Wellington, Wellington, New Zealand). Retrieved from <http://researcharchive.vuw.ac.nz/xmlui/handle/10063/2041>
- Blank, J. (2009). Situated in school scripts: Contextual early childhood teaching. *Teaching and Teacher Education*, 25(2), 251-258. doi:10.1016/j.tate.2008.11.007
- Cefai, C., Ferrario, E., Cavioni, V., Carter, A., & Grech, T. (2014). Circle time for social and emotional learning in primary school. *Pastoral Care in Education: An International Journal of Personal, Social and Emotional Development*, 32(2), 116-130. doi:10.1080/02643944.2013.861506
- Clark, J. (2010). National standards: The public debate—what was it all about? *New Zealand Journal of Teachers' Work*, 7(2), 106-124.
- Collins, B. (2013). Empowerment of children through circle time: Myth or reality? *Irish Educational Studies*, 32(4), 421-436. doi:10.1080/03323315.2013.854459
- Danielewicz, J., Rogers, D., & Noblit, G. (1996). Children's discourse patterns and power relations in teacher-led and child-led sharing time. *Qualitative Studies in Education*, 9(3), 311-331. doi:10.1080/0951839960090306
- DeMars, C. (2010). *Item response theory: Understanding statistics measurement*. New York, NY: Oxford University Press.
- Duman, G. (2009). Implementing circle time activities into Turkish national preschool

- program. *Procedia: Social and Behavioral Sciences*, 1(1), 1730-1733. doi:10.1016/j.sbspro.2009.01.306
- Eggen, P., & Kauchak, D. (2006). *Strategies and models for teachers: Teaching content and thinking skills* (5th ed.). Boston, MA: Pearson.
- Eggen, T., & Verhelst, N. (2011). Item calibration in incomplete testing designs. *Psicológica, International Journal of Methodology and Experimental Psychology*, 32(1), 107-132.
- Eirich, J. (2006). *Classroom meeting: A window into children's cultures* (Doctoral dissertation, Ohio State University, Ohio, USA). Retrieved from https://etd.ohiolink.edu/pg_10?0::NO:10:P10_ACCESSION_NUM:osu1158593536
- Gallas, K. (1992). When the children take the chair: A study of sharing time in a primary classroom. *Language Arts*, 69(3), 172-182.
- Gibbs, C., & Wilks, A. (1991). *Mat time in kindergartens: Aims and objectives for programme and children's development*. Unpublished research report, Massey University, Palmerston North, New Zealand.
- Greer, L. (2012). Group cohesion: Then and now. *Small Group Research*, 43(6), 655-661. doi:10.1177/1046496412461532
- Harmon-Jones, C. (2011). *Does musical behavior promote affiliation?* (Doctoral dissertation, Texas A&M University, Texas, USA). Retrieved from <http://oaktrust.library.tamu.edu/bitstream/handle/1969.1/ETD-TAMU-2011-08-10045/HARMON-JONES-DISSERTATION.pdf?sequence=2>
- Hong, Y. (1995). *Teaching large-group time in a preschool classroom: The teacher as orchestra conductor* (Unpublished doctoral dissertation). Illinois University, Urbana, USA.
- Leach, T., & Lewis, E. (2013). Children's experiences during circle-time: A call for research-informed debate. *Pastoral Care in Education: An International Journal of Personal, Social, and Emotional Development*, 31(1), 43-52. doi:10.1080/02643944.2012.702781
- Leggett, N., & Ford, M. (2016). Group time experiences: Belonging, being and becoming through active participation within early childhood communities. *Early Childhood Education Journal*, 44(3), 191-200. doi:10.1007/s10643-015-0702-9

- Ling, S., & Barnett, D. (2013). Increasing preschool student engagement during group learning activities using a group contingency. *Topics in Early Child Special Education, 33*(3), 186-196. doi:10.1177/0271121413484595
- Lown, J. (2002). Circle time: The perception of teachers and pupils. *Educational Psychology in Practice, 18*(2), 93-102. doi:10.1080/02667360220144539
- Mary, L. (2014). Fostering positive peer relations in the primary classroom through circle time and co-operative games. *Education 3–13: International Journal of Primary, Elementary and Early Years Education, 42*(2), 125-137. doi:10.1080/03004279.2012.662239
- McGee, C., & Fraser, D. (Eds.). (2012). *The professional practice of teaching* (4th ed.). Melbourne, VIC: Cengage Learning.
- Miller, D., & Moran, T. (2007). Theory and practice in self-esteem enhancement: Circle-time and efficacy-based approaches—a controlled evaluation. *Teachers and Teaching: Theory and Practice, 13*(6), 601-615. doi:10.1080/13540600701683549
- Ministry of Education. (2005). *Teacher Census 2004*. Retrieved from www.educationcounts.govt.nz/publications/schooling/teacher_census
- Ministry of Education. (2015). *Ministry funding deciles*. Retrieved from <http://parents.education.govt.nz/primary-school/schooling-in-nz/ministry-funding-deciles/>
- Mortlock, A. (2015). *Lifting the school mat: An investigation of pedagogy and children's social worlds at mat time* (Unpublished doctoral dissertation). Victoria University of Wellington, Wellington, New Zealand.
- Mosley, J. (1996). *Quality circle time in the primary classroom: Your essential guide to enhancing self-esteem, self-discipline and positive relationships*. Cambridgeshire, UK: Learning Development Aids.
- Osborne, J. W., Costello, A. B., & Kellow, J. T. (2008). Best practices in exploratory factor analysis. In J. W. Osborne (Ed.), *Best practices in quantitative methods* (pp. 86-102). Thousand Oaks, CA: SAGE Publications.
- Piters, A. (1995). *An investigation of a teacher's interaction patterns with students during mat time discussions* (Unpublished doctoral dissertation). Wellington College of Education, Wellington, New Zealand.
- Sikes, P. (2003). Making the familiar strange: A new look at inequality in education. *British*

Anita Mortlock, Vanessa A. Green, Mary-Jane Shuker, & Michael Johnston

Journal of Sociology of Education, 24(2), 243-248. doi:10.1080/01425690301898

Sugai, G., & Horner, R. (2002). The evolution of discipline practices: School-wide behavior supports. *Child & Family Behavior Therapy*, 24(1-2), 23-50. doi:10.1300/J019v24n01_03

Svinth, L. (2013). Children's collaborative encounters in pre-school. *Early Child Development and Care*, 183(9), 1242-1257. doi:10.1080/03004430.2012.719228