

PREPARING TEACHERS FOR MULTI-GRADE CLASSROOMS: SOME QUESTIONS AND ANSWERS

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Introduction

Concerns about issues of equity and social justice in Australia have focussed attention on the educational provisions for children in rural Australia. Because many of the schools in rural communities are small, many of the classrooms in which rural children are educated are multi-grade classrooms, that is, classrooms in which one teacher may be responsible for teaching at least two, and as many as seven, primary grades. Obviously, efforts directed at improving the quality of education for rural children must address the challenge of improving the quality of multi-grade teaching and the preparation of those who teach in multi-grade classrooms.

Multi-gradedness is not just a feature of rural schools, however. Schools in urban settings may also have one or more multi-grade classrooms, either by necessity or choice. Though some schools are compelled to form composite or multi-grade classes because of low student enrolments in one or more year levels, other schools deliberately elect to form multi-grade classes because they see educational benefits in, and are committed to, a multi-age or family group philosophy.

Multi-grade classrooms, therefore, are dotted all over the educational landscape. They can be found in large as well as small schools, and in town and city schools as well as those in rural communities. Moreover, multi-gradedness is not an uncommon occurrence. Some indication of the incidence of multi-gradedness can be gained from the fact that, in 1990, 34% of Australia's 7000 schools had student enrolments of under 100, and so were small enough to make multi-grade classrooms a necessity (Schools Council, 1992). To this number can be added those large schools which have opted for multi-grade classrooms or have been obliged to form composite classes.

Because a sizeable proportion of Australia's youth receive their primary education in multi-grade classrooms, one might expect that teaching in such contexts should figure prominently in programs of preservice teacher education. Apparently, this is not the case, at least in Queensland. This issue has received little attention in teacher education faculties in this state. A recent survey of about 900 Queensland teachers (Board of Teacher Education (Q), 1988) indicated a serious deficiency in the pre-

service preparation of teachers in respect of teaching in multi-grade classrooms. This study showed that, whereas an overwhelming majority of primary teachers in the survey believed that multi-grade teaching should be an important focus in pre-service programs, it actually received very little attention. Furthermore, the authors of this study reported that some teacher education institutions in Queensland did not even arrange for prospective teachers to have at least some practicum experience in multi-grade classrooms.

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Multi-grade Teaching and Preservice Teacher Education: Some Questions

There appear to be reasonable grounds, then, for asserting that teaching in multi-grade classrooms warrants much more attention in pre-service teacher education programs than it currently receives. Certainly, it is a claim that deserves careful consideration, but teacher education institutions cannot respond to this claim without some detailed and relevant information. An informed response to the claim will require clear answers to some basic questions such as the following:

Are beginning teachers assigned to teach in multi-grade classrooms on their first, or an early, appointment?

If so, what number of beginning teachers spend the first or early years of their teaching careers in multi-grade classrooms?

What kinds of multi-grade classrooms do they teach in - two-grade classrooms? three-grade classrooms? four-grade classrooms? ... or seven-grade classrooms?

Does multi-grade teaching require a special expertise? If so, what is the professional knowledge base for multi-grade teaching? What should beginning teachers know in order to be effective teachers of multi-grade classes?

A Review of the Literature on Multi-grade Teaching

The literature on multi-grade teaching provides few clues about answers to the above questions. There are several reasons for this: (1) Multi-grade teaching has attracted very little research attention. The authors of a report by the New South Wales Department of Education claimed that their literature search " (2) there is a dearth of statistical evidence relating to the incidence of multi-gradedness and the characteristics of multi-grade classrooms and of the teachers working in them; and (3) the discursive literature on multi-grade teaching is largely anecdotal, atheoretical and has not been adequately conceptualised. Some of the literature offers multi-grade teachers helpful practical suggestions and tips but much of it has been decontextualised so that it is unclear to which settings the material refers.

A brief review of the literature on multi-grade classes, identified at this stage in the study, is provided below.

Incidence of Multi-gradedness; Characteristics of Multi-grade Classrooms. A relatively recent report on primary schools in New South Wales (Department of Education [N.S.W.], 1989) showed that, in July 1988, there were about 3500 multi-grade classrooms in public schools in that state. This number represented about 20% of all primary classes, a level which had remained static over at least the preceding seven years. At that time, 1988, the majority of multi-grade classes (62%) were in non-metropolitan regions. About 90% of multi-grade classes in metropolitan regions were comprised of two consecutive year groups whereas, for non-metropolitan regions, the percentage was 71% . Data on the incidence and characteristics of multi-graded classes in other states have not been located.

Learning Outcomes. Very little research has been conducted into the learning outcomes of students in multi-grade classes. The available evidence suggests that there is no difference between the academic performance of students in multi-grade classes and those in single-grade classes but that some benefits, in terms of better social skills and attitudes to schools and teachers, accrue to students in multi-age classrooms (Ford, 1977; Pratt, 1986; Roseth, 1989).

Multi-grade Teachers: Needs, Problems and Challenges. A small number of rural school studies have reported on the needs,

problems and challenges facing teachers in such schools. Some of the findings refer to the multi-grade classroom situations in which many rural teachers work. Cross (1987) reported that over half of the 70 rural school teachers contacted in a British Columbian survey perceived multi-grade teaching as more difficult than teaching a single grade. He further reported that the main factors seen as contributing to this perceived greater difficulty were " ... (1) the amount of planning required; (2) planning science and social studies without repetition; (3) time for assisting individual children; (4) maintaining pupil interest; and (5) individual reading " (p. 42). Interviews with 32 of the same teachers revealed that most agreed that student teachers needed a practicum in a multi-grade classroom. Other characteristics of multi-grade classrooms for which they believed teachers needed preparation included " ... curriculum for all grades; classroom scheduling and organization; individualized instruction; and collecting a wide range of resources and materials " (Bandy, 1980, p. 85).

Following a survey of all one- and two-teacher schools in New South Wales in 1984, Spindler (1985/6) reported that the major needs of these teachers were in the areas of programming (time-tabling); planning learning experiences for, and appropriate management of, groups in the classroom; and evaluation of students, programs and themselves.

Teachers' Practical Knowledge. Only one study of the practical knowledge of teachers was located. This study (Phillips, Watson and Wille, 1993) sought to document the implicit knowledge of 12 teachers in a number of metropolitan schools in New South Wales who had been identified as outstanding multi-grade teachers . Teachers were interviewed to reveal the knowledge that underpinned their practice in lesson incidents recorded by researchers during observations over eight lessons per teacher. Analysis of interview transcripts produced 125 maxims covering six areas of teacher knowledge, namely, management, personalization, class climate, teaching strategies, curriculum and teaching contexts. These maxims were then subjected to validation checks by a panel of practitioners, principals and directors of school clusters. The authors concluded that the outstanding multi-grade teachers in their study -

" showed high levels of skill as revealed by a number of maxims that had particular reference to composite (multi-grade) classes. Their expectations of children were realistic and discriminating. They established efficient routines which enabled the many classroom functions to proceed with a minimum of fuss. They used group work skilfully to cater for individual differences. They sometimes taught the same lesson content to the whole class but made different process demands suitable to different individuals

and groups. These are indeed advanced level teaching skills but each is also applicable to the regular class. The composite

class, however, puts a higher premium upon some of the most difficult skills a teacher has to master " (pp. 27 - 28).

One other conclusion is particularly noteworthy. The authors expressed the view that " nothing seems to be uniquely special about the demands of the composite class " (p. 28) and that " while there is good reason to believe that composite class teaching is not qualitatively different from teaching a single grade, the evidence of this study suggests that effective composite class teaching requires a heightened expression of some of the most demanding skills a teacher develops " (p. 29). However, a crucial point to note is that all the teachers in the study were in multi-grade classes with just two year-levels. Whether these same conclusions would hold for all multi-grade classes, especially those with five, six or seven year-levels, remains open to question.

Conventional Wisdom . The discursive literature on multi-grade teaching is more extensive though the quality varies quite considerably. Perhaps the best work of this type is that produced by Miller (1988; 1990) at the Northwest Regional Educational Laboratory in the U.S.A. Other useful source books have been prepared by Reck (1988) and Wolfe, Tonsmeire and Findley (1990) while handbooks by Purdom (1970), Collingwood (1987) and the N.S.W. Department of School Education (1989) have been rated as valuable by Phillips, Watson And Wille (1993). Much of the conventional wisdom on multi-grade teaching, (which is far too extensive to be summarized adequately in this brief review) focusses on scheduling or time-tabling, organization and management, teaching techniques including grouping methods, student assessment, and curriculum.

Project Overview

As the above review indicates, the data base on multi-grade teaching is far too limited to provide an adequate basis for strategic planning by teacher education institutions in respect of preparing teachers for multi-grade teaching. For that reason, a research group at the University of Southern Queensland has designed a study into multi-grade teaching in Queensland.

The project has three phases:

In Phase 1, a survey of all primary schools in Queensland was to be conducted with the aim of identifying the range and frequencies of multi-grade classrooms and the total years of teaching experience and multi-grade teaching experience of all teachers in multi-grade classrooms.

In Phase 2, questionnaires were to be mailed to 200 teachers, both novice and experienced, in one-teacher and two-teacher schools and in multi-grade classrooms in schools with three to six teachers. Novices were defined as those with less than two years teaching experience and experienced teachers as those with six or more years of multi-grade teaching experience. The goal of this phase was to identify what practitioners, both novice and experienced, regarded as significant aspects of multi-grade teaching.

The findings from Phases 1 and 2 were to be used to inform the development of an intensive, case-study approach in Phase 3 to document the professional knowledge base of a small number of

highly effective multi-grade teachers. In-depth interviews were to be used for this purpose. In addition, research team members were to observe a number of lessons per teacher and then, in post-lesson interviews, assist teachers to disclose the professional knowledge base underpinning lesson segments identified by them as highly successful.

Progress to Date

The first two phases have been completed and preparation for phase 3 is well underway.

Analysis of the data from phases 1 and 2 has not yet been completed but the results of a preliminary analysis are reported below.

Findings - Phase 1

The survey form developed for accessing data from schools on multi-grade classes and teachers was a machine readable form with closed response items. The form sought information on the type of school (state/ non-state), location (metropolitan area and provincial cities with a population in excess of 10 000 or other), the number of teachers in the school with teaching responsibilities (1, 2, 3 - 6, 7 - 10, > 10), and the principal reason(s) for having multi-grade classes - (i) by necessity; (ii) committed to multi-grade philosophy; (iii) introduced on an

experimental basis; and (iv) none of the above. The survey also sought information on the number of year levels in each multi-grade class in the school and the years of teaching experience and multi-grade teaching experience of each teacher in a multi-grade class.

The survey form, and a covering letter outlining the nature of the research, were mailed out in October 1992 by the Board of Teacher Registration in Queensland, on behalf of the research team. This material was mailed out to all 1376 primary schools and schools with primary departments in Queensland. Responses were received from 1019 schools, representing a response rate of approximately 74%. All response forms were checked visually and then processed on an optical scanning device. The data have been analysed using the SPSS statistical package. Some selected findings are reported below:

Type and Location of Schools. Of the 1019 schools who responded to the survey, 849 or 83% were state schools and 170 or 17% were non-state schools. Fifty-eight percent (585) of the schools were outside the metropolitan area or provincial cities with populations over 10 000.

Size of Schools. The distribution of schools, according to size (as measured by the number of teachers with classroom teaching responsibilities), is shown in Table 1.

Table 1: Size of School

Number of Teachers in School	Number of Schools	Percentage
1	123	(12.1%)
2	122	(12.0%)
3 - 6	263	(25.8%)
7 - 10	137	(13.4%)
more than 10	368	(36.1%)
	6 (Missing Data)	
	1019	

Distribution of Schools by Size - Darling Downs Region. Since this survey was conducted, information has been provided by the Darling Downs Regional Office of the Queensland Department of Education on the number and distribution of multi-grade classes

in the 119 state schools in that region.

The data on schools in the Darling Downs region (see Table 2), as at March 1993, show that the proportions of one-teacher, two-teacher and 3 - 6 teacher schools in that region are higher than those in Table 1 and the proportions of larger schools (those with more than 6 teaching staff) are correspondingly lower. There are a number of interesting aspects to the data in Table 2:

- . Of the 725 classes in schools in the Darling Downs region, 263 or 36.3% were multi-grade classes. This means that primary teachers appointed to schools in this region have a 1 in 3 chance of being assigned to teach in a multi-grade classroom.
- . Seventy-one (71) of these multi-grade classes were in 36 of the 46 large schools - those with from 7 to 32 teaching staff.
- . Only 10 or 8.4% of the 119 schools had no multi-grade classes.
- . All classes in two large schools were multi-grade.

Table 2: Distribution of Various Sized Schools - Darling Downs Region

Number of Teachers in School	Number of
Schools	Schools
1	19 (16.0%)
2	27 (22.7%)
3 - 6	37 (31.1%)
7 - 10	14 (11.8%)
More than 10	22 (18.5%)
Total	----- 119 -----

Number and Distribution of Multi-grade Classes - Queensland.

The survey revealed that there were 2349 multi-grade classes and that these classes were located in 915 of the 1019 schools that responded to the survey. This means that only 104 schools (73 state and 31 non-state), slightly more than 10% of the sample, reported having no multi-grade classes. Of the 2349 multi-grade classes, 2020 were in state schools and 329 were in non-state schools.

It is not clear what proportion of primary classes in Queensland in 1992 were multi-grade, but, based on a comparison of state populations, it would appear to be at least as high as in New South Wales where, in 1988, there were 3500 multi-grade classes representing about 20% of the total number of primary classes in that state.

The number of multi-grade classes per school varies according to

the size of the school and whether it is committed to multi-age or family grouping. As Table 3 shows, 270 schools in the sample (including 123 one-teacher schools) reported having only one multi-grade class, 266 schools (including 122 two-teacher schools) reported having two multi-grade classes and 216 reported having three multi-grade classes. At the same time, there was a significant number of schools with four or more multi-grade classes and some with more than 10 and as many as 18. These were obviously large schools which had adopted a multi-age philosophy.

Table 3: Distribution of Multi-grade Classes across Schools of Varying Sizes

Number of multi-grade schools	Number of classes per school	Number of		
		State	Non-state	Total
	1	231	39	270a
	2	222	44	266b
	3	180	36	216
	4	78	11	89
29	5	24	5	
	6	10	3	
13	7	13	1	
14	8	3		0
3	9	1		0
1	10	1		0
1	11 to 18	13		0
13				

776 139 915

- a Includes 123 one-teacher schools.
- b Includes 122 two-teacher schools.

Types of Multi-grade Classes. In this survey, information was sought on the number of year levels in each multi-grade class. Analysis of these data (see Table 4) showed that 1502 or 64% of all multi-grade classes were classes with two year levels. A further 523 or 22% were classes with three year levels. The remaining 14 % of multi-grade classes had from four to seven year levels. Most of these classes were in the 245 one- and two-teacher schools.

Table 4: Type of Multi-grade Classroom

Number of year levels per class classes	Number of
2	
1502 (63.9%)	
3	
523 (29.1%)	
4	
180 (7.7%)	
5	
25 (1.1%)	
6	
23 (1.0%)	
7	
90 (3.8%)	

6
 missing

data

2349

The distribution of these multi-grade classes across the different size schools is shown in Table 5.

Table 5: Distribution of Types of Multi-grade Classes across Schools of Varying Size

Number of year levels per class	Size of school			
	1 teacher	2 teacher	3 - 6 teacher	7 - 10 teacher
2	2	15	587	201
697				
3	3	104	204	41
171				
4	10	112	35	5
18				
5	13	4		3
2		3		
6	13	4		1
2		3		
7	82	3		1
1		3		
	-----	-----	-----	-----
	123	242	831	252
895	-----	-----	-----	-----

Reasons for Multi-gradedness. The data on this survey item indicated that 832 or 82% of schools had formed multi-grade classes out of necessity. A further 136 or 13% of schools indicated that they had formed multi-grade classes because they were committed to a multi-grade philosophy, with another 27 schools (less than 3% of the sample) reporting that they had introduced multi-grade classes on an experimental basis. This means that roughly one school in every six was either committed to multi-gradedness or actively testing its relevance and benefits.

Teachers in Multi-grade Classrooms. The 2349 multi-grade classrooms in the sample of schools in this survey were serviced by about 2396 teachers, indicating that a very small number of multi-grade classes were cooperatively taught. The lack of precision as to the number of teachers stems from a small variation in two sets of data. The survey item seeking information on years of teaching experience gave the number of teachers as 2381, whereas the item seeking information on the years of multi-grade teaching experience of the teachers in the survey yielded a slightly larger number - 2396.

Table 6 shows that, of the teachers in multi-grade classes, only 261 or 11% were novices. Most, 1616 or 68%, had been teaching for six or more years, with a further 504 or 21% having had between three and five years of teaching experience.

Table 6: Length of Teaching Experience of Multi-grade Teachers

	Years of teaching experience	Number of teachers
261 (11%)	0 - 2 years	
504 (21%)	3 - 5 years	
1616 (68%)	6 or more years	
		----- 2381 -----

On the other hand, Table 7 shows that 909 teachers, or 38% of

those who teach in multi-grade classes, have had two or fewer years of multi-grade teaching experience. Thirty-one per cent of teachers in multi-grade classes have had between three and five years multi-grade teaching experience with about the same percentage having had six or more years of multi-grade teaching experience.

Table 7: Length of Multi-grade Teaching Experience of Teachers in Multi-grade Classes

Years of multi-grade teaching experience		
Number of teachers		
(38%)	0 - 2 years	909
(31%)	3 - 5 years	750
(31%)	6 or more years	737
	----- 2396 -----	

Summary - Phase 1

Phase 1 of the study involved a survey of multi-grade classes in all primary schools and schools with primary departments in Queensland. Information was sought from each school about the number of multi-grade classes, the number of year levels in each multi-grade class, the size and location of the school, reasons for the existence of multi-grade classes and the teaching experience of teachers in multi-grade classes. Survey forms were completed and returned by 1019 of the 1376 Queensland schools with primary classes in 1992.

A preliminary analysis of data from Phase 1 of the study indicates that -

- . There were well over 2000 multi-grade classes in these 1019 schools;
- . About nine out of every ten schools completing the survey had at least one multi-

- grade class;
- . The overwhelming majority of multi-grade classes had two year levels but that there were significant numbers of classes with three and four year levels;
- . One in ten schools had either made a commitment to a multi-grade philosophy or were actively investigating the issue;
- . About 40% of teachers in multi-grade classes had had less than two years teaching experience in multi-grade classes; and
- . About one in every 10 teachers in multi-grade classes was a novice, that is, had been teaching for only up to two years.

Findings - Phase 2

In Phase 2 of the study, a questionnaire was mailed out to 349 teachers in multi-grade classrooms which sought to identify their perceptions of what was critical to teaching success in such classrooms. The questionnaire required teachers to list those aspects of teaching they considered crucial to success in multi-grade teaching and to respond to statements about aspects of teaching in multi-grade classrooms by indicating how significant they perceived each aspect of teaching to be - 'very significant', 'significant', 'marginally significant' or 'not significant'.

As a first step in the development of the questionnaire, statements were synthesised from the literature on multi-grade teaching, each statement representing an aspect of teaching about which there appeared to be general consensus as to its significance. These aspects of teaching appeared to coalesce round six areas - teaching strategies, resources, time management and time-tabling, student self-management, student assessment and curriculum. Early versions of the questionnaire were modified in response to feedback from staff in three schools where staff had volunteered to provide critical comment on the questionnaire.

The questionnaire was distributed to about 350 teachers in small schools across Queensland, schools with one-teacher, two-teachers

and those with 3 to 6 teachers. The teachers were selected from data provided by schools in the Phase 1 survey. The aim of Phase 2 was to obtain responses from equal numbers of experienced teachers (those with 6 or more years of experience in multi-grade classrooms) and novice teachers (those with up to 2 years of multi-grade teaching experience) in each of the three types of

school. Responses were received from 160 teachers, a response rate of 46%. The distribution of respondents is shown in Table 8. A target figure of 30 respondents in each cell of the matrix in Table 8 was set. The number of novice teachers in one-teacher schools who responded fell well below this target figure because the population of novice teachers in one-teacher schools was very small.

Table 8: Distribution of Respondents to Questionnaire 2

Type of Respondent	Type of School			
	1 - Teacher		2 - Teacher	
3 - 6 Teacher	Totals			
Novice	13 (23)	25 (72)	25 (72)	
63				
Experienced	30 (46)	34 (77)	33 (59)	97
---	---	---	---	---
Totals	43	59	58	
160	---	---	---	---

N.B. The numbers in brackets indicate the number of teachers in each cell to whom questionnaires were mailed. Two mailings were required to achieve the responses indicated above.

The data from the closed response items in this survey of teachers are presented in Table 9. Aspects of teaching which were considered 'very significant' in multi-grade classrooms by 90% or more of respondents are listed first (See Set A), followed by those considered 'very significant' by 80 to 89% of respondents (see Set B), and so on. At the foot of Table 9 are several statements representing aspects of teaching which were considered 'very significant' in multi-grade contexts by 50 to 59% of respondents (see Set E). There were a further 11 aspects of teaching which were perceived by 50% or more of teachers as not being 'very significant' but, nevertheless, were seen by a majority of teachers as being 'significant'.

One noteworthy point is that the issue of student independence figures prominently among those aspects of teaching at the top of the list. Four of the five 'most significant' aspects of teaching had to do with this issue. This suggests that a high

level of student independence is a prime goal of teachers in multi-grade classrooms. The teachers in this sample have also identified curriculum planning, teaching strategies for promoting independent learning and being personally well organized as among the most significant aspects of teaching in multi-grade classrooms. On the basis of these data, a case could be made out for the inclusion of the following topics in programs of teacher education for multi-grade teaching:

Promoting student independence in work habits, learning and use of resources;

- Curriculum planning, with special emphasis on the integration of content
 - across different year levels and subject areas;
- Individualisation of instruction especially for students requiring extension or remediation;
- Classroom management, including time management and time-tabling;
- Teaching strategies appropriate to the multi-grade classroom; and
- Student assessment in the multi-grade classroom.

Responses of teachers to the open-ended items in the questionnaire support the above analysis but also extended it. Large numbers of teachers saw the possession by multi-grade teachers of interpersonal skills, of an extensive and rich knowledge of students, and of such attributes as flexibility, dedication, sense of humour, patience and humility, as crucial to success in multi-grade teaching.

Table 9: Levels of Significance of Aspects of Teaching- Teachers' Perceptions

Area	Aspect of Teaching	% of Teachers Who
Regard		Aspect as Very
Significant		
<hr/>		
Set A		
Student self greater management	Establishing independent work habits in students	90 or
Set B		

Teaching Promoting independent learning strategies 80 - 89

Time

management Organisation of self.

& time-tabling

Student self Establishing routines for students to follow in the

management classroom.

Set C

Resources Encouraging students to use resources independently 70 - 79

Curriculum Integrating content from different year levels

Integrating different subject areas

Planning for a diversity of grades

Student self Developing skills for effective group work management

Set D

Teaching Promotion of effective group work strategies 60 - 69

Providing learning support (remediation) to students

Providing extension for capable students

Management of groups, grades

Integrating different age groups

Resources Organizing resources to suit classroom situations

Time Allocating teacher time to individual students

management

& time-tabling

Set E

Teaching Peer tutoring strategies 50 - 59

Use of projects

Group discussion methods

Resources Obtaining suitable resources for the class

Instructing teacher-aides/voluntary helpers in the use of resources

Curriculum Reviewing curriculum to ensure relevance

Time Arranging the physical environment to suit a single management classroom situation

& time-tabling Allocating teacher time to specific groups

Student self Generating a time-table that facilitates student self

management management

Table 9 (continued)

Student	Finding time to assess student work
assessment	Keeping records of student work and progress
	Monitoring and assessing the work quality of groups, individuals working independently

The responses of experienced and novice teachers in the three kinds of schools (1- teacher, 2-teacher and 3 to 6 teacher schools) to closed items in the questionnaire were also tested for significant differences, using Analysis of Variance and t test procedures as provided in the Statistical Package for the Social Sciences (SPSS).

The results showed that, in general, there was a good deal of unanimity among experienced and novice teachers in the three kinds of school, as to which were the most significant aspects of teaching in multi-grade classrooms. There were some significant differences at or below the .05 level of probability but these were mostly related to the size of school. There were just three exceptions and these involved differences in perceptions among experienced and novice teachers in schools with 3 - 6 teachers. Experienced teachers in this size of school considered 'use of projects' to be a more significant aspect of teaching than novices whereas novice teachers perceived 'allocation of teacher time to the different year levels in a class' and 'integrating different age groups' to be more significant than did experienced teachers. It seems likely that novice teachers saw these last two aspects of teaching as more significant because, as teachers who have just entered multi-grade classrooms, these aspects of multi-grade teaching probably posed new and difficult challenges.

As indicated above, most of the significant differences were related to school size. The perceptions of teachers in one-teacher schools were significantly different ($p < .05$) from those in the two-teacher and 3 - 6 teacher schools on a number of items. These differences involved either novice or experienced teachers and sometimes both. Novice teachers in schools with 2 and 3 to 6 teachers considered the following aspects to be more significant than novice teachers in one-teacher schools:

- . 'Allocation of teacher time to the whole class';

- . 'Allocation of teacher time to year levels';

- . 'Provision of extension work for capable students'.

One reason for these differences might be that teachers in one-teacher schools work less with the whole class and separate year-level groups than their counterparts in the two-teacher and 3 - 6 teacher schools because of the larger number of year-levels in their classrooms and the greater spread in students' ages.

On the other hand, novice teachers in one-teacher schools saw 'performing administrative tasks' as more significant than their counterparts in the other two types of schools. This is not surprising given that the administrative responsibilities of teachers in one-teacher schools would probably not be shared by novice teachers in the other two types of schools because the latter would most likely not be principals, the ones who normally assume responsibility for administrative tasks.

The following aspects of multi-grade teaching were seen as more significant (at or below the .05 level of probability) by experienced teachers in two-teacher and 3 - 6 teacher schools than experienced teachers in one-teacher schools:

- . 'Developing schemes for student self-assessment';
- . 'Management of groups and grades';
- . 'Keeping records of student work and progress'; and
- . 'Providing learning support (remediation) to students'.

These differences in the perceptions of experienced teachers in the different sized schools are difficult to explain. In fact, the findings appear to be counter-intuitive. In respect of the first two aspects of teaching in particular, there are strong arguments for asserting that these should have more rather than less significance in one-teacher schools.

Experienced teachers in one-teacher schools, on the other hand, saw 'allocation of teacher time to individual students' as a more significant aspect of multi-grade teaching than experienced teachers in 3 - 6 teacher schools. The reason for this might be found in the following hypothesis: Given the larger number of grades and the greater student age-range in one-teacher schools, as compared with a single class in a 3 - 6 teacher school, teachers may have fewer opportunities to work with the class as a whole or with year-level groups and may therefore attach more importance to allocating time to individual students.

The above analysis suggests that teacher perceptions about which aspects of multi-grade teaching are very significant are

affected, to an extent, by the size of the school and, therefore, the number of year levels in a multi-grade classroom. However, the differences among teachers in one-teacher schools and those in slightly larger schools as to significant aspects of multi-grade teaching are not very substantial at all. There is general agreement among multi-grade teachers, irrespective of the number of grades to be taught concurrently, as to the most significant aspects of teaching.

At least one important question remains: Would teachers in single-grade classrooms hold a different view, as to what were significant aspects of teaching, from multi-grade teachers? An answer to this question might suggest whether there is something unique about the demands of multi-grade teaching and whether teaching in multi-grade classrooms requires specialist knowledge

and expertise.

To ascertain whether there were any differences in perceptions between single-grade and multi-grade teachers, a parallel form of the questionnaire was developed for use with teachers in single-grade classrooms. This alternate form of the questionnaire was sent out to experienced and novice teachers in large schools who had had either no multi-grade teaching experience at all or none within the last six years.

Responses from 30 single-grade teachers have been received so far. A preliminary analysis of these responses indicates some marked differences between the single-grade and multi-grade teachers in respect of their perceptions of what are important aspects of teaching. Whether these differences are statistically significant has not yet been determined. Tests of significance will be conducted when more returns from single-grade teachers have been received. Until such tests have been conducted, the following extrapolations should be seen as highly speculative.

Nineteen aspects of teaching were commonly perceived by 50% or more of teachers in both groups to be very significant. However, a further 12 aspects of teaching were considered very significant by 50% or more of teachers in one group but not both. Some of the items which appeared only in the multi-grade teachers' list of 'very significant' aspects of teaching had to do with integration of curriculum content from different subject areas, integration of different age groups for teaching purposes, the acquisition and organisation of instructional resources and such strategies as peer tutoring, project work and group discussion methods. Multi-grade teachers also appeared to place more emphasis on the importance of student independence and effective group work. Single-grade teachers, on the other hand, appeared to give more

emphasis to remediation, provision of extension work for the more capable students and allocation of time to the whole class.

Some Tentative Answers to Questions Posed Earlier

Early in this paper, a number of questions were posed, from the point of view of teacher education faculties, relevant to the claim that more attention should be paid to multi-grade teaching in pre-service teacher education programs. Some answers to those questions are provided below in respect of the Queensland scene.

Questions 1 and 2: Are beginning teachers assigned to multi-grade classrooms on their first or an early appointment? What numbers of beginning teachers spend the first or early years of their teaching careers in multi-grade classrooms?

The survey of 1019 primary schools or schools with primary departments in Queensland, representing 74% of all such schools in that state, revealed that there were 2349 multi-grade classrooms distributed across 915 schools or about 90% of the sample. Approximately 800 or 32% of the teachers working in those 2000 plus classrooms had been teaching for 5 or fewer years; close on 300 or 11% of the teachers had been teaching for two years or less. Moreover, one in approximately 6 one-teacher schools in the state was staffed by novice teachers, those with 2 or fewer years of teaching experience. Some additional information provided by the Darling Downs Regional Office of the Queensland Department of Education indicates that teachers appointed to state schools in that region would have a 1 in 3 chance of being assigned to a multi-grade classroom. These figures clearly indicate that a significant number of teachers assume responsibility for multi-grade classrooms early in their

teaching careers. These data point to the need to include multi-grade teaching in the pre-service education of teachers.

Question 3: What kinds of multi-grade classrooms do beginning teachers teach in - two-grade classrooms? three-grade classrooms? four-grade classrooms? ... seven-grade classrooms?

Data from this study show that, of the 2349 multi-grade classrooms in 1019 schools across Queensland, 64 % were two-grade classrooms, 22% were three-grade classrooms, a further 8% were four-grade classrooms and the remaining 6% had either 5, 6 or 7 grades per classroom. The data also show that, of the nearly 2400 teachers who taught in these multi-grade classrooms, 261 (11%) were novices (i.e. had been teaching from 0 to 2 years) and a

further 504 (21%) had been teaching between 3 and 5 years. This means that about 1 in 3 of all the teachers teaching in multi-grade classrooms had been teaching for fewer than five years.

The 261 novice teachers referred to above are spread out over the full range of multi-grade classrooms, from those with only 2 grades to those with 7 grades. Relevant data from phase 1 of the study have not been included in this report but some indication of the veracity of this claim can be gleaned from data in table 8. Data in that Table show that, of the 349 questionnaires mailed out to teachers in phase 2 of the study, 167 were sent to novice teachers - 23 in one-teacher schools and 72 in each of schools with 2 teachers or 3 to 6 teachers.

Question 4: Does multi-grade teaching require a special expertise? If so, what is the professional knowledge base for multi-grade teaching?

It is still unclear whether multi-grade teaching requires a special expertise and special knowledge. This study has begun to identify what aspects of multi-grade teaching are considered by multi-grade teachers to be very significant. Among the most significant are the promotion of student independence in work habits, learning and use of instructional resources; curriculum planning, particularly the integration of syllabus content from different year levels and subject areas; individualisation of instruction, especially for students requiring extension or remediation; time-tabling and time-management; teaching strategies; and assessment of students. Teachers' perceptions of the significance of some aspects of multi-grade teaching tend to vary somewhat. Teachers in one-teacher schools have different views about what are very significant aspects of teaching from teachers in schools with two teachers or those with 3 to 6 teachers. More importantly, there appear to be some marked differences between multi-grade and single-grade teachers as to what are significant aspects of teaching. The main areas of difference relate to the integration of curriculum content from different subject areas and year levels, group-work, organisation of instructional resources and teaching strategies. It should be noted, however, that the significance of these differences have not yet been tested statistically. What the implications are for teacher education are still unclear. It is still too early to say whether preparation for multi-grade teaching requires special knowledge and skills. The answer may become a little clearer when the third phase of the study has been completed.

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