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Required support for primary and secondary students with communication disorders
and/or other learning needs

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Running head: Comparative analysis of educational support
Abstract

Prioritization of school students with additional learning needs is a reality due to a finite resource-base. Limited evidence exists regarding teachers’ prioritization of primary and secondary school students with additional learning needs. The aim of the present paper was to differentiate teachers’ perceptions of the level of support required by and provided to students with respect to nine additional learning needs. Teachers of 14,533 students in an Australian school district (in 37 primary schools and 7 secondary schools) identified students’ required and actual level of support. Teachers identified 4,845 students with additional learning needs: 34.71% of primary students and 30.14% of secondary students. Of the nine areas of additional learning need, presence of a communication disorder was the most important predictive factor of teachers’ recommendation that primary or secondary students required a high level of support at school. Students were more likely to be identified with communication disorder if they were in grades 1, 2, 7, 8, or 10; that is, at the time of transition to different levels of schooling. Students with communication disorder + behavioural/emotional disorder + intellectual disability were identified by teachers as requiring the highest level of support at school. Overall, students received limited additional support at school; however, those with communication disorder + intellectual disability received the highest level of learning support within the educational setting. In contrast, students who received the greatest curriculum adaptations were those with intellectual disability + physical/medical disability. Those with intellectual disability + communication disorder were most likely to have an individual education plan and those with communication disorder + intellectual disability + physical/medical disability were most likely to receive long-term support from agencies outside of the school system. Socioeconomic status (specifically, being in a middle class school) was the most predictive demographic variable
for higher levels of support for students with communication disorder, followed by being male.

Key words: behaviour, epidemiology, intellectual disability, language, physical/medical disability, prevalence, prioritization, speech, vision

Article word count (excluding references): 5725
Introduction

Prioritization of resources for school students with additional learning needs (including communication disorders) is a reality due to a finite resource-base. One method that has been used to determine prioritization of students with additional learning needs is to consider prevalence estimates (Law, Boyle, Harris, Harkness, and Nye 2000). For example, Law et al. (2000) conducted a systematic review of prevalence studies of speech and language delay and indicated that the median prevalence of speech and language delay is 5.95% (range = 1.35% to 8.0%), and found a wide prevalence range for language delay only (range = 2.02% to 19%) and speech delay only (range = 2.3% to 24.6%). Prevalence differed according to age: typically, speech and language disorder is more prevalent in studies of younger children (e.g., McLeod and Harrison, 2009).

However, prioritization of resources for children based only on prevalence estimates is insufficient to plan the nature and extent of services required by children with additional learning needs. For example, Chambers, Kidron, and Spain (2004) examined the cost of services for approximately 10,000 students with disabilities across the USA. They indicated that the cost of intervention for children with disability could not be estimated by prevalence figures alone: the cost also needed to take into account expenditure for individual children in context. Similarly, in the UK Lindsay et al. (2008, p. 6) indicated that “An important factor in managing … inclusion has been use of banded funding, where amount of money depends on the nature and extent of need of the individual pupil.” Thus, prevalence estimates are not enough to determine prioritization of and resource allocation to children with learning needs. Additional measures such as the determination of the level of support and planning required for these students should be undertaken.

Limited evidence exists regarding teachers’ prioritization of school students with additional learning needs. Teacher identification of students with disabilities is widely
reported in the literature (Clarizio, 1992; Poulou and Norwich, 2000) and a number of studies of communication disorders employ teacher identification (Chevrie-Muller, Watier, Arabia, Arabia, and DellaTolas, 2005; McLeod and Harrison, 2009; McLeod and McKinnon, 2007; Okalidou, and Kampanaros, 2001; Van Borsel et al., 2006). However, most of these studies are limited to identifying students with communication disorders and do not examine the additional support that these students require within the classroom setting. In order to support children with communication disorders, Dockrell and Lindsay (2001) indicated that teachers faced three challenges: the additional difficulties experienced by the children, their own knowledge gaps, and the barriers to meeting the children’s needs and limited research has been conducted to address these issues.

Children with communication disorders are reported to have additional difficulties requiring consideration of the most appropriate provision of support within mainstream inclusive school settings. Children’s additional learning needs within the school years are predominantly related to literacy, numeracy, approach to learning and socialization according to a systematic review by McCormack, McLeod, McAllister and Harrison (2009). For example, Dockrell and Lindsay (1998) found an average delay of two years in language and literacy scores for children in year 3 identified with speech and language disorders. Harrison, McLeod, Berthelsen and Walker (2009) studied 3,632 children and found that children identified with speech and language impairment at 4-5 years did not perform as well as their typical peers at school (aged 6-7 years) on measures of language/literacy ability, numeracy/mathematical thinking and approaches to learning. Botting and Conti-Ramsden (2000) indicated that school-aged children identified with language impairments had greater behavioural and social difficulties than their typical peers.

The provision of support for students with additional learning needs differs around the world. In the USA, under the Individuals with Disabilities Education Act (IDEA) and No
Child Left Behind (NCLB) Act, students with additional learning needs typically receive support at school from teachers as well as from specialist professionals such as speech and language therapists (SLTs) and psychologists. SLTs are specifically named under the IDEA as providers of “special education” rather than a related service (IDEA, 2004, Section 300.39) and more SLTs work in schools than in any other location within the USA (Brown & Hasselkus, 2008). In the UK school students with additional learning needs typically receive support both within the health system and at school from teachers as well as from specialist professionals SLTs and psychologists. The Bercow Report (2008, p. 58) recommended “consideration of the effectiveness of joint working arrangements between schools, local authorities and health services in addressing SLCN (speech, language and communication needs).”

Context of the current study

Each state and territory of Australia supports children with additional needs with different combinations of services from education, health and disability government sectors (McLeod, Press and Phelan, 2009). In the state of New South Wales (NSW) schools do not typically employ specialist professionals to work with students with additional learning needs. School teachers, including those with training in inclusive education, are the primary and often only, source of support for NSW school-aged students with additional learning needs in schools. Therefore, NSW school-aged students with additional needs such as communication disorders may receive support outside of the education context from specialist professionals in agencies such as health and disability government departments. That is, in the state of NSW SLTs are rarely employed in, or work in the school sector. Consequently, NSW school districts provide a unique context for examining teachers’ recommended levels of support required for students with additional learning needs, since teachers are the primary providers of additional support.
This paper examines one large Australian Catholic school district (containing approximately 14,500 students) that conducted four waves of data collection over a seven year period to determine the prevalence of students with additional learning needs. Data were collected at two-year intervals in order to establish the levels of funding and number of support teachers required for each school. Data collected during the first wave of data collection (wave 0) were not subsequently analysed, but were used as a preparatory exercise for subsequent waves of data collection reducing selection and misclassification bias (Last, 2001). The comparative prevalence of learning needs in students in waves 1 and 2 were reported by McLeod and McKinnon (2007). In wave 1 there were 5,309 students identified as having at least one additional learning need from 14,514 students in primary and secondary school. In wave 2, there were 4,845 students identified from 14,533 students. Communication disorder was identified as the second most prevalent learning need after specific learning disability with 13.04% identified with communication disorder in wave 1 and 12.40% in wave 2. Data collected during wave 3 were described by McKinnon, McLeod and Reilly (2007). These data enabled consideration of the prevalence of speech-sound disorders, stuttering and voice disorders in the 10,425 primary school students in the school district. Overall, 0.33% were identified as having a stutter, 0.12% as having a voice disorder, and 1.06% as having a speech-sound disorder. There was decreasing prevalence of identified speech disorders with increasing grade level and a difference between the actual and perceived level of support for these students was revealed.

The present study reports on wave 2 data. These data contained five ratings by teachers of the perceived need for support and actual levels of support for primary and secondary school students with additional learning needs. These data provide an unsurpassed level of evidence for policy makers, researchers and clinicians interested in teachers’ prioritization of students with communication disorders. First, the data were based on
requested and actual support for over 14,500 students and were gathered using a carefully vetted four-phase of identification of learning need that included teacher training and confirmation by a relevant professional. Second, the data presented in the present paper were collected five years into this research project within the school district. Thus, inconsistencies due to selection or misclassification bias (Last, 2001) had been substantially reduced, or eliminated. Third, the data were collected without prejudice towards or against any of nine areas of additional learning need. The data were collected within a school system by teachers and checked by educational psychologists. No other professionals were involved in overall data collection; only for verification of learning needs in individually identified children. Identification of communication disorder was as likely as identification of any of the eight other learning needs (specific learning difficulty, English as a second or other language, behavioural/emotional difficulty, early achiever/advanced learner, physical/medical disability, intellectual disability, hearing impairment, and visual impairment). Although there were no explicit guidelines within the school district for prioritization of time and resources (both within and external to the school), an understanding of the implicit decisions that were made by the teachers and schools can be analysed considering the required and actual learning support for students with additional learning needs within this large school district during wave 2. Thus, this study aimed to consider teachers’ implicit prioritization of 4,845 students with additional learning needs. Specifically, there were three aims of the present investigation:

1. To determine teachers’ requested level of support (LOS) for students with nine different learning needs.
2. To determine actual level of support for students with nine different learning needs on four different scales: a) Existing learning support, b) Curriculum adaptation c) Presence of an Individual Education Plan (IEP), d) Involvement of outside agencies.
3. To determine the impact of sex and socio-economic status on teachers’ perceptions of level of support required for students identified with communication disorders.

METHOD

Participants

Every student attending primary (Kindergarten – grade 6) or secondary school (grades 7 – 12) within one Catholic Diocese was included in the study. These were mainstream schools; there were no special schools within this school district. There were a total of 14,533 students with 10,164 students in 36 primary schools and 4,369 in 7 secondary schools. In primary school there were 5,016 males and 5,148 females; in secondary school there were 1,879 males and 2,490 females.

Procedure

Nine areas of additional learning need were identified by the school district: communication disorder, specific learning difficulty, English as a second or other language, behavioural/emotional difficulty, early achiever/advanced learner, physical/medical disability, intellectual disability, hearing impairment, and visual impairment. Additionally, there were five measures of support recorded for each of the students: Required level of support (6 point ordinal scale), Existing learning support (6 point ordinal scale), Curriculum adaptation (4 point ordinal scale), Involvement of outside agencies (4 point ordinal scale), Presence of Individual Education Plan (IEP) (dichotomous scale) (see Table 2).

The Catholic Diocese underwent a four-stage process to identify those students who had one or more of these additional learning needs and to determine the level of support for each of these students.

Stage 1: An information session was held for principals and learning support teachers within each of the schools to describe procedures and protocols. A descriptors booklet
(Catholic Schools Office, 1998) was used to identify learning needs and to determine the level of support that was required and available for each identified student.

Stage 2: During a staff meeting in term 2 of the school year primary teachers and English secondary teachers were instructed about how to use the descriptors booklet and class survey sheet by their principal and learning support teacher. The teachers reviewed all students in their class to identify students who warranted identification within one week after the staff meeting.

Stage 3: Every teacher’s recommendations were reviewed by the learning support teacher and confirmed using supporting documentation from the relevant professional (e.g., SLT for the identification of communication disorder; audiologist for the identification of hearing impairment, or a psychologist for intellectual disability). Reports were accessed from school records or by initiating an assessment of the child.

Stage 4: The information about each identified student was reviewed by the principal, learning support teacher, the school’s learning needs committee, and an educational psychologist who reviewed and validated data across all the schools in the district. The second author entered and cleaned the data, checking for and correcting any missing data and inconsistencies. The entire process from stage 1 to stage 4 took one school term (10 weeks). All of the data were entered by the end of term 2.

Data analysis

Prevalence data were analysed using Statistical Package for the Social Sciences v11.0. Prioritization data were analysed using CHAID (Chi Square Automatic Interaction Detector) (Kass, 1980) since this technique allowed for investigation of a large quantity of categorical data. CHAID analyses provide a hierarchical tree diagram of the interactions between variables. The tree diagram is constructed by first specifying a dependent variable and then listing the family of independent predictors. CHAID then computes exhaustive
cross-tabulations and Chi-squares. The fact that many Chi-squares are possible raises the possibility that many will give false significant differences. To protect against this, a Bonferroni correction to the p-value is applied. For example, if 1000 Chi-squares can be computed, the p-value that is accepted as indicating that the Chi-square is significant is 0.05 divided by 1000. The best predictor is the one that splits the population with the largest Chi-square. The procedure continues at each sub-branch of the tree diagram until either the number of cases within a group is too small or until no further significant Chi-square is generated. The right hand branches of the hierarchical tree indicate that a condition or learning need is present; the left hand branches indicate that the condition is absent. Branches can be followed from top to bottom to determine the interactions between presence and absence of the independent variables. Branches end if they are fully analysed (indicated by an asterisk) or / no longer have an appropriate number of people within the cells for further analyses. The program was set to generate nine levels of analysis and the significance level for the Chi-square set at 0.05 with a full Bonferroni protection. The six analyses undertaken were:

1. Requested level of support (LOS) for students with one or more of nine different learning needs
2. Existing learning support for students with one or more of nine different learning needs
3. Curriculum adaptation for students with one or more of nine different learning needs
4. IEP in place for students with one or more of nine different learning needs
5. Involvement of outside agencies for students with one or more of nine different learning needs
6. Interaction between requested level of support, sex and socio-economic status for students with communication disorders.

RESULTS
Prevalence of students with learning needs

There were 4,845 students (2,890 males and 1,952 females, 3 undocumented) of the total student cohort (14, 533 students) who were identified as having additional learning needs. There were 3,528 (34.71%) students identified in primary school and 1,317 (30.14%) in secondary school (see Table 1). Generally, there was an increased prevalence of identified learning need in early primary school (grades 1-3; aged 5-9 years) and again in early secondary school (grades 7-9; aged 12-15 years). Many areas of learning need declined in prevalence throughout the secondary school years, particularly for grades 11 and 12 (aged 16-18 years) (see Table 1). It is likely that students with additional learning needs ended their schooling after the attainment of the School Certificate in grade 10: the first point at which Australian school students are permitted to conclude formal schooling.

Students could be identified as having more than one learning need and the average number of learning needs per child was 1.24 (SD = 0.831). Overall, 19.10% of students were identified as having specific learning difficulty, 12.40% were identified as having a communication disorder, 5.80% were identified with English as a second or other language, 6.10% were identified with behavioural/emotional difficulty, 5.50% were identified as an early achiever/advanced learner, 1.40% were identified with a physical/medical disability, 1.20% were identified with an intellectual disability, 0.80% were identified with a hearing impairment, and 0.30% were identified with a visual impairment (Table 1). The male:female ratio for all students was 1.66:1 and the male:female ratio for students with communication disorders was 1.87:1. The school districts were described according to the Socio-Economic Index for Areas (SEIFA) scale (Australian Bureau of Statistics, 2003). The SEIFA scale provides a continuum of social and economic well-being in each region where low values indicate areas of disadvantage; and high values indicate areas of advantage. There were 54.3% of students in the highest socio-economic status (SES) band (>

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next band (75-90%), 17.1% in the the next band (50-75%), and 17.2% in the lowest band represented in this school district (25-50%). There were no students in the two lowest SEIFA bands (10-25%) and (< 10%). There was a higher prevalence of students with communication disorders in the mid-high SES bands. McLeod and McKinnon (2007) provide further analysis of the prevalence of learning needs for these students.

**Required level of support**

A six-point scale was used by the teachers to indicate their “perception of the level of support required to successfully include each identified student in their classroom” (Catholic Schools Office, 2001, p. 4). The scale ranged from 0 = no support needed to 5 = very high level of support needed (see Table 2). The scale was found by Thomas (1997) to provide inter-rater reliability of 0.82. Figure 1 provides a CHAID analysis of the interactions between the level of support and all students identified with at least one of the nine learning needs (primary + secondary students). The average required level of support for all 4,845 students was 2.25. Communication disorder was the best predictor of the required level of support, with a markedly higher level of support required for those with a communication disorder (2.43) versus those without a communication disorder (2.13). The difference between the level of support measures was significantly different as identified by the CHAID Bonferroni correction. It is important to note that in Figure 1 those without a communication disorder did have at least one identified learning need.

Insert Figure 1 about here

When the interactions between identified learning needs were taken into consideration, teachers rated the following students as requiring the highest level of support (see Figure 1):

1. Students with a communication disorder + behavioural/emotional disorder + intellectual disability required the highest level of support (4.48), then
2. Students with a communication disorder + intellectual disability (3.87), then
3. Students with an intellectual disability and no other learning need (3.69), then
4. Students with a communication disorder + behavioural/emotional disorder + specific learning disability (3.65), then
5. Students with a communication disorder + behavioural/emotional disorder (3.55).

As can be seen in Figure 1 there were many other combinations of learning needs requiring lower levels of support; however, the students who were identified as requiring the lowest level of support were those who were early achievers/advanced learners who did not have SLD and did not have behavioural/emotional disorder (1.37).

The same CHAID analysis was undertaken for the 1,317 secondary students who were identified as having an additional learning need in order to determine whether teachers identified different areas of learning need as requiring high levels of support in secondary school. Similar to the overall score, the average required level of support for the 1,317 students was 2.36 (compared with 2.25 for all students). Again, communication disorder was the best predictor of the required level of support, with a significantly higher level of support required for those with a communication disorder (2.96). Teachers similarly rated secondary students as requiring the highest level of support when interactions between identified learning needs were taken into consideration:

1. Students with a communication disorder + behavioural/emotional disorder + intellectual disability required the highest level of support (4.50), then
2. Students with a communication disorder + intellectual disability (3.85), then
3. Students with an intellectual disability and no other learning need (3.59), then
4. Students with a communication disorder + behavioural/emotional disorder (3.76), then
5. Students with a communication disorder + behavioural/emotional disorder + specific learning disability (3.74).
When compared with the overall CHAID analysis, the groups and means for the secondary students compared with all of the students combined were strikingly similar.

**Actual level of support**

a) **Existing learning support**

A six-point scale was used by the teachers to indicate the existing level of support provided to students with additional learning needs. The scale ranged from 0 = no support to 5 = learning support provided by the class teacher + intensive (daily) direct long-term support. Figure 2 provides a CHAID analysis of the interactions between the existing level of support and students identified with at least one of the nine learning needs. The average existing level of support for all 4,845 students was 1.75, which indicates these students typically received support by the classroom teacher who consulted with the learning support teacher (score = 1) to support by the classroom teacher and direct short-term support from volunteer helpers, learning support teachers, assistants or school counsellors (score = 2).

Insert Figure 2 about here

Early achiever/advanced learner was the best predictor of the existing level of support for students with at least one of the nine learning needs, with a significantly lower level of support required for those identified as an early achiever/advanced learner (0.82) versus those who were not (1.94). Indeed, students who were identified as early achiever/advanced learners received the lowest level of support of any child with an additional learning need (Figure 2).

When the interactions between identified learning needs were taken into consideration teachers rated the following students as having the highest existing levels of learning support (see Figure 2):
1. Students who were identified as having an intellectual disability + communication
disorder received the highest level of support (3.99), then
2. Students who were identified as having an intellectual disability (3.83), then
3. Students who were identified as having specific learning disability + a communication
disorder + hearing impairment (3.43)
4. Students who were identified as having SLD + communication disorder +
behavioural/emotional disorder (3.06)

b) Curriculum adaptation

A four-point scale was used by the teachers to indicate the curriculum adaptations made
for students with additional learning needs. The scale ranged from 0 = no support to 3 =
major curriculum adaptation. Figure 3 provides a CHAID analysis of the interactions between
the existing level of support and students identified with at least one of the nine learning
needs. The average curriculum adaptation for all 4,845 students was 0.94 that corresponded
to limited curriculum adaptations. Intellectual disability was the best predictor of the required
level of support, with a significantly higher level of support required for those with an
intellectual disability (1.99) versus those without an intellectual disability (0.90).

Insert Figure 3 about here

Interactions between curriculum adaptation and identified learning needs are shown in
Figure 3. Students who received the greatest extent of curriculum adaptations were those with
an intellectual disability + physical/medical disability (2.46). Students with communication
disorders received slightly higher than the average level of curriculum adaptations (1.09), but
this increased if the students with communication disorders also had a specific learning
disability + behavioural/emotional disorder (1.52). The students who received the fewest
curriculum adaptations were those who spoke English as a second language (ESL) but had no other learning need (0.29).

c) Presence of IEP

The third measure of the actual level of support received by the students with at least one learning need was the presence of an individual education plan (IEP). A dichotomous scale (present/absent) was used by the teachers to indicate whether students with additional learning needs had an IEP. Figure 4 provides a CHAID analysis of the interactions between the presence of an IEP and students identified with the nine learning needs. In the other figures, mean scores have been provided since they relate to an ordinal scale. In contrast, Figure 4 provides percentages of the presence of an IEP since this analysis was based on a dichotomous scale (IEP present = yes/no).

Insert Figure 4 about here

For all 4,845 students identified with additional learning needs, only 9% had an IEP. Intellectual disability was the best predictor of whether students had an IEP (89%) (see Figure 4). Students with an intellectual disability + communication disorder were most likely to have an IEP in place (95%). The left hand branch of the CHAID analysis represents the students who did not have an intellectual disability +/- other learning needs. These students were least likely to have an IEP.

d) Involvement of outside agencies

The final measure of the actual level of support received by the students with at least one additional learning need was the involvement of outside agencies. The scale ranged from 0 = no involvement to 3 = long-term direct involvement by outside agencies. Outside agencies included professionals other than teachers, including SLTs. It is important to understand that SLTs typically work with children in community health settings, rather than education settings in this area of Australia. Figure 5 provides a CHAID analysis of the interactions
between the involvement of outside agencies and students identified with at least one of the nine learning needs. Overall 75.83% of the 4,845 students had no involvement with outside agencies, 12.01% scored 1 (outside agencies consulted), 6.52% scored 2 (short-term direct contact with outside agencies) and 5.64% scored 3 (long-term direct contact with outside agencies) and this translated to a mean score of 0.42.

Communication disorder was the best predictor of the involvement of outside agencies, with a significantly higher level of involvement for those with a communication disorder (0.68) versus those without a communication disorder (0.27). This high level of outside referral for communication disorder is a function of the SLT employer base being in health settings. However, it is important to note that both of these scores indicate limited involvement with outside agencies being consulted and no ongoing contact. When the interactions between identified learning needs were taken into consideration teachers indicated the following students had the highest level of involvement from outside agencies (see Figure 5):

1. Students with communication disorder + intellectual disability + physical/medical disability and did not speak English as a second language were most likely to receive long term support from agencies outside of the school system (2.05), then
2. Students with physical/medical disability + behavioural/emotional disability who did not have a communication impairment (1.47)
3. Students with communication disorder + intellectual disability and did not speak English as a second language (1.37)
4. Students with visual impairment who did not have 6 other learning needs (1.07)
5. Students with communication disorder + physical/medical disability + behavioural/emotional disorder (1.02)
6. Students with communication disorder + English as a second language +
   behavioural/emotional disorder (0.98)

The students least likely to have support from outside agencies were the early achievers
(0.07).

**Interaction of demographic variables with the level of support required for students with
communication disorders**

The six-point scale used to indicate the required level of support was the dependent variable
for the final analysis. This analysis was designed to determine the most important factors in
identifying the level of support for students with communication disorders: SES or gender.
Figure 6 provides a CHAID analysis of the interactions between the level of support, SES,
gender and students with communication disorder. The most predictive demographic
variables for the required level of support were (in order): presence of communication
disorder, SES, then being male (see Figure 6). There was a markedly higher level of support
required for those with a communication disorder (2.75) versus those without a
communication disorder (1.96). The second SES level in the present study (50-75%
corresponding to middle class) was the most predictive of the required level of support (3.02).

Insert Figure 6 about here

**DISCUSSION**

This large-scaled study enabled examination of teachers’ perceived need and
allocation of resources for children with additional learning needs. The unique context of the
study, whereby few professionals other than teachers consistently interacted with these
children, provided evidence for teachers’ *implicit* prioritization of students with differing
learning needs. Of the nine areas of additional learning need, presence of a communication
disorder was the most important predictive factor of teachers’ recommendation that primary or secondary students required a high level of support at school.

Overall, 4,845 students (33.34%) were identified as having at least one additional learning need. There was a discrepancy between the average required level of support (2.75) and the average existing level of support (1.75) for the 4,845 students identified with an additional learning need (where 2 = low level of support and 3 = moderate level of support). As McLeod and McKinnon (2007) indicated, a number of students identified as having additional learning needs within this cohort did not receive specialist support or curriculum adaptations. For example, although 12.4% of students were identified with a communication disorder only 16.8% of these students with a communication disorder had an individual education plan (IEP) in place. The current paper extends the work of McLeod and McKinnon (2007) to describe which areas of learning need and combinations of learning needs were seen by teachers as requiring additional support in the classroom.

A greater percentage of students in primary school (34.71%) were identified with an additional learning need compared with students in secondary school (30.14%). However, the identification of students with additional learning needs fluctuated from grade to grade. Students with communication disorder were more likely to be identified in grades 1, 2, 7, 8, or 10. That is, after their first year of formal schooling and before moving to primary school (grades 1 and 2), at transition to high school (grades 7 and 8), or during the year when they sit the School Certificate (grade 10) and decide whether to leave school or continue on to achieve their Higher School Certificate. Teachers’ recommendation of which students required a high level of support in their classroom did not differ between the overall sample and students in secondary school, suggesting that the level of required support is the same in primary and secondary school.
The most important predictive factor for teachers’ recommendation that students required a high level of support in their classroom was presence of a communication disorder. Students with a communication disorder + behavioural/emotional disorder + intellectual disability required the highest level of support (4.48), followed by students with a communication disorder + intellectual disability (3.87) (see Figure 1 and Table 2). This is an important finding for at least two reasons. First, nine areas of learning were included in the analyses and any one of these could have been identified as a significant and important and predictor, yet the presence of a communication disorder was the most important learning need identified by teachers as requiring additional support to have the child included in their classroom. Second, the presence of a specific learning disability was the most frequently occurring learning need identified in the group of 4,845 students (Table 1), yet it did not appear as an important predictor of the teachers’ level of support. In a sense its absence suggests that teachers regard it as less important than presence of a communication disorder for requiring additional support in their classroom. This may have been because teachers felt more equipped to work with students with specific learning disability. The fact that SLTs were not routinely employed in NSW schools suggests that teachers’ knowledge and ability to support students with communication disorders had to come from professional development, or contact with external agencies where SLTs were employed. The importance placed on children with a communication disorder also may indicate that they had additional learning needs, as discussed earlier. These findings support the three challenges that teachers faced outlined by Dockrell and Lindsay (2001): children with communication disorder experience additional difficulties, teachers have gaps in their knowledge about these children, and there are barriers to meeting these children’s needs.

In the present study, teachers also indicated which students with differing areas of learning need and combinations of learning needs were actually receiving support. As
indicated earlier outside support was at a low level (average of 1.75 on a 5 point scale, see Table 2). It is acknowledged that parents were not asked to contribute to this question, so some outside support may not have been documented by the school. Students with a communication disorder + intellectual disability were receiving the highest level of learning support from their teachers (see Figure 2). In contrast, the students who received the greatest extent of curriculum adaptations were those with an intellectual disability + physical/medical disability (see Figure 3). Those with an intellectual disability + communication disorder were most likely to have an IEP in place (see Figure 4) and those with communication disorder + intellectual disability + physical/medical disability were most likely to receive long term support from agencies outside of the school system (see Figure 5). Thus, two areas of learning need continually surfaced as important predictors of the required and actual level of support: communication disorder and intellectual disability. However, students with communication disorder were not in the highest group to have curriculum adaptations made. Students with the highest learning needs (i.e., students with communication disorders) were most likely to be receiving support from outside agencies. In countries such as the USA, school students with communication disorders receive specialist speech and language therapy services in schools not in outside agencies; indeed 56% of all certified SLTs in the USA are employed in the school education sector (Brown and Hasselkus, 2008). Policy makers within NSW should consider advocating for additional support in schools for students with communication disorders: including employment of SLTs in schools, professional development of teachers about working with students with communication disorders and allocation of higher levels of funding to support students with communication disorders. Typically, NSW schools provide explicit and specific support for students with hearing impairment, visual impairment, specific learning disabilities (particularly reading difficulties) and behaviour disorders: areas that rarely featured as significant predictors in the CHAID
analyses for required or actual levels of support. Specifically, current funding arrangements target these areas and once they are identified, clear interventions are specified within the schools and by support agencies such as school counsellors and specialist teachers often in specialist classrooms such as support classes for hearing-impaired students or support classes for students with behaviour disorders. To summarize, there is a misalignment between teachers’ identification of students with high learning needs and the actual support that these students receive in school. It is important to note, however that the allocated diagnostic category for each child in this research was validated by appropriate professionals (such as SLTs, audiologists and psychologists). This research highlights teachers’ roles in identifying and assisting students who have additional learning needs, particularly those with communication disorders. There is need for collaboration among professionals to assist students, their teachers and families to provide the most appropriate support for children with additional learning needs.

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Thomas, H. 1997: *Teacher’s perceived needs in supporting students with disabilities in regular classrooms*. Bathurst: Charles Sturt University.

<table>
<thead>
<tr>
<th>Identified area of need/Grade</th>
<th>Primary school</th>
<th>Secondary school</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td></td>
<td>K</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Age range</td>
<td></td>
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<tr>
<td>Specific learning difficulty (SLD)</td>
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<td>Communication disorder</td>
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<td>6.91</td>
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<tr>
<td>Visual impairment</td>
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Table 2. Rating scales and descriptors used by teachers to describe required and actual levels of support for students with additional learning needs (adapted from Catholic Schools Office, 2001)

1. **Required level of support**
   a) *Perception of the level of support required to successfully include each identified student in their classroom (6 point scale)*
   0 = no support
   1 = very low level of support needed
   2 = low level of support
   3 = moderate level of support
   4 = high level of support
   5 = very high level of support

2. **Actual level of support**
   a) *Existing level of support*
   0 = no support
   1 = class teacher + consultancy/resources
   2 = class teacher + direct short term support*
   3 = class teacher + occasional (1-2 times per week) direct long-term support*
   4 = class teacher + frequent (3+ times per week) direct long-term support*
   5 = class teacher + intensive (daily) direct long-term support*
   *Support = Learning support teacher/learning support assistant/volunteer

   b) *Curriculum adaptations made for students with additional learning needs (4 point scale)*
   0 = no support
   1 = minor curriculum adaptation (same curriculum with adaptation of methods)
   2 = moderate curriculum adaptation (same curriculum with lower or higher level activities)
   3 = major curriculum adaptation (same activity with different curriculum focus)

   c) *Presence of an individual education plan (IEP) (2 point scale)*
   0 = absent
   1 = present

   d) *Involvement of outside agencies (4 point scale)*
   0 = no involvement
   1 = outside agencies consulted
   2 = short-term (< 1 term) direct contact with outside agencies
   3 = long-term direct involvement by outside agencies.
Figure legends – [THESE FIGURES ARE AVAILABLE AS 300dpi .tif FILES]

Figure 1. Required level of support for students with additional learning needs based on 6 point ordinal scale where 0 = no support and 5 = very high level of support. The absent/present label refers to whether the feature was absent or present; for example communication disorder (present) indicates that this box refers to children who were identified with a communication disorder. The * indicates this subpopulation is fully analysed and cannot be split into any more significantly different subgroups.

Figure 2. Existing learning support for students with additional learning needs based on 6 point ordinal scale where 0 = no support and 5 = classroom teacher + intensive (daily) direct support long-term. The absent/present label refers to whether the feature was absent or present; for example communication disorder (present) indicates that this box refers to children who not identified with a communication disorder. The * indicates this subpopulation is fully analysed and cannot be split into any more significantly different subgroups.

Figure 3. Curriculum adaptations for students with additional learning needs based on 4 point ordinal scale where 0 = no adaptations and 3 = major curriculum adaptation. The absent/present label refers to whether the feature was absent or present; for example communication disorder (present) indicates that this box refers to children who were identified with a communication disorder. The * indicates this subpopulation is fully analysed and cannot be split into any more significantly different subgroups.

Figure 4. Presence of an Individual Education Plan (IEP) for students with additional learning needs based on dichotomous scale where 0 = no IEP. The absent/present label refers to whether the feature was absent or present; for example communication disorder (present) indicates that
this box refers to children who were identified with a communication disorder. The * indicates this subpopulation is fully analysed and cannot be split into any more significantly different subgroups.

Figure 5. Involvement of outside agencies for supporting students with additional learning needs based on 4 point ordinal scale where 0 = no involvement and 3 = long-term direct involvement of outside agencies. The absent/present label refers to whether the feature was absent or present; for example communication disorder (present) indicates that this box refers to children who were identified with a communication disorder. The * indicates this subpopulation is fully analysed and cannot be split into any more significantly different subgroups.

Figure 6. Interaction between required level of support, gender, and SES for students with communication disorders. The absent/present label refers to whether the feature was absent or present; for example communication disorder (present) indicates that this box refers to children who were identified with a communication disorder. The * indicates this subpopulation is fully analysed and cannot be split into any more significantly different subgroups.
Figure 2. Existing learning support