Teacher preparation for inclusive education: Initial teacher education and in-service professional development

Prepared for the Victorian Department of Education & Training

Lorraine Graham and Wendy Scott
Learning Intervention Team
Melbourne Graduate School of Education

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Overview

21st century education systems have a clear need for teachers who are sufficiently competent and motivated to know how to include children with disabilities (and those from other marginalised groups) in all classrooms (Lewis & Sagree, 2013). In order to develop the skills, experience and confidence to be inclusive of all children, teachers need to learn about and practise inclusive education during initial teacher preparation. They also need to be given opportunities for continuing in-service professional learning throughout their careers.

This review of initial teacher education and ongoing professional development for inclusion begins by defining both ‘inclusive education’ and ‘inclusive teaching practices’ as a foundation for the remaining discussion. The next section focuses on the importance of teacher and school leaders’ attitudes, self-efficacy and valuing of diversity as a foundation of inclusive education. Though there is some overlap across the next four sections, both international and Australian perspectives related to the development of expertise in inclusive teaching have been included. The final sections of this review consolidate findings by briefly attending to the importance of bridging research and practice and acknowledging the key role that school leaders play in forging inclusive school cultures.

By way of a progressive summary, some sections conclude with a table of ‘key points’ from the relevant literature that are offered to inform the development of a learning needs analysis focused on inclusive education. This work contributes to the Victorian Department of Education and Training’s special needs plan for promoting inclusive practices in schools to better support children with disabilities (see http://www.education.vic.gov.au/about/department/Pages/specialneeds.aspx).
### Key points from this review

#### Key points: Inclusive teaching practices

- Develop clear definitions of inclusion and related terms and use them consistently
- Incorporate contemporary perspectives on inclusion which emphasise valuing diversity
- Encourage positive teacher attitudes towards inclusive education
- Nurture core competencies for inclusive teaching
- Focus and report on student progress throughout the school year
- Foster teacher collaboration and professional learning communities
- Support teachers in their efforts to make accommodations, adjustments and modifications to a curriculum that is, as far as possible, accessible to all learners

#### Key points: Pre-service preparation of inclusive teachers

- Develop knowledge about socio-cultural issues, disabilities and difficulties that can affect students' learning
- Ensure knowledge is developed around evidence-based teaching strategies that facilitate the learning of diverse students
- Develop collaborative skills
- Provide opportunities for reflective practice
- Prepare a workforce of responsive teachers who are confident in collecting and analysing data about teaching and learning
- Ensure that the academics and professional practitioners teaching pre-service teachers are skilled and experienced in inclusive education
- Organise and support practicum experiences in a variety of schools and classrooms where inclusive practices are modelled well

#### Key points: In-service professional learning

- Ongoing professional learning is usefully grounded in the teacher’s context
- Build on teachers’ existing knowledge about learners and their needs
- Provide relevant and timely information about evidence-based teaching practices and strategies that will enhance the learning of all students
- Provide a framework for teachers to reflect on their teaching practice and skills
- Facilitate teachers’ sharing of evidence-based teaching strategies in collegial ways
- Develop professional learning plans and pathways for individuals and groups at the school level
- Ensure that professional learning experiences are tailored and introduced in a co-ordinated, systematic way
- Organise opportunities for teachers to learn, apply, practice, reflect and maintain new skills and knowledge
- Foster communities of learning and professional learning teams where co-planning, co-teaching, mentoring and coaching take place in supportive environments
- Foster partnerships to address how research informs practice and practice informs research

#### Key points: Leadership for inclusive education

- Model, promote and nurture positive attitudes towards inclusion
- Develop and implement policies that support inclusion
- Encourage staff members to embrace inclusive values
- Create awareness of the value of diversity
- Undertake personal professional learning related to difference and diversity
- Ensure school staff members have focussed and aligned goals for their professional learning
- Implement school-wide professional learning related to evidence-based teaching and learning strategies
- Formalise structures for tracking the progress of all students
- Establish professional learning communities designed around continuous situated learning, collaboration and mentoring
- Foster parent-school partnerships
Table of contents

OVERVIEW .......................................................................................................................................................3
KEY POINTS......................................................................................................................................................4
TABLE OF CONTENTS........................................................................................................................................5
1. INTRODUCTION TO THE LITERATURE REVIEW ..............................................................................................6
2. DEFINING INCLUSIVE EDUCATION ................................................................................................................7
3. WHAT ARE INCLUSIVE TEACHING PRACTICES? .............................................................................................9
4. ATTITUDES, SELF-EFFICACY AND VALUING LEARNER DIVERSITY.................................................................15
5. PRE-SERVICE PREPARATION FOR INCLUSIVE EDUCATION: INTERNATIONAL PERSPECTIVES .......................17
6. PRE-SERVICE PREPARATION FOR INCLUSIVE EDUCATION: AUSTRALIAN PERSPECTIVES .............................21
7. IN-SERVICE PROFESSIONAL LEARNING FOR INCLUSIVE EDUCATION: INTERNATIONAL PERSPECTIVES ......25
8. IN-SERVICE PROFESSIONAL LEARNING FOR INCLUSIVE EDUCATION: AUSTRALIAN PERSPECTIVES .............29
9. SUPPORTING TEACHERS TO BRIDGE RESEARCH AND PRACTICE .................................................................32
10. LEADERSHIP FOR INCLUSIVE EDUCATION .................................................................................................34
CONCLUSION .................................................................................................................................................35
REFERENCES...................................................................................................................................................36
ADDITIONAL BIBLIOGRAPHIC REFERENCES ....................................................................................................42
1. Introduction to the literature review

The preparation of pre-service and in-service teachers for inclusive classroom action was the focus of this review. The exploration of this topic began with a search of the EBSCOhost and ProQuest databases to find relevant literature published from 2009 to 2015. The terms ‘inclusive education’, ‘inclusion’, ‘diversity’ and ‘teacher education’, ‘teacher training’, ‘professional learning’ and ‘professional development’ were entered to locate peer-reviewed articles, with an emphasis on high impact Australian and international journals. Papers that related to a single area of study only (e.g. inclusive education in physical education classes) or which were methodologically inadequate were excluded. Wherever possible, papers that were research based, focused on the inclusive education of students, and useful to practicing teachers and teacher educators were considered in the preparation of the review. In total 117 articles and reports were accessed. Of these, 96 are directly referenced in the body of this work. Recent reports from AITSL (Australian Institute for Teaching and School Leadership), Australian Education Departments and the European Agency for Development in Special Needs related to teacher education and inclusive education were also considered in the preparation of this review.
2. Defining inclusive education

As a lack of understanding about what ‘inclusive education’ means can be a barrier to inclusion (Baglieri, Bejoian, Broderick, Connor & Valle, 2011), the first step in preparing teachers to meet the demands of the inclusive classroom is to define the term, ‘inclusive education’. This term is used extensively throughout educational literature, often in differing ways. The UNESCO Policy Guidelines on Inclusion in Education (2009) state that an inclusive education system can only be created if ordinary schools become more open and accepting; in other words, if schools become better at educating all the children who live in their communities. For some, inclusive education is solely about ensuring that students with disabilities have the same educational opportunities as their peers. However, in much recent literature, ‘inclusion’ takes on a broader meaning, which suggests that barriers to inclusive education must be considered at any point in time when the participation of students is restricted. Issues may arise for students as a result of a wide variety of reasons including disability, gender, behaviour, poverty, culture and refugee status (Shaddock, Smyth King & Giorcelli, 2007).

Globalization and mobility continue to change Australian society (United Nations Development Program, 2009). Philpot, Furey and Penny (2010) point out that the profession of teaching is being redefined as a result of such changes, particularly in terms of the demands associated with responding to diverse needs. As the UNESCO (2012) report, Education: Addressing Exclusion, concludes:

> Education is not simply about making schools available for those who are already able to access them. It is about being proactive in identifying the barriers and obstacles learners encounter in attempting to access opportunities for quality education, as well as in removing those barriers and obstacles that lead to exclusion.

(p. 1)

There may be many reasons underpinning the fact that some students encounter difficulties in participating fully in academic and social life at school. Englebrecht and Savolainen (2014) note that societal, political, economic and cultural forces all come into play when framing definitions of inclusive education. These factors need to be considered carefully, particularly when examining international research, as they shape the development of inclusive education in different contexts.

Since the mid 1990s, the philosophy of inclusion has been influential in changing the provision of education to students with disabilities and learning difficulties. Inclusion is about more than the location of education. It requires the provision of an education system that can meet the needs of all learners in local schools. It is, in essence, a philosophical move away from the accommodation of students with special needs into an already existing system, towards a model where all individuals have the right to an education that meets their needs. Inclusion is situated within a broad social justice agenda supported by United Nations policies that affirm the rights of children (for example, the United Nations Convention on the rights of the Child, 1989; the United Nations Standard Rules for the Equalisation of Opportunities for Persons with Disabilities 1993; the UNESCO Salamanca Statement, 1994).

Ainscow, Booth, Dyson, Farrell, Frankham, Gallanannaugh, Howes and Smith (2006) suggest that it is useful to distinguish between ‘narrow’ and ‘broad’ definitions of inclusion. Using their framework, narrow definitions of inclusion refer to the promotion of inclusion for a specific group of students, mainly, students who have disabilities and learning difficulties in ‘regular’ education settings. In contrast, broad definitions of inclusion focus not on specific groups of students but rather on diversity itself and how schools respond to the differentness of all students and all members of the school community.
The term ‘inclusion’ has already broadened from its usage in the 1990s and this is likely to continue into the 21st century. Armstrong, Armstrong and Spandagou (2011) note an important tension in this field when they observe that both broad and narrow definitions of inclusion become ‘fragmented’ when they break down the groups that are to be included. For example, Armstrong et al. (2011) use the example of a policy report from Great Britain that describes an educationally inclusive school as one in which the teaching and learning, achievements, attitudes and well-being of every young person in that setting matters.

In the same report, however, Armstrong et al. (2011) note that groups of students are identified in relation to inclusion: girls and boys; minority ethnic and faith groups, travellers, asylum seekers and refugees; pupils who need support to learn English as an additional language; students with special educational needs; gifted and talented students; sick children; young carers; those children from families under stress; teenage mothers and fathers; lesbian, gay, bisexual, transsexual, intersex and queer students; and any other students who are at risk of disaffection and exclusion. This list divides the notion of ‘every young person’ into numerous groups. While such an approach may help teachers identify commonalities and authorities allocate resources, it also means that inclusion can become a “process of ‘managing’ individuals and groups that are perceived as ‘problems’” (Armstrong et al, 2011). Inclusion, at its root, implies ‘including’ people into settings where they obviously were not previously - otherwise they would have already belonged.

A focus on individual student learning needs is obviously important to implementing inclusion and in this review refers to providing what is necessary for students to learn and to achieve: Inclusive education requires removing all possible barriers to learning for all. It is vital to remember that responding to individual student needs may require extra learning support or may mean extending and enriching some individuals’ school experiences. Such educational provisions may necessitate students moving around the school and community to access what they need.

In terms of investing in equity and enhancing educational outcomes, there is evidence that enabling young children’s participation in pre-primary programs is effective, alongside intensive support programs targeting the development of key skills by learners at risk (e.g., literacy, numeracy programs), parental involvement and close ties between schools and communities. A further factor vital to enhancing educational outcomes is the development, through quality preparation and professional learning, of teachers’ capacity and motivation to deliver better instruction to every single student in their classrooms.
3. What are inclusive teaching practices?

Inclusive teaching acknowledges the classroom reality of diversity by providing multiple ways for students to access content and demonstrate their learning. Inclusive teachers draw from a repertoire of evidence-based practices to meet students’ needs. For example, Florian and Black-Hawkins’ (2011) study of the craft knowledge of inclusive teachers found that an inclusive pedagogical approach focuses on all students in the classroom, not only the student or students who have been identified as requiring additional educational support. In this way, emphasis remains on what all learners need to know and the skills they need to demonstrate their learning. Specifically, Rouse and Florian (2012) defined ‘inclusive pedagogy’ as “an approach to teaching and learning that represents a shift in thinking about teaching and learning from that which works for most learners along with something ‘different or additional’ for those who experience difficulties, to an approach to teaching and learning that involves the creation of a rich learning environment characterised by lessons and learning opportunities that are sufficiently made available to everyone so that all are able to participate in classroom life.” (p. 18).

Additionally, Schaeffer (2008) suggested that a rights-based framework for inclusive pedagogy is necessary to achieve a truly inclusive system of education. This approach advocates interrelated dimensions that work together to ensure that the right to education is granted to everyone without discrimination; learners’ rights are respected within their learning environments and access assured through appropriate curricula, materials, and methodologies; and democratic values and respect for human rights are promoted.

Further, Goss, Hunter, Romanes and Parsonage (2015) in their recent report, Targeted Teaching, endorse a strong focus on learning outcomes through teacher collection of rigorous data and the use of this data to both target teaching and track student progress over time. This focus is supported by Hattie’s (2009) meta-analysis of the effect size of a variety of teaching interventions. Of the 49 teaching strategies identified in the research, Hattie ranked formative evaluation as having the highest positive impact on learning for all students. Formative evaluation is described as the use of student learning data by teachers to understand and analyse the effects of their teaching strategies and the impact they are having in class.

In their report, Goss et al. (2015) suggest that school leaders should provide teachers with the time, tools and the professional learning needed to track progress of students and embed targeted teaching into their practice. They propose that targeted teaching will result in teachers taking responsibility for lifting the performance of all students - those who are falling behind - as well as students who are performing beyond year level expectations. These authors also advocate shifting focus from year level comparisons to how much progress each student has actually made during the course of a school year.

The work of Hattie (2009) and Goss et al. (2015) is important in describing an effective general orientation to inclusive practices, as is the article by, O’Neill and Carter (2012) who reiterate the importance of evidence-based practice. Funding in the US is tied to teachers finding, appraising and using valid research as a basis for their teaching decisions. Hempenstall (2006) reports that in Great Britain research-based educational practices are mandated (Department for Education and Employment, 1998). However, Stephenson et al. (2012) point out that, “the Australian government to date has paid minimal attention to supporting and promoting evidence-based practice in a formal and consistent manner” (p.276).

Evidence-based practice, as an approach, began as evidence-based medicine and has spread to other fields, such as education. Bourke and Loveridge (2013) note that in education, some models of evidence-based practice include:
the collection and analysis of multiple sources of evidence, including current research evidence;
• teachers’ professional judgement; and
• collaboration with a team around the learner.

If teachers are engaging in responsive teaching cycles informed by research, assessing student need, responding by targeting teaching to identified student need, monitoring the responses of students to their teaching, reflecting on student responses, and then planning future teaching actions based on this information, then they are engaging in what could be termed ‘evidence-based practice’. There are a number of terms used to describe this kind of teaching cycle where the focus is on assessment and the continuous monitoring of learning to inform teaching. These terms include action research, responsive teaching, clinical teaching or differentiated instruction.

The complexity involved in instructing a range of learners with a variety of experiences, backgrounds, skills and abilities poses challenges for teachers. The necessity of catering for individual differences in inclusive classrooms has resulted in the development of pedagogical practices that aim to ensure that all students, including those with disabilities or difficulties, benefit from the learning environment (van Kraayenoord, Waterworth & Brady, 2014). For example, Universal Design for Learning (UDL) is a framework designed to extend access to educational environments. Differentiated instruction is another means of meeting the needs of a range of learners through making adaptations and modifications to the curriculum. Both UDL and differentiated instruction models advocate a single curriculum that is, as far as possible, accessible to all learners given the judicious use of modifications or adaptations. Scaffolding and Response to Intervention (RtI) are other key approaches to classroom inclusion. Promoting positive behaviour (Positive Behaviour Support (PBS) is also evidenced in supportive inclusive classrooms. Brief review summaries of these recommended inclusive practices are presented below.

**Differentiated Instruction** (e.g., Tomlinson, 2013) entails establishing clear goals, assessing persistently to see where each student’s progress tracks relative to these goals, and adjusting instruction based on assessment information. In her early work, Tomlinson (2001), stated that differentiated instruction “means ‘shaking up’ what goes on in the classroom so that students have multiple options for taking in information, making sense of ideas, and expressing what they learn” (p.1). According to Tomlinson, differentiated instruction is a careful combination of individual, group and whole-class instruction that is proactive, student centred and grounded in assessment. Once information on student need and ability is ascertained, teachers can differentiate their instruction in at least four main ways through addressing:

• **Content** – the skills covered in the curriculum;
• **Process** – the activities or strategies presented to students;
• **Product** – the ways students demonstrate learning; and,
• **The learning environment** – the physical setup and social aspects of the classroom.

Although there has been much written about differentiation and ways to implement it in classrooms, it seems that teachers remain somewhat unsure about or reluctant to use these strategies. Research that has examined what happens in classrooms, either through self-report questionnaires or observational studies, confirms that the most commonly used differentiation strategies tend to be those that do not require prior planning but instead are instigated as on-the-spot differentiation within the flow of a general whole-class lesson – for example, repeating or simplifying instructions, providing extra support or giving specific guidance to some students (Buli-Holmberg, Nilsen & Skogen, 2014; Chan et al., 2002; Yuen, Westwood & Wong, 2005).

**Universal Design for Learning** is a framework for improving and optimizing teaching and learning for all students based on insights into how humans learn. As van Kraayenoord et al. (2014) state, the
three main principles of UDL emphasise the responsive use of representation, expression, and engagement, such that:

- **Multiple means of representation** provide options for perception, language and symbols and comprehension – ways of acquiring information;
- **Multiple means of expression** provide options for physical action, expressive skills and fluency and executive functions – ways of presenting and demonstrating mastery; and
- **Multiple means of engagement** provide options for recruiting interest, effort and persistence and self-regulation – offering different levels of activity and engagement.

Mitchell (2015) suggests UDL as a means of reaching a range of learners in New Zealand classrooms, however, Kavita, Ok and Bryant’s (2014) review of universal design studies in education rated the research base supporting the framework as in its early stages. They found that a “barrier to establishing efficacy has been the lack of clear definition of what constitutes an intervention that is universally designed” (p.154). Kavita et al. (2014) questioned the number of elements of UDL that need to be in place for an intervention to be considered ‘universally designed’. With caution, however, they concluded that there is some empirical evidence to support the use of UDL as a means of improving student outcomes.

In Australia, van Kraayenoord, Waterworth and Brady (2014) described the Planning for All Learners (PAL) intervention program, which combines the principles of UDL with the use of assistive technology. These researchers report the success of PAL in two independent Queensland schools with particular reference to the progress of identified students in each class who presented with learning difficulties. Teachers were assisted in their professional learning journey through training and ongoing support from the PAL professional learning team. While the PAL program was conducted over a year, the program was active in classes for only two or three terms. van Kraayenoord et al. (2014) acknowledged that growth and sustained change could take longer than this period and have recommended a longer-term commitment to the development of teachers’ knowledge and skills and ensuring positive change.

Some students will require scaffolding of their learning. Scaffolding refers to instructional support given during the learning process and gradually withdrawn when it is no longer needed. Inclusive teachers provide these successive levels of temporary support to help students reach higher levels of comprehension and skill acquisition than they would have been able to achieve without assistance. Graham, Berman and Bellert (2015, p. 70) articulate the steps of scaffolding learning for teachers as:

- Before teaching, plan how you will support student learning:
- Know your learners: what do they know now and what do they need to learn next? A pre-test can provide useful information.
- Instructional clarity is key: what do the students need to do before, during and after the task?
- Anticipate errors and develop a procedure for error correction.
- Develop a routine to acknowledge progress and effort.
- How will you tap into prior learning and make connections with students’ experiences?
- How will you communicate to students that they can learn this task, procedure or concept? (p. 70).

An influential model that can be used to guide intervention planning and resource allocation in inclusive classrooms is **Response to Intervention** (also referred to as Response to Instruction). Response to Intervention (RtI) is an approach that advocates systematic attention to both early identification of emerging learning delays through screening and classroom assessment, and early intervention using planned and evidence-based approaches (McAlenney & McCabe, 2012; Gersten et al., 2009). It combines screening and high-quality instruction for every student with regular monitoring and assessment to identify learning and/or behaviour difficulties as soon as they emerge and timely, effective intervention to prevent students from falling behind (see Fuchs & Fuchs, 2006).
Consistent with the least intensive to most intensive design of the multi-tiered Response to Intervention model, at Tier 1 students are provided with effective, evidence-based instruction in their classroom with information from universal, curriculum-based assessment and monitoring used to inform instructional decision making. Students who do not demonstrate anticipated progress in response to this quality core instruction are identified through assessment and monitoring. They then participate in small-group supplementary Tier 2 interventions and, when necessary, more intensive Tier 3 interventions (Vaughn & Fuchs, 2003).

Research on multi-tier implementations of RtI in the United States has indicated evidence of growth in student performance, increased task completion and reduction in special educational referrals (Glover & Di Perna, 2007). Response to intervention has been influential in recent decades, particularly as it applies to identifying low-achieving students soon after learning delays or problems emerge. RtI means providing students with timely, appropriate intervention (Fuchs & Fuchs, 2006). In Australia, RtI is relevant as a framework for the systematic planning of curriculum-based assessment, monitoring and appropriate intervention (Graham & Bailey, 2007). It is included in this review of key inclusive practices because of its emphasis on quality initial teaching experiences, and its potential to inform a responsive, systematic, data-driven approach to the planning and provision of appropriate support for all students.

Positive Behaviour Support (PBS) is also provided through a school-wide tiered framework of support. Scott, Park and Swain-Bradway (2007) describe a four-step implementation model for PBS as focussing on:

- Staff being involved in predicting problems and being prepared to deal with them when they arise;
- Developing rules, routines and arrangements to prevent problems in specific contexts;
- Consistent implementation of strategies, rules and routines in classrooms and schools; and
- Collection of data to evaluate the appropriateness of strategies and subsequent planning based on information collected.

In order for Positive Behaviour Support to be effective, teachers work collaboratively to provide consistent approaches to behaviour management in their schools. School-wide behavioural expectations are established and communicated. Professional learning around behaviour management and the PBS framework is also fundamental. For example, Richards, Aguilera, Murakami and Weiland (2014) found that leadership and a high level of commitment from all stakeholders is needed to support the kind of fair and equitable practices that improve school climate and the academic attainment of students. School principals are key leaders who influence the shifts in practice. The aim is a shift from focusing on changing the behaviour of a few students to the provision of support to all students in inclusive settings. Leadership and collaboration are required for the introduction and successful implementation of programs such as PBS. Without the support of leadership and a consistent approach, behavioural and academic interventions are unlikely to be implemented rigorously nor will they be maintained in schools.

This section concludes with discussion of the skills and knowledge that educators need to implement inclusive teaching processes successfully in their classrooms. Recently, Dally and Dempsey (2015) developed for validation a comprehensive set of professional standards that describe the work of Australian special education teachers. Many of these statements could also be applicable, if aspirational, to the work of inclusive teachers. Areas covered by these standards are knowing students; knowing content; planning and implementing teaching strategies; the learning environment; feedback and reporting; professional learning; engaging with others; self-efficacy; and, co-teaching and professional skills. In an aligned way, the Australian Research Alliance for Children and Youth (2013) review of best evidence in relation to theory and practice for inclusive education for students with a disability outlines good in-class practice as consisting of...
quality teaching; inclusive pedagogy; adaptive curricula; alternative curricula; assistive and adaptive curricula; Universal Design for Learning; and individual planning (pp. 32-35).

More specifically, the European Agency for Development in Special Needs developed a set of core values and competencies for inclusive education that was published as a ‘Profile of Inclusive Teachers’ in 2012. This compilation centres on four key areas: Valuing learner diversity; supporting all learners; working with others; and, personal professional development. Specific competencies of interest were identified in each key area:

1. **Valuing learner diversity.**
   Key concept: Learner difference is considered as a resource and an asset to education.
   The areas of competence within this core value relate to:
   - Conceptions of inclusive education; including attitudes and beliefs about diversity-examining beliefs, engaging in ethical behaviour; being empathic
   - The teacher’s view of learner difference - student voice; essential information about learner difference; diversity is not static.

2. **Supporting all learners**
   Key concept: Teachers have high expectations for all learners’ achievements.
   The areas of competence within this core value relate to:
   - Promoting the academic, practical, social and emotional learning of all learners; learning is social; teacher expectations are key; developmental patterns and pathways
   - Effective teaching approaches in heterogeneous classes; abilities are not fixed; assessment for strengths; differentiated teaching; positive classroom management

3. **Working with others**
   Key concept: Collaboration and teamwork are essential approaches for all teachers.
   The areas of competence within this core value relate to:
   - Working with parents and families; interpersonal relationships are important.
   - Working with a range of other educational professionals: collaboration; common language; working in the community and in flexible teams.

4. **Personal professional development**
   Key concept: Teaching is a learning activity and teachers take responsibility for their lifelong learning.
   The areas of competence within this core value relate to:
   - Teachers as reflective practitioners: systematic planning and evaluation; continued learning is essential.
   - Initial teacher education as a foundation for ongoing professional learning and development.

As the discussion in this section illustrates, inclusive teaching practices are varied. The selection of particular strategies or practices depends on teachers’ dispositions and their attitudes towards and understanding of inclusion; their knowledge of strategies or practices such as differentiated instruction, UDL, scaffolding, response to intervention and positive behaviour support; and, their skill at applying these strategies and practices in response to students’ needs.
### Key points: Inclusive teaching practices

- Develop clear definitions of inclusion and related terms and use them consistently
- Incorporate contemporary perspectives on inclusion which emphasise valuing diversity
- Encourage positive teacher attitudes towards inclusive education
- Nurture core competencies for inclusive teaching
- Focus and report on student progress throughout the school year
- Foster teacher collaboration and professional learning communities
- Support teachers in their efforts to make accommodations, adjustments and modifications to a curriculum that is, as far as possible, accessible to all learners
4. Attitudes, self-efficacy and valuing learner diversity

Attitudes have a powerful influence on behaviour. Teachers’ thoughts and beliefs about inclusion impact their behaviour in the classroom. Teachers’ beliefs about their ability to succeed in teaching in an inclusive setting, or their sense of self-efficacy, also impacts on teaching behaviours. If teachers do not think that they are able to meet the needs of all students in the regular classroom, they may not invest the time and effort required to develop knowledge and skills in inclusive education. It is possible that a teacher can have a positive attitude towards inclusion but still feel that they do not personally have the necessary skills or experience to teach in an inclusive setting.

Rouse (2008) writes that developing effective inclusive practice is not only about developing teachers’ knowledge through professional learning, it is also about encouraging teachers to educate themselves in different ways and can involve challenging them to reconsider their attitudes and beliefs towards inclusive education. He describes inclusive practice as occurring across three levels: Knowing + Doing + Believing.

This simply stated view is supported in the literature. For example, Di Gennaro, Pace, Iolanda and Aiello (2014) who reviewed research on teacher attitudes towards inclusion, concluded that the “success of sustainable inclusive education requires both the acquisition of competencies as well as instilling values of diversity and human rights” (p.59). Teachers require knowledge and skill in order to manage and track their students’ learning in inclusive classrooms. They also need to apply this knowledge in a variety of classroom contexts. Even if knowledge is available to teachers, it is unlikely that it will be applied if they do not have the will to do so; either because they do not believe it is their role to include all learners or they believe that their actions will not lead to positive outcomes for all students. Di Gennaro et al. (2014) recommend that teachers learn how to give value to difference, as well as how to identify the best ways to respond to diversity in their classrooms.

From an international perspective, for example, it is estimated that in India there are approximately 30 million children with disabilities, but only about 4% of this number have access to education. Bhatnagar and Das (2014) attribute this statistic to lack of fiscal resources rather than a lack of government commitment. They note that a critical aspect of inclusion in India is the availability of regular class teachers who are trained in inclusive teaching practices. In their research, Bhatnagar and Das interviewed and conducted focus groups with 20 secondary teachers in Delhi in order to ascertain their attitudes towards inclusion. They found that the teachers believed that students with disabilities could succeed academically and benefit socially from inclusive classrooms. However, the teachers did not believe that inclusion would lead to higher levels of academic or social learning compared to education in segregated settings. An additional finding from this study was that, while teachers in general were hopeful of fostering inclusion in their schools, some were unwilling to teach students with disruptive behaviours and autism.

Attitude scales are often used to measure and report teacher attitude and efficacy. Sharma, Loreman and Forlin (2012) developed such an instrument to measure the efficacy of teachers in implementing inclusive practices. An 18-item scale, the Teacher Efficacy for Inclusive Practices (TEIP), was developed based on the initial responses of 607 pre-service teachers surveyed from Australia, Canada, Hong Kong and India. Factor analysis of responses revealed three main factors: Efficacy in using inclusive instruction; efficacy in collaboration; and, efficacy in dealing with disruptive behaviours.

The TEIP has been used in a number of recent studies. For example, Shaukat, Sharma and Furlonger (2013) investigated similarities and differences in attitudes and self-efficacy beliefs of pre-service teachers in two very different contexts. They surveyed 194 students in Pakistan and 123 students in Australia using a short form of the Attitudes Towards Inclusive Education Scale and the Teacher Efficacy in Inclusive Practice scale. Interestingly, although the researchers expected to find
that Australian pre-service teachers were more positive towards inclusion, they found no significant differences between participants’ attitudes. Neither group held particularly positive attitudes towards inclusion. Pakistani females, however, held more positive efficacy beliefs towards inclusion than their male counterparts.

While Shaukat et al. (2013) found differences between the attitudes of males and females in their study, McGhie-Richmond et al. (2012) found differences in the attitudes of primary and secondary teachers towards inclusive education in their research with 123 Prep to Year 12 teachers from Alberta, Canada. Primary teachers were more positive than secondary teachers on items measured by their Diversity, Individual Development and Differentiation scale. Follow-up interviews were undertaken with 14 of the survey respondents. These revealed that, in general, primary teachers believed inclusion comprised the celebration of strengths as well as meeting individual needs of students. In contrast, secondary teachers discussed inclusion in terms of meeting needs only. There were also within-discipline differences amongst the secondary teachers, with those who taught subjects such as art, physical education, and music, providing more positive responses about inclusive education. The researchers concluded that those who teach core subjects such as English, mathematics and social studies experience less flexibility because of the demands of the curriculum. Consequently, these teachers have less latitude to make decisions and to be flexible when accommodating the needs of students in inclusive classrooms. As McGhie-Richmond and colleagues noted, teachers of all secondary subjects need to be supported to use responsive approaches to the teaching and assessment of students who require curriculum modification and adjustments.

The studies reviewed so far in this section focused on individual teacher attitudes and ratings of efficacy. Urton, Wilbert, & Hennemann (2014), however, looked at how whole school ‘efficacy’ impacts on teachers. They used an attitude towards inclusion scale that included items that measured both self and collective efficacy towards special education and social inclusion. A total of 276 teachers and the principals from 35 schools in the North Rhine region of Germany were surveyed. Results confirmed that the attitudes of teachers and their principals were significantly connected. Observing and working alongside colleagues who were inclusive appeared to contribute markedly to improved self-efficacy for teachers.

In summary, there are clear indications that it is necessary to consider teachers’ attitudes towards, and beliefs about, inclusion as a precursor to planning professional learning. Is the aim, for example, to focus on activities in professional learning that will change teachers’ beliefs and attitudes about inclusion? Or, is the focus on introducing new skills and knowledge to support teachers’ existing beliefs and promote the extension of their inclusive practices? Valuing difference and demonstrating that inclusion has a positive impact on all students’ academic and social learning is critical. Teachers’ and teacher candidates’ early positive experiences of inclusion and exposure to positive and professional inclusive practices appear important.
5. Pre-service preparation for inclusive education: International perspectives

There is a significant corpus of international research confirming that pre-service teacher education programs have not traditionally prepared teachers well for inclusive teaching (Abu-Heran et al., 2014; Ashan et al., 2013; Bhatnagar & Das, 2014; Das et al., 2013; Symeonidou & Phtiaka, 2014). As an example, Das, Kuyini & Desai (2013) found that 70% of their sample of 349 primary school teachers in Delhi had neither received any training in special education, nor had experience with teaching students with disabilities. This finding is supported by Bhatnagar and Das (2014) who conducted focus group interviews with 20 secondary teachers selected from four administrative zones in New Delhi. The secondary teachers in this study did not feel prepared to teach students with disabilities in their classrooms.

Similarly, Bukvić (2014) surveyed 86 Croatian teachers who were employed in regular schools where students with special needs were enrolled. The findings indicated that 70% of this group reported having no or very little knowledge about teaching students with special education needs. Abu-Heran et al. (2014) presented a questionnaire to 340 teachers randomly sampled from the teaching population of Palestine, where the process the researchers described as ‘integration’ was in its infancy. Palestinian teachers were generally concerned about the inadequacy of their preparation. In Cyprus, Symeonidou and Phtiaka (2014) also found that teachers were dissatisfied with their initial teacher education for inclusion.

Reporting on a study conducted in the United States, Burke and Sutherland (2004) reached different conclusions. Surveying initial teacher education (ITE) candidates and in-service teachers in New York, they found that pre-service teachers believed their teacher preparation programs provided them with the skills to work with diverse learners, but in-service teachers believed that the ITE programs were inadequate. The differences between the views of pre-service and in-service teachers could be due to the fact that many of the teachers surveyed were trained before inclusive education was included in coursework. It is also possible that while pre-service teachers thought their courses provided the knowledge and skills required, when they had full responsibility of planning for and teaching classes they may have found that this was not the case.

In terms of what teachers need to know and be able to do, Florian’s (2012) position is that educational administrators and decision makers should move beyond debating whether beginning teachers need to know how to improve teaching and learning, or whether they need more specialist knowledge about disability and the learning needs of specific groups of students. She writes: “One thing is clear: the adults who work in schools need to be better at sharing their professional knowledge and skills with each other” (p.219). Florian calls for the development and research of new forms of professional knowledge that target inclusive education and which outline ways of working with and through others. It is her belief that the skills and knowledge required for working with adults, and children, should form an essential element of all teacher preparation courses.

Ashan, Deppler and Sharma (2013) note that the aim of ITE should be to equip teachers who are willing to teach in inclusive classrooms. These researchers found that female pre-service teachers showed more positive attitudes towards inclusive education than males. Overall, they concluded that simply attending inclusive pre-service teacher preparation courses is not sufficient for developing positive values and beliefs. Curriculum content, practicum opportunities and experience with children with disabilities were all deemed to contribute to the better preparation of teacher candidates for inclusive classrooms.

In terms of a pre-service teacher education curriculum, the European Agency for Development in Special Needs Education completed a literature review on teacher education for inclusion in 2010.
This group recommended that an initial teacher education curriculum should include information about diversity amongst the school population and also how to translate theory about responding to diversity into practice. Specific suggestions included that initial teacher education should promote “reflection on issues of norm, difference, inclusion, intercultural education, positive attitudes and high expectations, innovative skill in assessment, good communication and information communication technology” (item 6.2). This report states that inclusive teachers should be able to provide:

- developmentally appropriate content for students;
- clear instructions;
- opportunities for students to practice at an appropriate level of difficulty;
- opportunities for students to participate in appropriately designed task progressions; and
- accurate feedback on and assessment of subject matter and role performance.

(Item 6.4)

Additionally, Di Gennaro et al. (2014) advocate training pre-service teachers in critical reflection as a means of assisting them to become perpetual problem solvers who analytically question what is happening in their classrooms. Suggested means of developing reflective practice for pre-service teachers include the use of reflective journaling, portfolios, mind-mapping, storyboarding, scenario-based role plays, micro-teaching and video reflection. These researchers note that teacher education courses should “aim at reorienting teaching methods to be in line with inclusive values and support teachers in handling the complexity characterising the educational context of the twenty-first century” (p.62).

In an attempt to map gaps in teacher education programs for inclusive education across the United States, Zion and Sobel (2014) undertook a comprehensive series of research and evaluation activities, which included gathering data from 17 focus groups comprising 102 current pre-service teachers, recent graduates, clinical teachers, principals, students and families of students with diverse needs. The aim was to identify the skill sets needed by teachers to meet the needs of culturally and linguistically diverse students with disabilities. Zion and Sobel (2014) pinpointed disparities across pre-service program in four critical areas:

- socio-cultural knowledge;
- affirmative attitude;
- collaborative skills; and
- pedagogic diversity.

In another American study Harvey at al. (2010) surveyed 703 faculty members from teacher training institutions across 50 states and the District of Columbia in order to explore pre-service teacher preparation for inclusion. The results of 124 surveys were analysed, with researchers concluding that education institutions in the United States had made an effort to address concerns in the literature about the preparation of teachers for inclusive education. There was significant agreement that institutions represented in this study were offering coursework to teacher education majors regarding exceptional children across all departments or program areas and that all students were taking introductory courses in this area. A concern of the researchers, however, was that some departments did not provide a course specifically on collaborative teaching. Respondents in this study identified the need for additional time to develop collaborative initiatives across institutions and for financial resources to support these activities.

As a specific example of a response to the need for teacher versatility in inclusive settings, Portland State University in Oregon developed a merged secondary and special education program. Among the goals of this program was preparation for teaching differentiated units, developing lessons and tiered assessments; teaching reading and supporting reading comprehension across content areas; using positive behaviour support strategies; co-planning and co-teaching to strengthen the content
acquisition of students with learning disabilities; and for graduates to become change agents and leaders for responsible inclusion. Fullerton et al. (2011) collected information from 44 of the 2006/7 and 2008/9 Portland State graduates, seven of their supervisors and three employing principals. Candidates were encouraged to describe their growth in learning throughout their studies. The researchers reported that evidence from multiple sources indicated that, when working as content area teachers, graduates of the combined secondary and special education program competently gathered and used information about their students to develop differentiated objectives and instruction, and used formative assessment to inform instructional decisions.

In Scotland, Florian, Young and Rouse (2010) reviewed the Professional Graduate Diploma in Education (PGDE) – a one-year full time or two-year part time course offered jointly by the University of Aberdeen and associated schools. The PGDE program was revised to ensure that social and educational inclusion was addressed within the core of the program rather than being an optional pathway selected by a few pre-service teachers. The focus of this course was on inclusive pedagogy or “the creation of lessons and learning opportunities that enable all learners to participate in classroom life” (p.712). The researchers reported that the reformed course addressed three challenges: (i) How inclusive teacher education might take difference into account from the outset (knowing); (ii) How teachers might be convinced that they are qualified to teach children with additional needs (believing); and, (iii) How teachers might learn new strategies for working with and through others (doing).

In order to better understand whether the course was meeting the three challenges posed, Florian and her colleagues collected extensive data from lectures and two tutor groups. They analysed video recordings of 15 hours of lectures, 30 hours of audio material from tutorials and 14 hours of audio material from seminars. They also included opportunities for university academic staff to discuss their teaching. Some lecturers were happy to support the project by reading their own transcripts and debriefing about the pre-coded and coded documents. Often these conversations led them to interrogate parts of their own practice as they reread their own words and reflected on the project aims. For those lecturers who taught on the PDGE course in its second year, the researchers held a series of quarterly meetings to discuss issues of inclusion. The focus of the initial analysis of the data was on the intentional messages sent to students through lecturer talk. The researchers reported that they discovered ways in which the theoretical ideas underpinning the course intersected with the ways that lecturers used tools at their disposal to convey ideas. For example, they found that 48% of lecture time was devoted to theory and practice while 30% of lecture time was spent talking about strategies with students. In 14 of the 15 lectures personal stories of varying length were also used as a vehicle to make a theoretical point. Florian and her colleagues, through their research into the PGDE, actively encouraged the reflective practice of lecturers and students.

Institutes of higher education and teacher education institutions throughout the world are also seeking better ways to prepare pre-service teachers for inclusive education through targeting teaching practicum experiences. As an example, Kim (2012) conducted research in the mid-west of the United States, at a university that had an inclusive laboratory school. The aim of Kim’s research was to determine the optimal amount of time early childhood pre-service teachers should spend in an inclusive setting. Kim (2012) surveyed 146 early childhood pre-service teachers at the university. Findings were that those students with field experience in the lab school showed stronger teaching efficacy than their counterparts who had their field experience in less controlled settings. Correlational analyses revealed that field experience at the lab school was positively related to teacher efficacy in teaching children with disabilities with regard to student engagement; instructional strategies; and, in classroom management. Kim concluded that the best way to provide teachers with knowledge and skills for teaching children with disabilities was to “provide pre-service teachers with firsthand experience in an inclusive setting where the curriculum and program are professionally established according to disciplinary knowledge of best practice specific to inclusion” (p.174).
Hamman et al. (2013) found that practicing teachers who serve as mentors during field experience represent one of the most important sources of information accessed by pre-service teachers regarding how to provide instruction to students with disabilities. In Hamman et al’s study, three questionnaires were distributed to 337 pre-service teachers at a south-western US university on completion of their teaching practicum. One questionnaire asked pre-service teachers about inclusive education in the practicum. The second questionnaire focused on collaboration with supervising teachers, and the third questionnaire targeted evidence of teaching efficacy. Findings of this study were that both scaffolded collaboration and a focus on inclusion contributed to pre-service teachers’ sense of efficacy for implementing inclusive practices. Importantly, Hamman et al. (2013) concluded that, “conscientious, collaborative co-operating teachers make an important contribution to the capabilities of their students” (p.253).

In another study examining the self-efficacy of pre-service teachers, Leyser, Zeiger and Romi (2011) surveyed 992 general and special education pre-service teachers training in Israel. The participants were enrolled in 11 different teacher education colleges representing different national and religious affiliations in Israel. The study found that experience or contact with children and adolescents with special educational needs during field experience in the program and out of college (through activities such as mentoring, tutoring or working in camps) was associated with higher self-efficacy scores in the areas of general teaching, socialisation and teaching low achievers. While single subjects in inclusion may not be sufficient to change pre-service teachers’ beliefs, it appears that incorporating a service component, such as mentoring or tutoring experiences with students who experience disabilities or learning difficulties, can assist pre-service teachers to develop positive mindsets towards inclusion.

While it has been established that field experience or teaching practicums in inclusive classrooms are important, Atiles, Jones and Huynin (2012) were interested in accurately estimating how much direct field experience early childhood pre-service teachers actually had with students who experienced developmental delays or disabilities. These researchers surveyed 165 pre-service teachers attending a mid-west university in the United States. The measures of positive efficacy made by these pre-service teachers related to the amount of time they spent in inclusive classrooms. However, the results were not simply contingent on the number of hours the pre-service teachers spent in inclusive settings: Instead, high efficacy was found to be systematically related to the ratio of children with developmental delays or disabilities to typically developing peers in their practicum classrooms. Atiles et al. (2012) acknowledge that it may not always be possible to find placements with high ratios of students who present with learning delays or disabilities. They suggest, instead, that the focus should be on identifying mentoring teachers who model best practice interventions and that teacher candidates be guided to reflect on their observations of, and experiences with, these mentors.

The research summarised in this section informs us that pre-service teachers require information about developing curriculum that is responsive to diversity, and allows all students to participate in learning and demonstrate growth. The development of collaborative skills is also important in pre-service teacher education. Teacher candidates who are well versed in sharing knowledge and skills and who can communicate about inclusive practices are more likely to rate their classroom interactions as efficacious and engage in continuing professional learning. Ideally, teaching, practicum and community service experiences, all provide opportunities for pre-service teachers to learn from quality examples of inclusion and to employ critical reflective practices.
6. Pre-service preparation for inclusive education – Australian perspectives

In 2012 The Australian Institute for Teaching and School Leadership (AITSL) produced a report titled “Australian Teacher Performance and Development Framework”. This framework calls for the creation of a performance and development culture, described as “being characterised by a clear focus on improving teaching as a powerful means of improving student outcomes” (p.4). One means of improving teaching is to provide pre-service education that is responsive to the changing environment of the 21st century classroom. Alongside rapid technological change, the 21st century classroom is characterised by the diversity of the student population.

How do Australian Universities prepare teachers to teach diverse learners in their pre-service education courses? Stephenson, O’Neill and Carter (2012) tackled this question by collecting and examining information about the content of Australian university courses that prepare teachers to educate students with disabilities. Stephenson et al.’s findings were compared to those from Dempsey’s (1994) research. In 1994, Dempsey found that only 59% of the 53 campuses of 39 universities offered a teacher education course that had a compulsory unit in special education. In 2009, Stephenson, O’Neill and Carter (2012) focused on the 35 institutions across Australia that offered a four-year bachelor program. All except three courses included a core unit on inclusion or special needs education. An additional 20 electives were offered. Stephenson et al. concluded that the increase was driven by the emphasis on inclusion in Australian education and also by teacher registration requirements across the states and territories.

Of concern to Stephenson et al. (2012), however, was the lack of relevant qualifications held by the academics convening the courses. Whilst there were more subjects offered in 2009, fewer appeared to be taught by academics with active research profiles in special education. A web search revealed information about 72% of the course convenors and further research concluded that just under a half of these teacher educators had qualifications in special education or expertise in special education demonstrated through a relevant higher degree or recent publication. This finding led the researchers to conclude that it is possible that Australian pre-service teachers are less well prepared to teach students with disabilities and special needs than they were two decades ago.

In a series of studies also examining this issue, staff at Charles Sturt University explored their pre-service education courses at the design level. Bain, Lancaster, Zundans and Parkes (2009) completed a series of studies focused on features of embedded design. They wanted the pre-service teachers in their courses to “experience the essential features of inclusive practice repeatedly and in a manner that profoundly affects their own learning experiences” (p. 216). In this research, embedded design involved a four-part process:

- knowledge and awareness raising: developed through lectures;
- skill building through active experience: in this case, through 11 x 2-hour skill-building workshops;
- real world application with feedback: students were placed in collaborative practice communities and practiced a collaborative problem-solving process together; and
- personal impact or consequence identification: students used independent study, peer-assisted learning and co-operative learning groups to prepare for quizzes undertaken as part of the assessment of the course.

Participants in the Bain et al. (2009) study were 90 volunteer pre-service teachers in their second year of a primary Bachelor of Education program. They were all enrolled in a mandatory inclusive education course. The researchers found that participation in the embedded design course co-varied with at, or near, mastery level performance on three quizzes administered to test the students’ knowledge for the majority of the pre-service teachers. There was some limited evidence that peer
assisted and co-operative learning resulted in better quiz scores than individual study. An important course outcome was that the pre-service teachers reported increased confidence in using evidence-based practice to develop differentiated instruction.

Further to this study, Lancaster and Bain (2010) investigated the effect of program design on the self-efficacy of teacher education students. Participants in this study were 36 pre-service teachers in the second year of their primary Bachelor of Education program. Students on campus A were involved in an embedded design course. Students on campus B were involved in a course designed using the principles of applied direct experience. These students were exposed to a range of teaching strategies, including developing running records and using cognitive strategies to enhance learning. Lecturers modelled these strategies in workshop sessions. Pre-service teachers were then provided with instruction on how to develop their own lessons. There was some informal feedback from peers, but this group did not follow the embedded design sequence. Instead of engaging in the four levels of embedded design, students participated in a classroom support activity during weeks 3 to 13 of the semester. Students’ self-efficacy ratings on the Future Interactions with People with Disabilities Scale was used to compare the two groups. Results showed that pre-service teachers in both group A and group B increased self-efficacy from pre to post-test. Even though the applied experience condition included an additional 11 hours of engaged time working with students, this did not translate into gains in self-efficacy that exceeded those recorded by students in the embedded design condition.

A third study conducted at Charles Sturt University investigated the professional language use of pre-service teachers. Lancaster and Auhl (2013) used the principles of embedded design to try to further the development of a common language for sharing professional understandings about teaching and learning amongst pre-service teachers in inclusive courses. In this research, 103 pre-service teachers, again enrolled in the second year of the primary Bachelor of Education program, engaged in reflective writing about their lesson designs at the end of each of three teaching cycles. The reflections were analysed in two ways: (i) frequency counts of the number of common language terms, and (ii) improvement in the sophistication of the patterns of language used. Findings were that pre-service teachers increased their capacity in terms of both the frequency and the sophistication of pattern language related to inclusive education over the course of the study.

Again, results of pre-service teachers in the embedded design and applied direct experience groups were compared. Results of the quizzes on this occasion showed significant differences in favour of the students who participated in the embedded design course. In their discussion, Lancaster and Auhl (2013) emphasised the importance of ensuring that learning communities include attention to professional language as a way of underpinning effective collaboration between teaching staff. If early career educators are equipped with clear understandings of professional language, it is posited that they will be better able to contribute to dialogue about inclusion and collaborate with colleagues to improve their students’ learning and their teaching. Systematic attention to building collaborative practice was also shown to be effective.

At the University of Tasmania, academics have investigated the use of video-recorded interviews as a means of connecting theory and practice for pre-service teachers. Rayner and Allen (2013) report how the teaching team developed an alternative to lectures through the creation of a series of online video dialogues between the academic course co-ordinator and a range of professionals in the field of special education and inclusion. The aim was to demystify inclusive education and enhance accessibility of the learning content for pre-service teachers. A survey was prepared to gauge how 154 pre-service teachers responded to the videos. Results showed that 83% of the respondents ‘strongly agreed’ or ‘agreed’ that the interviews improved their understanding of the course content and assisted them to connect theory and practice. In addition, 77% ‘strongly agreed’ or ‘agreed’ that the videos were engaging and interesting. It was found that pre-service teachers studying online were especially positive about the recordings. Those in the 40-49 year age bracket were most positive, while respondents aged below 24 years of age were least positive. Course evaluation data showed
that, in general, pre-service teachers who accessed the learning resources, including the interviews, achieved higher grades than those who did not.

In terms of the effects of specific service learning, Forlin and Chambers (2011) surveyed pre-service teachers undertaking an undergraduate degree in education at a Western Australian university. Data were collected from 31 early childhood and 36 primary pre-service teachers prior to and following their involvement in a 39-hour unit of study on diversity. In addition to classes, pre-service teachers could opt to engage in 10 hours of social experience with a person with a disability. Seventeen students took this option and 50 students elected to critique inclusive programs in the community as an alternative activity. At the completion of the course the pre-service teachers completed a survey that measured their attitudes to and concerns about inclusion. Generally, respondents were positive towards including all students, although they expressed the least support for including those students who were physically aggressive. An unexpected outcome was the lack of significant gain in positive attitude following engagement with people with disabilities during the applied experience. It seemed that once pre-service teachers became more familiar with students with disabilities, even though they were more confident in teaching these students, they were also more aware of their responsibilities as teachers, which increased their levels of stress. Greater engagement with people with disabilities highlighted what these pre-service teachers would need to do to accommodate all their students once they graduated.

Hemmings and Woodcock (2011) were interested in enhancing the preparation of pre-service teachers for inclusive education and, subsequently, administered a survey twice, over a five-month period, to pre-service teachers enrolled in the third year of the primary Bachelor of Education course at Charles Sturt University. These researchers wanted to determine whether there were changes in students’ reporting of issues and concerns relating to inclusion across this time frame. The main finding of this study was that although the overall preparedness of the pre-service teachers increased throughout the five-month period, by the end of their third year of university study, 70% of those surveyed indicated they felt either only partly prepared or not sufficiently prepared to teach in inclusive settings. The pre-service teachers in this study acknowledged the key role that the individual teacher plays in effective inclusive education. This was demonstrated by high ratings for teacher quality as an important factor on the survey, and an increase in this rating over the semester.

In another study that tracked pre-service teacher beliefs and efficacy, Ng, Nicholas and Williams (2010) examined the evolving beliefs of pre-service teachers by collecting practicum data throughout all phases of their professional placements. Participants in this study were pre-service teachers enrolled in a one year secondary Diploma in Education course at a Victorian university. Questionnaires were completed at the start of the course, after fieldwork observations, after a four-week practicum, and again after a five-week practicum. The overall priority revealed by these pre-service teachers’ general teaching efficacy beliefs was the management of student learning through good pedagogy. This priority remained constant throughout the course.

A multi-method study carried out by Grima-Farrell et al. (2014) aimed to bridge the gap between university and schools in preparing teachers for inclusion. In collaboration with the Sydney Catholic Education Office, academics at the Australian Catholic University Strathfield developed a special education immersion project. This study focused on the experiences of ten 4th year primary B.Ed. pre-service teachers who had completed a unit on ‘Diversity in the Classroom’ and worked in schools with mentor teachers during literacy and numeracy sessions for four days a week. Data were gathered through individual surveys, semi-structured interviews and reflective journal entries. Information was collected on roles of participants in each setting and their experiences using research-based approaches when working with students with special needs. All pre-service teachers reported that their experiences strengthened their depth of knowledge and skills in responding to student needs. They agreed that what they had learnt at university could be put into practice and trialled in schools.
Another reported strength of this project was the long-term links that the pre-service teachers made with personnel from their assigned schools.

**In summary,** as there are an increasing number of subjects and courses preparing teachers to educate students with disabilities, it is important that suitably qualified and experienced lecturers teach these courses. From the research reviewed here, it appears that teacher candidates’ self-efficacy related to inclusive education is increased when specific focus is provided on (i) evidence-based practices that facilitate inclusion; (ii) the development of professional language proficiency so that pre-service teachers and graduates can contribute to dialogue around inclusion; and, (ii) effective collaboration which underpins joint efforts to address students’ needs.

**Key points: Pre-service preparation of inclusive teachers**

- Develop knowledge about socio-cultural issues, disabilities and difficulties that can affect students’ learning
- Ensure knowledge is developed around evidence-based teaching strategies that facilitate the learning of diverse students
- Develop collaborative skills
- Provide opportunities for reflective practice
- Prepare a workforce of responsive teachers who are confident in collecting and analysing data about teaching and learning
- Ensure that the academics and professional practitioners teaching pre-service teachers are skilled and experienced in inclusive education
- Organise and support practicum experiences in a variety of schools and classrooms where inclusive practices are modelled well
In-service professional learning for inclusive education: International perspectives

The term ‘professional learning’ has been taken up in education to describe the process of ongoing learning that keeps teachers up-to-date, ensuring a proficient and highly accomplished educational workforce. ‘Professional development’ is a term that has also been used to describe ongoing teacher learning and is still used in some of the current literature. The definitions are unclear in this area. However, the Northern Territory Teacher Registration Board website (2015) provides the following explanation about the interrelationship between professional development and professional learning: “Professional learning describes the growth in knowledge, skills and attitudes that comes from being engaged in professional development activities, processes and experiences.”

Over time the term ‘professional development’ has become associated with the delivery of some kind of in-service program, often to whole school staff groups, that is intended to influence or change teacher practice. Professional learning implies a more internalised process where individual teachers interact with information and ideas about teaching and learning to further develop their skills and knowledge. In this review, when authors of the study used either ‘professional learning’ or ‘professional development’, their usage has been retained. Whatever the term, it is clear that in order for inclusive education to be successful, teachers need to continually update their knowledge and to apply information about meeting the needs of diverse students in inclusive classrooms. As Smith and Tyler (2011) note, “Education reform requires a generation of highly effective teachers who are willing and knowledgeable to accomplish the goal of improving the learning of diverse learners” (p. 325).

One means of upskilling is for teachers to undertake post-graduate studies that prepare them for inclusive education. In the United Kingdom, Male (2011) surveyed 48 teachers enrolled in a Master of Education program in special and inclusive education. Teachers were surveyed at the beginning and end of a ten-week introductory module in order to ascertain whether their attitudes towards inclusive education had changed. Before undertaking the module teachers held generally positive attitudes towards the inclusion of students with physical/sensory difficulties, social difficulties and academic difficulties. They were less positive about including students with behavioural difficulties. At the end of the period of focused professional development, results showed that the teachers had more positive attitudes towards all students. The researchers caution, though, that the teachers had demonstrated pre-existing interest through their voluntary enrolment in the module and may have been open to attitudinal change.

In a comparative study Takala, Hausstatter, Ahl and Head (2012) questioned 241 teachers engaged in post-graduate courses with an inclusive education focus. These teachers were from Norway, Sweden and Finland and had both special and general classroom experience. There are inherent differences in approaches to inclusion in these three countries. In Norway there is no special education and no special education teachers are employed. The Swedish education system, however, includes special teacher education and pedagogy, with special pedagogues working as advisors in schools in roles that focus on the whole school system. In Finland, special education teachers are employed within the education system. Finland has the higher proportion of students in special schools or classes of these three countries. Data from the questionnaires indicated that teachers, including special teachers, actively sought to improve their skills to teach students with a range of disabilities.

O’Gorman and Drudy (2010) also investigated the professional development of specialist teachers working in regular schools as part of a large-scale research project. Questionnaire responses from learning support, resource and special education teachers in 399 primary schools and 416 post primary schools were analysed. Teachers ranked their needs for professional development as shown in Table 1.
Table 1: Ranking of professional development needs from O’Gorman and Drudy (2010)

Waitoller and Artiles (2013) completed an important and comprehensive review of the literature on professional development for inclusive education. Their extensive search of the literature uncovered an initial pool of 1115 articles. Once six strict criteria were imposed, 42 eligible articles were selected for review. Their results indicated that approximately 70% of the professional development undertaken and reported related to responses to ability differences in students through instructional methods such as differentiated instruction or by changing school cultures so that ability differences were accepted. School-wide action research projects to promote learning for all students made up a further 20% of the research, with the remaining 10% of studies relating to professional development about issues of race, class, gender or culture. These researchers found that about 80% of their sample of studies focused on supporting teachers to address a single form of difference. They expressed concern that this approach can result in partial solutions to the complex problems experienced in schools where there is competition for the recognition of different categories of diversity and ensuing competition for resources. In their conclusion, the Waitoller and Artiles (2013) recommend “designing and examining professional development efforts using an intersectional approach in which teachers identify and dismantle interesting and multiple barriers to learning and participation for all students” (p.347).

Nishimura (2014) also undertook a review of the literature related to professional development for inclusive education and identified three themes:

- **Engagement** – The most powerful and meaningful professional development experiences for teachers link their level of engagement through active participation in teaching, modelling, supporting and assessing student learning;
- **Reflection** – Effective professional development allows teachers to set goals for their learning that are meaningful to their own practice and incorporate time for self-evaluation; and
- **Empowerment** – Meaningful and sustainable professional development empowers teachers’ engagement in collaboration with their colleagues and creates communities of practice.

Nishimura’s (2014) review was used as the basis of the development of an inclusive professional development program in which eight Californian teachers voluntarily participated. Professional development sessions took place weekly for eight weeks during grade level planning meetings. Resource handouts were provided, followed by in-class coaching sessions tailored to individual teacher need. Teachers received between eight and 14 coaching sessions. Nishimura (2014) hypothesised that participation in the intervention would increase positive attitudes towards students with disabilities and teachers’ perceived ability to include these students in their classrooms. In terms of results, all eight participants reported they had positive experiences and a new appreciation for inclusive education practices as a result of their participation. Six of the eight teachers reported improved awareness and increased ability to carry out inclusive practices in their classrooms.
Schlessinger (2014) conducted an inquiry-based project that also featured a partnership between a tertiary institution and school system. In this project, teams of between 10 to 30 teachers met with facilitators at the tertiary setting on a monthly basis throughout the year. During this time, teachers were provided with concepts and practices; research; ideas about how to implement practices; time and space to discuss them; and support to implement these new practices and strategies, which were all targeted to identified dilemmas in their classrooms. Schlessinger concluded that as a result of this process, teachers reported feeling more able to autonomously make decisions supportive of student learning in inclusive settings.

As many of the reviewed studies suggest, professional development for inclusion needs to be tailored to specific needs identified in particular school settings. In their review, Jenkins and Yoshimura (2010) contend that professional development should prepare teachers to both identify student needs and determine how best to meet them. They present a five-step framework to structure professional development practices at a school level:

- **Build readiness** – Conduct awareness-building activities and plan collaboratively before training and implementation. Reflect on the school vision and needs. Identify broad goals for the professional development activity;
- **Conduct planning** – Translate the broad goals into detailed plans for activities to build knowledge and skills and plans for application. Establish a planning team representative of the teaching faculty. Consider opportunities for active learning, pacing of learning, allowing time for reflection;
- **Implement training** – Space professional development activities over time to promote integration of knowledge into practice;
- **Allow for implementation** – Provide support for teachers while they integrate knowledge to practice; and
- **Maintenance** – Provide continuous monitoring and reassessment of professional development activities. Encourage reflection, which may either be shared or kept confidential.

From a related perspective, Nichols and Sheffield (2014) encouraged the 49 teachers in their study to journal their experiences following bi-monthly professional development sessions focussing on co-teaching. A main finding from this study was that participants developed an appreciation for knowing their students and understanding the importance of becoming familiar with students' cultures. Similarly, Walton, Nel, Muller and Lebeloane (2014) emphasise the need for professional learning to be embedded in the professional lives and work of teachers. They report the results of a two-day differentiated teaching practices professional development activity undertaken with 19 staff at a school in South Africa.

Immediately after this workshop, participants completed an anonymous questionnaire, which showed that respondents were positive about the course presentation, the quality of the theoretical information provided, the practical applicability of the material presented, and their acquired confidence. The researchers were interested, however, in the longer-term impact of the workshop on teachers’ classroom practice so they returned to the school eight months later to collect further data through focus groups. At this point, six of the 19 participants indicated that they remained satisfied with aspects of the workshop. Criticism of the workshop was targeted at the fact it was a one-off event with no follow-up support. Staff did not believe that they required additional workshops, but requested an on-site support person who could work alongside them, so they could learn more about successful differentiation through effective group instruction, adapting learning and teaching procedures and curriculum and assessment modification. Walton et al. (2014) concluded that equipping teachers to be effective in inclusive settings requires more than workshops alone. They state that systemic support for teachers is crucial.
In a further systematic review of professional development literature responding to globalisation and inclusion, Philpot, Furey and Penney (2010) identified six areas of importance:

- **Professional Development for Inclusive Policy** - Presentation of information about policies that support the monitoring and provision of resources to enable inclusive practices;
- **Professional Development for Diversity** - Provision of information to develop the knowledge of exceptionalities necessary for more successful inclusion of students;
- **Professional Development to Nurture Positive Attitudes** - Building positive attitudes toward inclusion and nurturing the belief that learning ability is improvable;
- **Professional Development for Evidence-Based Teaching Strategies** - There is a need for innovation in professional development focussed on both acquiring and using evidence-based teaching strategies for instructional differentiation;
- **Professional Development for Collaborative Teaching** - Effective school leaders enable their schools to become professional learning communities of practice. Sufficient time is allocated for teachers to build critical collaborative skills of mutual trust and commitment to working together; and,
- **Professional Development for Meaningful Teaching** - Practicing teachers require ongoing professional development that reflects their current roles, addresses existing problems, and affords time for reflection.

In summary, the studies reviewed in this section give examples of how practicing teachers are actively seeking to equip themselves with the skills for working with students who have a range of disabilities. Ongoing professional learning that is relevant to the school lives and work of teachers is most likely to be efficacious. While much of the professional development offered to date has had a single difficulty as a focus, approaches that are responsive to a wide range of difference are more likely to remove barriers to student learning. The most powerful forms of professional learning involve the active participation of teachers and provide multiple opportunities for learning, practice, reflection and self-evaluation.
8. In-service professional learning for inclusive education: Australian perspectives

There is little recent research on in-service teacher professional learning in the Australian context to contribute to this review. However, Clench and Smyth King (2014) completed a study of blended professional learning in the United Kingdom and in New South Wales, Australia. This research was focused on the effectiveness of a series of on-line training modules developed to promote inclusive education. These modules provided information about different learners based on the premise that effective training should be delivered in context, have practical application to the workplace, and be targeted to those in most need. Participants in the course read information about the special needs in question and appropriate assessment and intervention processes, before being provided with case study examples including specific applications. Teachers participating in the modules were required to carry out assessments and interventions with their students and report back after a 90-day period using a goal attainment scale.

These modules have been delivered in New South Wales since 2009 through a blended mode of face-to-face sessions interspersed with online experiences and support. At the end of 2013, over 13,000 teachers had completed modules relating to ASD, behaviour management, motor and coordination difficulties, learners with speech, language and communication needs, understanding dyslexia and significant difficulties in reading and understanding hearing loss. Post-training Likert surveys from over 2000 training cohorts reported improvement in knowledge and understanding of specific disabilities or disorders, ability to select and use appropriate interventions, and confidence in meeting students’ needs.

Teachers never stop learning; they set up a process of perpetual learning by seeking evidence on which to base their professional organisation and activity. Teachers, as professionals, never reach a point where they know all there is to know about teaching and learning, simply because learners change and bring differences to their learning, and teachers change in light of experience, new professional learning and engaging with new students.

Ongoing professional learning is part of all teacher-accreditation frameworks in Australia and New Zealand and is also, of course, important in terms of learning that lasts. Ideally, teachers monitor their own professional learning needs, align them to the learning needs of their students and actively engage in the kind of professional development that improves their practice in a targeted and collaborative way.

In 2014, the Australian Institute of Teaching and School Leadership released the report, *Global trends in professional learning and performance and development: some implications and ideas for the Australian education system*, which presented findings from a worldwide scan of professional learning programs and practices in terms of whether they used contemporary learning principles and offered efficient low-cost solutions to complex challenges. The conclusions of this report pointed to the promise of professional learning that does the following:

- taps into the passions of and is owned by participants
- engages with external partners who offer a fresh perspective
- uses technology to support collaboration
- draws on new and existing data in new ways
- enables participants to rethink their use of resources (AITSL, 2014, p. 29)

In concert with the Australian Institute of Teaching and School Leadership’s report conclusions presented above, Graham, Berman and Bellert (2015) concluded that quality professional learning can do the following:

- be employed according to learners’ and teachers’ needs, passions and interests;
• suggest opportunities for collaboration and assuming fresh perspectives in terms of fostering strength and capability-based learning for all;
• provide frameworks for observing and collecting class data in terms of some of the frameworks provided; and,
• become valuable resources widely used in contemporary classrooms.

In their review of professional development research for inclusive education, Waitoller and Artiles (2013) note that, of late, effective professional development in inclusive education has mostly focused on the learning associated with specific action research projects that offer ongoing opportunities for problem-solving, generation of knowledge focusing on practice, reflection and engagement with inquiry and feedback and collaborations with peers.

However, the impetus for professional development in the future is likely to lie with schools and universities negotiating the content and form of professional learning and then expanding their shared artefacts (for example, understandings of action research and inclusive education, shared products, proformas and scaffolds) in order to examine how learning occurs around the use of these ‘boundary practices’ and how this affects teacher learning.

A boundary practice is defined as a practice that provides an ongoing forum for mutual engagement between two communities of practice. Boundary practices potentially facilitate learning because they are practices that both communities can examine with the aim of improving the educational experiences of all students. Boundary brokers – faculty members and teachers with different expertise – play a key role in connecting practices and tools across overlapping communities and facilitating transactions and joint work. How university faculty and school professionals create connections and how artefacts from one community are introduced into another is the stuff of professional learning with promise (Graham, Berman & Bellert, 2015).

In summing up this section, it may be that the way forward is to share understandings of inclusive teaching practices, co-constructing the content of professional learning in ways that translate research into practice and meet the specific needs of schools. For example, external partners and university faculty working in partnership with teachers, or teachers working together from specialist and regular settings, can provide fresh perspectives on how to improve professional knowledge and outcomes for students with disabilities. As Loughran (2015) notes, in-service professional learning requires reviewing current practice with fresh eyes. The success of large scale blended learning courses illustrates one way forward. Whatever direction is taken, the collection of data from teachers about their professional learning needs is a necessary foundational step.
### Key points: In-service professional learning

- Ongoing professional learning is usefully grounded in the teacher’s context
- Build on teachers’ existing knowledge about learners and their needs
- Provide relevant and timely information about evidence-based teaching practices and strategies that will enhance the learning of all students
- Provide a framework for teachers to reflect on their teaching practice and skills
- Facilitate teachers’ sharing of evidence-based teaching strategies in collegial ways
- Develop professional learning plans and pathways for individuals and groups at the school level
- Ensure that professional learning experiences are tailored and introduced in a co-ordinated, systematic way
- Organise opportunities for active participation of teachers to learn, apply, practice, reflect and maintain new skills and knowledge
- Foster communities of learning and professional learning teams where co-planning, co-teaching, mentoring and coaching take place in supportive environments
- Foster partnerships to address how research informs practice and practice informs research
9. Supporting teachers to bridge research and practice

Woodward (1993) pointed out that there is often a culture gulf between researchers and teachers. Researchers may view teachers as unnecessarily conservative and resistant to change; whereas, teachers may consider researchers unrealistic in their expectations and lacking in understanding of the school system and culture. Teachers' professional learning can be supported through organisational cultures and communities of practice where there are opportunities for teachers to discuss educational research and its potential to impact the classroom experience. As an example, Anwaruddin (2015) describes the need for researchers to understand how teachers interrogate and interpret theoretical knowledge in order to develop their pedagogical knowledge. Anwaruddin suggests there is a need for teachers to be engaged in research and for researchers to view teachers as professional partners in active learning communities. In this way teachers can contribute to relevant research, collect data and make their own determinations, which can underpin their evidence-based practice.

In Australia, Grima-Farrell, Bain and McDonagh (2011) conducted a literature review that focused on this research to practice gap in inclusive education. These authors note that, “Despite research advances there remains a significant gap between the accumulated knowledge of effective educational practices and the extent to which they are utilised” (p. 117). A search of the literature completed by Grima-Farrell et al. (2011) identified 22 peer-reviewed articles that referred to research to practice factors that related to inclusive education. The majority of these papers were commentaries or position papers with only 10 representing intervention research. The researchers found no empirical research examples with a longitudinal intervention-oriented focus on research to practice. In concluding their review, Grima-Farrell et al. (2011) summarised the recommendations for supporting teachers in their efforts to translate research to practice. Suggestions relevant to this section of the review include:

- Ensuring research questions are grounded in practice, with a focus on efficient and manageable interventions;
- Facilitating collaboration between researchers and practitioners to establish feasibility;
- Promoting school-based research; and
- Upskilling researchers regarding the translation of research to practice.

Teachers require evidence-based professional learning that is grounded in both theory and practice. In 21st century classrooms the focus is on the relationship between teaching and learning that takes place in each and every lesson. Adaptation and modification of materials, instruction, content and assessment are made to meet the needs of a range of learners. There is flexibility, negotiation and choice in the modern classroom. Learning is for all. Teachers are also more involved in their own professional learning currently than ever before. Timperley (2011) explains that, in the past, professional development for teachers was geared towards the transmission of information. In her recent writings, Timperley advocates for the greater engagement of teachers in their professional learning, because they are ‘adaptive experts’ - self-regulating learners, not passive recipients of knowledge.

Teachers engaging in professional learning are both generators and users of knowledge, engaging in reflection to improve practice (Cochran-Smith & Lytle, 1999). The purpose of reflection on teaching is to differentiate between effective and ineffective practices and to understand why some practices are more effective with particular groups of students than others. This reflection can be personal or facilitated. Increasingly pre-service and in-service courses comprise of experiences related to classrooms with the aim of bridging the research to practice gap. In examining the pedagogy of new teachers in Scotland, for example, Spratt and Florian (2015) explored the links between theoretical ideas and evidence of learning and teaching. They observed concrete examples of inclusive practices
used by beginning teachers who had completed an initial teacher education program at the University of Aberdeen that, as discussed previously, foregrounded inclusive pedagogy. Similarly, in South Africa, Walton and Lloyd (2012) devised a postgraduate course in inclusive teaching that sought to ameliorate the theory to practice divide by arranging visits with all students in their classrooms and providing feedback on their practice. These postgraduate students were questioned and challenged and ideas were trialled and revised. The researchers concluded that on-site supervision led to supportive relationships with lecturers and greater knowledge of practice on the part of course participants.

In summary, as both Allen (2003) and Timperley (2011) emphasise, ongoing improvement in student attainment and teacher professional practice should be the desired outcome of professional learning programs. At the heart of professional learning is the examination of current practice, for example, how does my teaching practice fit with current theory and how can it be improved? Professional learning communities are a means of examining theory and practice in education but they cannot operate without the support of school leadership (Le Clerc et al. 2012). The importance of school leadership is examined briefly in the last section of this review.
10. Leadership for inclusive education

It is accepted that school leaders and administrators exercise power and influence in establishing and maintaining inclusive settings (e.g., deMatthews, 2015; Hoopey and McLeskey, 2013; Lindqvist and Nilholm, 2014; Nichols and Sheffield, 2014). As a specific example, in their study of attitudes towards inclusion in 35 German schools, Urton, Wilbert and Hennemann (2014) concluded that, “In the overall process of school inclusion, principals, in collaborating with their teaching staff, play a key role in building a school culture promoting inclusion” (p.153). Ball and Green (2014) added that school leaders act as the lead innovators for practices that address the learning needs of all students and align teachers’ efforts to this goal.

Further, Irvine, Lupart, Loreman and McGhie-Richmond (2010) found that the leadership factors identified by the 16 principals and vice principals included in their study of Canadian rural educators led to successful inclusion because of:

- administrative ownership and responsibility;
- school team building;
- preparedness and adaptability;
- promoting and valuing student diversity; and,
- establishing parent–school partnerships.

In their summary of the important factors underpinning leadership for inclusion, Ruairc, Ottensen and Precey (2013) suggest that effective inclusive leaders value diversity, use assessment data systematically to support, monitor and track student progress and target professional learning opportunities and encourage collaborative professional learning practices. The following table summarises key points for inclusive leadership.

<table>
<thead>
<tr>
<th>Key points: Leadership for inclusive education</th>
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<tr>
<td>• Model, promote and nurture positive attitudes towards inclusion</td>
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<td>• Develop and implement policies that support inclusion</td>
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<td>• Encourage staff members to embrace inclusive values</td>
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<td>• Create awareness of the value of diversity</td>
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<td>• Undertake professional learning related to difference and diversity</td>
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<td>• Ensure school staff members have focussed and aligned goals for their professional learning</td>
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<td>• Implement school-wide professional learning related to evidence-based teaching and learning strategies</td>
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<tr>
<td>• Formalise structures for tracking the progress of all students</td>
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<tr>
<td>• Establish professional learning communities designed around continuous situated learning, collaboration and mentoring</td>
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<tr>
<td>• Foster parent-school partnerships</td>
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</table>
Conclusion

Good inclusive teaching does not follow a one-size-fits-all approach but acknowledges that students have different learning needs. Responsive teachers have knowledge about learning trajectories that are typical within curriculum domains and use this knowledge to plan and differentiate their teaching in response to the learning context and their students’ different learning needs. Importantly, responsive teachers also understand that some learners have complex profiles that do not fit expected learning and development trajectories. Valid assessment is vital as a foundation for responsive teaching, because it focuses on gathering information about students’ thinking and understanding and about the effectiveness of teaching. Inclusive education depends on effective, responsive teachers implementing differentiated teaching, learning and assessment, with a particular focus on ensuring that students with disabilities and/or learning difficulties participate and progress.

A significant challenge, and opportunity, for teachers in the 21st century is to work within a context of evolving societal change and fast-developing technologies. Teachers now need to deliver teaching and learning that equips students to live, learn and continue to learn in future schools, society and workplaces that, due to the pace of change, were almost unimaginable even as little as 10 years ago. To support learning in this context, teacher professional learning and collaboration are essential.

Ideally, as already stated in this review, teachers monitor their own professional learning needs, align them to the learning needs of their students and actively engage in the kind of professional development that improves their practice in targeted and collaborative ways. In fact, the future of professional learning is likely to lie in how school professionals and university faculties negotiate the sharing of artefacts that span their communities of practice and provide an on-going forum for mutual engagement. Boundary practices facilitate learning because they are practices that both communities can examine with the aim of improving the educational experiences of all students.

As Leonardo (2010) notes, teachers have a unique opportunity to act as change agents and to transform education. This is because teachers not only implement and innovate instructional approaches, but also provide access to opportunities to learn, to recognise and value difference. Teachers influence students’ thinking about issues of global importance that affect their present and shape their future lives.
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*Teacher preparation for inclusive education: Initial teacher education and in-service learning* 41

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