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Preparing Australian Special Educators: Courses and Content

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Abstract: The characteristics and content of post-graduate courses in special and/or inclusive teacher education in Australian universities were examined using publicly available material on university websites. Content analysis was guided by a set of content area elements covering desirable skills and knowledge for special educators that were identified in the Australian literature. The presence or absence of these content elements in each course and in core or elective units was coded for 28 courses from 21 universities. All or most courses covered generic content such as teaching strategies and evaluating and using research. However, more specialist content, such as explicit teaching strategies and instruction in literacy and numeracy, was absent from over half the courses. The implications of these findings are discussed in the context of the limitations necessarily imposed by the inclusion of only publicly available online information.

Introduction

With the increasing acceptance of the inclusion of students with disability worldwide, the role of special educators is undergoing change (Brownell et al. 2010). Although most primary and secondary education systems retain specialised classes for students with disability, many special educators work within mainstream schools supporting students in resource rooms and/or mainstream education classes. They may work with mainstream classroom teachers providing collaboration, co-teaching and in-class support. Some may also take responsibility for leading inclusion, administration and co-ordination of supports for students with disabilities, as is the case with Special Education Needs Co-ordinators (SENCOs) in UK schools (Tysoe et al., 2021).

In Australia, 7.7% of children under 15 have a disability and almost all these attend school, with two thirds of them in mainstream schools, where additional assistance may be provided by teachers in support positions (Australian Bureau of Statistics, 2018; Dally et al., 2019). These students present with a wide range of disabilities, including learning difficulties, intellectual disability, sensory impairment or communication disorders. The professional knowledge and skills required by teachers of students with disability requiring educational support are considerable and are often beyond those provided in initial teacher education courses (Dally et al., 2019).

Although Australia has professional standards for generalist teachers that apply nationally (Australian Institute for Teaching School Leadership [AITSL] , 2017a), no standards have been developed for teachers providing support in mainstream schools or those teaching specialist classes in mainstream and special schools (Dempsey & Dally, 2014). It is often the case, and has been for at least 15 years, that teachers appointed to support positions, taking responsibility for the learning of vulnerable students, do not have a special education qualification or the required knowledge and skills (Thomas, 2007; 2009; Fielding-Barnsley, 2005). Employers in Australia generally do not require a specialist qualification of teachers when hiring teachers for support positions (Stephenson & Carter, 2014). This is a different situation to the US where the majority of special educators are certified (Carter, 2016; Childre, 2014) and the UK where SENCOs must have a qualification on appointment or acquire one after appointment. Other specialist teachers in the UK may be accredited by different organisations at various levels. However, most schools do not employ these teachers themselves, but may access them through outside services (Driver Youth Trust, 2020)

Even where certification or standards are present, there may not be consensus about the desired outcomes of teacher education courses, including those preparing special educators (Brownell et al., 2020). This may be because the roles of special educators are expanding and becoming more varied as they cater for students in a wide range of contexts (Shephard et al., 2016). In the US, the Council for Exceptional Children standards (CEC) (2015) for professional practice for special educators are widely accepted and guide and inform many teacher education programs (Lusk & Bullock, 2013; Woolf, 2015). It is also the case in the US that some states are more specific in their licensing requirements, providing accreditation for specific disabilities or age groups rather than a generalist accreditation, and this is reflected in university courses (Scheeler et al., 2016; Sindelar et al., 2019).

Despite the lack of national professional standards, many Australian universities offer post-graduate education in special and/or inclusive education to prepare already qualified teachers (either primary or secondary) to take up specialist positions. This is the most common pathway for special educators, as only five universities offer initial teacher education courses with a specialisation in special and/or inclusive education (AITSL, 2017b). This is unlike the situation in the US where students may gain an initial teacher qualification in special education (Geiger et al., 2014). Amendments to Individuals with Disabilities Education Act (IDEA) in the United States in 2004 required all teachers to be highly qualified and this means special educators must be qualified in content areas as well (Geiger et al., 2014).

There is some consensus in the Australian literature about what content and experiences such post-graduate courses should offer, with the consensus being that special education teachers should have expertise in individualised and specialised assessment and intervention strategies for both academic and social/communication skills to complement general education teachers' specific content knowledge and skills (Dally & Dempsey, 2015; Dally et al., 2019). Dally and Dempsey (2015) carried out a study to establish the content validity of a set of standards they developed describing essential skills for Australian special educators. Their work was based on the existing AITSL standards for general educators and was informed by a review of relevant Australian studies (Dempsey & Dally 2014), the CEC standards (2015), and current relevant Australian legislation. Dally and Dempsey sent an initial draft of their standards to three subject matter experts, then after revision sent them to seven subject matter experts. The subject matter experts were selected "on the basis of their extensive experience in special education and knowledge of the role of special education teachers" (p. 115). For 32 of their 49 statements, all experts unanimously agreed and for the remainder, six of the seven experts rated them as moderately or highly relevant. The Dally and Dempsey standards covered individualised instruction using effective and evidence-

based strategies and adjustments, data-based decision-making, explicit instruction, use of assistive technology, working with families, transition practices, positive behaviour supports, functional assessment of problem behaviour and progress monitoring.

Dally et al., (2019) drew on McLesky et al.'s (2017) US summary of high-leverage practices in special education, critical practices that special educators should master in collaboration, assessment, social/emotional practices and instruction, to inform their consensus. This consensus was similar to that of the subject matter experts consulted by Dally and Dempsey (2015). Special educators should be able to set goals and adapt curricula and instruction to meet individual needs. They should be competent in explicit and systematic instruction and be able to support students to maintain and generalise skills. They should have skills in the functional assessment of problem behaviour and the development of proactive and positive behaviour plans. All teachers need to know about the current policies and practices underpinned by the Disability Standards for Education (Australian Government, 2006), have the capacity to work collaboratively with other teachers, professionals and families and have positive attitudes to the inclusion of students with disability (Dally et al., 2019). A similar set of attributes of special educators was determined by Keeffe and de George-Walker (2010) who surveyed school principals, interviewed education authorities, and held focus groups with special educators, families and other stakeholders. They reported consensus on the need for an individualised approach, understanding of disability, understanding of curriculum, pro-active behaviour management and relationships and communication with families, students and others.

A more recent set of Australian standards are those developed in 2019 by the Institute of Special Educators (InSpEd) and approved by the expert panel of that organisation comprising special education academics and experienced practitioners from across Australia (https://www.insped.org.au/expert-panel-members/). The content for these standards drew on the CEC standards (2015) and the literature cited above (Dally & Dempsey, 2015; Dally et al., 2019; Keeffe & de George-Walker, 2010; McLesky et al., 2017) and covered the general areas already identified (effective, evidence-based, individualised and specialised assessment, programming and instruction for academic and social skills, data-based decision making, assistive techn ology , communication and collaboration with families and others, and positive behaviour support practices). In addition, the InSpEd standards covered more specific skills and knowledge related to curriculum-based assessment, prompting strategies, research-based systematic and explicit instruction in literacy and numeracy, early communication skills, learners with high support needs, transition planning, and providing professional learning to other staff. Previous Australian literature has not made explicit any theoretical orientation to special education, and this may often be lacking in special education teacher preparation (Brownell et al., 2005). The InSpEd standards include a knowledge of the principles and practice of applied behaviour analysis as these underpin or are consistent with much research-based practice in special education (Begeny & Martens, 2006; Brownell et al., 2010; Gilmour, 2020; McLesky et al., 2017; Pennington et al., 2021; Steinbrenner et al., 2020). They also include content on research methodologies and on evaluating and using research. If special education is to be firmly evidence-based, practitioners must have the skills to identify practices based on trustworthy research. Finally, there is general agreement that teacher education courses should include a field work component or practicum where students can apply learned content in classroom contexts and be assessed on their performance in a real setting (Brownell et al., 2005; Childre, 2014; Cranston-Gingras et al, 2019; Lusk & Bullock, 2013)

Overall then, the Australian literature, informed by the international literature, presents a broad consensus on desirable content for post-graduate courses preparing special educators, but there could be considerable variation in the detail in which these broad areas

are addressed and in what is perceived as necessary content. One way to explore perceptions of desirable or essential content in programs preparing special educators is to examine the offerings of Australian universities in the area of post-graduate special and inclusive education. Accordingly, the research questions we set out to answer were:

1. What post-graduate programs offer preparation for special educators?
2. What are the characteristics of these programs (for example, length, mix of core and elective units)?
3. What content is included in these programs?
4. How does the content align with recommended content?

Method

Australian universities offering post-graduate courses (a degree or diploma) described as suitable preparation for teachers to work in special or inclusive education settings or with people with disabilities were identified through an internet search for special education and inclusive education courses. Initial teacher education courses with a specialisation in special or inclusive education were not included. Courses needed to be of at least 12 months duration and be designed for Australian domestic students.

Each relevant university website was then searched during 2020 or 2021 and information relevant to courses and units (one subject within a course) being offered in 2020 or 2021 was downloaded by the first and third authors. Where courses appeared to be undergoing revision, the more recent information was downloaded. For some universities, unit outlines were located by using the Google search engine, using the name and/or code of the unit as a search term. Information downloaded included handbook entries for courses and units, course structure and sequence information, unit guides, course and unit timetables and required readings. To ensure that all relevant information was located, each site was checked in 2021 by an author other than the author who downloaded the initial information and, if located, additional information was downloaded. Coding of the content was based on the most recent materials available

General information on each course was summarised including location of the university, name and duration of each course, credit points for the course and each unit, the number and percentage of elective and compulsory units. To give a comparable means of comparing the relationship of core content to elective content, we used credit points to calculate the percentage of content that was core in each course.

Course structures used for coding comprised core or compulsory units and elective units in many courses. Where multiple unit combinations were available, we selected one version of each course for analysis. Where there was a recommended course structure, this was selected even if other electives were available and could be included if students did not follow the recommended structure. Where courses included both a regular pathway or option and a research pathway or option with more research units, the research option was not selected, as special education content is necessarily reduced if additional research, project or dissertation units are included. Where course structures included groups of units for named specialisations or minors, we selected the course structure that provided the best coverage of the codes. Where practicum related units were offered as electives, we included them in the course structure that was coded as core. Where core or potential elective units, such as units on gifted education, did not contain content relevant to students with disability and special education needs, these units were not coded and are not included in the results. Unit material was reviewed for specific mention of students with special needs and units covering content

such as child protection and education policies, were viewed as relevant and included in coding.

For coding, each unit was classified as core if it was required or recommended content for those preparing to become special educators, or a practicum unit, and as elective if it was not required or recommended and students could select from a range of units on offer. For courses where we designated a particular combination of units as the optimum, these units were then regarded as core for that version of the course. Each unit was then coded for the presence or absence of specific content as summarised in Table 1. Additional information regarding practicum such as the length and supervision arrangements was also extracted.

The elements to be coded, covering recommended content, were drawn from the Australian and international literature reviewed in the introduction, particularly the CEC standards (2015), Dally and Dempsey (2015), Dally et al. (2019), InSpEd (2019) and McLesky et al. (2017). During coding, it became apparent that much information was too general to be coded under our original specific codes, so more general codes (learning theories, teaching strategies, assessment) were added, but these codes do not relate to recommended practice. In addition, some content not in the original standards was covered in several courses and codes were added for these generic areas (inclusion philosophies and practices, differentiation, and Universal Design for Learning), and again these codes do not relate to recommended content.

Given the often vague and dispersed nature of much of the unit information available, general course information was coded and agreed to by at least two of the authors. For the more detailed information and coding of content present, at least three of the four authors independently coded each unit in each course. If all three or three of four coders indicated content was present, it was coded as present. Where only one or two coders indicated a component was present, the unit materials were discussed by all authors and the final coding was by consensus, where all authors agreed on the coding after discussion and further examination of the materials. Thus, for each unit the final coding represents agreement between three or four of the authors. Table 1 presents the detailed codes and the definitions used in coding.

Content	Definition of content
Individual planning, documenting, measurable goals and objectives, includes adjustments	Must be clearly individualised education planning, behaviour support and/or intervention plans and individual adjustments, and not group or whole-class planning and programs
Monitoring (data collection) and evaluation of individualised plans	Strategies to regularly collect information on individual student learning and using information to evaluate plans
Learning theories	Any theory that is presented as an explanation for how students learn, including applied behaviour analysis and constructivism
Principles and practice of applied behaviour analysis (ABA)	Applied behaviour analysis as underpinning of intervention strategies Mention of ABA principles (such as reinforcement) without specific mention of ABA were coded as ABA. Mention of stimulus and response prompting in teaching without specific mention of ABA were coded as ABA.
Teaching Strategies	Any teaching strategies including explicit teaching, enquiry based learning, cooperative learning, peer supported learning
Research based-practice - explicit teacher directed instruction	Explicit teacher directed instruction A description of strategies as research-based or evidence-based was not sufficient. Some description of specific, explicit strategies was required.
Assessment	Any assessment strategies for individual learners including formative and summative assessment, norm-referenced assessment and curriculum-based assessment

Assessment (curriculum-based assessment)	Curriculum-based assessment applied to individual learners, based on formal academic curricula or individualised curricula developed by a teacher
Data-based decision making	Ways to make decisions about curriculum or teaching strategies based on data about student learning and performance Content on functional behavioural assessment was not coded here as it had its own category.
Research based literacy instruction	Literacy instruction that includes explicit instruction and/or instruction in content in areas such as phonics, phonemic awareness, letter/sound correspondence, decoding, vocabulary and comprehension As for teaching strategies some mention of specific strategies or content was required.
Research based numeracy instruction	Numeracy instruction that includes explicit instruction and/or instruction in areas such as number sense, number facts and problem solving strategies As for teaching strategies some mention of specific strategies or content was required.
Differentiation	The use of different means to present information and to assess student learning to meet a range of student needs in whole class instruction
Universal Design for Learning (UDL)	Principles or practice of Universal Design for Learning
Early communication skills	Information about pre-intentional, pre-symbolic and early symbolic communication behaviour and strategies to develop early communication skills If content regarding communication referred to learners with ASD, severe disabilities or students with complex communication needs this was regarded as including early communication skills.
Learners with high support needs	Programming, instruction and monitoring of learners with complex, severe and/or multiple disabilities
Assistive technology	Information about the use of computers, tablets, communication devices and other technology in educating students with disability
Positive behaviour support and functional assessment/program planning	Positive behaviour support as a pro-active way to reduce problem behaviour and the use of functional assessment to identify triggers for problem behaviour and use that information to write behaviour support and intervention plans
Social skills	Information about teaching social skills
Supporting regular educators - collaboration, co-teaching, coaching	Skills to build capacity in regular educators through collaboration, co-teaching or coaching (modelling, observation and feedback)
Working with families	Skills in consulting and collaborating with families
Collaborative program development with families and other professionals	Skills in working with and consulting others when developing individual programs and/or adjustments
Transition planning	Skills to support students and their families through transitions into, within and out of schooling
Reporting	Skills in reporting to families and to other professionals
Inclusion philosophy and practices	Philosophies of inclusion including rights-based approaches and inclusive practices
Disability standards for education, relevant laws and policies including National Disability Insurance Scheme	Relevant Australian national and state laws and policies including the Disability Discrimination legislation and the Education Standards
Ethical Practice	Ethical practice in professional life and in the conduct of research
Deliver professional learning to others	Skills in delivering professional learning to other teachers, teaching assistants and other professionals
Advise parents	Provide evidence-based advice to parents on educational placement, adjustments, programming, teaching and evaluation
Advise re unproven practices	Provide evidence-based advice to families, teachers, teaching assistants and other professionals on unproven and harmful practices such as sensory integration, facilitated communication, diet-based interventions

Knowledge of other professions, agencies	The work of other professions and how it can support the work of special educators
Impact of disability on learner	How particular disabilities might affect the behaviour or learning of students
Cultural factors	Cultural information that will support special educators to work with families from different backgrounds, including Aboriginal families
Knowledge of research methods	Use of quantitative and qualitative research methods This may include descriptions of methodology or project units where student carry out research.
Evaluating and using research	Evaluating the quality of research and its applicability to particular students or settings Content had to specifically refer to the research literature and not to the more generic evidence base.

Table 1: Content areas and definitions

Results

Programs Preparing Teachers for Special/Inclusive Education

We located 28 courses, all masters level degrees, from 21 universities that met our criteria. There were universities based in all states, but none based in the Australian Capital Territory or Northern Territory. Some universities had a campus in states or territories other than the state in which they were based. There were ten universities with a base in New South Wales (NSW), five in Victoria, four in Queensland, two in Western Australia and one in each of Tasmania and South Australia. One university offered three courses, and four offered two courses. As data collection took place during the COVID pandemic where campuses were closed, we have not included information on face-to-face and online delivery as many universities were forced to offer courses online only during this time. Twelve courses were named as a Master of Education with a specialisation term such as special education or inclusive education added in parentheses. Overall eight courses had a name including inclusion/inclusive only, four contained special education only, eight had reference to both special and inclusive education and eight had names that did not refer to either inclusive or special education.

A unit title and description were available for units from all universities. In addition, learning outcomes were available for 24 courses, information on assessment tasks for 19, additional content information such as a weekly timetable or module contents for 11 and two provided details of required texts or readings.

Program Characteristics

All courses were between one year and two years duration for full time students who did not get any recognition for prior study. Twelve courses were one year, but one of these required completion of a six month certificate course in advance (this required course has been included in the reported results), 11 were 18 months and five were two years.

Of the 28 courses, we coded electives with content relevant to special education/inclusion) for 21 courses. There were four courses with no electives, and three where we coded a recommended or best structure. The number of electives offered varied. Some courses offered a number (two to fourteen) of electives related to special education and some offered electives, that were not relevant to special education. The percentage of core content based on credit points within each course varied across courses. For the majority of courses the core content comprised between 75% and 93.8% of the content, for six courses

core content was between 50% and 66.7%, for five it was between 25% and 41.6% and for one was 12.5%.

Included Content

We calculated the frequency and rank of included content in the following ways. First, content was coded as present in a course if it was included in either a core or a coded elective unit and this gave a frequency of inclusion in each course. Next, we looked at inclusion of content in the core units in the 28 courses. We then looked at the electives included in the 21 courses where we coded elective content. These results are summarised in Table 2.

Content Area	Course Rank (number) (N=28)	Course Core Unit Rank (number) (N=28)	Course Elective Unit Rank (number) (N=21)
Teaching Strategies	1 (28)	2 (25)	1 (16)
Evaluating and using research	1 (28)	1 (28)	1 (16)
Assessment	3 (27)	3 (24)	3 (14)
Individual planning, documenting, measurable goals and objectives, includes adjustments	4 (26)	8 (20)	3 (14)
Knowledge of research methods	4 (26)	4 (24)	18 (7)
Inclusion philosophy and practices	6 (25)	5 (22)	8 (12)
Impact of disability on learner	6 (25)	11 (18)	5 (13)
Collaborative program development with families and other professionals	8 (24)	5 (22)	5 (13)
Monitoring (data collection) and evaluation of individualised plans	9 (23)	8 (20)	10 (11)
Learning theories	10 (22)	11 (18)	11 (10)
Ethical Practice	10 (22)	7 (21)	11 (10)
Disability standards for education, relevant laws and policies including National Disability Insurance Scheme	10 (22)	10 (19)	8 (12)
Assistive technology	12 (21)	17 (14)	5 (13)
Positive behaviour support and functional assessment/program planning	12 (21)	16 (15)	15 (8)
Supporting regular educators - collaboration, co-teaching, coaching	13 (21)	15 (16)	18 (7)
Social skills	16 (20)	17 (14)	18 (7)
Early communication skills	17 (19)	22 (11)	11 (10)
Data-based decision making	17 (19)	13 (17)	28 (4)
Cultural factors	17 (19)	20 (13)	15 (8)
Working with families	17 (19)	13 (17)	14 (9)
Deliver professional learning to others	21 (17)	19 (13)	18 (7)
Differentiation	21 (17)	21 (12)	18 (7)
Universal Design for Learning (UDL)	23 (16)	24 (10)	18 (7)
Principles and practice of applied behaviour analysis (ABA)	24 (14)	25 (9)	18 (7)
Assessment (curriculum-based assessment)	24 (14)	25 (9)	28 (4)
Reporting	24 (14)	25 (9)	15 (8)
Learners with high support needs	27 (13)	29 (7)	18 (7)

Research based-practice - explicit teacher directed instruction	27 (13)	22 (11)	28 (4)
Knowledge of other professions, agencies	27 (13)	25 (9)	18 (7)
Research based literacy instruction	30 (10)	30 (6)	28 (4)
Transition planning	31 (9)	31 (6)	31 (3)
Research based numeracy instruction	32 (6)	32 (4)	32 (1)
Advise parents	33 (4)	33 (3)	32 (1)
Advise re unproven practices	34 (2)	34 (2)	34 (0)

Table 2: Content elements ranked by frequency for courses and units

Following the course analysis, we totalled and ranked the number of core and elective units addressing each content element across the 28 courses. Table 3 presents the frequency of units across courses that contain each content element in rank order and in six groups (content in more than 100 units, content in 75 to 99 units, 50 to 74 units, 25-49 units and 1 to 24 units).

Number of units	Included content
150 to 175	Evaluating and using research
	Teaching strategies
125 to 149	Assessment
100 to 124	Inclusion philosophy and practice
75 to 99	Individual planning, documenting, measurable goals and objectives, includes adjustments
	Collaborative program development with families and other professionals
50 to 74	Impact of disability on the learner
	Knowledge of research methods
	Disability standards for education, relevant laws and policies including National Disability Insurance Scheme
	Monitoring (data collection) and evaluation of individualised plans
	Ethical practice
	Working with families
	Learning theories
25 to 49 units	Cultural factors
	Data-based decision making
	Assistive technology
	Positive behaviour support and functional assessment/program planning
	Differentiation
	Deliver professional learning to others
	Supporting regular educators - collaboration, co-teaching, coaching
	Social skills
	Principles and practice of applied behaviour analysis (ABA)
	Reporting
	Universal Design for Learning (UDL)
	Early communication skills
1 to 24 units	Research based-practice - explicit teacher directed instruction
	Assessment (curriculum-based assessment)
	Knowledge of other professions, agencies
	Learners with high support needs
	Research based literacy instruction
	Transition
	Research based numeracy instruction
	Advise parents
	Advise re unproven practices

Table 3: Number of units across all courses with included content elements

General teaching strategies, and evaluating and using research, were included in all courses, but only evaluating and using research was core in all courses. Assessment was included in all but one course but was core in 24. These three content areas were included in

many more units than other areas. Individual planning was in all courses, except two, but was core in only 20 courses. Overall, 26 of the content areas were included in at least half the courses, but only 18 were included in core units in at least half the courses. More specific information about assessment and teaching strategies was much less frequently provided and each was covered in fewer than 24 units overall. Curriculum-based assessment was covered in only 14 courses (core in nine). Explicit teacher-directed instruction was included in 13 courses (core in 11 courses), research-based instruction in literacy in 10 courses (core in six courses), and research-based instruction in numeracy in only six (core in four) courses.

Similarly, principles and practice of inclusion was included in 25 courses (core in 22) and was included in more than 100 units, but specifics like differentiation and Universal Design for Learning were less frequently included in courses and core units, and were covered in between 25 and 49 units. The content least included on all frequency measures was advise re unproven practices, advise parents, research-based numeracy instruction, transition planning and research-based literacy instruction. Learners with high support needs was core in only seven courses.

Practicum

A practicum experience was included in 15 courses, with a range of minimum lengths: 10 days (two courses), 15 (one course); 20 (five courses), 25 days (two courses), 30 days (three courses) and 45 days (one course). No information on length was available for one course. For three courses, a longer period of practicum could be provided if required by an employing authority. Six courses provided information about supervision, and in all courses this was provided by a mentor teacher.

Discussion

We located 28 relevant courses all at masters level with most of one year or 18 months duration. A unit description and statement of intended learning outcomes were available for 24 of these courses, with additional information available for 19 courses, leaving only four courses where we were limited to the title and description as sources for analysis. Most courses offered some electives, with most courses having at least 75% core content.

In regard to course content, it was disappointing that much of the information was not easy to access, and when located was vague and lacked clarity, and necessitated coding of content elements by consensus. We frequently had lengthy discussions about language before a content element was coded as present or absent. There was also some inconsistency in the available information. For example, some content elements that appeared in descriptions of assessment tasks were not included in descriptions of unit content. These points must be taken into consideration when interpreting the results. The limited information available for some courses means content may have been addressed, but was not included in shorter descriptions. It may be that another group of coders would have coded content differently. However, we tried to err in favour of content being included when information was opaque or ambiguous.

Generic Content

It is not surprising that the content most frequently included comes under the generic codes of learning theories, teaching strategies and assessment. Indeed, we added these generic codes as the course information publicly available often lacked more specific information. The generic content elements described in course information shed little light on the specific competencies, skills and knowledge expected of graduates, and provide little guidance for prospective students. Generic content on teaching and assessment does not allow us to say if recommended teaching and assessment practices for students with disability are covered in a course. Given that these courses are directed at providing already qualified teachers with advanced skills, it is disappointing that more information about strategies specific to special education and learners with disability was not provided in publicly available materials.

Content Relating to Research

Recommended content covering evaluating and using research was included as core in all courses, and research methods included in most courses, most likely because of the requirements for masters degrees of the Australian Qualifications Framework (AQF) (Australian Qualifications Framework Council, 2013). The AQF sets out generic standards for all Australian qualifications and requires graduates enrolled in a masters degree to "apply an advanced body of knowledge in a range of contexts for professional practice" (p. 60). We did note that for many of the courses that were a specialisation within a master of education suite of programs, the research units were common to all courses and this may mean that special educators do not receive a sound grounding in small-n research derived from applied behaviour analysis. Ethical practice was core in about a third of the courses and was often covered in the context of a research unit. Evaluating and using research was content covered in the most units overall and many units covering other content also contained this element.

Individual Programming and Collaborative Planning

One of the core features of special education practice is individual programming, documented in an individualised or personalised plan developed in collaboration with other stakeholders that includes goals and allows for progress monitoring (Dempsey, 2012). An Individual Education Plan is a legal requirement in the US but this is not the case in Australia. The Education Standards of the Disability Discrimination Act do require schools to consult the student and/or the family about reasonable adjustments to enable the student to participate in education. The Nationally Consistent Collection of Data on Students with Disabilities program (NCCD) (Australian Government, 2020) requires schools to document evidence of this consultation, the assessed needs of the student and the adjustments, as well as monitoring and review of the adjustments made. This assessment must be made on an individual basis and an individualised education plan is one of the forms of evidence that adjustments are being provided and monitored.

Individual programming and collaborative program development were covered in the majority of courses, and both in over 75 units, but the Disability Standards themselves were slightly less frequently covered (22 courses, core in 19). Relatedly the impact of disability on the learner was core content in 18 courses and the more specific area of transition planning was core in only nine courses. Given that individual programming is a cornerstone of the education of students with disabilities, it is of concern that it is not clearly described content

in all courses, and that the impact of disability and the legal obligations of schools and teachers are not core in all courses.

Working with others, including families, teachers and other professionals, through collaboration and consultation is regarded as an essential feature of special education practice in both the US and Australia (Brownell et al., 2010; Keeffe & De George Walker, 2010) and was a feature of the programs in the US analysed by Brownell et al. (2005). As noted above, in Australia there is a requirement to develop programs and/or adjustments in collaboration with the student and caregivers. Collaborative program development was core in 24 courses, and was mentioned in over 75 units.

One of the roles of special educators, especially those working in mainstream settings is to provide support to other teachers and to build staff competencies (Keeffe & De George Walker, 2010). The provision of support for regular educators, an essential feature of practice in mainstream settings was covered in 21 courses (core in 16), but provision of professional learning to others was less frequently covered. The more generic working with families was covered in 19 courses (core in 17) but advising parents was mentioned in only four courses. (core in three). Given the support roles of special educators in mainstream schools, it is important for them to be aware of resources available outside schools, but only 13 courses (9 core) included knowledge of other professions and agencies. Additionally, only two courses covered the provision of advice to others about unproven practices.

Monitoring and Data-based Decision Making

Ongoing individualised programming requires ongoing monitoring of student learning and decisions about programming and pedagogy made on the basis of data gathered through assessment (McLesky et al., 2017). Generic assessment was mentioned in all but one course, monitoring and evaluation of individualised plans was also commonly covered, but data-based decision making was covered less frequently and the more specific strategy of curriculum-based assessment, a critical element of special education practice (Brownell et al., 2010), was core in only nine courses. Related to both assessment and working with others, reporting was covered in only 14 courses (core in nine).

Explicit Instruction

Content relating to generic teaching strategies was mentioned in all courses but content on specific research-based strategies of instruction for students with disabilities was much less common. Explicit teacher-directed instruction was mentioned as core in only 13 courses, research-based literacy instruction was core in six, with research-based instruction in numeracy core in four. Others have noted the lack of preparation general educators receive in explicit teacher directed instruction, particularly in mathematics (Fahey et al., 2021) and this makes the need for inclusion in specialist courses even more pressing. The lack of content on explicit instruction suggests that many graduates will be poorly prepared to teach literacy and numeracy to students with disabilities, a concern when students with learning difficulties in literacy or numeracy are commonly encountered.

Inclusion

The pattern relating to inclusion was similar to that of instruction. Inclusion philosophy and practices was mentioned as core in 22 courses. The more specific topics of differentiation and Universal Design for Learning were core in 12 and ten courses respectively, even though there were 16 courses that had names related to inclusion. It seems course names may not indicate a particular stance towards the education of students with disability.

Applied Behaviour Analysis

Generally, courses did not appear to have consistent theoretical or philosophical underpinnings. Many authors have argued that a coherent "program vision" is a requirement of a teacher education course, although Brownell et al., (2005) in their analysis of articles describing 64 programs preparing special educators in the US found it received minimal attention. They also noted special education programs were far less likely to take a constructivist stance than regular teacher education programs, but we are unable to make this kind of judgement. Many more courses contained general content on inclusion philosophy and practices than the principles of applied behaviour analysis (14 courses, core in 9), but whether this reflects differing ideologies underpinning courses is hard to say as some courses contained both elements as core content.

Pedagogical approaches drawn from ABA have been shown to be effective evidence-based practices for students with disabilities for developing both academic and social skills as well as for managing problem behaviour (Barnett et al., 2020; Begeny & Martens, 2006). Given the well-established research base for pedagogies based on ABA, it is interesting to note that more courses addressed differentiation which currently has a very weak evidence-base (Graham et al., 2021) than ABA. Explicit teacher directed instruction, noted above as poorly represented in course content, also uses the principles of ABA, employing explicit antecedents, modelling and reinforcement (Begeny & Martens, 2006; Newsome et al., 2021). In addition, other evidence-based practices in special education began within ABA, including Response to Intervention approaches which incorporate regular monitoring of student progress and data-based decision making (Barnett et al., 2020). It might be expected that differentiation of instruction to meet the needs of students with disability could include behaviourally based and explicit teaching strategies.

Behaviour Support and Intervention

In the area of behaviour management, positive behaviour support, functional assessment of behaviour and interventions based on that analysis have strong research support, and indeed are a legal requirement in the US (Fennell & Dillenburger, 2018). This content was core in 15 courses, but not all made the theoretical underpinning of ABA explicit in the materials we reviewed. Begeny and Marten (2006) made a similar finding that special educators in the US received little training in behaviourally based educational strategies. We have also noted that the use of common research units across all education masters courses may mean special educators are not prepared in the basics of measurement and design strategies in small-n research that are used in functional assessment.

Coverage of Other Recommended Content

There were several other recommended content areas that were not addressed as core in half the courses or more. The education of students with high support needs was core in only seven courses, teaching social skills was core in 14 courses and teaching early communication skills was core in 11. Given the ability to communicate effectively across context is critical for students with disability, course deficits in the areas of social and communication skills are a concern (Pennington et al., 2021). Assistive technology, which would include the use of augmentative and alternative communication (AAC) was core in only half the courses. Since special educators must be prepared to educate students with complex communication needs, these omissions from courses are problematic. Australia is not the only country where lack of preparation in AAC is a problem. Da Fonte and Boesch (2016) provided a fine break down of the skills needed by special educators working with students with more severe disabilities who use AAC, and also noted special educators in the US and elsewhere were not receiving adequate preparation in this area. Pennington et al. (2021) found from their survey in the US that although courses contained content on AAC, other areas of early communication assessment and intervention were not widely covered, with a third of graduates rated as "not adequately prepared" in communication interventions (p. 246).

Practicum

As in regular teacher education, many writers on preparing special educators describe the importance of practicum or field experiences that are an integral part of the course and make explicit connections between practice and course content (McLesky & Brownell. 2015). They allow student special educators to apply strategies for assessment and instruction to individual learners (Cranston-Griggs et al., 2019). Haines et al. (2017) reported that students themselves valued practical experiences, especially opportunities to work with families and receiving mentorship from knowledgeable special educators. They also appreciated supervision from university academics. Whereas Brownell et al. (2005) found most courses described in the US had extensive practical experiences linked to content, only 15 Australian courses included a practicum and the mean length was 20 days. Little information was provided about supervision with six courses mentioning supervision by a mentor teacher and none mentioning involvement of university staff. At a deeper level, Markelz et al., (2017) made the valid point that content from special education courses must generalise to classrooms and that teacher educators must plan to promote this generalization. Their survey of a sample of special education programs in the US found this was not taking place, and the limited field experience in Australian courses strongly suggests it is not happening here. If special educators are to improve learning outcomes for students with disability, they must not only know about effective practices, they must be competent in using them appropriately. This will only eventuate when teacher education courses focus on what happens in classrooms and core skills are taught and practiced (McLesky & Brownell, 2015).

Do Courses Include Recommended Content?

An optimistic interpretation of our results would be that universities are addressing the recommended content elements we explore, but that the publicly available materials do not fully reflect course content. This may be true where we had limited information and

should be a consideration in interpreting the results. On the other hand, these courses are specialist courses, and it would be expected that the presence of content deemed to be essential or important for special educators gaining a second teaching qualification would be reflected in the reviewed materials, especially in learning outcomes (which were available for 24 courses) and unit guides. What we often found was description that was generic or vague, and as can be seen from our analysis, core specific skills such as explicit teaching was absent from more than half the courses, as was research-based literacy instruction and research-based instruction in numeracy was absent from the all but six of the courses. Other important areas that appeared to be poorly addressed in many courses included the education of students with high support needs, advising parents and advising about unproven practices. The apparent neglect of, or reluctance to explicitly mention behavioural learning theory (ABA), which underpins so much evidence-based practice in special education even when behaviour change and functional assessment are included is also a concern.

Further Research

This internet-based survey provides an initial overview of course content. It would clearly be beneficial to review course content using more detailed content such as unit guides and unit curricula. Such a study would need the full co-operation of universities offering post graduate special/inclusive education courses, and this may not be forthcoming. It may also be possible to survey practising qualified special educators regarding their views of how well prepared they were to take up specialist positions, and what course content they found most useful. There are more specific areas for in depth research that arise from the findings reported here. Staff attitudes to, and beliefs about explicit teaching (especially of literacy and numeracy) and ABA, and why these are included (or not) in courses would be of interest. We have only reported briefly on practicum and the whole area of specialist professional experience in Australia appears to be under-researched.

Conclusion

Overall, we think that given the neglect of explicit teaching and ABA, at least half of the courses we reviewed would not provide the content needed by special educators, and we call for universities to review course content to ensure crucial aspects of special education and inclusive practice are covered. We also call for professional standards for special educators to be defined and formal accreditation processes to be put in place, as for other professions which work with people with disability, such as speech pathologists. At present AITSL only provides general standards and is not taking a gate-keeping role for specialist treachers.

A case can certainly be made for much more research in this relatively neglected area, to gain a more in depth understanding of what course content is presented and why, as well as content that is required for special educators to fill their roles (Brownell et al, 2020; Sindelar et al., 2019). Accreditation of special educators as specialist teachers, implies accreditation of specialist preparation courses. As Keeffe and De George Walker (2010) argued "if accreditation is the crux of satisfaction and efficacy for special educators, then the nature of the accreditation must be a professional priority" (p 102).

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