Profiling Transitions in Emotional Development for Students With Additional Learning Needs

Eileen Roberts and Patrick Griffin

Assessment Research Centre, Melbourne Graduate School of Education, The University of Melbourne, Australia

The aim of the research described in this article was to build a protocol for describing students' development of emotional knowledge and understanding, and to tailor this to the requirements of assessing the progress of students with additional needs. The paper reports the establishment of such a developmental profile, using procedures for defining standards-referenced frameworks (Griffin, 2007) to create an observation questionnaire of students' emotional skills. This approach relies on the knowledge and collaboration of experienced teachers and researchers in the fields of special education and emotional development to establish an hypothesised framework of critical skills, observable behaviour statements, and developmental criteria that map qualitative transitions in student performance. The framework was subsequently validated against observation data gathered by teachers in 2007, from 77 Victorian government schools (21 mainstream, 56 special education) on 1597 students (3 to 18 years) with additional needs. Their responses were calibrated using partial credit item response modelling to empirically identify major transitions in students' emotional development and to establish the construct validity of the profile. In the area of students' emotional development, teachers have limited access to information that supports their assessment of progress and underpins decisions about setting goals for learning and appraising teaching strategies. The proposed article describes early stages of a research program that attempts to redress this situation by working with teachers to develop an appropriate and inclusive profile of emotional development for students with additional needs.

Keywords: emotional development, assessment, special education

In order to best meet the educational needs of students, Vygotsky (1929/1993) stressed that 'teaching must move development forward' (p. 252) and that education should be principally concerned with 'the development of skills and habits for future functioning and future activity' (1926/1997, p. 119). He also wrote that '[P]edagogics must be oriented not towards the point in the child's development from yesterday,

This paper was presented at the AASE/PASS Conference, 'Transitions: Facilitating Change for Students With Special Needs', held in Melbourne, Australia on April 16 and 17, 2009. Conference papers underwent rigorous peer review, based on initial screening by the conference committee and anonymous review by at least two referees.

Address for correspondence: Eileen Roberts, Assessment Research Centre, Melbourne Graduate School of Education, The University of Melbourne VIC 3010 Australia. E-mail: eileenr@unimelb.edu.au

https://doi.org/10.1375/ajse.33.2.151 Published online by Cambridge University Press

but towards tomorrow's development. Only then will it be in a position to bring life in the very process of teaching all those developmental processes that now lie in the zone of proximal development' (1929/1993,p. 251). The current research aimed to develop an assessment protocol based on a functional (not aged-based or norm-referenced) profile that identifies the progression of qualitative shifts or transitions in students' with additional needs in the area of emotional development. It also aimed to create a profile of transitions that can form a basis for the creation of guidelines for teachers on targeted intervention strategies to assist the emotional education of students with a range of intellectual disabilities. By accurately locating a student on a developmental continuum, teaching strategies and resources can be targeted towards the student's zone of proximal development.

Currently there are international and national shifts towards standards and criterion referenced assessment; however, assessment procedures for students with intellectual disabilities have remained primarily norm-referenced (Senate Committee, 2002). While norm-referenced monitoring is important for funding and legislative purposes, the skills and development of students with additional needs also need to be monitored for curriculum and development of individual learning plans. There have been concerns about the use of IQ tests as measures of ability for educational purposes (e.g., Gould, 1996), especially among people with cognitive disabilities (Jenkinson, 1996; Koegh, Bernheimer, & Guthrie, 1997). IQ tests do not take into account individual differences in functioning, learning styles and environmental considerations, and are often interpreted in ways that make sense to clinicians, but not to teachers, students or parents. In particular, Vygotsky criticised methods of norm-referenced measures of cognitive function such as IQ for their negative focus upon impairment and loss, and for their view of development as an additive rather than a transitional process (1929/1993). Vygotsky conceived development as a series of qualitative transformations or transitions and that measurement of development should recognise and map these transformations in performance. He argued that there should be an educational emphasis upon a child's abilities rather than their disabilities, and he stated that 'a child whose development is impeded by a defect is not simply a child less developed than his peers but is a child who has developed differently' (p. 30).

In the past two decades, developmental progressions have been defined in almost every area of learning for mainstream students; however, due to idiosyncratic patterns of strengths and abilities, assessment material developed for mainstream students are likely to prove inadequate to fully support the education of students with special needs. Vygotsky (1926/1997) emphasised that regardless of disability, it is the process of individualisation that is key to educating children and that teachers must thoroughly assess the learning needs and styles of their students and adjust their pedagogical practices appropriately regardless of disability.

Current Victorian Curriculum for Students With Additional Learning Needs

Currently in Victoria, learning standards exist for students in mainstream schooling but do not extend to describe the expected developmental pathways of students with disabilities, where many teachers have little or no formal training (Senate Committee Report, 2002). A Senate Committee investigation (2002) highlighted a lack of systematic information about expected learning outcomes and effective intervention strategies to assist teachers of students with additional learning needs. The Victorian Essential Learning Standards (VELS), like other curricula, links expected developmental progress

https://doi.org/10.1375/ajse.33.2.151 Published online by Cambridge University Press

of students to grades or age. The standards formally define at different stages students' expected knowledge and abilities. These curriculum expectations are divided into six levels from Prep to Year 10 and into three transitional stages of learning (See Table 1). The first stage of learning focuses on developing student's foundational skills, knowledge and behaviour in literacy, numeracy and other areas, to underpin future learning. The second stage of learning focuses on expanding and deepening learning from the first stage, whereas the third level focuses on developing independence and interests such as preferred areas of learning. While these transitional levels are a heuristically meaningful way for teachers to think about expected levels of proficiency and transitions for mainstream schooling, for students with additional learning needs these standards cannot necessarily be used as a guide as the normal age expected relationship does not hold.

For students with additional needs, learning goals, intervention identification, and progress reporting for student with additional needs are decided by the student's support group (VCAA, 2005). Where available, support groups comprise the student's parents or carer, school principal, class teachers and support professionals. The assistance this provides to teachers is limited to the experience of the support group to work with students of that particular learning need. The knowledge and experience of this group can be especially limited if the student is in a mainstream classroom, smaller school or rural setting where there may be few students with similar learning needs (Senate Committee Report, 2002). Within Victoria, the Education Department's Program for Students with Disabilities (PSD) is responsible for supporting the education of a very diverse group of students. In 2007, PSD provided funding for around 17,300 students (3.2 % of all students enrolled in government schools) of which 56% were in mainstream schools (Victorian Auditor General, 2007). In order to receive funding, a student must be assessed as belonging to one of seven disability categories that do not take into account multiple disabilities or other factors contributing to learning difficulties, such as socioeconomic disadvantage. There is a clear and unmet need to provide teachers with the tools to guide their teaching strategies and support the learning of this large and diverse group of students.

Importance of Inclusion of Emotional Learning Progress

In his classic work on the psychology of education, Vygotsky (1926|1997) devoted a significant portion to important aspects of the psychological elements of the skills that are part of the technique of learning and education. He focused on processes that he considered as being foundational to learning regardless of disability; that is, what all

TABLE 1

Victorian Essential Learning Standards

Standard	Year	Stage of learning
Level 1	Preparatory Year	Laying the foundations
Level 2	Years 1 and 2	
Level 3	Years 3 and 4	
Level 4	Years 5 and 6	Building breadth and depth
Level 5	Years 7 and 8	
Level 6	Years 9 and 10	Developing pathways

Note: Adapted from VCAA, 2008.

https://doi.org/10.1375/ajse.33.2.151 Published online by Cambridge University Press

students need in order to prepare themselves for learning. The current study forms part of a larger body of research that addressed five foundational developmental areas of learning: communication, literacy, cognition, emotion and social. This article aimed to identify the progression of qualitative shifts or transitions in the emotional development of students with additional learning needs. Vygotsky considered an essential part of education to be the 're-education' of one's emotional reactions, that is, teaching a child to become 'the ruler of his emotions'.

In line with Vygotsky's theoretical stance, the National Scientific Council Centre on the Developing Child (NSCCDC, 2007) considered the development of emotional wellbeing as fundamental for establishing a strong foundation of success. Emotional adaptation has emerged as an essential goal of education (Lopes & Salovey, 2004), with emotional skills influencing academic achievement both directly and indirectly. To interact with teachers, peers and learning activities, students need to control emotional outbursts and impulsive reactions. Mayer and Salovey (1997) argued that using emotions as a basis for thinking, and thinking with emotions, are important elements that lead to the establishment of social competencies and the adaptive behaviour required for successful learning and learning environments. Also, emerging research links emotional skills directly with academic outcomes, such as school bonding and avoidance of school dropout (Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999).

The VELS curriculum includes the area of emotions within the domain of Personal Learning where, as an element of managing personal learning, the curriculum includes knowledge skills and behaviour to 'learn to understand and manage their own emotions' (VCAA, 2008). Standards for assessing and reporting student achievement are introduced for this domain at Level 3, or the end of Year 4, where students are expected to 'manage their feelings in pursuit of goals'. While there are no specific statements of standards for Levels 1 and 2, focus statements provide limited advice on assisting students to work towards the Level 3 standard. The statement at Level 1 (Prep) encourages teachers to provide students with opportunities to share their feelings and thoughts about learning and the statement at Level 2 (Years 1 and 2) encourages a focus on students beginning to record their feelings and understanding about their learning.

Creating a Standards-Referenced Framework

This study aimed to develop and validate assessment procedures that provided guidelines for teachers to support the emotional education of students with additional needs. It was intended that these procedures should be based on functional standards, describe qualitative transformations in students' emotional development, and assist teachers with students with a range of disabilities. At the foundation of this methodology is a model for defining standards referenced frameworks (Griffin, Smith & Martin, 2003) that relies on a specialist panel of experienced special education teachers working within the framework of a partial credit latent trait model (Masters, 1982). Following procedures outlined by Gillis and Griffin (2004) an evidence-based framework was developed consisting of components (areas of learning), indicators (broad statements of observable behaviours) and developmental criteria (indicative of relative performance quality) using expert judgment of students' emotional development. Developmental criteria are specific, ordered categories or standards describing how well actions or tasks are demonstrated.

https://doi.org/10.1375/ajse.33.2.151 Published online by Cambridge University Press

Identification of Components, Indicators and Developmental Criteria

Experienced teachers and researchers in the field of special education and child development were invited to a series of workshops to create an emotion developmental framework of qualitative transitions. In these workshops, hypothesised emotional developmental frameworks were proposed, critiqued and expanded upon as well as the review of developmental criteria statements to be used for the calibration of the learning standards and pathways. In particular, learning standards were built on aspects of the theoretical development of emotional intelligence established by Salovey and Mayer (1990) and key emotional competencies considered critical for development described by Saarni (1999) and Denham (1998).

In Mayer and Salovey's (1997) description of emotional intelligence they argue that using emotions as one basis for thinking, and thinking with emotions themselves, is related to important social competencies and adaptive behaviour. Emotional intelligence is defined as a set of mental abilities applying to self and others that include: perceiving and expressing emotion, using emotion to facilitate cognitive activities, understanding emotions and managing emotions for both emotional and personal growth. In their model, a hierarchy of abilities are described from basic to higher psychological processes, where each ability has important milestones that are ordered based on developmental emergence from birth to adulthood. Saarni (1999) describes seven key emotional competencies in increasing proficiency: awareness of one's emotional state; ability to discern others' emotions; ability to use the vocabulary of emotion; capacity for empathic and sympathetic involvement in others' emotional experiences; ability to realise that an inner emotional state need not correspond to outer expression; capacity for adaptive coping with aversive or distressing emotions; awareness that the structure or nature of relationships is in part defined by the quality of emotional communication within the relationship; and capacity for emotional self-efficacy. Detailed descriptions from Denham (1998) on children's development of emotion expression, emotion and language, understanding emotion and regulating emotional expression were also analysed in these workshops.

Development of an Observation Questionnaire

Teachers and researchers collaborated to create an observation questionnaire to be used by teachers to describe the emotional development of their students with additional learning needs. The emotional processes described above were assessed in detail by teachers and researchers, and appropriate structures used as the basis for developing a rubric. First, draft observation statements were created according to rules for developing rubrics (Griffin, Gillis, Keating, & Fennessy, 2001). Next, the teachers, researchers and specialists made comparisons of the relative difficulty of each of the observation statements using subject knowledge and judgment as well as consideration of developmental sequences from Bloom's Taxonomy (1964). The developmental criteria statements formed the basis of an observation questionnaire (see Figure 1) that had 14 behavioural indicators as items and 54 developmental criteria as response choices. The draft observation questionnaires were trialled in 16 schools covering a range of school settings (special developmental, special, mainstream primary and mainstream secondary). In Victoria, special developmental schools enrol students with more severe disabilities, in general, than special schools, and it was important that the pilots were conducted in schools that covered the full range of educational settings for the target group of students. During the trialling, teachers were invited to critique and suggest improvements to the questionnaire to address: ambiguous and excluding wording;

https://doi.org/10.1375/ajse.33.2.151 Published online by Cambridge University Press

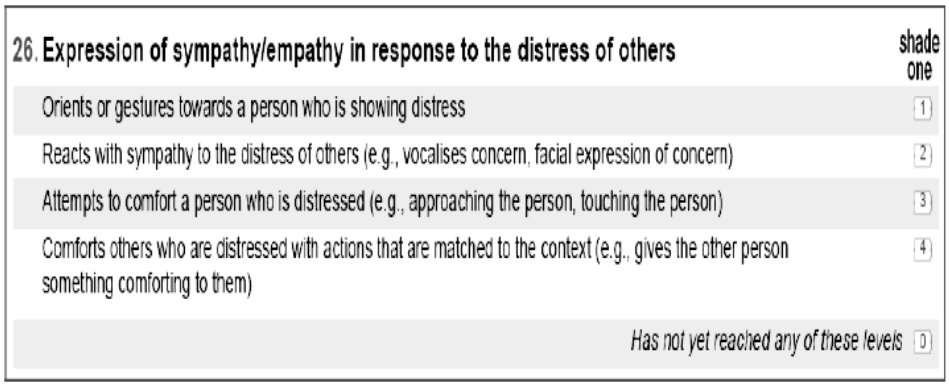
appropriateness of descriptions; developmental range coverage; appropriateness for diverse disabilities; and range of appropriate indicators.

Data Collection

To ensure that the learning standards and pathways were inclusive and suited to the needs of students with a range of addition learning needs, it was necessary to survey a large sample of teachers from a variety of school types (mainstream, special, special developmental and autistic), working with students across all years of schooling and with a range of intellectual and learning disabilities. Accordingly, all Victorian specialist schools (n = 75) enrolling students with intellectual disabilities and selected mainstream schools (n = 112) were invited to participate in the research. Mainstream schools were selected based on probability proportional to a Health Learning (H/L) Index. Mainstream schools were given a weighting based on the proportion of students who had not reached state benchmarks in literacy and the School Entry Health Questionnaire indicators of additional needs for students (Griffin, Nadebaum & Edgecombe, 2006) and from these a H/L Index was created. The observation questionnaires were completed for 1594 students by a total of 572 teachers or teams of teachers (151 mainstream, 421 special education) from 77 schools (21 mainstream, 56 special education). The students ranged in age from 3 to 18 years, with 65% being male, and 89% described by their teachers as having additional needs in terms of their social/emotional learning.

Calibration of the Observation Questionnaire and Establishment of Levels of Emotion Development

A probabilistic developmental Rasch partial credit model (Rasch, 1980) was used to examine cohesion of the developmental criteria and their mapping onto a developmental continuum. In order to identify the nature of the underlying developmental continua, this model was implemented through the computer software ConQuest (Wu, Adams, & Haldane, 2007). Simple logistic models have been used previously to successfully identify underlying latent traits in teachers' observations on second language development (Griffin, Smith & Martin, 2003) and communication and literacy skills of students with additional needs (Woods & Griffin, 2008).



26. Expression of sympathy/empathy in response to the distress of others	shade one
Orients or gestures towards a person who is showing distress	1
Reacts with sympathy to the distress of others (e.g., vocalises concern, facial expression of concern)	2
Attempts to comfort a person who is distressed (e.g., approaching the person, touching the person)	3
Comforts others who are distressed with actions that are matched to the context (e.g., gives the other person something comforting to them)	4
Has not yet reached any of these levels	0

FIGURE 1

An example of a behavioural indicator and developmental criteria that appeared in the questionnaire.

https://doi.org/10.1375/ajse.33.2.151 Published online by Cambridge University Press

Indices of test reliability and separation (Wright & Masters, 1982) were used to examine the construct validity of the developmental levels. The questionnaire had an alpha reliability of 0.93, a Rasch item separation reliability of 0.94 and student separation reliability of 0.95. These high reliability estimates suggest that the items were well dispersed, allowing identification of the underlying variable and differentiation of student proficiency. The questionnaire items and response choices were plotted according to increasing difficulty as shown in Figure 2. These yielded a series of qualitatively different levels of development following the procedure outlined by Griffin, Woods and Dulhunty (2007).

On this chart, horizontal lines represent level cut scores where items, representing quality criteria for each of the behavioural indicators, show evidence of shifts in difficulty. Quality criteria clustered at each level of difficulty were compared and examined for common underlying themes. Seven emotion levels of development were established and the distribution of students in the sample determined. These initial analyses indicated that 20.4% of students were self-oriented and learning to react to the environment, 20.5% were learning to become aware of emotions, 21.1% were learning to name and respond to emotions, 17.8% were learning to differentiate their emotional responses and becoming aware of the causes of emotions, 11.1% were learning to describe and apply emotional knowledge, 4.4% were learning to discuss emotional experiences and match their emotions to the context, and 4.7% were learning to explore and adapt their knowledge of emotions. Examples of the indicators that mapped onto each level of this derived scale of emotion development appear in Table 2.

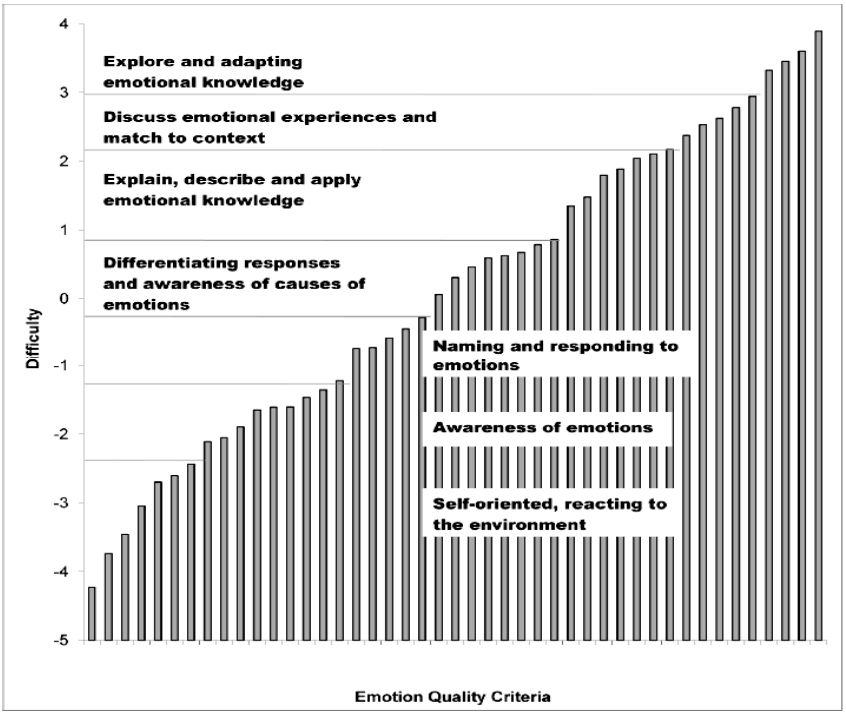


FIGURE 2

Ordered difficulty of criteria (observation statements) on emotion survey questions.

https://doi.org/10.1375/ajse.33.2.151 Published online by Cambridge University Press

TABLE 2

The Derived Levels of Emotion Development in Students with Additional Learning Needs

Emotion level description	Example of developmental criterion
Self-oriented, reacting to environment situation	Makes the same emotional response regardless of
Awareness of emotions	Orients or gestures towards a person who is showing distress
Naming, responding to emotions	Names the emotion s/he is experiencing either verbally or using assistive technology, writing or signing
Differentiation of responses, awareness of causes of emotions	Indicates the immediate and present cause of another's feelings (e.g., immediately after seeing someone being hurt indicates what hurt him/her)
Explain, describe, apply emotional knowledge	Gives reasons for modifying expression of feelings to benefit self (e.g., "didn't want others to know I was embarrassed")
Discuss emotional experiences, match to context	Matches his/her emotional reactivity to the context
Explore, adapt emotional knowledge	Explores and describes causes of own conflicting emotions

Comparison of Levels on the Derived Scale of Emotion With VELS Stages of Learning

Student frequencies in the seven levels of emotion development were compared to the VELS transitional stages of learning and results of these comparisons appear in Figure 3.

The proportion of students in each of the VELS year-based transitional stages was compared with the proportion in each of the levels of emotional development, and a relationship was observed, $\chi^2\,(df\ 18\ ,\ N = 1588\ ) = 151.9,\ p < .05$. Examination of adjusted standardised residuals suggested that younger students, who would usually be described in terms of the first stage on VELS, were also more likely to be described as working at the lower emotion levels on the derived scale. For older students, who would usually be allocated to the higher VELS stages, the adjusted standardised residuals showed no relationship between levels on the derived scale and the VELS stages. Thus, Figure 3 shows the relationship between VELS year-based Stages of Learning and the derived emotion levels, with students in the youngest age group more likely than older students to be at the lower levels on the pathway. However, older students were distributed relatively evenly across all of the derived levels, and there are quite high proportions of older students with additional needs who are currently working towards the internalisation of lower level skills. For example, the proportion of students who, based on age or year-level alone, would be allocated as being beyond VELS stages of learning is fairly consistent across all seven emotion bands. Likewise a large proportion of students who would be placed in VELS stage in which they are 'developing pathways' are located in the lower emotion developmental levels on the derived scale.

Conclusions

The current research described the creation of an assessment of learning that was standards based and that identified the progression of qualitative shifts or transitions in the emotional development of students with additional needs. It also sought to assist teachers to monitor progress of these students in this foundational area. An assessment framework was created grounded on emotion developmental theory and incorporating

https://doi.org/10.1375/ajse.33.2.151 Published online by Cambridge University Press

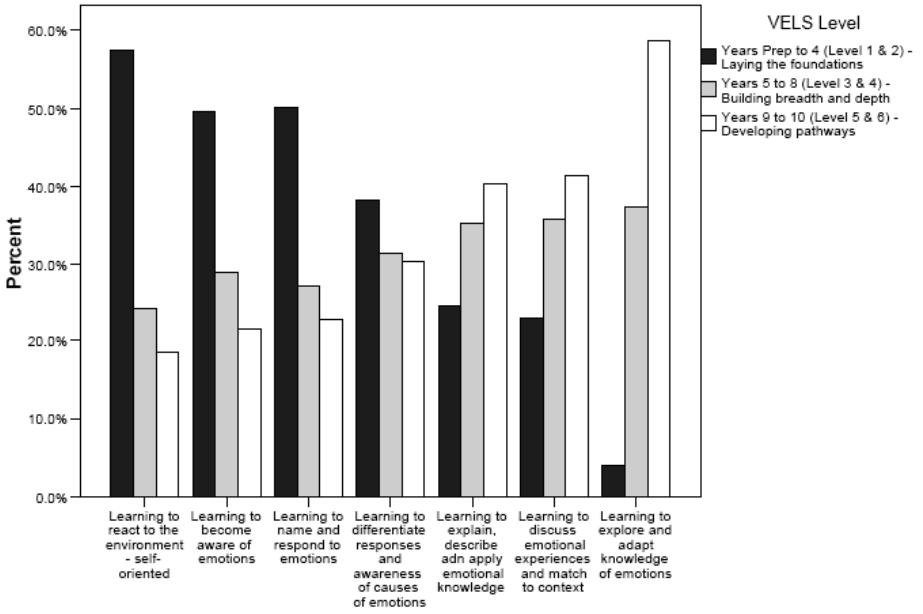


FIGURE 3
Student frequencies in each emotion level.

the knowledge of experienced teachers, researchers and specialists to describe emotional learning. This framework included observable behaviours that were appropriate and critical indicators of proficiency of emotional learning and inclusive for students with a diverse range of disabilities.

The observation data gathered by teachers revealed a framework that profiled transitions of emotional development for students with additional needs with seven interpretable levels. These levels were defined by sets of items shown in Table 2 that demanded approximately equivalent demonstration of student proficiency and illustrated in Figure 2. Construct validity in the materials was evidenced by high indicators of reliability and item and student separation reliability (Wright & Masters, 1982), and by a close match between the construct as originally defined for the research and the derived scale. The information provided by the emotion developmental levels directs teachers' thinking about students away from an overly simplified notion of age-related or year-based progressions, and encourages them to set realistic goals for students of all ages. It supports the differentiated teaching designed to support each student's individual 'readiness to learn' without focusing on the student's deficiencies.

The systematic framework developed in the current study provides a more comprehensive learning pathway for the emotional development of students with additional needs than currently provided in the Victorian curriculum. Due to the systematic information about expected learning outcomes from this developmental framework it becomes conducive to further evaluation, addressing needs of teachers for resources on effective intervention strategies for learning emotional adaptive behaviour required for successful learning and learning environments. Future plans for the research include evaluating the suitability of the transitional pathway for the purpose of

https://doi.org/10.1375/ajse.33.2.151 Published online by Cambridge University Press

assessing and reporting learning at different levels of emotional development, with different subtypes of additional learning needs, and across a range of school contexts. More specifically, use of the pathway to guide teaching strategies and resources that are specifically linked to their students' current developmental level or zone of proximal development by monitoring teachers' use.

References

Bloom, B.S. (Ed) (1964). *Taxonomy of educational objectives: the classification of educational goals.* New York: D. McKay Co.

Denham, S.A. (1998). *Emotional development in young children.* New York: Guilford.

Gillis, S., & Griffin, P. (2004). Using rubrics to recognise varying levels of performance. *Training Agenda: A Journal of Vocational Education and Training, 12*(2), 22–24.

Gould, S.J. (1996). *The mismeasure of man.* New York: Norton.

Griffin, P., Gillis, S., Keating, J., & Fennessy, D. (2001). *Assessment and Reporting of VET courses within Senior Secondary Certificates.* Sydney, Australia: NSW Board of Vocational Education and Training.

Griffin, P., Nadebaum, C., & Edgecombe, G. (2006). *School Entry Health Questionnaire: Longitudingal analysis 1998 to 2004* (A report to the Department of Human Services). Melbourne, Australia: Assessment Research Centre, University of Melbourne.

Griffin, P., Smith, P.G., & Martin, L. (2003). *Profiles in English as a second language.* Clifton Hill: Robert Anderson & Associates.

Griffin, P., Woods, K., & Dulhunty, M. (2004) Australian students' knowledge and understanding of Asia. *Australian Journal of Education, 48*(3), 253–267.

Hawkins, J.D., Catalano, R.F., Kosterman, R., Abbott, R., & Hill, K.G. (1999). Preventing adolescent health-risk behaviors by strengthening protection during childhood. *Archives of Pediatric & Adolescent Medicine, 153*(3), 226–334.

Jenkinson, J.C. (1996). Identifying intellectual disability: Some problems in the measurement of intelligence and adaptive behaviour. *Australian Psychologist, 31*(2), 97–102.

Koegh, B.K., Bernheimer, L.P., & Guthrie, D. (1997). Stability and change over time in cognitive level of children with delays. *American Journal on Mental Retardation, 101,* 365–373.

Lopes, P. & Salovey, P. (2004). Toward a broader education: Social, emotional, and practical skills. In J.E. Zins, R.P. Weissberg, M.C. Wang & H.J. Walberg (Eds.), B*uilding school success on social and emotional learning* (pp. 76–93). New York: Teachers College Press.

Masters, G. (1982). A Rasch model for partial credit scoring. *Psychometrica, 47,* 149–174.

Mayer, J.D., & Salovey, P. (1997) What is emotional intelligence? In P. Salovey & D.J. Sluyter (Eds.), *Emotional development and emotional intelligence: Implications for educators* (pp. 3–31). New York: Basic Books.

National Scientific Council Centre on the Developing Child. (2007). The Science of Early Childhood Development. Retrieved November 20, 2007, from http://www.developingchild.net.

Saarni, C. (1999). Developing Emotional Competence. New York: Guilford.

Salovey, P., & Mayer, J.D. (1990). Emotional intelligence. *Imagination, Cognition, and Personality, 9*(3), 185-211.

Senate Employment, Workplace Relations and Education References Committee. (2002). *Education of students with disabilities.* Canberra, Australia: Senate Printing Unit.

Victorian Curriculum and Assessment Authority (VCAA) (2005). *Victorian Essential Learning Standards: Students with Disabilities Guidelines.* Retrieved March 17, 2007, from http://vels.vcaa.vic.edu.au/downloads/disability_guidelines.pdf

Victorian Curriculum and Assessment Authority (VCAA). (2008). *Victorian essential learning standards: Stages of learning.* Retrieved September 28, 2008, at http://vels.vcaa.vic.edu.au/stages/index.html.

Victorian Auditor-General (2007). *Program for students with disabilities: Program accountability* (PP No. 37, Session 2007–2008). Victorian Government Printer.

Vygotsky, L. (1926|1997). *Educational psychology* (R. Silvermann Trans.). Florida: CRC Press.

https://doi.org/10.1375/ajse.33.2.151 Published online by Cambridge University Press

Vygotsky, L. (1929/1993). *The collected works of L.S. Vygotsky, Volume 2: The fundamentals of defectology* (abnormal psychology and learning disabilities) (R.W. Rieber & A.S. Carton Trans.). New York: Plenum Press.

Woods, K., & Griffin, P. (2008, September). *Profiling developmental pathways of communication and literacy for students with additional learning needs.* National Conference of the Australian Association for Special Education, Fremantle, Australia.

Wright, B., & Masters, G. (1982). *Rating scale analysis.* Chicago: MESA Press.

Wu, M.L., Adams, R.J., & Haldane, S. (2007). *ConQuest: Generalised item response modelling software.* Melbourne, Australia: Australian Council for Educational Research.

https://doi.org/10.1375/ajse.33.2.151 Published online by Cambridge University Press