



What Does Research Say About the Effectiveness of Professional Learning and Development for Culturally Responsive Teaching at Primary School Level?

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HEATHER SMYTH

Victoria University of Wellington

ABSTRACT

In recognition of the growing cultural diversity in today's schools and the importance of culturally responsive teaching, a systematic review was conducted to attempt to answer the question: "What training is most effective for primary teachers to incorporate their students' cultures into their learning opportunities?" Database searches were conducted and eight studies, including three based in New Zealand, met the specified inclusion criteria. The studies included qualitative, quantitative and mixed methods approaches. Main themes and findings include a lack of studies that are designed to collect data on teachers' implementation of professional development strategies and their impact on student achievement, sampling and researcher bias as common threats to validity, and common characteristics of training such as sustained support, self-awareness, reflection and constructing learning with others. Due to the dissimilarities of the studies reviewed, for example, with different age groups, for different topic areas and varying aims, no one type of professional development could be identified as the most effective. Implications for teachers and teacher educators are discussed.

Keywords

Professional Learning and Development, Culturally Responsive Teaching, Primary Schools.

INTRODUCTION

Disparities in educational achievement, based on student ethnicities, highlight inequalities in many of the world's education systems. This is the case in New Zealand where a strong link between student background and attainment of qualifications suggests that education is maintaining the status quo (Strathdee, 2012), which includes lower achievement for Māori and Pasifika students. Achievement gaps between ethnic majority and minority students are

a growing problem both locally and internationally as student populations become increasingly diverse through global migration trends.

Research has demonstrated that providing opportunities for students to bring their cultures into the classroom can have positive effects on student outcomes (Bevan-Brown, 2003; Bishop, Berryman, Tiakiwai, & Richardson, 2003; Ladson-Billings, 1995). Furthermore, a meta-analysis of over 800 studies by Hattie (2009) provided support for the importance of the teacher on student outcomes. These findings illustrate the potential for teachers to positively influence student learning; however, the mechanisms through which teachers can successfully bring their students' cultures into the classroom are far from obvious. Banks (2010) uses the term "demographic imperative" to describe the trend of increasing student diversity paired with the relatively unchanging make-up of teachers, with a disproportionate majority belonging to mainstream cultures. For many of these teachers, the way their cultures impact on their practice may be unseen, and the way they can successfully alter their practices to be more culturally responsive, unknown. Some teachers believe a lack of a definition about what multicultural education is leads to a fragmented approach, or completely puts teachers off incorporating culture into the classroom (Fong & Sheets, 2004).

Deficit theorising, when teachers view their students as being unteachable because of perceived deficiencies in their environments (Shields, Bishop, & Mazawi, 2005) is dangerous because of the powerful effect teacher expectations have on student achievement (Castagno & Brayboy, 2008). But just as classroom teachers are cautioned against deficit theorising about their students, educational professionals and researchers should avoid deficit theorising about classroom teachers (Lowenstein, 2009). Parallel to solutions proposed for use with students in school settings, teacher training can be designed to recognise and enable teachers to capitalise on the resources they already have. A study by DeJaeghere and Zhang (2008) found that participation in "ongoing and meaningful professional development" improves teachers' confidence about their cultural competency (p. 266). However, Maddahian, Stern, and Chen (2006) showed that professional development can influence outcomes but may fail to close the achievement gaps or even fail at preventing them from getting bigger. This highlights the importance of not merely providing professional development but evaluating programme effectiveness and using the findings to inform the design and selection of future programmes.

Sleeter (2011) claims there is a lack of studies that evaluate the effectiveness of professional development programmes that aim to equip teachers with these skills. Most professional development has been based on theoretical arguments and culturally-centred values rather than evidence-based research (Sleeter, 2011). One criticism is that evaluations of professional development normally ask the teachers for their opinions of a course's usefulness at its conclusion but do not assess their learning, the strength of implementation, or the impact of strategy implementation on student outcomes which is the ultimate goal (Meyer, 2011). This is beginning to change though, with greater emphasis on accountability which demands evidence-based practice. Meyer discusses the difficulties of evaluating professional development, including the way teachers' prior knowledge, skills and attitudes mediate their learning during a course and the impossibility of using robust experimental designs in school settings.

One example of an evaluation of a professional development programme that includes impact on student achievement is that of *Te Kotahitanga*, a national project seeking to increase Māori student achievement (Savage, Hindle, Meyer, Hynds, Penetito, & Sleeter, 2011). The evaluation included classroom observations, individual interviews and focus groups with students, teachers and whānau, and data on student achievement, behaviour and attitudes (Meyer, 2011). A tool named “The Effective Teaching Profile” (ETP) was used to assess teacher practice during observations (Savage et al., 2011). The effectiveness of *Te Kotahitanga* training was demonstrated by participants’ higher implementation of the ETP compared to control teachers, and changes to their practice as reported by Māori students (Savage et al., 2011). This research on *Te Kotahitanga* is not reviewed in this article as it was conducted at the secondary school level only.

Objectives

The purpose of this mixed-methods systematic review is to gather recent research on professional development programmes for culturally responsive primary teaching, weigh up the evidence supporting each programme through careful analysis, and to provide a resource which can be used by educators to inform their decision-making in the area of professional development design and selection.

Definition

Incorporating students’ cultures into classrooms can be defined in many ways, as culture can encompass an infinite number of constructs. For the purpose of determining which articles to include in this systematic review, training to incorporate students’ cultures in the classroom and learning experiences was defined as professional development designed to enable students to “safely bring who they are and what they know into the learning relationship, and where what students know, and who they are, forms the foundations of interaction patterns in the classroom – in short, where ‘culture counts’” (Bishop & Glynn, 1999, pp. 165-166). This definition allowed a range of studies to be reviewed, including comprehensive professional development for specific subject areas.

METHODS

Search strategy

Four databases were systematically searched for relevant literature published between 2004 and 2012. The databases were: ProQuest, Education Research Complete, ERIC, and A+. The initial search terms “cultur*”, “primary school”, “elementary school”, “classroom” and “professional learning and development” yielded some results but refinements to “professional development”, “professional learning”, “teacher education”, “multicultural teacher education”, “culturally responsive” and “culturally relevant” located more pertinent studies. Searches were limited to peer-reviewed, scholarly journals and searches with the first set of terms were further narrowed by excluding irrelevant subjects and journals. From the database searches, 258 articles were found. The titles and abstracts were reviewed to ascertain whether they met the

inclusion criteria. To be included in the review, studies had to be primary school research investigating ways of increasing teachers' incorporation of students' cultures in the classroom, in mainstream primary (including intermediate and middle schools) school settings, and reported in English. Those that were reviews of studies (e.g., Castagno & Brayboy, 2008), syntheses of reviews (e.g. Guskey & Yoon, 2009), theoretical discussions (Lowenstein, 2009), postgraduate tertiary courses (e.g. Alfaro & Quezada, 2010; Dantas, 2007) or which did not include an adequate description of the professional development programme (e.g., Patton, 2011; Perez, Holmes, Miller, & Fanning, 2012) were excluded. The reference lists of highly relevant articles were examined and searches for specific articles were conducted by typing the titles into Victoria University's search engine, Te Waharoa. Local organisations offering professional learning and development, Accent Learning and Te Toi Tupu, were emailed to check if they had any research published, but this process did not lead to any extra studies being included. Eight articles met all of the inclusion criteria.

Data extraction

The eight studies are summarised in Table 1 according to participant samples and settings, description of professional development (including timeframe), study design and phases included, validity and reliability, and themes and findings. Other study characteristics were also extracted including aims, who delivered the training, how teachers were recruited, implementation, fidelity, and feasibility/social validity. Below is an overview of each article.

Table 1 TABLE OF EVIDENCE

Professional development for teachers to incorporate students' cultures into their learning opportunities

CITATION	PARTICIPANTS AND SETTING	DESCRIPTION OF TRAINING	STUDY DESIGN	VALIDITY AND RELIABILITY	THEMES AND FINDINGS
Allen, Taleni, & Robertson (2009)	5 Pākehā teachers: 3 primary, 2 secondary working with Pasifika students in Canterbury, NZ	The University of Canterbury Education Plus Pasifika Initiative. Teachers spend 10 days in Samoa living with a local family.	Qualitative study. Data collected via semi-structured interviews, surveys and personal journals.	Data triangulation. Low inference indicators increases interpretive validity. Social desirability a threat.	Teachers self-reported increased student engagement, parent approaches, insight and appreciation of difficulties.
Fickel (2005)	37 elementary and middle school teachers and teacher aides from four high-needs rural and urban areas, working with Native American students in Alaska.	Teachers spent time in a rural village in Alaska, where native Alaskans taught them about indigenous ways of knowing and learning.	Qualitative case study including naturalistic inquiry, surveys during and at end, field notes, interviews following the course. Researcher was participant-observer.	Four-year study provided validity through extended fieldwork. Differential selection a threat to validity as participants self-selected for training, then those most involved selected for follow-up.	Teachers self-reported increased knowledge of subject content and cultural competency.

CITATION	PARTICIPANTS AND SETTING	DESCRIPTION OF TRAINING	STUDY DESIGN	VALIDITY AND RELIABILITY	THEMES AND FINDINGS
Hamm et al. (2010)	5-7 grade teachers in 9 schools in 4 small rural schools Northern Plains state of US, schools chosen for low SES and achievement. 165 students.	Meetings, course, online modules covering development, cognition, motivation, classroom dynamics and management, and video-conferences, 27 hours total training.	Student adjustment data collected pre, during and post-intervention.	Matched control schools as comparison. Observations were used to gauge fidelity of implementation. Independent observers.	Intervention students improved on all measures, including better grades. Native Americans showed greater improvements than White students.
McIntyre, Kyle, Chen, Muñoz, & Beldon (2010)	23 teachers from kindergarten to upper elementary and 50 students of 7 teachers who fully implemented model. Large, urban school in Midwest US.	50 hours of training over 18 months. Eight components: preparation, building background, comprehensible input, strategies, interaction, practice/application, lesson delivery, and review/assessment.	Mixed methods. Pre and post-intervention observations scoring teachers using a sheltered instruction model called SIOP. Reading section of Predictive Assessment Scales (PAS) Test to measure student achievement.	Control students. Observations conducted by assistant independent of PD facilitation. Researchers also collected data to get inter-rater reliability.	All teachers scored high post-intervention on the rubric, most across all components and some substantially. Less than a third of teachers fully implemented model. Student learning between intervention and controls reached significance in a paired t-test.

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CITATION	PARTICIPANTS AND SETTING	DESCRIPTION OF TRAINING	STUDY DESIGN	VALIDITY AND RELIABILITY	THEMES AND FINDINGS
Melchior (2011)	Two primary teachers of culturally diverse 5-7 year-olds at an inner-city school in Wellington, NZ.	Used experiential learning approach, including modelling, team-teaching and observations, and educultural concepts to teach pedagogy to teachers over 2 years.	Qualitative case study with two teachers. Data collected via semi-structured interviews, observations and journal entries.	Professional development delivered by researcher, increasing chances of researcher bias. Extensive timeframe enhances validity. Data triangulation.	Both teachers reported confidence to teach dance to students and pedagogy to colleagues, and that dance was a useful tool for language development. Students demonstrated science learning through dance.
Phillips, McNaughton, & MacDonald (2004)	72 primary teachers and 344 5-6 year-olds from 12 schools with highest proportions of Māori and Pasifika students, in two areas of Auckland.	Ten half days over 20 weeks, with assignments to do between sessions. Groupwork to assist teachers to make refinements to classroom literacy programmes.	Quasi-experimental design. Longitudinal and mixed methods.	Schools with similar demographics were used as controls. Some non-intervention students were in the same classes as intervention students, making contamination a threat to validity.	Intervention students made faster progress than control students and achievement higher levels on a range of measures.
Psalti (2007)	70 teachers, 41 primary, 29 secondary, in 5 groups. Set in Northern Greece for teachers working with culturally diverse students.	Three modules, based on ASK (awareness, skills and sensitivity and knowledge). Eight 6-hr sessions, total 48 hours, between Feb and May 2003.	Teachers evaluated before and after training programme – not described as qualitative or quantitative. Suspect it is mixed methods.	Did not measure change in behaviour or change in student achievement.	Teacher feedback suggests objectives were met, knowledge gained, interest and effectiveness. Teachers voiced disappointment at lack of practical training.

CITATION	PARTICIPANTS AND SETTING	DESCRIPTION OF TRAINING	STUDY DESIGN	VALIDITY AND RELIABILITY	THEMES AND FINDINGS
Zozakiewicz & Rodriguez (2007)	20 elementary and middle school maths and science teachers of grades 4-6 grade, including special education, bilingual and general teachers. In the US Southwest.	Collaboration between university, schools and pre-service teachers. Teacher input used to create a programme which involved two-week course, monthly meetings, and an annual one-day workshop.	Teacher and student interviews, focus groups at beginning and end of each year. Videos of meetings, surveys, transcripts, assessments, lesson activities, field notes and regional documents collected. Analysed using ethnographic approach.	Regions selected partially on teacher commitment. Three years allowed for extensive fieldwork.	17 of 20 teachers showed positive change. Capturing impact on student achievement is planned for the future of the project.

OVERVIEW OF ARTICLES

The first study reviewed was Allen et al. (2009) who sought to address the research gap for professional development for teachers of Pasifika students in New Zealand. The aim of the initiative was to “help teachers clarify their beliefs and attitudes towards other cultures” (Allen et al., 2009, p. 52) to enable them to meet the needs of their Pasifika students more effectively. Three primary teachers, whose classes comprised 20-30% Pasifika students, and two secondary school teachers participated. The professional development involved lessons in the Samoan language and culture, then a 10-day trip to Samoa where the teachers were hosted by local families on the island of Savaii and spent their time engaging in activities in the community and schools. Meetings with other teachers in the group were scheduled to provide opportunities for learning and reflection. Data collection methods included a pre-trip survey, journal entries, and semi-structured focus group interviews, including a follow-up five weeks after the trip. The participants reported increased confidence in meeting the needs of their Samoan students and deeper understandings of their individual needs. They reported that their experiences had challenged previously held stereotypes, for example, that Pasifika students prefer group learning. The study did not attempt to give teachers strategies for incorporating their students’ cultures into their classes, but set out to stimulate their thinking. Sleeter (2011) describes this type of professional development as repositioning the teachers as learners seeking knowledge from their students. The intention of the researchers is to contact the teachers in the future to assess the long-term impacts of the study.

Another study which involved teachers learning in a cultural environment different to their own is by Fickel (2005). This was a qualitative ethnographic case study conducted over four years. The training aimed to enhance both primary and secondary social studies teachers’ knowledge of content and their skills to deliver culturally responsive lessons. The training was designed to meet Alaska’s unique guidelines for culturally responsive teaching and addresses a guideline which suggests that teachers experience first-hand Native Alaskan teaching from elders. The researcher was a participant-observer and attended the ten training days prior to the trip each summer over four years. The participants were self-selected and motivated by perceived knowledge deficits. The data collected consisted of field notes, informal interviews, conversations, surveys and reflective essays. Sixteen participants were chosen for follow-up interviews because of their high levels of involvement in the professional development. Teachers reported several ways the training had changed their practices. They were: investing more time and energy getting to know their students on an individual basis; incorporating talking circles into the class; inviting parents, grandparents, and elders into school to share their knowledge, thus making a connection with the community; finding ways to develop their students’ sense of self and others; interpreting student behaviour in a more positive way; and utilising increased subject knowledge. One teacher did not give examples of changed practice, but she was from the village and said it validated what she already knew and did.

The third study reviewed was by Hamm et al. (2010) who investigated the impact of professional development in rural school settings in the United

States of America (US). Employing a randomised controlled design, the effect of teachers' professional development on diverse students' social, behavioural and academic adjustment was evaluated. The objectives of the programme's five components were to assist teachers in creating supportive climates, increase teachers' awareness of how climate affects students' development, increase academic engagement (including strategies to help teachers be more responsive to diverse learners), improve behaviour management (including relationship building), and manage social dynamics more effectively. Compared to students at a control school, students made gains in achievement and either maintained or improved their perceptions of schools compared with the students at control schools whose perceptions worsened.

Another US study reviewed was an 18-month project by McIntyre et al. (2010). They investigated the impact of a professional development course on teaching a sheltered instruction model of literacy called SIOP to English language learners. The training consisted of classroom practice, reflection and analysis with colleagues over 11 sessions, totalling over 50 hours. It had eight components: preparation, building background, comprehensible input, strategies, interaction, practice/application, lesson delivery, and review/assessment. The participants were 23 teachers who taught kindergarten to upper elementary in an urban area. All teachers scored higher on the rubric after completing the training but less than a third of the teachers implemented the model completely. The researchers believed that this was because they had been unsuccessful in building supportive relationships and because teachers' meetings with other colleagues in the programme were too infrequent, hindering the creation of a learning community. The impact of the professional development on student achievement was assessed a year after the course by comparing the reading test scores of 50 students, whose teachers performed well and fully implemented the model, with 59 matched control students at another school. The test was the reading section of the PAS Test (which is administered to all students three times a year) and when multiple raters calculated the impact on student achievement, their scores matched 93% of the time, providing high inter-rater reliability. The students of teachers who fully implemented the model showed increased achievement, demonstrating significance in a paired t-test.

A New Zealand-based two-year-long professional development programme to incorporate culturally responsive dance pedagogy into the primary classroom (Melchior, 2011) was the fifth study reviewed. Two teachers were taught dance through experiential learning which encompassed "planning, observation, modelling, team teaching and critical reflection" (p. 127) and drew on Macfarlane's educultural concepts of whanaungatanga (building relationships), rangatiratanga (representing teacher effectiveness), manaakitanga (caring), kotahitanga (bonding), and pumanauratanga (the climate set by attitudes in the environment). The researcher gathered evidence through semi-structured interviews, journal entries, film clips and interviews. Teacher, student and researcher perspectives were used to triangulate the data. A principal seeking dance education for his staff approached the researcher/dance teacher and two of the school's teachers volunteered to do the programme then teach their colleagues. The teachers' students were culturally diverse 5-7 year-olds with a variety of learning needs. As a result of the professional development, the teachers felt confident and enthusiastic to

both incorporate dance into their own classes and to share their dance teaching skills with their colleagues. The teachers described ways that they used dance as a literacy tool and claimed it was particularly useful for children with English as a second language. The professional development was considered successful because of the researcher's observation of their engagement in the dance activities, student quotes and the teacher reports of students' improved group work.

Phillips et al. (2004) conducted a quasi-experimental study on professional development designed to change teachers' perceptions and practices to being more co-constructivist, with a focus on the features of literacy activities and methods of participation. Twelve low decile schools in two Auckland communities with high numbers of Māori and Pasifika students participated in the study. Seventy three teachers representing a range of ethnic backgrounds and teaching experience partook in the training, which involved working in teams and consisted of 10 half-day sessions over 20 weeks. Baselines were collected from a group of 157 girls and 186 boys aged 5.0 – 6.0 years. Of these, 108 children who were aged 5.0 years old were in the intervention group, while 135 5.6 year-olds were in the non-intervention group. The achievement data of children who were already 6 years old at the commencement of the study provided a baseline of performance before the intervention was implemented. The children in the intervention group made greater gains across a range of literacy measures compared to matched control students.

The seventh study reviewed (Psalti, 2007) was a pilot to investigate whether the ASK framework was an effective model for professional development for school psychologists to deliver to teachers in Northern Greece. Participants were primary and secondary teachers of culturally and linguistically diverse students from three cities, who attended the training in five separate groups. The classroom-style training was delivered in eight 6-hour sessions over four months. Teachers' expectations prior to the commencement of the training programme and an evaluation at the end of the programme were collected. The majority of teachers discussed the importance of participating in the training and 81 percent reported that their expectations were met. Satisfaction for acquiring practical knowledge was low; however, the researchers expected this as it was one phase of a larger project. Most teachers claimed to be more confident in approaching their culturally and linguistically diverse students, managing their difficulties, fostering equality, and developing their students' essential abilities.

Zozakiewicz and Rodriguez (2007) investigated how the two-year Maxima professional development programme, which was designed to increase "inquiry-based, gender inclusive and culturally relevant learning environments" (p. 397), impacted teachers and their practices in California. A sociotransformative constructivist framework underpinned the training which had three principles: responsive and explicit instruction; support that is sustained and on-site; and reflexivity and collaboration. The training consisted of two full weeks that the teachers helped to design, monthly meetings with colleagues, and an annual one-day workshop. Support offered included mentoring, ideas, observations if requested, and even resources for classroom activities. The participants included some preservice teachers and all inservice 4-6 grade maths and science teachers (special, general, and bilingual teachers)

in a district chosen for the level of commitment the teachers expressed for the programme and their ability to monitor the students through middle school. Forty 4th grade female students were followed through to 6th grade and had Maxima teachers throughout the project. The data collection consisted of interviews with teacher and student participants, focus groups, surveys and observations. All teachers identified the modelling as a crucial component of the training. Seventy percent of teachers reported feeling that the project staff were responsive to their needs and 17 out of 20 teachers demonstrated changed teaching practice. Future plans include gaining student perspectives on the new strategies.

RESULTS

The Table of Evidence summarises the studies according to sample and setting, description of training, study design and phases included, validity and reliability, and themes. The number of participants in the studies varied widely from two (Melchior, 2011) to 72 (Phillips et al., 2004). Three of the studies are set in New Zealand, four in the US, and one in Greece. All of the training programmes are comprehensive, with a range of components, and occurring over a period of time, ranging from ten days (Allen et al., 2009; Fickel, 2005) to three years (Zozakiewicz & Rodriguez, 2007).

Four of the reviewed studies (Allen et al., 2009; Fickel, 2005; Melchior, 2011; Zozakiewicz & Rodriguez, 2007) were qualitative, one (Hamm et al., 2010) was quantitative, and two (McIntyre et al., 2010; Phillips et al., 2004) were mixed methods. The other study (Psalti, 2007) did not specify, though the mention of statistical analysis and the types of answers provided indicate a mixed methods design.

Some of the study designs incorporated features that strengthened the validity of the research. For example, Hamm et al. (2010), Phillips et al. (2004), McIntyre et al., (2010) and Zozakiewicz and Rodriguez (2007) used sampling methods that included all teachers in a selected area(s) or school(s), although in the study by Zozakiewicz and Rodriguez (2007) the motivation of the teachers was a factor in the particular area being selected. Other strengthening features included data triangulation, independent observers, low inference indicators and extensive fieldwork. Researcher bias and differential selection were some of the threats to validity identified. Reliability measures included obtaining inter-rater reliability.

Three of the studies (Allen et al., 2009; Fickel, 2005; Melchior, 2011) reported increased teacher efficacy for working with culturally diverse learners and making connections with their families. Six studies reported changes in teacher practice and positive changes in students' performance. These improvements occurred in literacy (Phillips et al., 2004), social studies (Fickel, 2005), reading (McIntyre et al., 2010), science and maths (Zozakiewicz & Rodriguez, 2007), and in general (Allen et al., 2009; Hamm et al.; 2010, Melchior, 2011).

DISCUSSION

This systematic search located eight studies investigating professional development for the purpose of incorporating students' cultures into their learning opportunities. Data extraction revealed that only half the studies assessed the effect of the training on teacher practice and student outcomes. Summaries also revealed methodological features which threaten the validity of the findings. Two distinct styles of professional development, those with lessons implicit in experiences or strategies taught explicitly, emerged. These findings, the similarities and differences with regard to style and format of training, aims of training, subjects targeted, feasibility, changes to teacher practices, effectiveness of training, ethical considerations and limitations are discussed.

Lack of studies that assess each step

Only three of the reviewed studies (Hamm et al., 2010; McIntyre et al., 2010; Phillips et al., 2004) measured the impact of the professional development on student achievement. In all of these studies, inclusion of students' cultures was embedded in a comprehensive professional development framework, making it difficult to ascertain which parts of the training were responsible for which outcomes (and if all these components were necessary). Other studies which had cultural responsiveness as a sole focus of the professional development, such as Melchior (2011), Fickel (2005) and Allen et al. (2009), used anecdotal teacher reports of students being more engaged. While still valuable, bias is an obvious threat to this method of assessment. These studies do, however, offer teacher reports regarding their own increased efficacy. While teacher efficacy is a good predictor of student achievement, social desirability could bias their reporting. In addition, even with increased efficacy, other constraints such as lack of time and having to conform to school/national policies may prevent using strategies in areas such as assessment.

The other two studies did not investigate any kind of effect on students. Psalti's (2007) study only evaluated teachers' expectations prior to the course and their level of satisfaction immediately after it finished. One finding was that teachers were disappointed at this lack of guidance around translating the skills to classroom practice. It is important to highlight that Psalti's (2007) research is part of a larger study which is likely to assess implementation and student outcomes in a later phase.

Methodological issues

Participant samples may have made some training programmes look more effective than they would have been with a sample representative of all teachers in a region. For example, in Fickel (2005) most of the 37 teachers who participated in the training over the four years of the study were self-selected. This was also the case in Melchior's (2011) study with the two teachers who were taught culturally responsive dance pedagogy. Furthermore, in Fickel's (2005) study, the participating teachers belonged to a Professional Development School, and the participants in the follow-up stage were selected because of their high levels of participation. This may have meant these teachers differed in significant ways from other teachers; for example, they may

have been more motivated than the general teaching population. This method of selection means that teachers who did not find the training helpful or were not motivated to implement it were excluded, increasing the likelihood that the success of the professional development programme is inflated.

Some of the studies had a high risk of researcher bias. For example, in Melchior (2011) the researcher was also the professional development educator. Furthermore, the programme was only subjectively assessed by people within the programme – the researchers or the teachers, both of whom are likely to be biased due to their vested interest in the programme's success.

In Phillips et al.'s (2004) study, contamination may have affected the results as the children in the non-intervention group were in the same classes as children in the intervention group. Therefore, for the study to be carried out as intended, the teachers had to switch between using strategies taught for intervention children and teaching other children as they usually would.

Lessons implicit in experiences or strategies taught explicitly

There are two contrasting styles of professional development in the review studies: those using experiential learning opportunities to guide teacher-participants to new understandings, and those teaching strategies explicitly. Two qualitative studies based on experiential learning opportunities are Allen et al. (2009) and Fickel (2005). These programmes do not involve specific techniques for the teachers to use in their classrooms – the teachers learnt through experiences immersed in unfamiliar cultures. This style of learning dictated the method of reporting and assessing. As there were no predetermined lessons the teachers were meant to discover, they self-reported their new understandings and how they changed their practice through reflections and journal entries. This is in contrast to McIntyre et al. (2010) and Phillips et al. (2004) where the professional development prescribed more specific ways of teaching, and implementation fidelity was rigorously assessed using a customized observation tool. Sleeter (2011) also discusses this distinction between the two types of professional development. She calls programmes that prescribe strategies as technical-rational models and ones that do not, co-construction models, or “professional development that repositions teacher-student relationships” (p. 17).

Professional development reflecting principles being taught

Unsurprisingly, many professional development programmes utilised the techniques that the educators sought to pass on to their teacher-students to use with their primary students. For example, Phillips et al. (2004) talked of using the strengths of the teacher-participants and encouraging them to bring with them questions and scenarios from their practice, bringing the teachers' worlds into the professional development classroom. Zozakiewicz and Rodriguez (2007) used state requirements and teacher-participant input to design their training programme, which ensured that it was relevant and would have helped to increase ownership and commitment from the teachers, while also working within teacher constraints. In addition, the programme involved modelling the sociotransformative constructivism they wanted the teachers to adopt. Allen et al. (2009), Fickel (2005), and Melchior (2011) allowed room for teachers to discover meaning through their own experiences, mirroring constructivist approaches intended for school classrooms. All these studies reported positive

outcomes for teachers and/or students. In contrast, McIntyre et al. (2010) reported low teacher implementation and attributed this to weak relationship building and infrequent contact. Both of these factors would be expected to impact adversely on school-aged students in a classroom too.

Style and format of professional development

The training studied by Allen et al. (2009) and Fickel (2005) involved teachers travelling to another place to experience their students' cultures first-hand "in order to learn through culture, not merely about culture" (Fickel, 2005, p. 499). Melchior (2011) also used experiential learning, through dance. The teachers were taught dance to allow them to teach it to their students and colleagues. The majority of studies, however, were delivered face-to-face in workshop or classroom-style settings (McIntyre et al., 2010; Phillips et al., 2004; Psalti, 2007; Zozakiewicz & Rodriguez, 2007). Hamm and colleagues' (2010) study was a mix of workshops and online modules. A combination of hands-on learning, discussion with colleagues and reflection was used in some studies, such as McIntyre et al. (2010), Fickel (2005) and Allen et al. (2009).

Additionally, the professional development programmes in the studies all occurred over a period of time, reflecting an acknowledgement that one-off courses have minimal evidence of being effective (Guskey & Yoon, 2009).

Aims and subject areas

The studies reviewed had varying aims and targeted a range of subject areas. For example, Fickel (2005) focused on social studies teaching and content knowledge, Zozakiewicz and Rodriguez (2007) on teaching science and maths, and McIntyre et al. (2010) on reading, and Phillips and colleagues (2004) sought to improve teachers' abilities to teach literacy. The other four studies were designed to improve teachers' culturally responsive teaching ability generally.

Feasibility

The expense of some of the programmes, for example, Allen et al. (2009) and Fickel (2005), which involved trips away, could make them difficult to use on a wide scale. In others, for example, the professional development studied by Melchior (2011), only two teachers were taught over two years; therefore, it is hard to imagine it being delivered to a number of teachers. However, it did equip the two teachers to teach their colleagues and so it may be able to reach more teachers through a snowball-type delivery.

Changes to teacher beliefs and practices

The teachers in Fickel's (2005) and Allen et al.'s (2009) studies reported gaining insight into the significance of connections between home and school and that the training had provided them with methods for facilitating this. The teachers in Allen et al.'s (2009) study reported having the confidence to approach parents and claimed that parents began to approach the teachers also.

As a result of seeing oneself differently, Fickel (2005) reports that the teachers in her study were more inclined to see the strengths of their students. This extinguished deficit theorising. Very similar reports were made in Allen and colleagues' (2009) study, whereby behaviour previously perceived as

undesirable was able to be seen in context, understood and even appreciated. Phillips et al. (2004) explicitly stated at the outset that the training was designed to help teachers reject deficit views.

Resistance to change

Three teachers in Zozakiewicz and Rodriguez's (2007) research were resistant to the new strategies and did not change their practices in significant ways. The researchers reported that these teachers focused on the subject content of the training, believing that culture was irrelevant. Poor teacher implementation in McIntyre et al. (2010) may have been a result of teacher resistance, due to perceived impracticability. The professional development programmes which allowed the teachers the freedom to construct whatever learning they wanted did not report any resistance from the teachers.

Effectiveness of training

The purpose of this systematic review was to answer the question: "What training is most effective for primary teachers to incorporate their students' cultures into their learning opportunities?" Effectiveness is defined as teachers' implementation of learning gained from their participation in the professional development, and as a result of this application, an increase in their students' learning. As discussed, only three studies attempted to measure effectiveness in this way. Of these three studies, all showed positive outcomes for students. However, McIntyre and colleagues (2010) found many teachers did not implement strategies from the professional development, indicating that improvements would be needed before this training could be considered effective. The research conducted by Phillips et al. (2004), Zozakiewicz and Rodriguez (2007) and Hamm et al. (2010) measured all components of effectiveness, showed high levels of teacher implementation, and increased student achievement. As the studies had different aims, and were conducted with different age groups, various subject areas, in different cultural settings, it is not appropriate to try to determine which of these is most effective. The studies by Allen et al. (2009), Fickel (2005) and Melchior (2011) offer valuable insights into the changes in teachers' attitudes in experiential learning. These studies could inform future research which seeks to measure the impact of professional development on teacher practice and student learning in an objective way.

Ethical considerations

Many of the studies did not explicitly address ethical issues, but they were implicitly evident in the decisions that were made. For example, the ethical principle of equality is integral in rationales for carrying out this type of research. Fickel (2005) used pseudonyms to prevent participants from being identified and no names were attached to responses in the other studies. In an excluded study (Patton, 2011) teacher-participants spoke of their inability to apply what they were being taught about using alternative assessments because of the policies governing their practice. This may have been an unreported issue in some of the reviewed studies, which raises questions around the ethics of creating dissonance between teachers' beliefs and their practices that they cannot resolve.

Limitations

This study searched only published research in peer-reviewed journals; therefore, valuable findings in relevant government documents or in non-refereed journals may have been missed. Furthermore, only four databases were searched meaning that relevant studies in other databases may have been unintentionally excluded.

A blind independent reviewer was not used to check the accuracy of the search; therefore researcher bias, where the “researchers ‘find’ what they want to find” (Johnson & Christensen, 2012, p. 264) is a threat to validity. However, the systematic process should have minimised this threat.

A broad definition was used to gain an adequate number of studies, yet this was a limitation in that it resulted in heterogeneous studies, which were not easily comparable.

IMPLICATIONS FOR TEACHERS

This review has implications for both teacher educators designing and running professional development for culturally responsive teaching and the teachers who attend these courses. In order to determine the effectiveness of professional learning and development, ways to assess changes in teachers’ thinking and classroom behaviour and student outcomes need to be identified and utilised. Appropriately collected data may be able to contribute to an evidence base to inform the design of effective courses in the future.

Teachers attending professional learning and development which lack these kinds of evaluation measures might like to devise methods for monitoring their own learning and teaching practice. Reflecting on how they are transferring their learning from professional development courses into their classrooms may help teachers get the most out of their training and determine whether the training was a valuable use of their time.

CONCLUSION

This systematic review examined eight studies that involved professional development to incorporate students’ cultures into their learning opportunities. All of the studies reported positive outcomes, yet the variability in study designs and specific aims added to the complexity of comparing studies. Only three studies assessed impact on student achievement, and all of these studies showed an increase in student achievement; however, methodological issues threaten the validity of these findings. The common characteristics identified reflect already known features of successful professional development, such as those that occur over a period of time, involve learning with others and tap into prior knowledge (Guskey & Yoon, 2009). Other common features, which are readily found in cultural competence training, included self-awareness and self-reflection. All of these training programmes resulted in positive outcomes but without having objective measures of impact on student achievement, it is difficult to determine which is the most beneficial, cost-effective and feasible. More research needs to be done on professional development that assesses all three phases: the professional development (including teacher satisfaction), teacher implementation (including social validity), and student outcomes (objective measure and student perceptions).

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ABOUT THE AUTHOR

HEATHER SMYTH

Victoria University of Wellington



Heather is a full-time educational psychology student with a background in teaching English as a second language and recruitment. She conducted this systematic review as part of her Masters in Educational Psychology degree and is currently enrolled in the educational psychology internship programme.

Email: hcsmyth@gmail.com