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Abstract

This paper aims to address the importance of, and difference between, the concepts of 'teacher quality' and 'quality teaching', based on students' academic performances within the Programme for International Student Assessment test (PISA) and the National Assessment Program of Literacy and Numeracy (NAPLAN). Comparisons will then be made between countries to determine the impact of 'teacher quality' and 'quality teaching' upon the success of student outcomes based on the rankings of PISA and NAPLAN. The paper will also address what changes have been incorporated among the selected countries to improve their international education ranking.

Keywords

teacher quality; quality teaching; academic performance; PISA; NAPLAN; Singapore; Colombia; Australia



The importance of ‘teacher quality’ and ‘quality teaching’ on academic performance

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This paper aims to address the importance of, and difference between, the concepts of ‘teacher quality’ and ‘quality teaching’, based on students’ academic performances within the Programme for International Student Assessment test (PISA) and the National Assessment Program of Literacy and Numeracy (NAPLAN). Comparisons will then be made between countries to determine the impact of ‘teacher quality’ and ‘quality teaching’ upon the success of student outcomes based on the rankings of PISA and NAPLAN. The paper will also address what changes have been incorporated among the selected countries to improve their international education ranking.

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Introduction

Teacher quality and the quality of teaching are the most powerful elements in education, though both have been under scrutiny and ambiguously defined for many years (Adams et al., 2015). Despite the emphasis placed on teacher quality and quality teaching by governments, parents and students, often both terms are intertwined and/or used interchangeably. Essentially, the attributes of a quality teacher are based in a personal approach, whereas quality teaching refers to the pedagogy involved. This paper aims to define the attributes of ‘teacher quality’ and ‘quality teaching’, addressing both terms as described by the Organisation for Economic Co-operation and Development (OECD) Director of Education and other OECD ministers of education and research. The article will further explore how ‘teacher quality’ and ‘quality teaching’ impacts students’ academic performance and overall success. The first part of this paper will explore what makes a quality teacher, ongoing professional learning, quality undergraduate training, personal attributes, high expectations of students, effective classroom management and 21st century pedagogy. The second part of this paper will investigate the notion of quality teaching, focusing on the experiences of Australia, Singapore and Colombia.

What makes a teacher ‘quality’?

The demands on schools and teachers are becoming more complex (Van Zandt Allen, 2013), though their roles are central for preparing students to acquire the sophisticated skills that are required to contribute to a knowledge-based society (Rizwan & Khan,



2015). Teachers of the 21st century are expected to deal with “different languages and student backgrounds, to be sensitive to all cultures and gender issues, to respond effectively to disadvantaged students, to effectively use new technologies, to successfully teach learners of varied needs and learning styles and to keep up to date with the rapidly changing fields of knowledge, skills and pedagogy” (OECD, 2005, p. 2). Thus, developing and sustaining a quality teacher in the 21st century is proving to be a challenge (OECD, 2005). The quality of a teacher and their teachings are the most significant factors in influencing and improving students’ academic performance and overall success (OECD, 2005). However, almost all OECD countries have reported concerns regarding a ‘shortfall’ in quality teachers (OECD, 2005). The OECD recognises that the quality of teaching is an important focus, but that teacher quality is comprised of many aspects that are not captured by factors such as qualifications and tests of academic abilities (Naylor & Sayed, 2014; Zammit et al., 2007). Teacher quality is often indirectly defined by the pressure that is placed on students’ outcomes, or through the presence of professional attributes, including skills, knowledge, qualifications and professional learning (Zammit et al., 2007). Such definitions highlight some important aspects of quality teachers, yet inadvertently narrowly define ‘teacher quality’ itself. Education now needs to equip young students with the capacity for flexible thinking, the ability to efficiently solve problems and respond to and thrive within a constantly changing society (NSW Department of Education and Communities (NSW DEC), 2015). This suggests, that the initial criteria for selection of teacher education and teaching employment needs to be applied to a high-quality standard. The definition also fails to measure key attributes of quality teachers, such as: the importance of the teachers’ attitude and characteristics, the impact of the teacher–student relationship, the importance of high expectations, the methods, actions and strategies implemented in the classroom, the teachers’ leadership and classroom management and organisation skills, and the ability to equip young students with the changing demands of modern education (Schleicher, 2011). Although research supports such attributes of teacher quality, the perception of a quality teacher is fundamentally determined by individual perceptions.

Professional learning

Effective learning starts with the teacher (Watkins, 2015). Thus, it is vital that teachers participate in ongoing professional learning, which can provide them with the ability to improve their skills, knowledge and strategies. Teachers who do not participate in ongoing professional learning do not improve such skills and, as a result, student learning suffers (Centre for Education Statistics and Evaluation, 2013). Ongoing professional learning builds on teachers’ skills and knowledge acquired through their university degree, as a single degree cannot provide the extensive range of learning experiences, knowledge and skills that are necessary to excel in the ever-changing fields of education and teaching (Mizell, 2010). Quality teachers continually evaluate their own learning and expand their professional learning on both an individual and a collegial level (AITSL, 2012, 2014). Continual professional learning advances teachers’ practices, techniques and strategies and enables them to apply any necessary changes within the curriculum. When quality teachers access ongoing professional learning throughout their career, student learning and achievement is positively impacted (OECD, 2005). Effective professional learning takes place



formally through staff meetings, seminars and workshops, as well as informally through conversations and collaboration with other practising teachers, to address any student learning challenges (Mizell, 2010). Continual informal professional learning plays a significant role in improving student outcomes as “the more an educator’s learning is shared and supported by others, the more quickly the culture of continuous improvement, collective responsibility, and high expectations for students and educator grows” (Killion, 2012, cited in AITSL, 2014, p. 2). Thus, ongoing professional learning is a vital attribute of a quality teacher, as the ultimate goal of all teachers and school leaders is to improve student outcomes. The absence of professional learning will limit a teacher’s ability to address and adapt to the challenges they face in improving student learning, engagement and wellbeing, with consequent negative effect on student learning achievement (AITSL, 2012). A quality teacher recognises the importance of learning in improving student outcomes and that professional learning encompasses formal, non-formal and informal learning practices (Davey & Tatnall, 2007).

Qualifications

Qualified teachers’ are vital for providing students with successful learning and academic success, as a knowledgeable and skilful teacher makes the greatest impact on students’ learning achievements (Centre for Education Statistics and Evaluation, 2013). A teaching degree that is nationally accredited can produce career-ready graduates who have extensive professional experience and strong industry links (University of Wollongong, 2016). A teacher’s qualification is made up of a wide range of essential attributes, including: “practical and theoretical elements of teaching; professional attributes and curriculum studies; strong knowledge and skills throughout all required fields; strong preparation and dedication to the teaching profession, the ability to effectively plan, implement and evaluate teaching and learning experiences and programs; classroom management and teaching strategies; the ability to teach students with diverse needs; and a commitment to on-going professional learning” (Curtin University, 2016). Although a qualification provides quality teachers with a strong foundation for teaching, quality teachers demonstrate professional attributes that go beyond a formal qualification (McArdle, 2010).

Personal attributes (characteristics and personality)

A quality teacher is made up of many qualities that enhance their teaching. Many become teachers due to the intrinsic benefits and satisfaction felt from helping young students (Shah et al., 2012). The characteristics of the individual teacher have accounted for the greatest variance in student achievement (Hattie, 2009, cited in Sautelle et al., 2015). However, every teacher is unique and what is considered a quality personal attribute can vary significantly among individuals. Nevertheless, a high-quality teacher has been suggested to possess distinct personal qualities of: openness to experience, motivation, intellectual stimulation, organisation and tolerance (White & Smith, 2012); conscientiousness, a teachers’ ability to organise, plan and create goal-directed learning; extraversion, a teacher’s ability to be social, warm, energetic and enthusiastic toward students, and agreeableness, a teacher’s tendency to be kind, cooperative and empathetic (Sautelle et al., 2015). Other personal attributes that arise are clear communicators, self-regulatory skills, resilience,



dedication to the students and compassion. Self-regulatory skills involve teachers managing their time and workload and effectively seeking and using feedback to adjust and improve their teaching. Resilience is also seen as a desirable quality of teachers, as it improves a teacher's capacity to persist in long-term teaching, given that teaching is regarded as a highly stressful occupation with a poor retention rate (Sautelle et al., 2015). From these observations, the characteristics of a quality teacher can include openness, motivation and stimulation, however, these can only be achieved if personality qualities such as being a clear communicator, resilience, dedication and compassion are present.

High expectations and teacher–student relationships

High expectations and positive teacher–student relationships are the most reliable drivers of high student achievement for all students (Lemov, 2013). The quality of teacher–student relationships affects students' social development, academic motivation and their engagement and willingness to learn (Liberante, 2012). Positive and supportive teacher–student relationships and high expectations “generate positive learning environments and social outcomes” (Keddie & Churchill, 2005, p. 211) among students. Teachers who set high expectations for all their students ultimately create positive and supportive teacher–student relationships, providing students with a “sense of belonging” and encouraging students to “participate cooperatively in classroom activities” (Hughes & Chen, 2011, p. 278). Students of teachers who set high aspirations for their students generally outperform students of teachers who set lower expectations (Kraft, 2012). When a positive teacher–student relationship is created, students thrive to meet the high expectations of the teacher, ultimately improving the students' academic performance and overall success. High expectations and positive teacher–student relationships benefit both the student and the teacher. They allow the teacher to understand each student's learning needs, helping teachers to tailor the learning to individual student needs.

Classroom management and organisation

Classroom management and organisation are essential in creating a positive learning environment where a “sense of belonging” (Hughes & Chen, 2011, p. 278) is established. Classroom management is the wide variety of skills and techniques that are used by teachers to keep students organised, focused, attentive, interested and on task. When classroom management skills are executed effectively, the teacher has minimised the behaviours that impede learning for other individuals and has maximised behaviours that enhance learning (NSW Department of Education and Training (NSW DET), 2003). A well-organised and managed classroom appears to diminish student confusion, frustration and disruptive behaviour, while increasing their ability to navigate the classroom independently, and promotes academically productive social interaction among students (Sautelle et al., 2015). Without proper classroom management, effective lessons cannot be achieved, with classroom management and organisation in the educational process being viewed as one of the most-important determinants of effective teaching and learning (El Warfali & Yusoff, 2014).



Demands of the 21st century

Education is concerned with the effort to promote ‘21st century skills’ for all students by emphasising life and career skills, learning and innovation skills and information, media and technology skills (Brusic & Shearer, 2014). Education in the 21st century is focused upon striving to encourage problem-solving skills, critical thinking, communication, collaboration and to respond to and thrive in a changing society (NSW DEC, 2015). Quality teachers are challenged to ensure they provide high-quality pedagogy that works within the world of contemporary students and to continue to upskill their own knowledge and skills. Education has moved from being teacher directed to student directed, with the emphasis on an inquiry learning approach. Thus, the teacher’s role is to pose questions, provide the tools and research methods and deliver subject content and guidance for problem solving in a collaborative learning environment (NSW DEC, 2015).

Achievement of student outcomes

High-quality teachers can have a profound, positive effect on students’ academic performance and success (Sautelle et al., 2015). Students’ academic performance is affected by teachers’ professional attributes and ongoing professional learning, qualifications, personal attributes of teachers, the setting of high expectations, teacher–student relationships, classroom management and organisation and the demands of education in the 21st century. A high-quality teacher strives to create a positive learning environment where strong teacher–student relationships are formed and high expectations are set. Teachers strive to provide the best education they can by ensuring that their own knowledge and skills are up to date and a well-organised learning environment is established. A quality teacher who demonstrates all the attributes listed above, provides their students with an environment in which to succeed academically.

What is quality teaching?

Teaching quality is the primary in-school influence on student engagement and outcomes (NSW DET, 2003). Quality teaching is pedagogy that focuses attention on the process through which knowledge is constructed, produced and critiqued. Producing high-quality teaching is of central focus to all OECD countries. Quality teaching entails three components in the NSW Quality Teaching Model (QTM): intellectual quality, quality learning environment and significance placed on student work (NSW DET, 2003). These qualities are fundamental components in producing strong student academic performance. Pedagogy that focuses on producing high levels of intellectual quality benefits students of all academic calibres. Teaching that produces high levels of intellectual quality allows students to develop a strong knowledge concept and perspective learning (Newmann, 2000). High intellectual quality, though, is only established if teachers themselves have a deep understanding of the knowledge they are addressing with their students. Although this can only be achieved if a quality learning environment is established, a quality learning environment that stimulates, collaborates and challenges students significantly enhances the performance and academic growth of students (Smith & Apple, n.d.). Student learning is benefitted when the learning environment provides high levels of



positive support. Quality teaching needs to focus on pedagogy that creates significance for students, where learning that has significance is learning that is meaningful and important to students. This is achieved by pedagogy that draws clear connections with students' prior knowledge and identities and with real-life contexts outside of the classroom (NSW DET, 2003). The experiences of Singapore, Australia and Colombia could be used to highlight what governments are trying to do in order to build relationships between quality teachers and quality teaching.

Singapore

Singapore's education system is among the most-highly regarded in the world, as Singaporean students score among the best in the world when it comes to results in international exams (OECD, 2015). The key to Singapore's success in education is their teachers, as "high performing systems are very careful how they recruit and select their teachers and how they train them" (Schleicher, 2012, 15:43). Each year, Singapore calculates the number of teachers that are required and only opens that many spots within their training programs. The teachers are recruited from the top one third of high school graduates, ensuring that high-quality teacher standards are maintained (National Center on Education and the Economy (NCEE), 2015). The education sector is committed to building teachers as a quality professional force, as the wealth of the nation lies in producing qualities in people (Ministry of Education, 2016). Singapore recognises that their future depends on the nation's ability to continually renew and regenerate leadership and citizenry from building up from the past, learning from the circumstances of the present and preparing for the challenges of the future (Ministry of Education, 2016). Thus, it is imperative that quality teaching is ingrained in all schools, as the people are regarded as the nation's most precious resource. Quality teaching is maintained as teachers are provided with a quality professional workforce, ongoing professional learning, and the resources and environment that are needed to produce quality teaching. Teachers must possess sound people-orientated skills, classroom management, teaching and learning strategies, be an effective mentor and role model, cater their teaching to all individuals and learning styles, create and sustain positive professional student–teacher and parent–teacher relationships and equip students to be good and useful citizens of Singapore (Ministry of Education, 2016).

Australia

Australia's education performance, based on international testing, has shown a steady decline over the past decade, although Australia is still situated in the top third in mathematics and science of all OECD countries (Coughlan, 2015). According to the OECD's PISA testing, one quarter of Australian Year 4 students do not meet the demands of reading proficiency and have remained static in mathematics (Pyne, 2014). High-achieving countries have stable and effective teacher education policies and mechanisms in place to ensure the quality of initial teacher entrants, programs and graduates. Australia's teacher education policies are currently well below high-achieving countries, as Australia is not ensuring that future teachers are recruited from the top 30% of the age cohort (Ingvarson et al., 2015). The federal government is implementing a range of reforms to improve the quality of teaching, to allow students to have access to the best teachers and an up-to-date and relevant curriculum



(Department of Education and Training (DET), 2016). One reform that has been implemented in Australia is the Literacy and Numeracy Test for Initial Teacher Education Students (DET, 2016). The test is utilised to ensure that all qualified primary education teachers have the knowledge required in literacy and numeracy. The federal government has also started to make many changes to strengthen and better prepare individuals starting their teaching career, by improving universities (NSW DEC, 2015): “the quality of an education system cannot exceed the quality of the teachers” (Schleicher, 2012, 15:38).

Colombia

Colombian education is ranked within the bottom half of OECD countries despite progress in the education sector. The Colombian government has initiated a ‘Going for Growth’ policy that is designed to prioritise and improve efficiency and equity in education (OECD, 2014). Despite education being compulsory from age five, on average only 65% of five-year-old children are enrolled in school. Most Colombian students begin their formal education at age seven, with 90% of students enrolled, meaning that most students only attend school for a period of seven years, whereas on average across OECD countries most students attend formal education for 13 years (OECD, 2014). The Colombian government has started to address challenges, such as expanding and improving equity, increasing quality and relevance, and making governance and finance more responsive (OECD, 2014). Due to the unsatisfactory results obtained by Colombian students in PISA testing, the Colombian government has focused upon teacher training issues, such as recruitment for pedagogical programmes and initial teacher preparation through universities, in order to strengthen the quality of teachers and student learning.

Conclusion

Although quality teaching refers to pedagogy, the standards of quality teaching, however, are directly related to the standards and qualities of the teacher (Rizwan & Khan, 2015). Teacher quality is vital in producing high-quality teaching. As explored at the beginning of this article, there are a number of elements that contribute to a quality teacher. Research supports some qualities, such as the importance of ongoing professional learning, qualifications and academic student achievement, while there are many other qualities which are determined by an individual’s personal opinions and experience (Zammit et al., 2007). Producing high-quality teachers and teaching is of central focus to all countries that comprise the OECD. The aspiration of the OECD is to help every learner, parent, teacher and policy maker understand that improving the standards and quality of education has no limits, and that improving all education systems is the key to a better and fairer society (OECD, 2005). Educational systems are measured by testing regimes such as NAPLAN and PISA. As Schleicher (2012) stated, “this is the first time we have a truly global scale of the quality of education” (0:23, cited in Coughlan, 2015). Such tests provide countries, rich or poor, access to comparing themselves against the world’s education leaders, to discover their strengths and weaknesses and to see what the long-term economic gains are from improved quality schooling (Coughlan, 2015). A successful education system, however, can only be developed by producing and sustaining high-quality teachers and teaching, as great educational systems attract great teachers (Schleicher, 2011).



Teacher quality is established by ongoing professional development and exchanging information and expertise among teachers and others (Schleicher, 2011). Effective educational systems improve teachers' job satisfaction and personal development, which widens their repertoire of pedagogical practices and improves their effectiveness (Schleicher, 2011): "the best performing systems, not simply improvement by national standards, increasingly become the yardstick for success. In a world that is indifferent to tradition and past reputations, unforgiving of frailty and ignorant of custom or practice, success will go to those individuals and countries which are swift to adapt, slow to complain and open to change" (OECD, n.d.). In all teaching environments 'teacher quality' and 'quality teaching' have a significant effect on students' learning, academic outcomes, classroom engagement and willingness to learn. Combined, these qualities are the most-powerful elements in education. Although both terms are closely intertwined, teacher quality essentially is based on an individual's personal approach whereas the quality of teaching refers to the pedagogy involved. Quality teaching can only occur as a result of a quality teacher and, thus, countries which have high rankings based on international standardised tests have employed effective teacher recruitment and training programmes. In order to sustain teacher quality, ongoing professional learning is the most vital route to gain new knowledge, skills and strategies.

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