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ORIGINAL ARTICLE

Assessing the productivity of schools through two "what works" inputs, *teacher quality* and *teacher effectiveness*

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Abstract This paper is a critique of the school education productivity evaluation and two research constructs germane to it, *teacher quality* and *teacher effectiveness*. The paper will argue that policy inceptions of *teacher quality* and *teacher effectiveness* proxy for the productive capacity of schools and more broadly, school systems. Student achievement scores as determined by high stakes testing are the school education outputs of policy significance in current times while inputs thought to matter are increasingly tapered towards the particular characteristics of classroom teachers, specifically their quality (usually credentials) and effectiveness (teaching behaviours). The paper finds that attributing school system success largely to teachers and their work, especially in terms of their classroom teaching practice(s), distorts the school education policy agenda so that evaluations of school productivity purely serve accountability purposes.

Keywords Teacher quality · Teacher effectiveness · Student achievement · Inputs–Outputs · Policy

1 Introduction

This paper engages with the notion of school education productivity evaluations and two terms that are synonymous with it, *teacher quality* and *teacher effectiveness*. The aim of the paper is to stress the often unstated link between research findings on *teacher quality, teacher effectiveness* and audit. The paper will assert that *teacher quality* and its proxy *teacher effectiveness* serve aspects of an audit agenda distorting how we think about matters relating to student achievement and the provision of a quality school education for all.

Notwithstanding the contributions that teachers make to student achievement, the problem of school education productivity evaluations is generally one of *misappropriation*, that is, too

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often their focus on inputs such as *teacher quality* and *teacher effectiveness* and the extent to which these descriptors explain and are responsible for student achievement and school productivity sideline broader structural and cultural inputs masking important features of schooling. To state it concisely, features of schooling variously described as issues of race, gender, ethnicity, social class and so on are assigned blanket numeric weightings satisfying evaluative purposes thinning out contextual disparities (see Demack et al. 2000). With this in mind, the paper grapples with the following research questions: why is the problem of school education productivity evaluations generally one of *misappropriation?* and (2) how is school education policy development affected by them?

A methodology informed by critical policy analysis (CPA) (see Diem et al. 2014) is adopted by the paper to explore how research constructs like *teacher quality* and *teacher effectiveness* are educed in major school education policy documents. CPA frames the broader problematic conditions and discourse(s) of school education policy and offers the critical policy researcher a means for analysing particular policy-making constructs such as *teacher quality* and *teacher effectiveness.* CPA pays attention to the complex systems and contextual nuances underpinning policy assumptions about *teacher quality* and *teacher effectiveness* while offering a means for highlighting the importance of re-orientations in teaching practice beyond the sensibilities of the Global Education Reform Movement—GERM (see Sahlberg 2011). Policy inceptions of *teacher quality* and *teacher effectiveness* link to global political and economic processes resulting in significant changes in school education systems more broadly and for the teachers that work in them. Indeed, a major aspect of policy making in the field of school education is an assumed linear transference between stated intentions/aims and outcomes achieved (see Lingard 2010). Discourses of *teacher quality* and *teacher effectiveness* mirror the straightforward linear conceptions and simplifying tendencies of school education policy ignoring '…the complexities and messiness of school and classroom practices' (Rawolle and Li 2015, 21).

Governments invariably characterise educational issues as problems that require policy solutions (see Lingard 2010; Gale and Molla 2015). According to Gale, this has the effect of concentrating policy-maker attention on '…finding the right solution and little focus on understanding the problem' (1994, 227). Fundamental to this analysis of *teacher quality* and *teacher effectiveness* is an understanding of policy text and policy making as a form of political encounter with roots and processes. The political stakes are high with policy-makers as Gale and Molla highlight deploying '…specific discursive constructs to portray that their agendas are necessitated by the way things now are' (2015, 811) and only specific action will alleviate oncoming economic calamity. In paying close attention to the aims, substance and intent of policy, this work acknowledges that teachers and the work they do operates within and is bound by broader complex systems and circumstances. CPA problematizes the qualitative nuances of contemporary school education and the complex systems and circumstances enclosing it, by examining policy assumptions about teaching and learning, exposing distorted truth claims and raising awareness of counter arguments.

The principal sources of data for this study are policy documents. Two data sources are national school education policy documents, a '*Race To The Top'* (2015), *RTTT* hereafter from the USA and '*Students First'*, *SF* hereafter *(2015)* from Australia. The third is an analytical report, *'The Future of European Education and Training Systems: Key Challenges and Their Implications' (2008), FEETS* hereafter, written for the European Commission (EC) by an "expert" economics of education committee, the European Expert Network on Economics of Education (EENEE). These documents have been chosen for this study because they indicate the contemporary direction of school education policy in major nations and regions of the world. They also indicate the degree to which current school education policy incorporates

the research constructs *teacher quality* and *teacher effectiveness*. Critical Discourse Analysis (CDA) as described and understood in critical policy studies (Taylor 2004) was the technique of analysis undertaken to examine data sources. Policy texts and reports that inform them connect to social practices and CDA permits a systematic critical analysis of their influence in shaping not only our understanding of the world as portrayed by policy texts and policy making, but our behaviour in it. Central to the analysis in this study is how teachers are positioned by policy texts and policy making. This brings about an important element in the analysis, namely, identifying the extent to which teachers are positioned as primary facilitators of educational change.

The paper is in three parts. Part one considers the notion of school productivity. It outlines the two categories of school productivity and provides the historical context and the conceptual framework of their inception. Part two considers the issue of school education policy reform and provides an overview of each of the policy documents chosen for this study. The major features of each document as they allude to the research constructs *teacher quality* and *teacher effectiveness* are highlighted. Part three characterizes *teacher quality* and *teacher effectiveness* as doxic school education policy substitutes for student achievement and system success. The paper concludes by arguing that current school education policy inceptions of *teacher quality* and *teacher effectiveness* reflect a school education policy need for the manageable treatment of perceived student under-achievement and, as such, follow the particular research biases of the expert knowledge derived about boosting school productivity.

2 School productivity

Baker and Welner (2012) contend that studies of school productivity invariably fit into two categories. The first is concerned with the production and cost efficiency of individual schools and school systems more generally. Researchers from within this category employ statistical models in the hope of depicting the 'complexity of the real world' and identifying the particular inputs, given certain spending levels that produces a 'certain level of outcomes with certain students' (Baker and Welner 2012, 98). The second category scrutinizes the cost-effectiveness of particular educational models, strategies or reforms. Researchers from within this category are concerned with determining the cost-effectiveness of specific and usually large-scale school education programmes and their effects given costs on student learning.

The primary indicator of productivity in school education is student growth in achievement as measured by mandated standardised testing (national and international) (see Gorur and Wu 2015; Miller and Voon 2011), and evaluations of school productivity are often based on education production-function analyses (see Miller and Voon 2011). The education production-function relates school and various student inputs and is a measure of school output. A typical education production-function can be written thus, where A $(studentachievement) = f(School, Student, Other)$, i.e., is a function of school, student, other. Hanushek (1979, 1986), an economist and an early populariser of education production-functions as tools for school productivity evaluations has contributed significantly to their development and application in the field of school education. Comments from his 1979 research review paper on the use of education production-functions to evaluate school productivity are as relevant today as they were then:

> Measuring educational performance and understanding its determinants are important for designing policies with respect to such varying issues as teacher accountability, educational finance systems and school integration. (Hanushek 1979, 351)

Indeed, the relevance of education production-functions goes beyond simply their application in school productivity evaluations of student achievement. They also signal consideration of other important points, foremost of which is coming to grips with the complexity involved in applying what is essentially an economic model to an educational problem. The results of education production-function studies often have broader ramifications for issues such as the wages of school personnel (teachers and Principals), school financing, and the impacts of quality of education on urban location and housing choice (see Alexander et al. 2015). Their policy resonance on matters related to school education particularly in the USA as Hanushek clarifies, 'have frequently entered into judicial proceedings, legislative debate, and executive branch policy deliberations' (1979, 352).

While education production-function studies abound now in education research, arguably the most popularly known and influential production-function study in education is that conducted in the USA by Coleman et al. (1966), *Equality of Educational Opportunity,* also known as the Coleman Report. The report is significant in a number of ways. First the sheer number of students and schools surveyed; over half a million students and more than 3000 schools (elementary and secondary). Never before had such a large number of students and schools in the USA been mapped for their educational outcomes. Second, the report narrowed its investigation to specific school related inputs and their purported effect on the output of student achievement. Third, the report swamped the public policy arena at the time in the USA with specific quantitative and other tools of measurement, for example, statistical significance, analysis of covariance, production efficiency, multicollinearity, residual variation, estimation bias and so on (see Hanushek 1979). This latter point is of some further significance in that statistical techniques gave the report the added evidence base needed for validation purposes.

The input–output mode of the report's analysis featured strongly in the policy impact that it would have in nations like the USA grappling at the time with significant school education issues such as school segregation and equality of opportunity. Coleman points out that for him the study has had unpredictable and far reaching judicial impacts. In an interview he gave for *Educational Researcher* in 1972, Coleman pointed out how '…judges view this report as one of the few which provides some kind of evidence on which they can base a decision' (1972, 13). Notwithstanding this, the report was the first to explicitly link student achievement as an outcome of school with particular in-school inputs. The ground breaking significance of this development enabled measuring the performance of a school against the achievement of its students. Traditional measures of school quality and student performance prior to the Coleman Report were based on inputs and not the output of student achievement. Inputs amongst other things signified student cohort. Up until the Coleman Report, educators and policy-makers held fast to the notion that the 'primary variation in student performance is not what the schools are doing but what the child comes to school with' (Coleman 1972, 13). The Coleman Report drew attention to the output of student achievement as a measure of a successful school and by implication its productivity by measuring the effect of various inputs on achievement. The report also details the degree of segregation of minority group students and teachers in schools and compares achievement levels attained.

The conceptual model of a production-function assumes that a relationship exists between inputs and output such that the maximum achievable output from a given set of inputs can be determined. In making decisions about maximizing efficiency by adjusting inputs, a firm theoretically maximizes profit (output) (see Karmel 2000a; 2000b). An education production-

function adopts a similar theoretical construct and, while a production-function has a specific connotation in the economic field, one that is equally applicable to the field of school education according to researchers like Hanushek, differences are encountered. The major difference is in significance, as an education production-function can have public policy effects as outlined above.

3 Contemporary school education policy reform

Harvey suggests that it is in the course of 'crises that the instabilities of capitalism are confronted, reshaped and re-engineered to create a new version of what capitalism is about' (2014, 9). Reforms in school education often centre on crises, be it in methods of teaching, standards of achievement, and the inadequate preparation of students and/or teachers. The new world of innovation marked by new frontiers of knowledge—niche technologies incorporating biomedical sciences, artificial intelligence(s) and the digitised businesses amongst others, is encapsulated by the 'neo-liberal ethic of anti-statism' (Harvey 2014, 13), privatisation binding services such as education to the tumults of free markets. Corrective interventions infuse the contemporary economic and political imaginary, reimaging schooling away from the suspected 'limitations of the classical welfare state' (Connell 2002, 323). A changing society necessitates new relationships between education (at all levels) and the economy. Schools and teachers (of a particular type and kind) matter in that new sets of capacities and skills sustain economic competitiveness and ward off economic stagnation (see FEETS, 2008).

The need of reform populates the policy documents of this study. In what follows, each of the documents are briefly foregrounded outlining their key reform features highlighting aspects of *teacher quality* and *teacher effectiveness*.

3.1 Race to the top

The Obama administration's *Race To The Top* is a US federal program administered through the American Recovery and Reinvestment Act of 2009 (ARRA) 'designed to stimulate the economy, support job creation, and invest in critical sectors, including education' (Race To The Top Executive Summary 2009, 2). Approximately $100 billion was allocated for education and $4.35 billion set aside to establish a *RTTT* (Howell 2015, 60). As the document suggests, US states are encouraged to opt into the reform agenda proposed and in doing so need to meet six selection criteria. The selection criteria include state *Success Factors; Standards and Assessments*; *Data Systems to Support Instruction*; *Great Teachers and Leaders*; *Turning Around the Lowest-Achieving Schools* and *General Selection Criteria* (see Race To The Top 2015). Six priorities are listed the first of which is designated an 'Absolute Priority', the second is termed a 'Competitive Preference Priority' and the remaining four are labelled 'Invitational Priorities' (see Race To The Top 2015).

A *RTTT* is filled with terms like 'instruction', 'productivity', 'reform(s)', 'innovation', 'innovative', 'standards', 'teacher effectiveness', 'teacher quality', 'results', 'gains', 'effective teachers', 'student achievement' and so on. Selection Criteria D, Great Teachers and Leaders addresses *teacher quality* and *teacher effectiveness* issues specifically and comprises a further five discrete criteria including Providing high-quality pathways for aspiring teachers and principals; Improving teacher and principal effectiveness based on performance; Ensuring equitable distribution of effective teachers and principals; Improving the effectiveness of teacher and principal preparation programs and Providing effective support to teachers and

principals. Reforms in *teacher quality* and *teacher effectiveness* as expressed in a *RTTT* link to:

> The development and/or presence of alternative pathways into school education for aspiring teachers and principals;
> improvements in teacher and principal effectiveness based on performance measured by annual student achievement growth targets;
> ensuring the equitable distribution of effective teachers and principals targeting schools of most need;
> improving the effectiveness of teacher and principal preparation programs by monitoring achievement gains made and extrapolating back to 'where those teachers and principals were prepared for credentialing' (Race To The Top 2015, 10) and
> the provision of effective teacher and principal support (see Race To The Top 2015).

A *RTTT* also delineates between effective and highly effective teachers/principals. An effective teacher/principal has their 'students achieve acceptable rates (e.g., at least one grade level in an academic year) of student growth' and a highly effective teacher/principal has their 'students achieve high rates (e.g., one and one-half grade levels in an academic year) of student growth (Race To The Top 2015, 12).

3.2 Students first

SF is clear in its aim namely to put 'students first and improve their education outcomes and our schools' (http://www.studentsfirst.gov.au 2015, para 1) listing in order of inferred importance the inputs that will make the difference; *Teacher quality*, *School Autonomy, Engaging parents in education* and *Strengthening the curriculum.* In listing these inputs by order of importance *SF* begins with *Teacher quality* claiming that the 'first step to achieving a quality education, which is so critical for the future of young Australians and our nation, is to lift the quality, professionalization and status of the teaching profession' (http://www.studentsfirst.gov.au 2015, para 1). Quality is an issue for *SF* the primary implication being that current classroom teachers are poorly prepared. As a result, teacher preparation and professional learning are priority areas in *SF*. A key aim is an overhaul of teacher education courses across Australia including proposing a literacy and numeracy test for all initial teacher education students prior to their graduation so that 'teacher employers and the general public…have increased confidence in the skills of graduating teachers' (http://www.studentsfirst.gov.au 2015, 1) and maintaining alternative short duration "urgency credentialing" courses such as Teach For Australia[1]. Professional learning in *SF* is addressed by focusing on implementation of characteristic teaching programmes, the first of which is an Agriculture in Education Programme designed so that teachers 'better understand the products and processes associated with food and fibre production and ensure that all students have an opportunity to under-

[1] An alternative select entry pathway into teaching, Teach For Australia (TFA) is modelled on its US and UK counterparts, Teach For America and Teach First. Structured 'within a concept of mission', teacher education candidates are chosen for their capacity to make a 'significant difference to the learning outcomes of the most disadvantaged students, and contribute to the elimination of the differences in educational achievement that exist between wealthy and poor students' (Suzanne et al. 2015, 498). Selected candidates undergo a five- to six-week training/education program before they are then placed into some of the most disadvantaged schools. While results are mixed (see Suzanne et al. 2015) as to if candidates trained in this way remain in the classroom, Rice et al. maintain that teaching long term per se is not seen as essential as 'alumni will move into other roles following their stint as a teacher…to become leaders in policy, law, government, and business, and to carry with them into these roles a commitment to improving the educational outcomes of the disadvantaged, and to bring to such positions of influence a first-hand knowledge of disadvantaged schools and the challenges they face' (2015, 500).

stand their importance in the Australian economy' (http://www.studentsfirst.gov.au 2015, 1). The second teaching programme is a flexible Literacy for Remote Schools Programme espousing the teaching methods of 'Direct instruction and Explicit instruction' (http://www.studentsfirst.gov.au 2015, 1).

SF represents the school education policy aggregate of the Australian coalition government (2013—present)[2]. Originating from the government's election policy manifesto, *Coalition's Policy for Schools: Students First (2013), SF* is organised into four sections and presented via the government website. The four sections incorporate specific policy nominated inputs deemed necessary to enhance student achievement (see above). Each of the four inputs are further divided into discrete sections with the *Teacher quality* input for example arranged into five sections with each representing an important contributing component to the input of *Teacher quality* as outlined above. The *School autonomy* input contains the $70 million Independent Public Schools initiative, an initiative based on school decentralisation principles (see *SF* 2015, para 5). The *Engaging parents in education* input is a collection of links on a website framed on a mix of questions and specific guidance about parental involvement in school education (see *SF* 2015). The *Strengthening the curriculum* input is composed of two specific aims. First, a review of the Australian curriculum is proposed (subsequently carried out in 2014 by the Teacher Education Ministerial Advisory Group[3]), with the view to focusing curriculum attention on the Science, Technology, Engineering and Mathematics (STEM) related disciplines. Second, providing a focus on the teaching of foreign languages in Australian schools, the goal being that 'at least 40 per cent of Year 12[4] students are studying a language other than English within a decade' (*SF* 2015, para 4).

3.3 The future of European education and training systems: key challenges and their implications

The EU is a collection of nation states, its representative body being the EC. The *FEETS* document is an analytical research report written for the EC by the European Expert Network on Economics of Education (EENEE). The authors of this report are all practising economists. The report is divided into four chapters with each chapter focusing on a 'Key Challenge' identified by the report's authors requiring attention by EU policy-makers. The challenges in order from Key Challenge (I)–(IV) include: Demographic and Population Change; New Forces of Global Competition; A Long-Run Perspective on Social Cohesion and Enacting Innovation under Given Political Realities. The report devotes one page to *teacher quality*, covering the issue under Key Challenge (II) highlighting its relevance educationally and vocationally in preparing the EU for a new era of global post-structural economic competition. The chapter suggests four future implications for European education and training systems.

[2] The current Australian government is a coalition (partnership) between the Australian Liberal Party led by the Prime Minister, Mr. Malcolm Turnbull and their parliamentary partners, the Nationals led by Mr. Barnaby Joyce. The coalition as it is known represents the "right" or what can be termed the Conservative side of Australian politics.

[3] The Teacher Education Ministerial Advisory Group also known as the TEMAG was commissioned by the Coalition government in 2014 to provide advice to government on the substantive changes needed in teacher education across Australia. The TEMAG was a government appointed panel comprised of five academic members, two Principals (one now a director of the Australian Institute for Teaching and School Leadership (AITSL), the other from the independent "non-public" school sector), the Independent Schools Chief Executive Officer and a representative from Learning First, an independent education research and consulting firm that lists among its supporters and clients, AITSL, the Bill and Melinda Gates Foundation, the National Center On Education And The Economy, the Center for American Progress, the OECD, and Microsoft.

[4] Year 12 is the final year of secondary school in Australia.

First, is the need for a strengthened and high-skilled labour force. Second, is a need to focus on *teacher quality*. Third, is a need for new governance structures in education and training systems conducive to globally competitive economic structures in transition. Fourth, is an education system geared for innovation. In tackling *teacher quality* four points are made. First, that teachers are important to student achievement. In making this claim the chapter relies on a research paper by Rifkin, Hanushek and Kian published in *Econometrica* (2005). Second, that talented teachers need to remain in the profession as many now leave due to low wages or poor job satisfaction, particularly high quality natural science teachers. Third, that teacher education is in need of reform although the report cites no evidence as to why this should be the case. Fourth, that more needs to be done about managing and eradicating poor student behavioural issues.

4 Doxic substitutes: teacher quality and teacher effectiveness

In introducing doxa as part of his approach to field theory, Pierre Bourdieu is against hyper-rationalist and surface research accounts. The truth of interactions for Bourdieu are found in the logic(s) that define the field of which they are part. Bourdieu likens a field to a game composed of unique rules, structures, positions and processes. Field positionality is multi-dimensional with relational and hierarchical field positions that are productive, reproductive and transferable (see Thomson 2008 for a fuller explanation of each field position). A game is also composed of a prize and to win, agents (players in the game), draw on various forms of capital, be it symbolic, economic, political and/or cultural with the aim of improving their position within a field. Participation and the experience of playing the game exposes players to the rules and capitals at stake within it. Bourdieu suggests as Thomson states that 'agents learn in a semi-conscious fashion how to be players in various field games' and that this learning is part of an embodied habitus, a 'set of dispositions to know, be and act in particular ways' (Thomson 2008, 653). Chance in this scenario defers to rule-governed individual actions pre-determined by field position and successfully occupying a field position or negotiating through a field is more often than not a matter of field know-how, namely understanding 'how to behave in the field, and this understanding not only feels "natural" but can be explained using rules and truths (doxa) that are common parlance within the field' (Thomson 2008, 654).

An established doxa in the field of school education and teaching in particular has it that teachers are committed and motivated people passionate about learning and a genuine enthusiasm for making a difference in people's lives (see Pugach 2009). School education policy increasingly positions teachers (specifically their effectiveness and quality) and the work they do in classrooms as the over-riding influence on student achievement and as such their classroom teaching practice(s) stand out as the school-based input of maximum impact (see Goldhaber et al. 2015; Muijs et al. 2014; Hattie 2009, 2012). Teacher efficacy (quality and effectiveness) is predicated on systems of appraisal that have a clear goal, which is uniformity in terms of teacher-centred instruction in the basics of literacy and numeracy (see Au 2008) that Lingard characterizes as the application in schools of what he terms is an increasing 'potential for defensive and scripted rather than productive pedagogies' (2010, 143).

The promise of establishing connections between individual classroom teaching and student achievement has resulted in a plethora of studies on the topic, see for example, Evertson (1982); Good and Brophy (1986); Mortimore et al. (1988); Cheng and Tsui (1999); Robin-

son (2004); Muijs and Reynolds (2005); Muijs (2006), amongst a host of others. Research systematising teaching charts are what are considered productive and effective practices to enhance student learning. For example, Robinson (2004) proposes five performance related elements of the effective teacher which includes (a) meticulous planning and preparation based on strong subject knowledge, (b) an understanding of the different modes of interaction between teachers and taught, (c) the logical and systematic construction of a single lesson, (d) core teaching skills such as questioning, exposition, narration and illustration, and, (e) the personal power and presence of the teacher. The focus in these elements is on ensuring that teachers engage in behaviours positively related to student achievement. Similarly other researchers like Muijs et al. (2014) suggest that effective teachers engage in behaviours that maximize opportunities to learn and time spent on tasks; prioritize the instruction and interactions given to students; focus on the classroom climate generated and provide high teacher expectations. They also suggest that the presentation and structure of lessons is important in maximizing learning and the effective teacher provides (1) overviews and/or reviews of objectives, (2) outlines the content to be covered signalling transitions between lesson parts; (3) calls attention to main ideas and (4) reviews main ideas at the end of every lesson.

Many studies correlate teacher characteristics including teaching practice with enhanced pupil achievement, and it would be naïve to suggest otherwise (see Slater et al. 2012; Muijs and Reynolds 2011; Rockoff 2004). Research into teacher effects/practice reflects differing research traditions. Konstantopoulos and Sun (2013) classify these traditions into three groups. Group one is interested in associations between teacher characteristics that include educational preparation, experience and salary and their connection to student achievement. Group two calculates student achievement variations across classrooms and/or teachers controlling for student and other background characteristics including gender, social class and type of school. The third group, generally known as process-product studies, identify particular classroom practices or processes facilitating student learning. These particular studies as Konstantopoulos and Sun (2013) highlight a focus on what happens in classrooms, and the work of John Hattie (2009, 2012) represents studies of this kind. The literature in each of these research strands flags the fundamental role and lasting effects that quality and effective teachers have on students (see Pedersen et al. 1978).

Nonetheless studies reporting on *teacher quality* and *teacher effectiveness* are critiqued for their narrow interpretations of teaching practice and their reliance on scientism or what Hammersley describes as naïve realist ontology (1992). Absolutist descriptions and a tendency to various forms of reductionism—methodological and contextual—reinforce controlling discourses where the complex pedagogic work of teachers is envisioned through scientistic models and then compressed into quantifiable outputs depicting cause and effect (see Berliner 1987; Imig and Imig 2006; Wrigley 2013; Gottlieb 2015). This promotes "what works" accounts of teaching practices founded on unquestioned assumptions about applicable solutions to learning and under-achievement.

The orthodoxies connected to curriculum, form(s) of pedagogy and modes of verification that gives expression to the knowledge, logic and theory governing the practice(s) of school education instil it with its doxic traditions. Some of these are expressed in the research recommendations outlined above. The field of school education relies on what seemingly are an objective set of structures approved through consensus about what should be learnt, how and why based on thoughts and perceptions 'that are not cognitive in the sense that is generally understood' (Bourdieu 2014, 173). Bourdieu maintains that our comprehension of the world is in many ways initial and immediate. Common everyday beliefs and assumptions including taken-for-granted discourse(s) and practice(s) such as those found in research recommendations of effective and quality teaching pivot on an established yet unquestionable logic. An

example from within a *RTTT, SF* and the *FEETS* is the common belief they all express in the notion that school students should engage more with the STEM disciplines. Skills derived from within the STEM disciplines are thought to prepare students better for the jobs of the future. A *RTTT, SF* and the *FEETS* also express a belief in the work that effective teaching can do to bridge equity gaps between the advantaged and disadvantaged (see *RTTT 2015; SF 2015; FEETS 2008*). Thinking in this way as Bourdieu suggests signifies that the arbitrariness of something is usually easily forgotten, lost in an 'amnesia of genesis' (Bourdieu 2014, 121). Taken-for-granted logic(s) enter people's mindsets dismissing broader contingent influences particularly on educational outcomes. The origins of how people speak and think about something signals the formation of spaces where varying modalities of symbolic expression coalesce. Over time the active process of organization, which is also an active process of 'unification, centralization, standardization, homogenization' (Bourdieu 2014, 120) begets the representation of something. In Bourdieuian terms a doxa or common sense understanding about something is established by a process that in many respects reproduces itself often ignoring its own set of weaknesses.

As proxy measures for the distinctive effects (behaviours) of classroom teachers on student achievement, *teacher quality* and *teacher effectiveness* cannot be comprehensively understood separately from the symbolic order from which they take their meaning. Recourse to the accountability mechanisms that populate the field of school education have adjusted policy-maker constructions of perceived weak student achievement converting the latter into a problem of national significance in need of redress. The continued articulation by governments of failing schools, under-performing students and a need for perpetual improvement is also a form of doxa suggestive of a specific and persistent under-performance and stagnation in student achievement necessitating the policy constant of school and teacher education reform. This confers a field specific construction where notions of *teacher quality* and *teacher effectiveness* are sub-divided into discrete descriptors of performance. Bourdieu contends that the 'social order rests on a *nomos* that is ratified by the unconscious in such a way that it is essentially the incorporated coercion that does the work' (2014, 173). Policy conceptions of *teacher quality* and *teacher effectiveness* rely upon an objectifying logic founded on practical principles (rules) that, once identified, can be applied. School education policy codifications of *teacher quality* and *teacher effectiveness* found in a *RTTT*, *SF* and the *FEETS* are legitimized by the research definitions that objectify the pedagogical work of classroom teachers thus reducing its complexities into settled universals. An example is found in the following claim that highly effective teachers/principals achieve one and one half grade levels of achievement above merely the one grade level of achievement of effective teachers/principals in any one year (see *RTTT* 2015).

5 Conclusion

An over-riding issue generally absent from policy announcements of *teacher quality* and *teacher effectiveness* is the extent to which weaknesses in their determination are acknowledged. Measuring *teacher quality* and/or *teacher effectiveness* is less a problem of 'some inherent property of the complexity of "complex human behaviour"' as it is more about 'misunderstanding the nature and source of the complexity involved' (Gottlieb 2015, 119). Hence, research constructs of *teacher quality* and *teacher effectiveness* can always be traced to the "adherences" (see Bourdieu 2014) of researchers which in effect is their preferred way

of comprehending the world rather than an objective stand-alone definition or understanding of *teacher quality* and/or *teacher effectiveness.*

School education productivity evaluations incorporating research constructs of *teacher quality* and *teacher effectiveness* are the symbolic representations of a system in transition. Theory is reinforced by commissioned empiricism de-particularizing the public problem of student and school under-performance from 'contingencies, interests, conflicts' (Bourdieu 2014, 28). The logical summations of *teacher quality* and *teacher effectiveness* are ends in themselves cohering to policy inflections of efficiency and the symbolic ambiguities connected to unstable financial markets. While *teacher quality* and *teacher effectiveness* bestow credence to school education productivity evaluations they too officialise the indeterminate, nominalizing aspects of teaching practice into general laws and rules. Consequently, the productivity evaluations of schools will remain skewed as long as attention diverts towards a policy programme fixed on *teacher quality* and *teacher effectiveness* as pre-eminent school system responses to changing economic circumstances. Given this state of affairs, teachers ought to re-assert their professional agency by problematizing research and policy discourses purportedly revealing the fundamental and/or essential about school education.

In summary, the problems that comprise the 'in-between space/places/contexts that connect classrooms with the experiences of everyday life' (Giroux 2011, 75) need the application of theoretical resources. By drawing upon the expertise and work of teachers as educators with the capacity to guard against 'ends that are alleged to be general and ultimate' (Dewey 1998, 255), teachers potentially dispense with the "abstract" checks and detached summations of *teacher quality* and *teacher effectiveness* research. In this way, the interactions that constitute school education, their context and diversity, become the primary concern of teachers as educators that critically engage with the complex forms of knowledge and social relations defining contemporary modern existence.

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