Investing in Educational Success: An investigation of the evidence base

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Contents

Executive Summary

The report that follows provides an overview of the research literature associated with the claims in the Investing in Educational Success Working Group report in order to provide an evidence base to support wider discussions on aspects of the initiative. While this report focuses on the original WG reports, not subsequent developments, it does examine research beyond the evidence cited in the WG report. The purpose of this report is to provide an overview of the literature rather than a critical review of the IES initiative as outlined in the two WG reports. From this overview we conclude the following 11 points:

1. Context: The literature identifies context (e.g. historical, political, social, cultural, geographical, linguistic) as a critical consideration in the implementation of educational reform across the three areas of system, leadership, and teacher effectiveness. The WG report acknowledges the importance of context and states that a current task is tailoring the IES proposals to the specific needs of the New Zealand context. The research base suggests that contextual features should be considered alongside the identification of the desired reform changes.

2. Systemic change: According to the literature, when considering whole-system reform it is important to consider the interaction between aspects (e.g. leadership, teacher education, career pathways, student achievement, and pedagogy). Thus care must be taken when planning and implementing system reform. The literature strongly cautions against focusing on one factor at a time, or changes made in isolation. Additionally, continual review of the reform initiatives and their effects is needed as part of an ongoing improvement cycle.

3. Engagement of teachers: Research demonstrates that successful implementation of reform initiatives is contingent on high levels of intrinsic motivation of teachers. This helps to build social and human capital focused on improving a broad range of student outcomes. Furthermore, teachers need to be centrally involved in the planning and implementation of reform

initiatives so that their classroom needs are at the heart of the design of the initiatives.

4. Career paths: While research generally supports career pathways that allow teachers to gain promotion and stay in the classroom, systems that provide for this do so as part of a wider set of reform initiatives. Furthermore the literature cautions that for reform to be successful and sustainable key roles should be long-term appointments. Only in this way can such roles be considered as true career pathways.

5. Leadership effect: The literature finds, statistically, that any leader effect on student achievement is indirect and small. Any such effect is fully mediated by the quality of the school's instructional environment.

6. Leadership characteristics: For leadership to be effective, the literature argues for models of instructional/pedagogical leadership that focus on: creating a community that learns how to improve student success; planning, coordinating and evaluating the curriculum; improving teaching and curriculum by promoting and taking part in professional learning; and providing support by observing and giving feedback to teachers. Currently the WG report does not provide information on models and characteristics of effective leadership as part of its initiatives.

7. Distributed leadership: Leadership should extend beyond the principal to include all levels of teachers. The literature suggests that distributed leadership should be genuinely distributed and not just the distribution of managerial roles.

8. Teacher effectiveness: A student's background and out of school factors have the largest impact on student achievement and educational outcomes. When controlling for these significant out-of-school SES effects, research shows that teacher effectiveness is the most significant in-school variable affecting student achievement.

9. Student outcomes: Research cautions that defining teacher effectiveness in terms of student achievement risks narrowing student learning to quantifiable measures. The WG report acknowledges the need for a broader conceptualisation of student outcomes. However, it is unclear how "measureable gains in learning and student achievement" (p. 5) will be able to acknowledge this broader conceptualisation.

10. Nature of collaboration: Research is in agreement with the WG report's emphasis on collaboration. However, research also identifies that different models of collaboration have different effects. Specifically, collaboration that is overly hierarchical risks 'contrived collegiality'. Collaboration that is more lateral and democratic is better capable of responding to student and teacher needs as identified by teachers.

11. Resourcing: Research stipulates that in order for initiatives to be implemented successfully and sustainably, adequate temporal and financial resources must be provided. Moreover, while these resources are necessary, they are not sufficient. Research additionally shows that while attention needs to be paid to all aspects of reform, particular attention should be given to the structural and contextual details of professional development and inquiry time.

Introduction

In January 2014, the Government announced a new initiative, Investing in Educational Success (IES), designed to help raise student achievement in the compulsory school sector. The initiative would involve an investment of $359m over 4 years and then $155m each year after that. A Working Group (WG) of educational sector leaders was set up to advise the Government about key aspects of the design of the IES initiative. The WG included representatives from teacher unions, principals' associations, Maori and Pasifika associations, Ministry of Education, school trustees associations, school sector associations, university academics and the New Zealand Council for Educational Research. At the time of writing, the WG acknowledges through its report the need for ongoing development work and consultation between the advisory group and the wider educational sector.

The WG produced two reports giving advice to the Government about the IES initiative. Part one of the WG's report (Ministry of Education, 2014a) makes a number of claims about important components of schooling that positively raise students' achievement. The claims focus on "what works to deliver a sustained system-wide lift in performance" (p. 30). The WG report also supplies a brief overview of the evidence used to support the development of the IES initiative. The report states that this overview is not an exhaustive list of all of the information, data or other evidence used in the IES's development; however a full bibliography is not provided. Part two of the WG's report (Ministry of Education, 2014b) provides some independent background papers and working documents.

The primary purpose of the report that follows is not to critically review the IES initiative as outlined in the two WG reports. Such a critical review is beyond the scope of this project. Rather, this report provides the reader with an overview of the research literature associated with the claims in order to provide an evidence base to support wider discussions on aspects of the IES initiative. While this report focuses on the original WG reports, not subsequent developments, it does examine research beyond the evidence cited in the WG report. To achieve this, a systematic search of

the literature was undertaken. Details of this systematic literature search are provided in the methodology section.

This report is structured in the following way. Firstly, a brief description of the four key aspects of the IES initiative is given. Secondly, the claims and arguments made in part one of the WG report are detailed. Thirdly, the methodology for this report is identified. Lastly, an overview of the evidence in relation to the claims made in part one of the WG report is provided.

The IES initiative

From the outset, the WG report acknowledges that a student's background and out of school factors have the largest impact on student achievement and educational outcomes. It goes on to argue that, within schools, the quality of teaching has the biggest impact on student achievement. However, it should be noted that students don't leave their 'home effects' at the school gate. The IES initiative seeks to raise student achievement for all students by improving the quality of teaching across the compulsory school sector and by enabling collaboration between teachers so that they may benefit from each other's experiences.

The WG report identifies two main themes within the IES initiative, the first of which is to "enable collaboration between teachers, leaders, schools and communities across the national network" (Ministry of Education, 2014a, p. 5). This would see the establishment of Communities of Schools designed to encourage collaboration between governance, leadership, and teachers. The Communities would self-identify and it is intended that there would be a variety of schools in each community (Primary and Secondary) representing possible educational pathways for students. Communities of Schools would be encouraged to establish links with both early childhood centres and tertiary education providers. Involvement in a Community of Schools would be voluntary although the other aspects of the IES initiative are contingent on being part of a Community of Schools.

The second theme identified within the WG report is to "improve career pathways for teachers and leaders" (Ministry of Education, 2014a, p. 5). This would see the introduction of three new teaching and learning roles and a Principal Recruitment allowance. The first of these new roles—a Community of Schools leadership role (previously called the Executive Principal role) is intended to support all principals and teachers within the Community of Schools. The second role, a Community of Schools Teacher (across community)—previously called the Expert Teacher—would see these teachers work closely with other teachers from within the Community of Schools to share their subject and practice expertise. Within each Community of

Schools it is envisaged that there would be 4 or 5 Community of Schools Teachers (across community) who would receive some release time to conduct this role throughout the Community of Schools. The third new role is a Community of Schools Teacher (within school)—previously called the Lead Teacher. This role would see teachers open up their classroom as a model of learning for other teachers within their own school. These teachers would remain in their classroom and have other teachers come in to observe and discuss practice.

A fixed term Principal Recruitment Allowance would be established to help high needs schools recruit a high quality principal by broadening their potential recruitment pool. It is intended that this incentive payment will encourage experienced principals to apply for principal positions in high needs schools.

Additional funding would also be provided to Communities of Schools to provide additional 'Inquiry Time' release for teachers. Schools would determine for themselves the best way to use this Inquiry Time. A 'Teacher-led Innovation fund' ($10m over three years) would also be established to support the development of innovative practice. This fund would be centrally managed by the Ministry of Education.

Claims for the design of the IES

In reviewing the claims cited in the WG report, claims surface in the areas of system change, leadership, quality teaching, professional development, and collaboration. These claims are set out below and referenced to the numbered point in the 'evidence' section on pages 30 to 36 of the WG report:

- "Effective school leaders see themselves as leaders of education, not just of their own school" (#20, p.32).
- Finland's model of distributed leadership is effective (#21).
- Professional leadership roles for teachers support the improvements of their peers (#28).

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- "Successful improvement was seen in systems that understand where they are on the improvement continuum and apply strategies appropriate to the next stages in improvement" (#10, p.30).
- World–class education systems "highlight the importance of continuous improvement of pedagogical skills and knowledge, and strengthening leadership at the school level" (#13, p.31).
- High performing education systems recruit and retain the best possible people to become teachers and educational leaders (#14).
- "Successful systems create deliberate opportunities for teachers to open up their practice to observation and discussion with colleagues within and across schools in ways that stimulate improvement" (#16, p.31).
- Successful systems value teachers and understand the complexity of their profession (#27).
- We need to build a "professional culture that expects and demands critical feedback on practice from colleagues" (#19, p.32).
- Effective teacher learning is school-based and collaborative (#18).
- "successful systems overseas have created deliberate mechanisms to support teacher collaboration that emphasises the professional stance of teachers as researchers" (#23, p.33).
- "The existence of a collaborative approach in itself is not sufficient to achieve learner improvements" (#24, p. 33).
- Expertise external to the group is important as it can challenge existing assumptions, practices, and beliefs (#24).
- "Effective collaboration is premised on universally high levels of capability" (#26, p.33).
- Singapore has effective career paths which allow good teachers to progress without moving away from their classroom (#29).
- "The new roles proposed in the Investing in Educational Success initiative recognise and build on the strengths of our system in Aotearoa New Zealand and offer career paths that are characteristic of a strong profession" (#31, p.34).

Methodology

A systematic search was conducted of the four major educational databases: Discover, Scopus, Google Scholar and A+. A variety of search terms were used. The exact terminology used depended upon the database being searched. Search terms included keywords (e.g., school leadership, educational system reform, professional learning, professional development, student outcomes, student achievement, education career pathways, quality teaching, quality teachers, collaboration) and descriptors (e.g., management, administration, characteristic, attribute, organisation, transform, profession, path). Truncations and wild cards were used to ensure that searches remained as wide and accurate as possible. Additionally, snowball search techniques were employed whereby significant and seminal articles that had not been identified previously were sourced. The references from the WG report were also accessed.

A total of 230 results were saved for further full-text analysis. Given the large number of articles and reports identified, we primarily focused on material from 2004 onwards, although some older material was also included where it was clear that it was highly relevant. These articles were then analysed by the team and working templates for those felt to be relevant to the project were written. This resulted in a total of 139 templates being written and these working documents are appended to the report for reference. From these templates, an overview of the literature was prepared. It should be noted that not all of the articles and reports identified in the templates are included in this overview. Where not included, these articles informed our broader understanding of the literature in the respective areas.

While the literature in the subsequent sections is discussed under specific headings, it is acknowledged that the literature does not fit neatly into these sections. Rather, there is a degree of overlap between areas; indicative of the highly complex nature of the systemic change in education.

System

The WG report (Ministry of Education, 2014a) states that the proposal will support whole system change, which it claims will "lead to measurable gains in learning and student achievement" (p. 5). The system changes proposed by the WG report are "informed by international analysis of reform strategies in successful and successfully improving education systems and identification of the weakness in the New Zealand system" (Ministry of Education, 2014a, p. 30).

This section starts by analysing some of the key features of the 2010 McKinsey report (Mourshed, Chijioke, & Barber, 2010). Following this, the discussion turns to the importance of an integrated, systemic approach and issues relating to context. Key aspects from the more general educational reform literature are then briefly summarized. The section concludes with a brief discussion on the career pathways proposed within the WG report.

The design of the IES proposal appears to be closely informed by the 2010 McKinsey report titled 'How the world's most improved school systems keep getting better' (Mourshed et al., 2010). The experiences of "20 school systems from all parts of the globe that have achieved significant, sustained, and widespread gains, as measured by national and international standards of assessment" (p. 7) are drawn on (Mourshed et al., 2010). The sample of data for these 20 school systems includes the experiences of "nearly 575 reform interventions" (Mourshed et al., 2010, p 7). The main purpose behind the report was to try to understand more about:

which interventions occurred in each school system and when, and how these interventions interacted with each other and with the system's broader context to deliver better outcomes for students (p. 7).

The sample includes school systems labelled as "sustained improvers" (p. 11) (systems consistently increasing their performance over at least five years) and systems labelled as "promising starts" (p. 11) (systems newer to educational reform

but which have seen strong improvements over a two to three year period) (Mourshed et al., 2010). Five ratings of system performance are used: poor, fair, good, great, and excellent. The analysis in the McKinsey report is particularly focused on the common interventions used successfully by systems in progressing from one performance stage to the next. Both international assessment data, e.g. PISA, TIMSS, PIRLS, and national assessment data are drawn on in the analyses. In addition, the data include interviews with "200 system leaders and their staff, supplemented by visits to view all 20 systems in action" (Mourshed et al., 2010, p. 8). This is clearly a very substantial data set although no further detail is provided as to who the interviewees were and whether they covered the full spectrum of stakeholders in the respective countries. It should be noted that the 2010 McKinsey report has received strong criticism, in particular for its lack of attention to context—comparisons are made across systems with differing aims, values and needs—and for its lack of focus on pedagogy (see for example, Alexander (2013) and Coffield (2012)).

According to the analysis, New Zealand is classified as 'fair', but is on the boundary between "fair" and "good". The IES proposal in the WG report appears to closely follow the results of the McKinsey report. This can be seen in the nature of the interventions listed as successful in helping countries to progress from 'good' to 'great'. These interventions include a focus on "ensuring teaching and school leadership is regarded as a full-fledged profession" (Mourshed et al., 2010, p. 20). According to Mourshed et al. (2010), this requires "putting in place the necessary practices and career paths to ensure the profession is as clearly defined as those in medicine and law" (p. 20). Collaborative practices within and across schools are cited as ways of sustaining changes in pedagogy and practice (Mourshed et al., 2010).

One of the claims in the WG report is that successful improvement was seen in systems which understand where they are on the improvement continuum and apply strategies appropriate to the next stages in improvement. It can be assumed that systems were implementing educational reforms with the intention of improving their educational standing. However, the five categories (poor to excellent) on the 'improvement continuum', together with the lists of successful interventions used in

moving from one category to another, are outputs of the analyses in the McKinsey report, i.e. the framework has been applied after the interventions and international and national assessments have taken place.

Further to this, while the McKinsey report states that "all improving school systems appear to adopt a similar set of interventions" (Mourshed et al., 2010), the interview data also revealed that there was a lack of detailed understanding as to the reasons for their success, e.g.:

few were certain about why they had been successful: they often did not have a 'theory of the case' about why what they did worked. Even fewer had a mental map of how all the changes they made fit together as a coherent whole. Some even thought they had just been lucky (p. 11).

A systemic approach and aspects of context

Caution should be noted here in terms of selecting and applying strategies appropriate to the next stages in improvement[1]. This is due to two key factors: First, the interaction between factors in a reform, and second, the issue of context. Fullan (2009) highlights the importance of the interaction between factors in successful education reforms and strongly cautions against a key focus on one factor at a time. This means, as Carpay et al. (2013) note, that educational reform needs to be systemic and not made in isolation, as changes to one part of the system require changes to other parts. Successful reforms are systemic but focus on a smaller number of selective, focused and integrative changes rather than attempting to achieve too much, too quickly (Fullan, 2000; Schmoker, 2004). Due to the interaction between factors, once a reform is implemented, there needs to be a continual process of review and change (Carpay et al., 2013; Duffy & Reigeluth, 2008; McLaughlin & Mitra, 2001; Schmoker, 2004).

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[1] The issues discussed here are a summary from the literature. It is not suggested

This interaction effect is seen in studies of PISA results. For example, as a result of their prominent appearance at the top of league tables, Finland has become a popular case study. However, the Finnish report into its own PISA results concludes that "…there is no single key factor behind Finland's successful performance in PISA. Rather, Finland's high achievement seems to be attributable to a whole network of interrelated factors…" (Välijärvi, Linnakylä, Kupair, Reinikainen, & Arffman, 2000, p. 46). Hargreaves et al. (2007) expand on this to say that "it is the intersection and integration of the moral, political, structural, cultural, leadership and learning-based aspects of Finland, within a unitary whole that defines and explain the nation's success" (p. 11). The Finnish education system is relatively 'test-free'. Teaching is a highly respected profession in Finland, with the focus "on developing understanding, fostering an interest in learning and cultivating open trust-based relationships between teachers and students" (Sahlberg, 2006, p. 282). The teaching workforce is also highly educated: For example, teachers are educated to postgraduate level. Finland is based on a culture of cooperative, high-trust professional relationships (Hargreaves et al., 2007). Schools are obliged to report on how they cooperate with other schools (Hargreaves et al., 2007).

The above overview of the Finnish case highlights the additional issue of context. The WG report (Ministry of Education, 2014a) notes that the "proposals are informed by international analysis of reform strategies in successful and successfully improving education systems and identification of the weakness in the New Zealand system" (p. 30) but acknowledges that: "How these changes are finally designed to meet the specific needs of the New Zealand context is the current task of the Working Group" (p. 30).

According to Mourshed et al. (2010), adapting a reform or intervention for a particular system's context, comes after a system correctly identifies their starting point and the necessary interventions to help them make "the desired improvements in student outcomes" (p. 18). They state that "[t]his is not to say that context is not important, but it is secondary to getting the fundamentals right" (p. 11). The importance of context, for example, historical, political, social, cultural, geographical

and linguistic, features prominently in the literature, (e.g., Alexander (2013); Coffield (2012) Duffy and Reigeluth (2008); Fullan (2009), Kamens (2013), Sahleberg (2006) and Varjo et al. (2013)). The research suggests that it is critical to focus on context alongside the identification of the desired reform changes from the outset. As Riley and Torrance (2003) claim, problems can arise in seeking "off-the-shelf solutions which are highly context specific" (p. 421). Porter and Gamoran (2002) expand on this and state that importing "the pedagogy of one nation into another, whatever the achievement standing of the first nation" (p. 11) can pose issues as what works in one country and culture may not work in another.

Collaborative practices in high-performing countries

The WG report (Ministry of Education, 2014a) states that its first of two major themes is to "enable collaboration between teachers, leaders, schools, and communities across the national network. There is a need for greater and more substantial collaboration within and between schools" (p. 5). In the analysis of evidence, the WG highlights as a weakness of New Zealand's current system, the lack of "a deliberate, system-wide approach to ensuring teachers and leaders can and do work together effectively to solve problems of professional practice. They claim this is a feature of some high performing systems" (Ministry of Education, 2014a, p. 36).

The WG report does not specify exactly which systems it is referring to here. However, as Jensen et al. (2012) note, the systems of Hong Kong, Shanghai, Korea and Singapore, which were four of the five highest achieving systems in PISA 2009 "are implementing what works" (p. 13). Their strong focus is on pedagogy and things that we know are important in the classroom, e.g. "a relentless, practical focus on learning, and the creation of a strong culture of teacher education, research, collaboration, mentoring, feedback, and sustained professional development" (Jensen et al., 2012p. 10).

Singapore has implemented a "Teachers Network" with six main interrelated components. These are "(1) learning circles, (2) teacher-led workshops, (3) conferences, (4) a well-being program, (5) a website, and (6) publications" (Darling-Hammond, Wei, & Andree, 2010, p. 6). The learning circles are run by a facilitator and generally involve between 4-10 teachers who meet to collaboratively "identify and solve common problems… using discussions and action research" (Darling-Hammond et al., 2010, p. 6). As a support for this, training programs are run on "the key processes of reflection, dialogue, and action research" (Darling-Hammond et al., 2010, p. 6). In Shanghai, all teachers have mentors who observe their classes and give feedback and all teachers belong to research groups which are designed to further develop their teaching practices (Jensen et al., 2012). In Hong Kong, where the entire system has been reformed since 1999, "learning communities and district level clusters were developed to enable teachers to learn from others' experiences and re-enforce effective implementation within schools" (Jensen et al., 2012, p. 37). Finland, another high performing system, also has a range of collaborative practices. However, despite this it has been suggested that "continuous improvement and dramatic transformation in teaching and learning require more thoroughgoing within-school collaboration that currently seems less evident" (Hargreaves et al., 2007, p. 17).

Brief overview of key factors in educational reform

A desire to reform does not always have the intended impact and there are many accounts of failed reforms. However, as Fullan (2007) notes, despite repeated failures in the implementation of educational reforms, there is now also a much stronger appreciation of the complexities. Lessons learnt from evaluations, reviews and analyses of educational reform efforts are outlined below.

Successful implementation is key to any educational reform. Mourshed et al. (2010), in their review of nearly 575 reforms in 20 systems, comment that different systems may carry out the same interventions but have different outcomes. One system may be successful while another unsuccessful. Mourshed et al. (2010) attribute this, in part, to

differences in levels of engagement, "rigour and discipline" (p. 20) in the system's implementation of the intervention.

As successful reform needs to change the culture of schools and the school system, strong teacher engagement is essential (Fullan, 2011). Reform needs to appeal to the intrinsic motivation of teachers and not be blame or deficit focused (Fullan, 2011; Goldspink, 2007). Teachers need to be included in the process of reform from the outset and are key agents in determining the success of a reform (Caldwell, 2003; Datnow, 2000; Desimone, 2002; Fullan, 2000; Hertling, 1999; Hopkins & Levin, 2000). Datnow (2005) suggests that the level of implementation, i.e. the extent to which a reform is actively engaged with and pursued, is "a significant predictor of student achievement gain" (p. 193). Datnow makes this claim from a review of the findings of 16 studies which used externally developed reform designs. All involved longitudinal, qualitative case studies, combined in most cases, with quantitative studies of student achievement. Reform fatigue, or the cumulative effect of a series of failed reforms, are also cited in the literature as negatively impacting on teachers' engagement with reform. Datnow and Springfield (2000) claim that the impact of this is that "teachers learned to retreat to the safety of their own classrooms. When new reforms came along, they looked for ways to incorporate them as superficially as possible" (p. 198).

One concern raised in the literature is that lower levels of active engagement with reform tend to be found in schools with lower student achievement or those which serve a significant number of priority learners (Kidron & Darwin, 2007). Datnow (2005), in the review mentioned above, discusses one potential reason for this. She reports that teachers in schools with low achievement levels admitted prioritizing preparing students for assessments over reform efforts. Teachers felt that they could not justify spending time on reforms where they could not see the direct and immediate benefits. This highlights the importance of involving teachers in the early stages of reform, in explaining the reasons for the reform, and thus also the benefits of it for them and their daily classroom practice. These measures are needed to ensure teacher engagement and buy-in in reform efforts. They will also help to ensure teacher

agency, an important requirement within a Community of Schools approach.

Following on from this, Fullan (2000) states that reforms need to build teacher and leader capacity by focusing on the long-term social and individual benefits. According to the literature this building of capacity is more important than focusing on quantifiable short-term outputs (Datnow, 2000). Fullan (2011) expands on this by stating that focusing on accountability via student achievement as the dominant driver will not generate intrinsic motivation and thus will not achieve whole school reform. A focus on student achievement in this way is also unlikely to change teacher instruction or pedagogy. Student achievement is only one measure of the success of a reform. This point was made by Datnow (2005) reporting on teacher views: "[E]ducators lamented that test scores were not the proper measure of success for their reform efforts" (p. 145).

Career paths and incentives

The WG report (Ministry of Education, 2014a) states that its second major theme is to "improve career pathways for teachers and leaders" (p. 5). In the analysis of evidence, the report highlights as a weakness of New Zealand's current system, the lack of systematic strategy to ensure that the "best people with the relevant expertise get to the teachers and students that need it most" (Ministry of Education, 2014a, p. 36). As part of enticing the right people to these roles, "it is intended that a proposed new incentive payment will encourage a wider pool of experienced principals to apply for positions in high need schools" (Ministry of Education, 2014a, p. 4). Alongside this, "[t]hree new teaching and leadership roles would be established …to provide clearer career pathways for teachers and principals" (Ministry of Education, 2014a, p. 3).

The WG report draws on evidence from Jensen et al. (2012) that high performing countries "attract high quality candidates, turn them into effective instructors and build a career structure that rewards good teaching" (p. 13). The WG report draws particular attention to the case of Singapore where three career track roles have been

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established and notes that this is central to Singapore's efforts in raising the quality of teaching. Singapore is one of the top five performing systems in the world.

Singapore's career track roles are one of a number of important components of their commitment to raising the quality of teacher education and encompass a wider range of activities than are covered by the IES proposal. For example, in Singapore there is one sole provider of initial teacher education. The aim is to attract the top 30% of high school graduates, student teachers are paid employees and most teaching positions are held within the Ministry of Education. There are three career track roles and potential principals participate in a "six month (full-time) Leaders in Education Programme …focused on elements of leadership and critical self-reflection rather than technical administration" (Jensen et al., 2012, p. 69). Professional development is linked to teacher pay and "includes extensive planning of teachers' activities, frequent coaching and mentoring, reflection and feedback, and is strongly linked to professional learning" (Jensen et al., 2012, p. 107). Reforms around teacher career structures have been linked with lowering the attrition rate of teachers in Singapore (Jensen et al., 2012). Teachers in Singapore do not need to leave the classroom to get promoted, something the international literature cites as a deterrent for many practicing teachers (Stone-Johnson, 2014). Similarly, in Finland, all principals do some teaching (Hargreaves et al., 2007). Here, as noted earlier, due to the importance of context, the literature advises caution when adopting reforms that have worked successfully in other countries or systems.

In terms of financial incentives, Fullan (2009) discusses how higher salaries could be used to incentivize staff to work "in the most challenging schools" (p. 110). Although, here it should be noted that the Ministry of Education acknowledges that rewards, including financial ones, do not necessarily impact on student achievement (Ministry of Education, 2010).

The literature suggests caution where there is heavy reliance on individual roles in implementing change in system reform. The WG report (Ministry of Education,

2014a) states that the "roles are fixed-term positions" (p. 2) with the exception of the within school role which is to be an ongoing position. If a key individual leaves a role, or a role ends, before the culture is sufficiently developed and internalized, the change may not survive their departure (Fullan, 2000). This has been the experience of others. For example, in the UK, a project called the 'Transforming School Workforce Pathfinder Project', was piloted for one-year by 32 schools (Gunter et al., 2007). The project involved teachers making changes in their practices to find ways to free up time to focus on teaching. Research evaluating the pilot found that there is "a danger of losing some people along the way" (p. 32) and that the short-term nature of posts (2 years) made it difficult to recruit the right calibre of staff and to make sustainable changes (Gunter et al., 2007). Short-term roles also make it more difficult to establish a continuity of relationships within the school. Research has found that student achievement tends to increase when students and teachers develop relationships through being taught by the same teacher over a number of years (Darling-Hammond et al., 2010). In this respect it is positive that the within-school role proposed in the WG report is to be an ongoing one.

Summary

A review of the literature shows that system change is complex and contextually bound. Even those involved in successful reforms are not always clear why the reforms they implemented worked. For example, in the case of Finland, experts reflecting on the Finnish success in PISA could not isolate one single key factor which accounts for their success. The literature highlights the integrative and interactive nature of factors within a system, noting the importance of reform being systemic in nature, strongly cautioning against a key focus on one factor at a time. It was also noted that due to the interactive nature of factors within a system, a process of continual review is needed.

The literature identifies context (e.g. historical, political, social, cultural, geographical, linguistic) as a critical consideration in implementation of educational reform across the three areas of system, leadership, and teacher effectiveness. Furthermore, the literature advises caution against simply adopting reforms that have

worked successfully in other countries or systems. The research base suggests that contextual features should be considered alongside the identification of the desired reform changes, not subsequent to their identification.

Strong teacher engagement and high levels of intrinsic motivation are cited as key factors in successful system change. The importance of ensuring that teachers are involved in reform from the outset should not be underestimated. Furthermore it is important that teachers understand the purpose of the reform, and how the reform will impact on their daily practice.

While research generally supports career pathways that allow teachers to gain promotion and stay in the classroom, systems that provide for this do so as part of a wider set of reform initiatives. For example, the career pathways in Singapore are one component of a wider range of activities in raising the quality of teacher education. Furthermore the literature cautions that for reform to be successful and sustainable key roles should be long-term appointments. Key individuals leaving a role, or a role that comes to an end before the culture is sufficiently embedded, may negatively impact on the sustainability of the changes proposed.

Leadership

The IES initiative, either explicitly or implicitly, identifies principal leadership as a key aspect of effective schooling. One of the three new positions—the Community of Schools Leadership role—and the Principal Recruitment allowance both position the principal as an important component of effective schools. Furthermore, the role of the principal as a professional leader, of both their own school and the wider educational community, is highlighted in the evidence provided in the later part of the WG report (e.g. points 20 and 28 of the evidence brief). Even though Leithwood, Harris and Hopkins (2008) identify school leadership as second only to classroom teaching as an in-school influence on students' learning, the relative size and nature of this influence is under debate. Moreover, while Louis, Leithwood, Wahlstrom, and Anderson (2010) claim that: "To date we have not found a single case of a school improving its student achievement record in the absence of talented leadership" (p. 9), is a talented leader sufficient to improve student outcomes?

The following section will examine the literature on the effects of school leadership on student outcomes. Robinson, Hohepa and Lloyd (2009) acknowledge that although the literature on educational leadership is extensive, only a small part of it focuses on student outcomes, and those studies that do primarily have a narrow focus on student achievement. This section is structured to examine four key aspects of the literature. Firstly it will examine the direct and indirect effects of leadership on student outcomes. Secondly, it will look at the theoretical models of transformational and instructional/pedagogical leadership. Thirdly, it will examine the characteristics of effective leadership identified in the literature. Lastly, it will discuss the effect of distributed leadership on student outcomes.

Direct versus indirect effects of leadership

Within most school settings the principal is seen as the key educational leader. While principals are held accountable for student achievement, most studies show that they have little direct effect on student outcomes and achievement (Soehner & Ryan,

2011).   For example, an analysis of 37 multinational research reports (Witziers, Bosker, & Krüger, 2003) found that there were no significant direct effects of leadership in general.   Rather, the bulk of the studies indicate that any effect on student achievement is relatively small and indirect (e.g. Heck & Hallinger, 2014; Leithwood et al., 2008; Leithwood & Sun, 2012; Marzano, Waters, & McNulty, 2005; Mulford et al., 2007; Nettles & Herrington, 2007; ten Bruggencate, Luyten, Scheerens, & Sleegers, 2012).   The indirect pathway is conceptualised to be that principals affect teachers and teaching quality, which then affects student learning and achievement (Leithwood & Sun, 2012).   This conceptualisation has a number of logical leaps that research has yet to establish.

Heck and Hallinger (2014) devised and tested a model to try and examine the dynamic relationship between leadership, teaching quality, and student learning. They sought to quantify the pathways through which leadership influences student learning.   They found that any leadership effects on student learning were fully mediated by the quality of the school's instructional environment.   In other words, they found no direct effect of leadership on students' achievement.

Heck and Hallinger's (2014) research drew on teachers' surveys about their schools' leadership practices and classroom instructional environments, and mapped this against teacher effectiveness scores derived from students' mathematics achievement data. This large longitudinal study drew on nearly three thousand students and several hundred teachers from 60 primary schools in the USA. The model also included a range of student background variables (e.g. gender, SES) and a range of school context variables (enrollment size, special education and language composition, student SES profile, staff stability). The study followed students for two years and distinguished between what they describe as a student's 'ending' achievement—their final level of achievement in mathematics at the end of the two years—and a student's growth in achievement—changes in their mathematics achievement levels based on multiple measures.

While Heck and Hallinger (2014) identify a number of limitations to their study (e.g. short time period for a longitudinal study, self-reporting of teachers' instructional practices and perceptions of their principals' leadership practices) they conclude the following points. Firstly, the instructional environment was positively and directly related to students' ending achievement in mathematics, although the effect size is quite small at 0.28[2]. Instructional environment also had the largest effect size of any of the school level variables on growth in achievement, but it is also quite small at 0.12. Secondly, instructionally focused leadership had a small positive, but indirect, relationship to students' ending achievement in mathematics through its effect on the instructional environment. A 1 SD increase in the strength of the leadership results in an effect size of 0.15 on students' ending achievement levels. The authors did not find any indirect effect of leadership on students' growth in achievement. Lastly, they found that instructionally focused school leadership moderated the effect of individual teachers on student learning.

The view that principals have a "direct effect on student learning has largely been abandoned and replaced by a focus on the indirect relationships that principals create through their interactions with teachers and the educational environment" (Nettles & Herrington, 2007, p.9). As a result in this shift of focus, research has examined models of leadership that demonstrate a positive, albeit indirect, effect on student outcomes.

Transformational versus instructional/pedagogical leadership

In seeking to unpack this indirect relationship, a number of studies have examined the impact of leadership on student outcomes through two theoretical models of leadership: transformational leadership and instructional leadership (also referred to as pedagogical leadership). Put simply, transformational leadership emphasises

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[2] Although there is no single approach to the interpretation of effect sizes, the convention used for the interpretation of effect sizes in this report is as follows: from 0.0 to 0.2 (no effect to weak effect); from 0.2 to 0.4 (small effect); from 0.4 to 0.6 (moderate effect); more than 0.6 (large effect).

creating a vision and inspiring and motivating people to move beyond self-interest to pursue that vision. Instructional leadership emphasises establishing clear educational goals, planning the curriculum and evaluating teachers and teaching. Transformational leadership is centred on relationships while pedagogical leadership is centred on educational purposes.

As part of the Ministry of Education's Best Evidence Series (BES), Robinson, Hohepa and Lloyd (2009) compiled a BES on school leadership and student outcomes. This document focused on the complex relationship between educational leadership and student outcomes and on the particular leadership dimensions that are crucial to improving student outcomes. The BES examined 134 studies, of which 61 were from New Zealand.

To examine the impact of different types of leadership on student outcomes the study adopted a forward mapping strategy that starts with a measure of leadership and then traced it through to student outcomes. In their study Robinson et al. (2009) compared the impact of transformational leadership and pedagogical leadership. Of the 134 studies, only 27 of the studies quantified the relationship between leadership and student outcomes. The effect sizes for the 13 studies looking at transformational leadership indicated both positive and negative effects on student outcomes. The average effect size was a relatively weak 0.11. For the 16 studies looking at pedagogical leadership, 8 were weak and 8 were moderate to large. The average effect size was a moderate 0.42, almost four times the impact of transformational leadership. This is consistent with work by (Shatzer, Caldarella, Hallam, & Brown, 2013) that identified that instructional leadership had slightly more impact than transformational leadership.

A meta-analysis study by Leithwood and Sun (2012) examined 79 unpublished studies (mainly theses) on the effects of transformational leadership on school organization, teachers and students (see also Sun & Leithwood, 2012). They found that transformational leadership had a moderately strong effect on individual teachers

(0.57) and a moderate positive effect on school conditions (0.44). They argue that transformational leadership has a direct effect on teachers' internal states and behaviours and this, in turn, has an effect on school conditions. Leithwood and Sun's (2012) definition of 'transformational' leadership includes many practices that, elsewhere, would be considered aspects of instructional/pedagogical leadership. Despite the positive effects of transformational leadership practices on teachers and school conditions, they identified that leadership had only a small positive effect on student achievement (0.09).

The WG report, cites Fullan (2011) who argues strongly for the building of social capital in order to maximise and enhance the benefits of individual human capital. The WG argues that this helps to create a "professional culture that expects and demands critical feedback on practice from colleagues" (Ministry of Education, 2014a, p 32). Although this argument appears more consistent with an instructional/pedagogical model of leadership rather than a transformational model of leadership, the WG report does not outline the models of leadership it views as most appropriate in the Community of Schools leadership role.

The models examined above are theoretical leadership models designed to help us more fully understand the complexity of leadership. In reality, a true picture of the complexity of leadership cannot be achieved by one model alone (Gamage, Adams, & McCormack, 2009). Furthermore, the definitions of some of the studies on transformational leadership include aspects that would normally be associated with instructional leadership (e.g. Leithwood & Sun, 2012), hence creating confusion over the interpretation of the research base. As such, it is important not to set up a false dichotomy between these two models. A more profitable way forward is to examine the effect of particular characteristics and practices of effective leadership on student outcomes. These characteristics may provide a clearer picture of what the leaders in the IES initiative should attend to.

Characteristics of effective leadership

Robinson et al. (2009) examined the characteristics of leadership in interventions and programmes demonstrated to have improved student learning. Based on their forward mapping analysis described earlier, the authors derived five dimensions of effective leadership. Of the five dimensions, the effect size for dimension 4 (promoting and participating in teacher learning and development) had a strong effect size (0.84) that was more than twice that of any of the other dimensions. Dimension 1 (establishing goals and expectations) and dimension 3 (planning, coordinating and evaluating the curriculum) both had a moderate effect size of 0.42. Dimension 2 (resourcing strategically) and dimension 5 (ensuring an orderly and supportive environment) has effect sizes of 0.31 and 0.27 respectively.

Robinson et al. (2009) question whether the dimensions that emerge from their analysis are relevant in the New Zealand context, given the limited New Zealand based research that links school leadership with student outcomes.

Robinson & Timperley (2007) examined characteristics of leadership that had an effect on student outcomes by adopting a backward mapping strategy. The authors started with articles and reports of studies of professional learning initiatives that had demonstrated positive effects on student learning. They then went through each article and report to see what leadership practices evident in the initiative were described. Seventeen such studies were identified. As these were not leadership studies, per se, the role of the leader in the success of the initiative is inferred through this backward mapping process.

Five leadership dimensions deemed critical in fostering teacher and student learning were identified: providing educational goals embedded in teaching and learning rather than just articulated at meetings; ensuring strategic alignment of the teaching programme and resources; creating a community that learns how to improve student success; engaging in constructive problem talk; and selecting and developing smart

tools (e.g. software for tracking achievement and attendance data, policy documents and reporting procedures). Robinson and Timperley (2007) caution us that these dimensions should not be seen as discrete. Rather, "Leaders' learning about how to improve student outcomes through teacher learning is dependent on the integration of the dimensions into coherent and iterative cycles of inquiry into both teachers' and students' learning needs" (Robinson & Timperley, 2007, p 258).

In the meta-analysis by Leithwood and Sun (2012) discussed earlier, the authors found that "leaders influence teachers mainly through people-developing practices, namely, modeling behaviors (.54), providing individualized support (.52) and intellectual stimulation (.50), and achieving a shared vision and agreed-on goals for the organization (.50)" (p. 405). The authors caution us that each practice is complex and that a narrow set of leadership practices is unlikely to work. Furthermore, they highlight that not all leadership practices have a positive effect. Management by exception—where the leader monitors the performance of the staff members and interacts with them when their behavior deviates from expectations—was shown to have a negative effect on teachers' internal states or practices (–.31).

In a large mixed methods study, Louis, Leithwood, Wahlstrom and Anderson (2010) found that "leadership practices targeted directly at improving instruction have significant effects on teachers' working relationships and, indirectly, on student achievement" (p. 37). This large mixed method study drew on interview and survey data collected from nine states, 43 school districts, and 180 elementary, middle, and secondary schools. Over the five-year period of the study they collected survey data from a total of 8,391 teachers and 471 school administrators; interview data from 581 teachers and administrators, 304 district level informants, and 124 state personnel; and observational data from 312 classrooms. They also gathered achievement data in mathematics and literacy from state tests.

In addition to identifying the effectiveness of leadership practices focused on instruction, Louis et al. (2010) also found that effective leadership strengthened the

professional community and "where teachers feel attached to a professional community, they are more likely to use instructional practices that are linked to improved student learning" (p. 282). It is the relationships between adults in the school—either principal/teacher or teacher/teacher—that seems to lead to stronger focused instruction in classrooms. Their study found that these relationships appear easier to establish and maintain in a primary school setting rather than a secondary school setting.

These findings are consistent with a study by Valentine and Prater (2011) that found that leadership behaviours that promote instructional and curriculum improvements showed a small positive link to student achievement. Similarly, Sebastian and Allensworth (2012) identified small positive indirect effects for leaders that attend to the quality of professional development and the cohesion of teaching programmes.

It could be argued that many of the characteristics and practices identified above require that the 'leader' be full-time member of the school (e.g., promoting and participating in teacher learning and development, individualised support for teachers, modeling and providing feedback on teaching, creating communities that learns how to improve). Given that, within the IES initiative, the Community of Schools Leadership Role is not a full-time member, either of the schools in their Community of Schools, or, given their release time, their own school, it is unclear how these practices and characteristics will be enacted by them.

Distributed leadership

This notion of distributed leadership is implicitly and explicitly referred to in the WG report. In examining the research literature on distributed leadership, Robinson (2008) warns us that:

Research on distributed leadership in schools, like research on educational leadership itself, is only very loosely coupled to research on the improvement of teaching and learning. This separation has meant that theoretical and empirical work in distributed leadership does not yet serve the goal of educational improvement, even though that goal is espoused by many writers in the field (p. 254).

Despite this warning, a number of studies have investigated distributed leadership. For example, in their BES on school leadership, Robinson et al. (2009) found that leadership practices that improve learning are highly distributed, both in who leads it and how it is enacted. Often the leader was a teacher leader (e.g. literacy leader) or someone from outside the school (university based researcher, PD facilitator etc.). There was almost no mention of the principal as leader. Moreover, many of the studies described above have adopted broader conceptions of leadership. These will often include other senior deputy and assistant principals, heads of departments, curriculum leaders within school, as well, in some cases, out-of-school leaders.

In another study, Louis et al. (2010) identified that "when principals and teachers share leadership, teachers' working relationships with one another are stronger and student achievement is higher" (p. 37). In considering leadership the authors found that a broad array of stakeholder groups and people influence school decisions, reflecting a distributed conception of leadership. Furthermore, schools with higher SES student bodies have higher levels of parental influence through parental advisory committees helping to create professional practice amongst teachers and a high focus on student achievement.

 As an example of the context specific nature of research, the WG report cites Finland as one of the countries where distributed leadership is working well. A closer look at the Hargreaves et al. (2007) report that looks at the nature of the Finnish education sector reveals some interesting observations. The authors warn us that: "[T]he Finnish model cannot be copied wholesale, for it is a model or strategy that arises out of alignment between and integration of a deep set of cultural and social values, a

particular kind of social and economic state, and a distinctive approach to educational reform" (p. 11).

Hargreaves et al. (2007) note that what might be called contemporary 'distributed' leadership is relatively new in Finland. Finland has a highly decentralised system with 416 municipalities and, as such, rather than being a set of practices initiated and handled by principals or senior officials, leadership is "already distributed throughout the culture and organisation of the schools" (p. 21). Despite this natural distribution of leadership, one participant argued that they are good at cooperation but are still learning how to collaborate. In many instances, distributed leadership tended to be a delegation of managerial roles rather than working together and has been described by some participants in their study as 'contrived collegiality'. Hargreaves et al. (2007) warn us that such instances of contrived collegiality "can create cynicism about the cooperative process and they serve as a warning that distributed leadership needs to extend beyond allocation of tasks to teams, and more into shared responsibilities for improving teaching and learning where everyone, not just the principal, becomes pedagogical leaders" (p. 25).

Summary

This section of the report has examined that research evidence in relation to the impact of leadership on student outcomes. It has identified that, statistically, leadership has a small and indirect effect on student achievement. Any such effect is fully mediated by the quality of the school's instructional environment. Despite the recognition of this indirect pathway, the evidence suggests that the size and strength of the effect is dependent on the nature of the leadership style and particularly the characteristics and practices of the leader. Practices consistent with instructional/pedagogical leadership models have the greatest impact. These include a focus on: creating a community that learns how to improve student success, planning, coordinating and evaluating the curriculum, improving teaching and curriculum by promoting and taking part in professional learning, and providing support by

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observing and giving feedback to teachers.

These leadership practices are not solely the responsibility of the principal. Leadership should be genuinely distributed throughout the school community rather than just the distribution of managerial roles. The distribution of leadership will be particular important in secondary schools as, possibly due to their generally larger size and more removed position of the principal, the effect of leadership in secondary schools is generally less than in primary schools (Kythreotis, Pashiardis, & Kyriakides, 2010; Witziers et al., 2003).

Teacher Effectiveness

The final theme pertains to teacher effectiveness. Teacher effectiveness serves as an umbrella term encompassing research on two topics: quality teaching and professional development. The WG focuses on these two topics via two related claims. First, the WG cites Darling-Hammond (1995) as evidence that "what teachers know and do is one of the most important influences on what students learn" (Ministry of Education, 2014a, p. 31). From this evidence, the WG turns to a 2009 McKinsey report (Barber & Mourshed, 2009) to support their second claim that teacher learning is a central feature of improving student outcomes. Thus, if quality teaching is the primary in-school lever for raising student achievement, then the teacher must be a focal point for policy, particularly for policy relating to teacher recruitment, selection, and continuing development.

The following overview shows that there is an evidence base supporting the claims made by the WG report about teacher effectiveness. There are, however, areas identified by the broader evidence base that remain unconsidered by the WG report at the time of this writing. These areas include the following: student learning that extends beyond quantifiable student achievement, the particular kind of collaboration envisioned for teachers and leaders, and the structure and context of temporal and financial resources made available for teachers' professional development and inquiry time.

Quality teachers

One of the primary claims in the WG report is that teachers are the most significant, in-school influence for raising student achievement. The WG report arrives at this claim through a body of evidence that shows the influence of teachers on student achievement. The WG report includes Darling-Hammond (1998), Alton-Lee (2003), Barber and Mourshed (2009) and Sanders and Rivers (1996) to support the claim that teachers are a significant, in-school influence on student achievement. The WG report acknowledges that student background has the most influence on student

achievement. However, by narrowing the focus on student achievement to in-school factors, teaching becomes the most significant lever.

As such, questions of teacher effectiveness focus on having quality teachers in the classroom. The WG report cites Alton-Lee's best evidence synthesis (2003) that "up to 59 per cent of the [in-school] variance in student performance is attributable to differences between teachers and classes, while up to 21 per cent is attributable to school-level variables" (Ministry of Education, 2014a, p. 31). It is important to note that the figures quoted in the Alton-Lee report are the upper limits of the expected variance in student performance, rather than the average. The WG report adds to this Sanders and Rivers (1996) finding that "over three years, learning with a high performing teacher rather than a low performing teacher can make a 53-percentage point difference for two students who start at the same achievement level" (Ministry of Education, 2014a, p. 31). Taken together, the WG report offers evidence that supports quality teachers as the primary in-school influence on student achievement.

The wider body of research on quality teaching and effective teachers bears these general points out. Effective teaching was shown to have greater leverage for student achievement than effective schools (Nye, Konstantopoulos, & Hedges, 2004). Nye et al. (2004) also show that the teacher effect is greater in low socio-economic schools than in high ones. Moreover, Heck (2009) shows evidence for cumulative gains in achievement when students have successive effective teachers. Teacher effectiveness has also been positively correlated with science achievement (Johnson, Kahle, & Fargo, 2007) and has been shown to have effect on mathematics and reading achievement apart from teacher background (Rivkin, Hanushek, & Kain, 2005). More recently, teacher background has been shown again to be a poor predictor of teacher quality (Slater, Davies, & Burgess, 2012). However, Slater et al. (2012) acknowledge that teacher qualifications have shown mixed results as a determinant of teacher quality in studies that view larger populations than their own research. For example, Philips (2010) shows subject-specific graduate degrees for elementary and early childhood educators are positively related to student achievement gains. Furthermore, teacher background was shown to have a bigger influence on mathematics

achievement, whereas spelling and reading achievement was positively influenced by instructional support (Boonen, Van Damme, & Onghena, 2014). This evidence tells us that while there is a general consensus about the positive influence of teacher effectiveness, what exactly constitutes an effective teacher is less clear.

Goe (2007) pointed out in a research synthesis that while research showed some teachers were more effective at raising student achievement than others, there was a lack of investigation into what specific teacher characteristics (e.g., qualifications, practices, etc.) were responsible for this difference. However, in that same year, Stronge et al. (2007) showed three characteristics of effective teachers: greater differentiation of instructional strategies, higher complexity of questioning, and reduced disruptive student behaviour. In a further study, Stronge et al. (2011) reaffirmed the correlation between teacher effectiveness and student achievement as well as effectiveness and reduced disruptive student behaviour. However, this more recent study found no significance between teacher effectiveness and instructional delivery and assessment.

A number of teacher-oriented factors have been discussed as beneficial to student achievement. Allen et al. (2013) point out the positive influence of teacher interactions on student achievement, with the caveat that their model shows interaction is influenced by student background in significant ways as well. More specifically, their research shows that instructional support and classroom organization contribute to student achievement but these variables negatively correlate for students with low socio-economic status. Kyriakides et al. (2013) offer evidence that suggests the particular approach of a teacher (e.g., direct, constructivist, etc.) is less important to student achievement than the more general interaction between students and teachers. Research from Hairrell et al. (2011) identifies teacher quality as one of three inter-related teacher-based factors that improve student learning in reading comprehension and content-area achievement, along with professional development adherence and education. There is also evidence that suggests that student achievement is correlated with teacher motivation and that

teacher engagement with raising student achievement is an important characteristic of successful classrooms (Hynds & McDonald, 2010; Leithwood & Mascall, 2008).

While the research offers conflicting evidence on the role of teacher background, there appears to be some agreement that teacher motivation and teacher-student interaction are qualities of effective teachers that contribute to increases in student achievement. However, there is further research that cautions against the direct connection between teacher effectiveness and student achievement due to the tendency to narrow student achievement to measurable outcomes at the expense of the diverse, often non-cognitive needs of students (Skourdoumbis & Gale, 2013). In other words, conflating teacher effectiveness with student achievement, where such achievement is understood in terms of quantified measures such as test scores, risks neglecting student needs that do not fall within a quantified framework yet still contribute to their achievement in school and offer evidence of teacher effectiveness more broadly. As mentioned above, the WG report acknowledges that student learning is broader than quantified student achievement, but the focus of its own research base does not include any measures that extend into broader conceptualisations of student learning. Thus, the WG report remains unclear how "measureable gains in learning and student achievement" (Ministry of Education, 2014a, p. 5) will incorporate this broader conceptualisation of learning alongside student achievement in its narrow, quantitative sense.

Professional development

The second claim made by the WG report pertaining to teacher effectiveness maintains that effective teacher learning is school-based, collaborative, and shows benefits to both teachers and learners. Whereas the previous claim deals with quality teachers, this claim involves developing teachers in order to improve their teaching quality and effectiveness. The WG report (Ministry of Education, 2014a) notes, drawing on work from Darling-Hammond (1998), that: "What teachers know and do is one of the most important influences on what students learn" (p. 31). Jensen et al. (2012) take this further and comment that "[t]he most direct and effective way of

raising teacher quality is to improve teacher education and recruitment in tandem with improving teachers' professional learning" (p. 51), while the Ministry of Education (2010) states that "[a] comprehensive body of research clearly indicates that effective teachers are the main factor in raising the achievement and fostering the ongoing engagement of students" (p. 10). These findings are supported by Darling-Hammond et al. (2010) stating that "[u]sing increasingly fine-grained measures of teacher knowledge and disaggregated analyses of large-scale data sets, a number of recent studies suggest that teacher expertise is one of the most important factors in determining student achievement, followed by the smaller but consistently positive influences of small schools and small class sizes" (p. 6).

As such, the WG report takes up the area of professional development for teachers as a central concern. The WG report identifies current research within the field of professional development (PD) as an area that offers suggestions for the development of an effective teaching profession. The evidence offered within the WG report shows that successful professional development for teachers includes a combination of collaboration, external expertise, leadership roles for teachers, and building teacher capability to identify best practice in their relevant domain.

Darling-Hammond & McLaughlin (1995) pointed out the need for collaborative, inquiry-led PD for teachers that includes outside stakeholders such as other teachers, other schools, and neighbourhood-based youth organizations as well as opening opportunities for teachers to be involved with regional and national education activities. Since then, a large body of research has formed around questions of effective PD for teachers. Wallace (2009) found PD had moderate effects on teacher practice and very small, but statistically significant, effects on student achievement. Burke (2000) focused on results-based PD, wherein educators worked collaboratively on their own goals combined with the needs of their students. In Burke's model, the principal's primary role was to provide the time and opportunity for teacher-teams to collaborate. Supporting teachers to identify their own professional learning needs as they relate to their student learning needs has shown to be effective for raising student achievement in reading comprehension (Timperley & Alton-Lee, 2008; Timperley,

Parr, & Bertanees, 2009). Adding another dimension to effective PD, Janas (2001) found that effective PD maintains a balance between external directives, peer-collaboration, and more autonomous self-coaching in which teachers are able to develop their own professional goals and plans. Also supporting the professional, autonomous status of teachers, Elmore (2002) cautions against PD that is used as a tool for control. He urges a PD model in which teachers are active learners in their PD activities and that PD be focussed on specific contexts and challenges that are present in the local school or classroom. He further suggests that PD be linked to capacity building in teachers in ways that will promote a model of distributed leadership directed toward instructional improvement. This linking of PD to capacity building aligns with the WG report's call for capacity building based on the 2009 and 2010 McKinsey reports (Barber & Mourshed, 2009; Mourshed et al., 2010) and Fullan (2011).

Research that involves teachers self-reporting on what makes PD effective suggests a focus on teachers as active learners seeking research-based answers to their specific contexts. Collaborative inquiry between teachers has been shown to positively impact student outcomes in social studies (Sinnema, Sewell, & Milligan, 2011). Also, a study of 1,027 mathematics and science teachers found that teachers reported that the most effective PD consists of a focus on content knowledge, provision of opportunities for active learning, and coherence with other learning activities (Garet, Porter, Desimone, Birman, & Yoon, 2001). Lester (2003) interviewed secondary school teachers and found that teachers desire PD experiences in which their learning is active and able to be clearly integrated into practice and that peer-collaboration generated enthusiasm for PD. Bruce et al. (2010) offered a case study of two PD programmes and showed that attention to the complexities of context in a school is a positive contributor to effective PD for mathematics teaching.

Collaboration has emerged as a focal point for teacher PD as well. Collaborative learning communities are commented on positively within the literature on educational system reform. Fullan (2000) argues for wide collaboration stating that commitment from all those with a stake in the success of the system as a whole is

needed for large-scale educational reform to be successful. The benefits of collaborative learning communities are particularly highlighted in terms of the contribution they make to professional development. For example, Hopkins and Levin (2000) state that "schools will not improve unless teachers develop, individually and collectively…if the whole school is to develop then there need to be many staff development opportunities for teachers to learn together" (p 25). The distinction between the impact of collaborative learning communities on individuals as well as the staff collectively is also made by Datnow (2000) and Fullan (2011). For example, Datnow (2000) comments that the focus in educational reform needs to be on long term social and individual benefits which professional learning communities facilitate. Fullan (2011) also makes this distinction between social and individual capital and suggests that the social capital is the more powerful and important of the two in terms of building teacher capacity.

The literature also comments positively on the benefits of collaborative learning and its impact on student outcomes. For example, the 2010 McKinsey report (Mourshed et al., 2010) cite research from John Hattie pointing out that: "In his synthesis of over 50,000 studies and 800 meta-analyses of student achievement, John Hattie drew one major conclusion: 'The remarkable feature of the evidence is that the biggest effects on student learning occur when teachers become learners of their own teaching'" (p. 75).

In the US, a review of the Bay area school reforms found that the "character and strength of teachers' professional community within the school also emerges as a significant factor in most all accounts of educational improvement" (McLaughlin & Talbert, 2003, p. 7). These reforms were designed around a professional learning inquiry approach to examine performance data to improve student outcomes. The study used a mixed-methods approach combining data from teacher surveys (18 schools), test data (58 schools), and qualitative case studies (4 schools).

Concerns about the extent to which collaborative learning can build teachers' capacity in pedagogy are also commented on in the literature. For example, Peterson et al. (1996) state that: "Advocates of restructuring have assumed that teachers will discover new pedagogies and practices by being exposed to new ideas and by working in organizations that promote more collegial interaction" (p. 150). However, simply participating in professional learning communities and having conversations about learning and learners does not necessarily equip teachers with the pedagogy to respond to learners' needs. The structure of professional learning communities is considered important here. For example, as Harris and Jones (2010) note, if the learning communities are too loosely configured, "it is easy … to pay attention to everything else except learning and teaching, and in so doing, to significantly reduce the potential impact of their work" (p. 174). This was also the finding of Southworth (2000) who reviewed six projects, each focused on using professional learning communities of primary schools in the UK to improve student achievement outcomes. The findings revealed that while there were strong concerns and efforts in improving the quality of pupils' learning and in raising student achievement levels, this was "not accompanied by an equally strong interest in pedagogy" (Southworth, 2000, p. 279). This lack of dedicated reflection on teacher pedagogy led Southworth (2000) to conclude that "[t]here is no guaranteed link between looking at learning and enhancing the quality of teaching" (p. 282).

A subset of research supporting collaborative, teacher-oriented PD uses the concept of Professional Learning Communities (PLC) to describe what effective PD looks like. The PLC framework focuses on teachers as active and collaborative learners (Owen, 2014)—a focus that the WG report shares. Professional learning communities, designed to improve individual teacher capacity, were also found to support an increase in student achievement over a 10 year period in schools in New York (Resnick & Hall, 1998). Similarly, Schmoker (2004) claims that professional learning communities are "probably the most practical, affordable, and professionally dignifying route to better instruction in our schools" (p. 430) and can lead to gains in student outcomes.

Within a PLC framework, Doolittle et al. (2008) highlight the initial investment of time successful PLC require. The authors specify that this time should be dedicated "upfront to establish ground rules, clarify the tasks to be undertaken, identify supports required for successful implementation, and ensure that a shared vision and mission exist between partners" (2008, p. 303). Lieberman et al. (2009) emphasise the teacher-centric approach of PLC in their survey of five different PLC programmes. They conclude that in order for PLC to be effective, the members must focus on the knowledge and practice of teachers, and educational reform within a PLC framework must come from within the classroom. Hord (2009) reiterates Doolittle et al. (2008) requirement for an initial time investment and adds that leadership may start with the principal but must transition to a distributed model in which the teachers become responsible for the learning and decision-making within their PLC. This sort of collaborative work must strike a balance with the professional learning needs of teachers (Cherrington & Thornton, 2013).

Other studies, while positive about the role that collaborative learning plays, have found challenges in their sustainability due to the substantial time and effort involved. Schmoker (2004) talks about how insufficient resourcing can be the downfall of reform. Resourcing was also commented on by Sweetland (2008) in reflecting on the Inspired School model, which was implemented in a half-dozen public schools in Washington, DC with the goal of allowing teacher time for professional learning during the school day. Similarly, Little (2002), using qualitative case studies of whole-school reform in two high schools in the USA, found that a "heavy reliance on individual initiative and effort" in the professional learning communities led to high staff turnover (p. 706).

Ensuring that the changes are sufficiently embedded in the routines of staff and schools, or 'institutionalised' as Datnow (2005) refers to, is also prominent in the literature. For example, Harris and Jones (2010) report on piloting a model of professional learning communities as part of the national 'School Effectiveness Framework' (SEF) in six schools in Wales. The idea was to build professional learning communities within, between and across schools. While findings show early

evidence of changes in professional practice, Harris and Jones (2010) talk about the challenges in building professional communities across schools which can require a lot of negotiation and support and the subsequent time pressures needed for the changes to be integrated into routines to be sustainable. This was also found by Mullen and Schunk (2010) in a qualitative review and analysis of models of professional learning communities (within a single school) in North America. For change to be sustainable it needs to be embedded in the routine structures which requires a change in workplace culture (Mullen & Schunk, 2010). Here all staff have a role to play and Mullen and Schunk (2010) caution that: "The cult of heroic leadership is misleading, over-emphasizing the role of individual leaders at the cost of understanding more deeply the change process" (p. 190).

Research on PLC is beginning to show the results of this variety of PD. Huggins et al. (2011) show in their qualitative study that PLC can lead to change in teacher practice, though they note that in their study, this change came about in part through school leaders "providing instructional processes and practices that are characterized by structure, pressure, and support" (p. 67). Edwards (2012) noted a shift from principal leadership to a distributed leadership model shared among teachers in his research as well as the need for external support and expertise in the formation and maintenance of PLC, echoing the WG report that such expertise is helpful to challenging teachers' assumptions (Ministry of Education, 2014a). A recent study has been able to analyse data from 992 teachers involved in PLC and found that PLC, while defined inconsistently across research, was able to be conceptualised across three capacities: organisational, personal, & interpersonal (Sleegers, den Brok, Verbiest, Moolenaar, & Daly, 2013). These capacities offer evidence of PLC being a multi-level and multi-dimensional concept suggesting that PLC operates according to a networked architecture rather than a hierarchical one. Supporting this organizational architecture more generally, Alton-Lee (2011) offers a best evidence synthesis showing school leaders who support and participate in PD have a significant effect on teacher learning. As a result, teacher-centred leadership requires that the evaluation of PD be done by those who participate in it, and practitioners "demand better evidence from consultants and purveyors of new strategies and practices" (Guskey & Yoon, 2009, p. 498).

In contrast to the networked model supported by Sleegers, et al. (2013), Farley-Ripple & Buttram (2014) present a case study of a PLC framework mandated by the Delaware Department of Education (US). Their research shows that the mandate offered multiple levels (district, school, classroom) for interpretation and misinterpretation. Moreover, their findings suggest "that mere compliance is not sufficient for developing the type of collaborative practices likely to impact teacher knowledge or practices or, ultimately, student learning" (Farley-Ripple & Buttram, 2014, p. 49). They also note the importance of leadership at multiple levels of PLC, though they do not include teachers within their consideration of leadership.

The above studies highlight an important point about the organisation of collaboration. While collaboration is supported through a robust evidence base on PD as well as PLC, in consideration of Sleegers et al. (2013) and Farley-Ripple & Buttram (2014), the form that collaboration takes can determine the success of the initiative collaboration is attached to. Taken together, their research suggests that collaboration that is hierarchical and compliance-based is ineffective at positively influencing student learning. But collaboration where decision-making is more lateral and democratic is better capable of responding to student and teacher learning needs as identified by teachers.

Some cautionary research on PD, and more narrowly PLC, shows that there is little consensus around the term 'effective' in PD and that the concept is fluid and difficult to generalize into a uniform approach. Emphasising this point, Yoon et al. (2007) conducted a literature review of 1,300 research-based evidence manuscripts on the effects of PD and found nine that met the criteria for the What Works Clearinghouse evidence standards. Watson (2014) showed in a literature review that the ubiquity of PLC stretches the concept to mean very different things, thus it becomes problematic to offer a general set of conclusions about PLC. He further shows that, due to the flexibility of the concept, PLC may function to maintain the sort of ineffective PD it is designed to replace. Lomos et al. (2011) point out the lack of a definition for professional communities within schools citing little conceptual and empirical validation of the concept.

The focus and investment required for effective PD is a question that occurs in the evidence base. Guskey (2003) surveyed thirteen PD programmes recommended by the United States Department of Education and found little rigorous investigation of the relationship between improvements in teaching and improvements in learning outcomes. The author does note some overlaps between these programmes, the most frequent being a focus on teachers' content and pedagogic knowledge, though nearly all of the programmes focussing on these two areas are related to math and science. The second most common overlap between programmes emphasised the importance of time and resources to PD. Substantial time and resources for PD is echoed across the research body (Bleicher, 2013; Burke, 2000; Doolittle et al., 2008; Edwards, 2012; Elmore, 2002; Hairrell et al., 2011; Hord, 2009; Yoon et al., 2007), though some research also warns that PD time and resources are less effective when they are not directed toward building teacher capacity in a collaborative, rather than individualistic, framework (Opfer & Pedder, 2011; Pedder & Opfer, 2012).

There is some evidence for time resourcing for effective PD. In terms of hours for professional development, "in Hong Kong there are 150 hours professional development available to teachers within a 3 year cycle while other high performing countries such as Singapore, Sweden, and the Netherlands require at least 100 hours of professional development per year, beyond the many hours spent in collegial planning and inquiry" (Darling-Hammond et al., 2010, p. 5). These hours are allocated to teachers' work day in the same way that teaching is. In a study of the impact of professional development time on student achievement, Darling-Hammond et al. (2010) found that 50 hours or more over a six to 12 month period impacts on student achievement with gains of up to 21 percentile points on standardised tests.

The research on temporal and financial resourcing, tells us that time and money are both critical to the success of professional development, which we take as a term that includes the WG report's mention of inquiry time. However, they are not sufficient. In addition to the amount of each provided, time and money must also be structured and contextually responsive to the needs of teacher and student learning.

Summary

A review of the evidence for the WG report's treatment of teacher effectiveness shows there are two areas the report considers: quality teachers and professional development. Overall, the WG report offers an evidence base that shows quality teachers are the most significant, in-school contributor to student achievement. As well, the WG report offers evidence supporting collaborative professional development that positions teachers in leadership roles as regards their learning.

The broader survey of evidence provided in this overview has shown that while the evidence base supports the general claims made in the report, there are a number of factors that are not addressed by the WG report. These include how an implemented Investing in Educational Success will avoid narrowing student achievement at the expense of students' diverse needs, the kind of collaboration teachers will take up and how it will be structured in and across schools, the mechanisms by which professional development will be context-specific and will connect student needs to teacher needs, and the structure and context of the time and money provided for professional development. The research base included above shows these areas to be critical to the success of teachers in the classroom as well as their continued development as autonomous professionals.

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Appendix 2: Templates

TEMPLATE	
Standard bibliographic information	Alexander, R. (2013). Moral panic, miracle cures and educational policy: what can we really learn from international comparison? *Scottish Educational Review, 44*(1), 4-21.
Country of Origin	UK
Key words	PISA TIMSS Policy Educational standards International student achievement
Abstract	In many countries, including the UK, the potential of international student achievement surveys such as TIMSS and PISA is being subverted by political and media fixation on the resulting league tables. These prompt not just well-founded efforts to learn from others' success but also ill-founded assertions about educational cause and effect, inappropriate transplanting of the policies to which success is attributed, and even the reconfiguring of entire national curricula to respond less to national culture, values and needs than to the dubious claims of 'international benchmarking' and 'world class' educational standards – the latter equated with test scores in a limited spectrum of human learning. Informing such responses are the attractively simple nostrums of high profile and highly selective literature reviews that massage policymakers' urge for the quick fix by playing down the complex interplay of culture and schooling and ignoring the kinds of evidence that can provide a truer and more nuanced picture of education systems in action. Using a typology developed by the US National Research Council, the paper critiques three recent and influential examples of this paradigm before illustrating an alternative approach. This draws on the author's comparative studies of culture and pedagogy to show how explicating the principles that underpin observed classroom practice, rather than copying national policies, can lead to genuine transformation of the quality and outcomes of student learning. The paper ends by contending that PISA panic and the supremacist mindset it feeds has dangerously distorted the debate about what a 'world class' education should entail. With PISA 2012 now in progress, policymakers are urged to redress the balance.
Type of Research	Critical discussion

Key themes or findings.	'it's not obvious enough to the current crop of educational policy advisers who advocate policy borrowing on what I believe is a culturally reckless scale and are applauded by their governments for doing so; and who find it politically more expedient to counter Britain's patchy educational performance by commending the educational policies of Singapore, Hong Kong or Finland than by examining the economic and social policies of Britain'. [p 5] 'Thus Type I includes the large-scale international student achievement studies like TIMSS, PISA and PIRLS. These are typically quantitative and are referenced by a limited number of indicators and measures of learning outcome and, latterly, of context and input. Type II includes a more varied mix of studies though the usual paradigm is the deskbased review of existing literature or data. What Type II studies have in common is a direct focus on specific policy concerns – standards, the curriculum, teacher training, school leadership or whatever. Examples are the recent reports from Ofsted, McKinsey and Cambridge Assessment which adopt the Type II desk review format first to explain countries' differential performance in Type I student achievement surveys and then to propose policy responses. (Reynolds and Farrell 1996, Barber and Mourshed 2007, Mourshed, Chijioke and Barber 2010, Barber, Whelan and Clark 2011, Oates 2010). Type II desk reviews, it seems to me, most conspicuously illustrate the dangers of ill-conceived international comparison in the context of educational policy, so I shall use them as cases. Type III includes the majority of work in the published corpus of academic'. [p 7] 'But the first McKinsey report (Barber and Mourshed 2007) is a lavish coffee table product with colour illustrations, an exotic typeface, and cardboard covers of the robust grade normally reserved for eco-coffins. It is also so big that you have to stand up to read it – an act of enforced deference that I somewhat resent. And all the McKinsey education reports have been backed by a no less prodigal campaign of international promotion.' [p 7] 'In the course of its expensive quest for this damp squib the McKinsey report delivered further stunning insights such as: 'The quality of an education system cannot exceed the quality of its teachers', 'The only way to improve outcomes is to improve instruction' and 'High performance requires every child to succeed.' To such compound tautologies McKinsey added linguistic gems like: 'Top-performing systems leverage a substantial and growing knowledge about what constitutes effective school leadership to develop their principals into drivers of instruction.' (Barber and Mourshed 2007, 4 and 30). Two further reports followed from the same stable and in similar methodological and linguistic vein: How the World's Most-Improved School Systems Keep Getting Better (Mourshed et al 2010) and Capturing the Leadership Premium: how the world's top school systems are building leadership capacity for the future (Barber et al 2011). The second McKinsey report looked at 20 rapidly-improving systems, the third at eight. 'Systems' in all three reports was defined very loosely

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	indeed, allowing comparisons, which some would balk at, between Japan (a country with a population of 127 million), Alberta (a Canadian province with 3.7 million) and Aspire (a charter school system in the state of California with just 40 schools)'. [p 9] • 'McKinsey recommendation of better teachers, teacher training and school leadership is decidedly unmiraculous since it is a statement of the obvious'. [p 9] • 'However, while saying that good teaching is what makes the difference, McKinsey had nothing whatever to say about pedagogy as such, so its reports have no obvious classroom purchase, and in any case the focus is on systems rather than classrooms. But the McKinsey brand is evident in the current elevation of school leaders from head teachers, who by their traditionally modest English title are primus inter pares, to heroic figures who turn round failing schools and stamp their sharp-suited presence on the mere mortals who actually do the teaching'. [p 10] • 'But the most devastating criticisms come in a recent article by Frank Coffield (2012). His central charge is that McKinsey's analysis is culpably mono-factorial when it has long been understood that socio-economic factors have a significant impact on students' motivation, engagement, learning and attainment, especially in a country whose economic and social disparities are as great as they are in Britain. The first McKinsey report, continues Coffield, is methodologically flawed, 'disablingly selective' in its data and explanatory frame, superficial in its account of 'best practice' and how this can be disseminated, and seduced by its own rhetoric on leadership. Coffield likes the second McKinsey report a bit better than the first, though still not a lot, but castigates it 12 for an impoverished view of teaching and learning, a thin evidence base, implausible arguments about the mechanisms and processes of school improvement, technocratic and authoritarian language and a pervasive neglect of culture and political context. Yet, Coffield notes, the UK coalition government's 2010 White Paper The Importance of Teaching (DfE 2010b) approvingly quotes McKinsey seven times in its first 20 pages. Coffield sees McKinsey as the work of 'global' policy analysts, remote from the complexities of classrooms and the discomfiting findings of researchers which pose such difficulties for politicians in search of quick 'transformations' of school systems before the next election. They espouse a ... model of schooling ... characterised by relentless pressure, competition, line managers, customer services, data for performance management, accountability and value for money; and professional autonomy for teachers only when granted by the centre ... Their notion of teaching is narrowly conceived and technocratic ... Their model remains unsophisticated, impracticable and undemocratic ... Their recommendations are educationally and socially dysfunctional and should not be part of school reform in a democracy. (Coffield 2012, 145-6). Strong stuff indeed, though in my view not unjustified'. [pp 11-12] • 'Here's another example. My Cambridge colleague John Gray has recently completed a meta-analysis of

	adolescent wellbeing, using international data, which shows that while the Netherlands and Finland both rank high on PISA, Dutch students are much happier at school than their Finnish contemporaries. He also argues that McKinsey-style comparisons between the UK and Hong Kong or Singapore are fruitless because the cultures are so utterly different and the educational systems are not remotely comparable in scale (England has 23,000 schools while Singapore has just 350). He therefore suggests that if we really wish to use international comparison for policy transfer we should look not at Hong Kong, Singapore or even Finland, but at the Netherlands, because it is successful in the interlocking areas of attainment and wellbeing and it is culturally not too different from the UK. (Gray et al 2011)'. [p 14]
Methodology	N/A

	TEMPLATE
Standard bibliographic information	Allen, J., Gregory, A., Mikami, A., Lun, J., Hamre, B., & Pianta, R. (2013). Observations of effective teacher-student interactions in secondary school classrooms: Predicting student achievement with the classroom assessment scoring system-secondary. *School Psychology Review, 42*(1), 76-98.
Country of Origin	US
Key words	Academic achievement -- Research Teacher-student relationships -- Research Multilevel models (Statistics) Classroom environment Achievement tests Teachers -- Rating of Educational evaluation
Abstract	Multilevel modelling techniques were used with a sample of 643 students enrolled in 37 secondary school classrooms to predict future student achievement (controlling for baseline achievement) from observed teacher interactions with students in the classroom, coded using the Classroom Assessment Scoring System—Secondary. After accounting for prior year test performance, qualities of teacher interactions with students predicted student performance on end-of-year standardized achievement tests. Classrooms characterized by a positive emotional climate, with sensitivity to adolescent needs and perspectives, use of diverse and engaging instructional learning formats, and a focus on analysis and problem solving were associated with higher levels of student achievement. Effects of higher quality teacher-student interactions were greatest in classrooms with fewer students. Implications for teacher performance assessment and teacher effects on achievement are discussed.
Type of Research	Quantitative: Qualitative; Descriptive;
Key themes or findings.	• Study shows three domains of teacher-student interaction (Emotional Support (ES), Classroom Organization (CO), & Instructional Support (IS)) were predictive of higher student achievement test scores at the end of the year. • ES & IS had greatest predictive value in smaller class sizes. • Results show significant predictions of achievement from positive climate, teacher sensitivity, and regard for adolescent perspectives in ES, instructional learning formats in CO, and analysis and problem solving in IS. • Higher quality behaviour management, instructional learning formats, content understanding, and quality of feedback were significantly predicted by students' baseline achievement test scores, along with the domain-level scales CO & IS. However, no effects of baseline levels of student achievement on ES were observed. • Finds that constructing a measure of observed teacher-student interactions through a composite of 5 significantly predictive dimensions (positive climate, teacher sensitivity, regard for adolescent perspectives, instructional learning formats, and analysis and problem solving) would put a student entering with an average

	test score (50th percentile) in a classroom one standard deviation below the mean on this composite reflective of overall quality of teacher-student interactions would on average place in the 37th percentile in end-of-year tests; whereas a student entering with average test scores in a class that was one standard deviation above the mean on this scale would on average place in the 63rd percentile on end-of-year tests. • Finds quality of behaviour management in classroom is associated primarily to pre-existing levels of student achievement rather than future gains in achievement. • Suggests that professional development focused specifically on teachers' emotional, organizational, and instructional interactions with students may enhance teacher effectiveness in ways that have a direct effect on student learning.
Methodology	Multilevel modelling

TEMPLATE	
Standard bibliographic information	Alton-Lee, A. (2003). *Quality teaching for diverse students in schooling: Best evidence synthesis.* Wellington, NZ: New Zealand Ministry of Education.
Country of Origin	
Key words	
Abstract	
Type of Research	Best Evidence Synthesis
Key themes or findings.	Executive Summary lists 10 key findings: • "Quality teaching is focused on student achievement (including social outcomes) and facilitates high standards of student outcomes for heterogeneous groups of students" (vi). • "Pedagogical practices enable classes and other learning groupings to work as caring, inclusive, and cohesive learning communities" (vi). • "Effective links are created between school and other cultural contexts in which students are socialised, to facilitate learning" (vii). • "Quality teaching is responsive to student learning processes" (vii). • "Opportunity to learn is effective and sufficient" (viii). • "Multiple task contexts support learning cycles" (viii). • "Curriculum goals, resources including ICT usage, task design, teaching and school practices are effectively aligned" (ix). • "Pedagogy scaffolds and provides appropriate feedback on students' task engagement" (ix). • "Pedagogy promotes learning orientations, student self-regulation, metacognitive strategies and thoughtful student discourse" (x). • "Teachers and students engage constructively in goal-oriented assessment" (x). Other findings: • "Our best evidence internationally is that what happens in classrooms through quality teaching and through the quality of the learning environment generated by the teacher and the students, is the key variable in explaining up to 59%, or even more, of the variance in student scores" (2). • "The available New Zealand evidence shows school level effects to vary from accounting for 5% of the variance in student scores to 20.9% of the variance for different curricular areas" (2).
Methodology	See Section 6 for Best Evidence Synthesis Approach

	TEMPLATE
Standard bibliographic information	Alton-Lee, A. (2011). (Using) evidence for educational improvement. *Cambridge Journal of Education, 41*(3), 303-329. doi: 10.1080/0305764X.2011.607150
Country of Origin	NZ
Key words	Leadership Professional Development Student Outcomes Social Outcomes Academic Achievement Evidence Policy Equity Improvement
Abstract	The New Zealand Ministry of Education has published a best evidence synthesis iteration (BES) that identifies the characteristics of teacher professional development that make a positive difference for valued student outcomes. A companion best evidence synthesis iteration (BES) that identifies the leadership influences on valued student outcomes reveals that when school leaders promote and/or participate in effective teacher professional learning and development, this has more impact on student achievement than any other leadership activity. This article provides an overview of the findings about effective professional development and highlights the potential of such evidence to inform educational improvement. An example of a tool to support collaborative professional inquiry and knowledge building in schools is provided. The article highlights policy challenges for the systemic use of effective professional development and illustrates what is possible in two examples of high impact research and development (R & D) that have been effective across varied contexts. These examples illustrate the potential for educational improvement when professional learning is underpinned by cumulative high impact research and development in education.
Type of Research	Descriptive; Qualitative; Quantitative
Key themes or findings.	• Greatest effect size for leadership on student outcomes (d=0.84) is "associated with the role of school leaders in promoting and participating in teacher professional learning and development" (306). • "Findings call for school leadership to play a central role in embedding a professional inquiry model into teaching practice" (307). • "Use of evidence is more likely when there is stakeholder ownership" (307), i.e., ownership of the profession. • "Qualitative analyses of the synthesis findings revealed the greatest gains evident were those that deepened teachers' foundation of curricula-specific pedagogical content and assessment knowledge" (312). • "When professional development bypasses rather than engages teachers' own theories about their practice, little changes for students. When teachers get limited

	professional development and lack opportunity to integrate their new learning into practice, little changes for students. When there is an absence of proactive involvement by leaders in the professional learning and when there are constrained or no opportunities for teachers to process new learning with colleagues, less changes for students" (312).
	• "The evidence indicates that it is an inquiry rather than a prescriptive approach that will optimise the effectiveness of professional learning" (316).
	• "effective professional development is a major policy lever for systemic improvement in education, and highlights how R & D can make an important contribution by identifying practices that have significant positive impact, supporting the development of effective professional learning and enabling ongoing improvement. Systemic improvement requires policy, research and professional leadership to prioritise and create the conditions for productive professional learning" (324).
Methodology	Best Evidence Synthesis

TEMPLATE	
Standard bibliographic information	Barber, M., & Mourshed, M. (2009). *Shaping the future: How good education systems can become great in the decade ahead.* Singapore: McKinsey Company. Retrieved from http://www.mckinsey.com/locations/southeastasia/knowledge/Education_Roundtable.pdf
Country of Origin	Singapore
Key words	N/A
Abstract	N/A
Type of Research	Report synthesis from International Education Roundtable (IER) discussion with ministers and senior representatives from six school systems around the world.
Key themes or findings.	IER report offers following summary statements: *"The skills that students will need in 20 years will be different from what they are provided with now and cannot be fully predicted.* *One objective that will continue to be important is equity. We need to ensure all children can succeed while enabling some children to push the limits of educational potential* *We will also need to review our assessment systems to match the outcomes that will be required of schooling in the future* *Explaining and discussing these imperatives with communities both outside and inside schools are important challenges for educational and political leaders* *Information and communication technology (ICT) is a transformational force for education. The challenge our systems face is how to, system-wide, use ICT to unlock the potential of students and put power in their hands as learners* *Effective system-wide use of ICT will require combining technology (hardware, software, maintenance, and support) and capability (teachers' and school leaders') with a coherent ICT strategy, including:* • *Embedding ICT in day-to-day learning, rather than setting up a separate computer lab* • *Transparency on learning: gather and respond to*

	feedback from students • *System transparency: managing and using large amounts of data* • *Equity and tailoring: provide cost-efficient high-quality learning to remote and/or small groups of learners* • *Online collaboration through networks* • *Assessment formats and tools* • *Research and development* • *Blending ICT's use with human interaction, recognizing that the power of ICT technology in its combination with human interaction* *The challenge for teaching and leadership development is enormous given all of the above. Systems will need:* • *To recruit top talent into teaching and school leadership...even the best systems are not and cannot be complacent* • *To support and manage our teachers and leaders to be successful (and to retain them)* • *To establish a normative model of teaching practice and then embed it in daily instruction and in professional development* • *To offer leadership development to school leaders" (42).*
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Barker, B. (2007). The leadership paradox: Can school leaders transform student outcomes? *School Effectiveness and School Improvement, 18*(1), 21-43. doi: 10.1080/09243450601058618
Country of Origin	UK
Key words	Foreign Countries Observation Leadership Academic Achievement Case Studies Outcomes of Education Educational Policy Government School Relationship School Administration Student School Relationship Leadership Effectiveness Interviews England Canada Australia Tanzania
Abstract	This qualitative case study of an exceptional school in the south of England challenges the hypothesis that transformational leaders significantly impact on student outcomes. Interviews with staff and students, together with classroom observation, confirm that the head, appointed in 1995, has played an important role in transforming internal processes and in changing the context of the school. Although the observed and reported behaviour of leaders, teachers, and students matches expectations from the literature, the consequences for student achievement are unclear. Background variables seem to explain most of the apparent improvement in student outcomes. An effectiveness framework that assigns disproportionate value to examination results seems to have created a leadership paradox, where heads reported to be transformational produce only limited gains in performance. The study concludes that the government's determination to assume a strongly positive relationship between leaders and outcomes has compromised the principle of evidence-informed policy-making and that we need a different approach based on a broadly defined, qualitative conception of student success. (Contains 2 tables and 1 chart.)
Type of Research	Qualitative; Descriptive;
Key themes or findings.	• Looks at changes one principal has brought about in a school & on measures described, e.g....roll increase, number of students retained post 16, level of A to C GCSE passes leadership has transformed the school. • A number of internal and external changes other than leadership seem to have contributed to the improved examination results and qualify our perception of the school's enhanced effectiveness. • In fact, the school's improvements in examination results are only slightly higher than the improvements in the LEA

	results.
	• The schools relative improvement may be plausibly explained by the additional resources and enhanced status, achieved through designation first as a foundation school, then as a Language College.
	• The author questions the ways in which trying to measure the link between effective school leadership & outcome may actually be distorting reality, particularly when examination data is used.
Methodology	Single Case study

	TEMPLATE
Standard bibliographic information	Basque, M., & Bouchamma, Y. (2013). Academic achievement in effective schools. *Alberta Journal of Educational Research, 59*(3), 503-519.
Country of Origin	Canada
Key words	N/A
Abstract	Purpose: The purpose of this study is to identify predictors of achievement in mathematics in elementary schools in New Brunswick (Canada). Data Collection: Both teachers and school leaders (N = 111) completed a questionnaire on their practices and on school functioning. Findings: Multiple regression analyses revealed that the students' achievement in mathematics was determined by prior achievement, urban school attendance, and teaching quality. Implications: To counter the socioeconomic constraints on achievement in mathematics, taking a closer look at teaching quality represents a promising research area. The implications of this study on education policies and research are discussed.
Type of Research	Quantitative
Key themes or findings.	• "Among the school-related variables, school location was shown to be significant in predicting performance in math, even after other variables were controlled" (513). • "For the variables related to the school and the classroom, teaching quality was the only one capable of predicting achievement in eighth grade math. When the variables prior achievement and school location were controlled, teaching quality remained significant in predicting performance" (513). • "Our results showed that students' prior achievement (fifth grade mathematics) predicted performance in the eighth grade and lead to the possibility of identifying at-risk students three years before their final exams" (514). • "This study also showed that students in urban schools fare better than students in rural areas" (514). • "Also demonstrated in this study was the importance of teaching quality and its impact on student achievement. To ensure that teachers provide high-quality learning activities for their students, school principals must establish adequate instructional supervision, particularly for new teachers" (515).
Methodology	Regression Analysis and Descriptive Statistics

	TEMPLATE
Standard bibliographic information	Berends, M., Bodilly, S., & Kirby, S. N. (2002). Looking back over a decade of whole-school reform: The experience of new American schools. *Phi Delta Kappan, 84*(2), 168 -175.
Country of Origin	USA
Key words	School reform Student achievement Implementation
Abstract	Federal and state policy makers need to think critically about their current stance of simultaneously promoting high-stakes testing, comprehensive school reforms that centre on innovative curriculum and instructional strategies, and the adoption of multiple additional reforms, the authors warn.
Type of Research	Evaluation of reform programme
Key themes or findings.	• New American Schools (NAS), which is a private non profit organization 'was charged with helping schools and districts raise significantly the achievement of large numbers of students by implementing whole-school reforms' - initially 147 schools [p 1]. Idea was to develop whole school designs that 'could be readily adopted by communities around the nation'. Had design teams that worked with schools • RAND (research think-tank) did analysis and evaluation of NAS reform. • Mixed success in terms of implementation. Some issues were lack of coherence between design and school, initial buy-in, reform fatigue, funding issues – reform costs were high, teacher time. Mixed findings in terms of gains in student achievement, e.g. 'strong principal leadership as reported by teachers had significant positive effects on students' state test scores in reading and mathematics'; 'in general, early implementation of NAS designs in a high-poverty district within a high-stakes accountability system did not result in significant effects on student achievement' • 'we cannot expect stronger performance results unless implementation significantly improves' [p 6] • 'A rush to scale-up when interventions are not completely developed weakens results' [p 7] • 'The initial hypothesis, that by adopting a whole school design a school could improve its performance, was largely unproved. Our general findings showed difficulties in implementation and lack of strong improvements in school performance in a significant percentage of the schools in our samples' [p 6].
Methodology	Evaluation of reform programme. Longitudinal quantitative (performance) and qualitative (case study) data.

	TEMPLATE	
Standard bibliographic information	Bibbo, T., & d'Erizans, R. (2014). Professional development that works. *Principal Leadership, 14*(7), 28-32.	
Country of Origin	US	
Key words	Teacher-administrator relationships -- Methods Professional development -- Methods Knowledge transfer -- Methods Educational evaluation -- Methods United States	
Abstract	N/A	
Type of Research	Descriptive	
Key themes or findings.	• Citing Bash & D'Auria (2012), PD that leads to improved student learning includes: Specific content- or subject-area knowledge or pedagogical strategies; Active/Inquiry-oriented learning; Sufficient duration; Reflection & feedback; Collaboration. • Citing Guskey & Yoon (2009), PD that increases student learning includes "significant amounts of structured and sustained follow-up after the main PD activities" (31).	
Methodology	Research synthesis	

TEMPLATE	
Standard bibliographic information	Bleicher, R. E. (2013). A collaborative action research approach to professional learning. *Professional Development in Education, 40*(5), 802-821. doi: 10.1080/19415257.2013.842183
Country of Origin	US
Key words	Action Research In-service Teacher Education Professional Development Professional Learning Reflection
Abstract	The field of professional development is moving towards the notion of professional learning, highlighting the active learning role that teachers play in changing their knowledge bases, beliefs and practice. This article builds on this idea and argues for creating professional learning that is guided by a collaborative action research (CAR) theoretical framework, founded on an action research philosophy. CAR components include: motivation—teacher orientation and self-efficacy; knowledge—adding to knowledge bases about disciplines and students relevant to teachers' interests; action—change in teaching practice perceived to improve student achievement; and reflection—the cornerstone of the entire learning process in which teachers are afforded time and support to connect new experiences to their teaching practice. This article argues for professional learning developers to consider utilizing these four CAR components as a framework. A current professional learning project that was based on the CAR framework is employed to illustrate how it can be implemented.
Type of Research	Qualitative
Key themes or findings.	• CAR is a useful framework for Professional Learning effecting teaching practice. • *Motivation*: "teachers' prior epistemological and pedagogical beliefs and dispositions are important to recognize at the start; teachers need collegial support in the form of regular meetings and discussions to bolster self-efficacy; teachers' perceptions of student achievement are crucial to the success of the change process; and teachers need experience with new strategies before they will change their pedagogical beliefs (awareness and knowledge of new strategies are not sufficient for their adoption to the classroom)" (814). • *Knowledge*: "if a teacher perceives that a new technique is getting what they see as favourable results from their students, then they are likely to form a positive disposition towards that technique and include it in their future teaching practice…. The single most important PL outcome is for teachers to feel empowered to be able to change their practice" (814). • *Action*: "teachers were capable of identifying their own PL needs during their CART meetings. Through such involvement, teachers could be truly said to be more empowered in their teaching roles…. the group reflection process was highly valued by the teachers as

	indispensable to their instructional planning. It challenged individual beliefs and led to a safe environment for trialing new practices given the support of colleagues" (815).
	• *Reflection*: "Teachers can benefit from PL that helps them clarify their ability to reflect and make those reflections available to share with others" (815).
	• "the four CAR components can provide a useful theoretical framework for PL projects that aim to achieve long-term change to teaching practice" (816).
Methodology	Action research

Standard bibliographic information	Boonen, T., Van Damme, J., & Onghena, P. (2014). Teacher effects on student achievement in first grade: which aspects matter most? *School Effectiveness & School Improvement*, 25(1), 126-152. doi: 10.1080/09243453.2013.778297
Country of Origin	Belgium
Key words	Teacher Effectiveness Student Achievement Primary Education Multilevel Regression Analysis
Abstract	The present study investigates the effects of teachers (background qualifications, attitudes and beliefs, and instructional practices) on student achievement in mathematics, reading, and spelling in 1st grade. Its theoretical framework and methodology are based on recent work by Palardy and Rumberger (2008). Data from the SiBO Project, a longitudinal study in Flemish primary education, were analysed for the present study using 2-level regression analysis. The results showed that teacher background had the largest effect on mathematics achievement, whereas instructional practices had the largest effects on both reading and spelling achievement. Moreover, the size of teacher effects depended upon the specific learning domain: Larger teacher effects were found for mathematics than for spelling and reading. Overall, the results suggest that teachers had a modest to strong effect on student achievement in first grade.
Type of Research	Quantitative
Key themes or findings.	• "no effect of teachers' background was found for student achievement in reading and spelling, whereas a significant effect of teachers' background was found for student achievement in math. The positive effect of teacher experience and the negative effect of in-service training accounted for 8.4% of the class/teacher variance in math achievement" (142). • "regarding math achievement, (a) one teacher attitude (job satisfaction) and (b) two math-specific activities (estimation and classification) were associated with math achievement. Of these, job satisfaction had the largest association. All three significant teacher variables had a combined effect size of .21" (142). • "In our study, (a) one teacher attitude (attitude towards the underprivileged), (b) two instructional modalities (whole-class instruction and homogeneous reading groups), and (c) one language-specific activity (story projects) were significantly associated with reading achievement" (142). • "findings from this study revealed that instructional practices had the greatest effect on student achievement in reading and spelling, but not on student achievement in mathematics" (143). • "the results of the present study on teacher effectiveness suggest that teachers have a modest to strong effect on student achievement. Combined effects of .57 for math achievement, .22 for reading achievement, and .27 for

	spelling achievement after controlling for individual and compositional classroom differences were found" (143).
Methodology	2-level regression analysis

TEMPLATE	
Standard bibliographic information	Borko, H., Elliott, R., & Uchiyama, K. (2002). Professional development: A key to Kentucky's educational reform effort. *Teaching and Teacher Education, 18*(8), 969-987. doi: 10.1016/S0742-051X(02)00054-9
Country of Origin	USA
Key words	Professional development Systemic reform Standards-based educational reform Case study
Abstract	Despite its essential role in educational reform, professional development typically does not receive adequate support in systemic reform efforts. This article presents an exception—a state that incorporated professional development as a central priority in its reform effort and four schools that used state resources to build their capacity for enacting the reform agenda. We describe central features of Kentucky's approach to professional development, characterize elements of professional development within the four schools, and discuss how these elements promoted three dimensions of school capacity: individual teachers' knowledge, skills, and dispositions; professional community; and program coherence. Based on this "image of the possible," we offer recommendations for professional development that supports systemic, standards-based educational reform.
Type of Research	Case study of professional development programme as part of standards-based reform agenda in Kentucky.
Key themes or findings.	• 'in the United States, systemic reform efforts typically provide inadequate support for teachers' professional development' [p 970] • Presents Kentucky case – 'made professional development a major component of its standards-based reform effort' from the start and 'four exemplary schools that used state PD resources [p 970]. • Notes importance of PD being continuous and long-term rather than a one-off event. Must focus at individual and school level. Must be embedded from start – teachers as crucial part of change. • 5 key things are important for improving student achievement: teacher knowledge, professional learning community, program coherence, technical resources and principal leadership. First three of these are 'most responsive to improvement through professional development' [p 972]. • Findings that PD was successful in supporting systemic educational reform. Support for finding that PD is needed to meet both individual and institutional needs.
Methodology	Case study

TEMPLATE	
Standard bibliographic information	Branch, G. F., Hanushek, E. A., & Rivkin, S. G. (2013). School leaders matter. *Education Next, 13*(1), 62-69.
Country of Origin	USA
Key words	School principals Academic achievement Educational leadership Teacher turnover Leadership
Abstract	The article discusses a study which determined the importance of school leadership by estimating individual principals' contributions to growth in student achievement. The researchers measured differences in average gains in achievement, adjusted for individual student and school characteristics, across principals in different schools and in the same school at different points in time. They also examined the principals' management of teacher transitions, which affect student achievement.
Type of Research	Quantitative.
Key themes or findings.	• Measured how average gains in achievement (on Maths) differed across principals. • The research approach was similar to those used to measure 'value added' by teacher. • Highly effective principals raised achievement between 2 & 7 months in a year. Ineffective principals lower achievement by roughly the same amount. • This impact is lower than the impact of having a highly effective teacher. • "The principal labor market does not appear to weed out those principals who are least successful in raising student achievement. This is especially true in schools serving disadvantaged students" (63-64). • They concede that the impact of principals on learning is a difficult analytical problem.
Methodology	Used existing databases and a 'value added' model.

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Standard bibliographic information	Bruce, C. D., Esmonde, I., Ross, J., Dookie, L., & Beatty, R. (2010). The effects of sustained classroom-embedded teacher professional learning on teacher efficacy and related student achievement. *Teaching and Teacher Education, 26*, 1598-1608. doi: 10.1016/j.tate.2010.06.011
Country of Origin	Canada
Key words	Professional learning Teacher efficacy Mathematics achievement
Abstract	This paper reports on the impact of a classroom-embedded professional learning (PL) program for mathematics teaching in two contrasting districts in Canada, and investigates the relationship between teacher efficacy and student achievement. Before the PL, District A had lower teacher efficacy and student achievement than District B, but after the PL, this situation was reversed. Qualitative analysis revealed that the two districts reported learning very different things from the PL opportunity. The complexities of context, prior learning experiences, goal setting, and persistence of participants all factored into what and how teachers learned.
Type of Research	Mixed Methods
Key themes or findings.	• "The teachers in the school with the least knowledge of effective mathematics teaching practices actually had higher efficacy and higher student achievement scores than the District that had engaged in a comprehensive mathematics professional learning program. After a sustained and intense year-long professional learning program, the situation was reversed. The mathematics teachers with greater prior professional learning experiences increased their efficacy more than those of the other District, and their students learned more. We partially explained this finding by looking at what the teachers had learned and how they had participated in the PL sessions. The context of the PL was necessary to explain this counter-intuitive finding" (1606). • "this study illustrates that sustained professional learning programs that are collaborative and classroom embedded support effective professional learning that leads to substantial student achievement gains and the related gains in teaching quality. Teacher efficacy can act as a further mediator to support higher student achievement. Teacher efficacy alone may have minimal impact; however, it operates indirectly by positively influencing teacher goal setting and persistence using challenging teaching strategies that benefit students. In contrast, high teacher efficacy based on untested or unchallenged self-appraisals can be disabling if teachers believe they have nothing new to learn from PL opportunities. In this study, the moderately high teacher efficacy coupled with the prior PL experiences and collaborative practices of participants in District A enabled goal setting, provided participants with a strong foundation for recognizing

	how the PL content was of value to them, and it provided participants with cultural capital in the form of capacity for collaborative learning" (1607).
	• "The teachers who were more experienced with the pedagogy being explored in the professional learning program, which in this case was teaching through problem solving, were able to maximize their learning from the PL program" (1607).
	• "Far from demonstrating a ceiling effect, this study showed that these teachers were engaged in deepening their learning and applying it effectively to the classroom on an ongoing basis, while the teachers who were just beginning to learn about this type of pedagogy were mainly focused on surface features, such as the need to rely on grade level expectations instead of textbooks or trade materials, and the formal structures of co-teaching. These findings lend support to other research that has called for long-term, classroom-embedded, sustainable strategies that support teacher professional learning, rather than single workshops or professional learning programs that are disconnected from the classroom environment" (1607).
	• "In-between-session activity of teacher participants where they implemented problem-based mathematics lessons regularly in their classrooms had a positive effect on teacher efficacy and related student achievement. Participant engagement in ongoing co-planning and co-teaching, beyond the six PD sessions was a key factor in the rate of participant feelings of success. Those participants who co-planned and co-taught between the formal sessions were more confident and engaged, as well as capable of implementing effective mathematics pedagogical practices by the end of the program" (1607).
	• "Shifts in mathematics pedagogy require time and ongoing support in the form of authentic and collaborative professional learning opportunities that are supported and classroom embedded" (1607).
	• "There is an indirect but powerful relationship between increasing teacher efficacy and increasing student achievement. We theorize that teacher efficacy, mediated by contextual factors, impacted what teachers learned from the PL opportunity, and how they learned" (1607).
Methodology	Case study

TEMPLATE	
Standard bibliographic information	Burke, K. (2000). Results-based professional development. *NASSP Bulletin, 84*(618), 29-37. doi: 10.1177/019263650008461805
Country of Origin	US
Key words	N/A
Abstract	Departing from the traditional in-service model of professional development, a new results-based program supports a more focused and individualized growth plan. This approach encourages a community of learners in which teachers are motivated and empowered to improve the quality of education.
Type of Research	Essay
Key themes or findings.	• Results-based professional development (RPD) focuses on goals of educator and needs of students. • RPD has educators "select a theory or program to explore, research their topic in more depth, implement (practice) new strategies, and collect data on their performance and their students' performance to monitor the results of their efforts" (30). • RPD is more effective when teachers work in teams toward a shared goal with the principal as the instructional leader providing time for collaborating teams in RPD making the process on going instead of episodic. • In RPD, teachers determine the data and artefacts of evidence for results. • RPD may or may not be linked to formal performance evaluation. • In RPD, "the principal facilitates the process of teachers working collaboratively to achieve their professional and student-centered goals" (36). • The primary role of principals is to provide time and opportunity for teacher-teams to collaborate on shared goals.
Methodology	N/A

	TEMPLATE
Standard bibliographic information	Caldwell, B. J. (2003). *A Blueprint for Leadership for the Successful Transformation of Schools in the 21st Century*. Paper presented at the international conference on the theme of Educational Leadership in the New Millennium: From Teacher Development to School Development, Hong Kong.
Country of Origin	Australia but international comparisons, particular focus on Australia, Hong Kong, England
Key words	School transformation
Abstract	There is universal recognition that education is the key to the well being of society and of the individual in the years ahead. It is a knowledge society and it spans the globe. Paradoxically, the school may decline in importance with the stunning advances in technology, the emergence of other places of learning, and in some nations, a loss in public confidence in the institution of the school. On the other hand, the very opposite may occur if leaders at all levels, but especially in schools, understand the remarkable array of opportunities that are waiting to be seized. It could be a golden era for schools and school leaders. A critical task will be to connect each individual – each teacher and each leader – to the institution – the system of education and each of its schools – in a collaborative community commitment to the enterprise. More specifically the challenge is to connect the learning of the individual to the learning of the institution – individual learning to organisational learning – or, as the conference theme describes it, to move from teacher development to school development. The purpose of this paper is to provide a blueprint to guide the process for those who see the enterprise as the transformation of schools in the 21st century. It is proposed that school development is enhanced to the extent that the school is part of a network of institutions in the wider community.
Type of Research	Key note discussion paper
Key themes or findings.	• Discusses model for schools looking to make change. Importance of having distributed leadership, having a clear vision of what want to achieve. • 'The unrelenting focus on learning outcomes in the emerging consensus on expectations for schools suggests 'innovation in professionalism', in that teachers' work will be research based, outcomes-oriented, data-driven, and team-focused, with lifelong professional learning the norm' (p 14) • Need a 'systematic, continuous and purposeful approach' to teacher professional development. • Importance of building relationships beyond school with the community.
Methodology	Discussion paper

TEMPLATE	
Standard bibliographic information	Carpay, T., Luttenberg, J., Veugelers, W., & Pieters, J. (2013). Harmony and disharmony in an educational reform concert: Towards a Parsons' inspired dynamic model of tuning. *Journal of Curriculum Studies, 45*(6), 814-837. doi: 10.1080/00220272.2012.739204
Country of Origin	Netherlands
Key words	Educational change Curriculum change Research Social systems Teaching methods -- research Adaptability (psychology) Classroom environment Education Secondary education Netherlands adaptation curriculum reform educational reform exchanges integration social system
Abstract	In large-scale educational reforms, many actors play their roles. The diversity of contributions and lack of harmonization prove to be frequently found to cause educational reform failures. Many explanations for these failures focus on differences between the actors and on differences in their contributions to the reform process. In this article, we examine the effects of these differences and emphasize on the need to harmonize these contributions to the reform process. Contributions by several actors to a large-scale curriculum reform undertaken in the Netherlands in the 1990s are mapped for this purpose. This curriculum reform is part of a larger educational reform aimed to introduce a constructivist approach. Education is conceptualised as a social system, and educational reform as the manner in which this social system adapts to immanent and emmanent changes. The actors in the education system are distributed across functional subsystems. In the present analyses, teacher acting within a particular subsystem stands central. The results show adequate exchange and harmonization of the contributions from the different subsystems to be a necessary condition for successful educational reform. To achieve a good exchange and harmonization, the use of an Educational Impact Assessment is recommended.
Type of Research	Qualitative theoretical
Key themes or findings.	• 'the most important effects of the contributions on the educational reform can only be identified when the interaction between the parties involved and the broader context of the reform are taken into consideration. In a web of interdependent processes, changes in one part of the reform system can affect other parts of the system but often in unpredictable ways (Hubbard et al. 2006)' [p 816].

	• 'The introduction of constructivist approach, together with the new examination programmes which facilitated the study house, was in fact a national curriculum reform serving a long-desired educational reform'. [p 820] More self-directed learning was to be promoted by teachers with less whole-class teaching. • Importance of leadership communication: 'In the interviews, no statements could be found about efforts on the part of school leaders to meet with their schools to establish a shared vision' [p 825] • Importance of teacher autonomy: 'The teachers did not appreciate such extensive interference with the content of their instruction and teaching practices' from inspectorates… [p 830]. Space and autonomy for teachers to implement decreased 'while the authority of the school boards and school managements increased' [p 831] • 'all parties involved in seeking solutions to the problems which inevitably arise during educational reforms consider the impact of their solutions on other subsystems as well' [pp 834-835].
Methodology	Case study analysis of the development of large scale secondary educational reforms undertaken in the Netherlands in the 1990s. Interviews conducted.

TEMPLATE	
Standard bibliographic information	Cavanagh, R. F., & Dellar, G. B. (1998). *The development, maintenance and transformation of school culture.* Paper presented at the Annual Meeting of the American Educational Research Association, San Diego: CA.
Country of Origin	Australia
Key words	Collegiality Cooperative Planning Educational Environment Educational Improvement Foreign Countries High Schools Leadership School Culture Secondary School Teachers Teacher Collaboration Teaching Conditions Values Australia (Western Australia)
Abstract	This paper describes a study that investigated Western Australian senior high schools' cultures. Researchers developed the School Cultural Elements Questionnaire to examine six aspects of school culture: professional values, emphasis on learning, collegiality, collaboration, shared planning, and transformational leadership. A group of 422 teachers in 8 schools completed the instrument. Also, teachers in two of the schools completed interviews designed to confirm the survey data. Researchers used the original theoretical framework and the study findings to develop the School Improvement Model of School Culture. This paper applies the model in an examination of the nature of school culture, school improvement, and educational systems change. Discussion of these matters is based on a set of propositional statements concerning: internal and external influences on cultural stability; school subcultures; school improvement and cultural growth; cultural inertia; traditional school improvement programs; cultural stimulation; systemic school improvement; and school improvement by cultural intervention.
Type of Research	Quantitative and qualitative
Key themes or findings.	• Questionnaires (school cultural elements questionnaire) 422 staff in 8 schools and interviews from staff in 2 schools • 'The findings indicated that school and faculty cultures could change over a period as short as one year' [p 6]. • 'The success of school and systemically initiated improvement programmes requires consideration of prevailing school culture. Changing school level and classroom practices to improve the learning outcomes of students invariably necessitates a change in the beliefs, attitudes and values of teachers about their work' [p 17].
Methodology	Questionnaires (school cultural elements questionnaire) and interviews

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<tr><td>Standard bibliographic information</td><td>Chapman, C., & Muijs, D. (2014). Does school-to-school collaboration promote school improvement? A study of the impact of school federations on student outcomes. School Effectiveness and School Improvement, 25(3), 351-393. doi: 10.1080/09243453.2013.840319</td></tr>
<tr><td>Country of Origin</td><td>UK</td></tr>
<tr><td>Key words</td><td>Federation
Chain
Governance
Impact on student outcomes
School improvement</td></tr>
<tr><td>Abstract</td><td>This study adopted a quantitative methodology involving a matched sample of federated and non-federated schools and utilising multilevel modelling techniques to explore the impact of federations on student outcomes. The sample involves a total of 50 school districts and 264 schools. These are grouped into 122 federations; 264 comparator schools were selected to match these. The study has identified 6 broad and sometimes overlapping categories of federations. The findings suggest there is evidence of impact on overall performance, in that, while federation and comparator schools perform similarly at baseline, federation is positively related to performance in the years following federation. There is evidence to suggest that impact is strongest in performance federations. There is no relationship between federation and inspection judgements or differential impact on students from different socioeconomic settings. In conclusion, this article reflects on the findings to discuss the key implications for future research, policy, and practice.</td></tr>
<tr><td>Type of Research</td><td>Quantitative</td></tr>
<tr><td>Key themes or findings.</td><td>"School improvement may result when a strong school works with a weaker school to improve the latter, and that it is this rather than a generic 'collaboration effect' that may lead to improvement" (385).
Other analyses of federations (Chapman et al., 2008; Lindsay et al., 2007) have identified key features associated with successful partnerships involving "stronger" and "weaker" schools. These include the successful transfer of cultural norms and management systems into the "weaker" school, the movement of staff between the schools to build shared understanding of and approaches to teaching and learning, and the streamlining of financial mechanisms to achieve economies of scale" (385).
Caveats to early findings: "Schools entering federations may be more dynamic or have greater capacity for change than non-federation schools. They may have experienced unmeasured staff changes over the time period studied. Our measures of pupil intake are incomplete, not providing, for instance, a measure of ability as this is not collected in the national data system we used for the analyses. There is also the possibility of</td></tr>
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	regression to the mean for the low- and high-performing schools in performance federations" (385).
	• Further research needed: Independent research needs to show what does and doesn't work for school improvement in federations and why; We do not know whether practice is co-constructed and tailored to school contexts or whether the weaker schools in federations experience a form of panoptic performativity; the optimal size of school federations is under-researched; little is known about the relation between school federation purposes and their impact on a broader range of outcomes; there is little evidence of school federation impact on other schools within the federations proximity; more needs to be known about the processes within federations that contribute to differential outcomes.
	• "Policy makers need to develop policy that encourages school leaders to take shared responsibility for all students in a locality and develop appropriate accountability mechanisms to capture emerging structures and the fluidity and movement of staff and students across organisational boundaries" (390).
	• "There is a danger that network leadership can become detached from the nuance of individual school and community cultures, particularly if the network is spread over a wide geographical area. Furthermore, the more centralised and standardised systems become across the network, and the more heavily they are monitored for compliance by the executive, the less empowered and motivated staff are likely to become to develop contextually specific localised approaches that engage the students and wider community" (391).
Methodology	Multilevel modelling

TEMPLATE	
Standard bibliographic information	Cherrington, S., & Thornton, K. (2013). Continuing professional development in early childhood education in New Zealand. *Early Years, 33*(2), 119-132. doi: 10.1080/09575146.2013.763770
Country of Origin	NZ
Key words	continuing professional development professional learning early childhood education
Abstract	This article explores the influences on and nature of continuing professional development in the New Zealand early childhood education sector. In addition to discussing the nature of professional development and providing an explanation of the policy context that informs the delivery of professional development, the paper draws on evaluations of national programmes and research studies involving the authors that offer alternative approaches to professional learning. This discussion of literature, policy and research raises a number of implications for continuing professional development including: the need to balance individual reflection with collaborative learning and shared critical reflection; the possibilities for using technology to support professional learning; and the need for dissemination of research findings and debate to support teachers to choose effective approaches.
Type of Research	Descriptive
Key themes or findings.	"Collaboration is a highly valued feature of the continuing professional development (CPD) initiatives such as blended action learning and communities of practice described above; however, it should be balanced with the need for individuals to have access to personalised professional learning opportunities" (128). "The [outside] facilitator's dual roles as enabler of learning and trusted inquisitor were essential and complementary aspects that both supported and challenged the leadership learning of participants" (129). "Two main advantages of using information and communication technologies (ICT) in CPD include, first, supporting the ongoing implementation of skills and knowledge learned in face-to-face professional development and, second, deepening professional learning through the use of online tools that support both reflection and ongoing collaboration" (129). "Issues for the early childhood teaching profession arise from government dominance in the early childhood education CPD field" (129).
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Chin, J. M. C. (2007). Meta-analysis of transformational school leadership effects on school outcomes in Taiwan and the USA. *Asia Pacific Education Review, 8*(2), 166-177.
Country of Origin	Taiwan, based on studies in Taiwan and USA
Key words	Transformational leadership, school outcomes, meta-analysis
Abstract	Researchers have suggested that transformational leadership is an important aspect of effective schools; however, whether the effects vary across related studies and the robustness of the overall effect size remain unclear. A meta-analysis technique was used to synthesize the results of 28 independent studies and to investigate the overall relationship between transformational school leadership and three measures of school outcomes. The study found that, in terms of the mean effect sizes, transformational school leadership does have positive effects on teacher job satisfaction, school effectiveness perceived by teachers, and student achievement.
Type of Research	Quantitative meta-analysis of previous research.
Key themes or findings.	• Focus is transformational leadership. • Acknowledges the contradictory results of research when looking at connections between school leadership & school outcomes. However, authors' analysis is that there are direct effects of transformational leadership on a range of measures including student achievement - which he found to be both significant and positive. • The study found that, in terms of the mean effect sizes, transformational school leadership does have positive effects on teacher job satisfaction, school effectiveness perceived by teachers, and student achievement. The following are quoted from the conclusion. • Twenty-one effects sizes representing the relationship between school transformational leadership and teacher job satisfaction were analyzed. The mean of the 21 effect sizes（r）was .707 with the range -.060 to .950. • 13 effect sizes representing the relationship between transformational school leadership and school effectiveness as perceived by teachers were analyzed with a mean of .695 and the range .219 to .940. • 11 effect sizes related to the relationship between school transformational leadership and student achievement with a mean of .487 and the range .010 to .893. • the effect sizes in elementary schools are significantly higher than the effect sizes in secondary schools from studies related to transformational leadership with teacher job satisfaction as well as school effectiveness as perceived by teachers. However, studies of transformational leadership and student achievement show that the effect sizes in secondary schools are

	significant higher than those in elementary schools. In addition, all the studies conducted in Taiwan have lower average effect sizes than those in the United States. • leaders, who show understanding and take an individual interest in teachers, and who are proactive, produced positive results for teachers such as greater satisfaction and higher school effectiveness as perceived by the teachers. • the effect of transformational leadership on student achievement was found to be relatively smaller than teacher job satisfaction and student achievement when the contextual factors, such as student SES and the attitudes of the community, are playing positive roles.
Methodology	Quantitative meta-analysis of 28 independent studies.

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Standard bibliographic information	Coffield, F., (2012). Why the McKinsey reports will not improve school systems. *Journal of Education Policy, 27*(1), 131-149.
Country of Origin	UK
Key words	McKinsey School system Education Educational policy
Abstract	In the last four years McKinsey and Company have produced two highly influential reports on how to improve school systems. The first McKinsey report How the world's best-performing school systems come out on top has since its publication in 2007 been used to justify change in educational policy and practice in England and many other countries. The second How the world's most improved school systems keep getting better, released in late 2010, is a more substantial tome which is likely to have an even greater impact. This article subjects both reports to a close examination and finds them deficient in 10 respects. The detailed critique is preceded by a few general remarks about their reception, influence and main arguments.
Type of Research	Critical discussion
Key themes or findings.	**Deficiencies in first report** • 'The B and M report contains two methodological weaknesses. First, it is in essence a comparative study of 25 school systems, but it does not compare like with like. The English system (with 23,000 schools) is constantly being compared unfavourably with Alberta (4000 schools), Singapore (351 schools) and Boston (150 schools). To deal just with the category of size, the challenges faced by a national system of over 20,000 schools are of a different order than those faced by a city with 150. Besides, the English system has different aims and values; what it wants from its schools is very different from what Singapore wants' [p 136]. • 'In their preface, the authors state: 'We have chosen not to focus on pedagogy or curricula, however important these subjects might be in themselves' (op cit: 9). The McKinsey report claims to be an international benchmarking study of school improvement and yet it omitted to study what subjects the schools were teaching or how they were taught. But it is not only pedagogy and curricula which are absent. Their analysis lacks any discussion of: governance and policy; discrimination whether of class, race, religion or gender; parental influences on education; how culture and teaching come together as pedagogy; or the aims and purposes of education'. [p 137] • 'B and M make the extraordinary claim that 'best practices . . . work irrespective of the culture in which they are applied' (op cit: 2), but they offer no evidence to support it' [p 138]. Second report

	• 'Despite references to a 'system's pedagogy' (op cit: 99), the MCB report contains neither an explicit view of teaching and learning nor a vision of education'. [p 140] • 'MCB do not locate their findings within the relevant literatures; there is no bibliography, only nine incomplete references to other books and articles and only two to policy documents' [p 140]. • 'Why are the interventions located at particular stages in the 'improvement journey' from poor to excellent? For instance, the strategy (of releasing teachers from administrative burdens by providing administrative staff) is allocated to the final stage of moving from great to excellent and as such is apparently part of a 'unique intervention cluster' (op cit: 36). Does this mean that teachers, considered to be working in systems described as poor, fair or good, should not be released from such burdens? If they were to be so released, would their journey from poor to fair, or fair to good, or good to great not be all the shorter and less stressful? No explanation is offered as to why this intervention should be used only at the final stage. All teachers, at whatever stage their school system is in, need to be freed from as much administration as possible so that they can concentrate on the learning needs of their students. Moreover, teachers are burdened with these administrative tasks because of the demands for data made by management and the state' [p 141]. • 'MCB devote one of their four central chapters to 'Contextualising', which they define as 'the influence of history, culture, values, system, structure, politics, etc.' (op cit: 71). Yet in their very next paragraph context is reduced to only three aspects: (1) professional development requirements, (2) language of instruction, and (3) student achievement targets (ibid) In this manner, they avoid any exploration of the history, culture, values and politics of the 20 systems they are comparing. Instead, the claim is made that: 'each performance stage is associated with a dominant cluster of interventions, irrespective of geography, culture or political system' (op cit: 24). But how is it possible to understand the content and process of education in any country without knowing in detail how they have been shaped by its history, geography, local culture and politics? Alexander (2009, 7) has criticised studies like the first McKinsey report where culture 'is reduced to one factor among many, something which is external to school life rather than that which actually creates it and gives it meaning' [p 143]. • 'MCB have moved considerably from their first report, which advocated a toolkit which contained essentially one tool – improve the quality of teaching – to a second study which asks some of the right questions, and recommends 5 strategies and 21 factors, some of which are welcome; and yet their model remains unsophisticated, impracticable and undemocratic. Unsophisticated because the

	complexities inherent in comparative education, in the psychology of teaching and learning and in the sociology of education policy have been ignored. Impracticable because it deals with too narrow a range of factors, and fails to discuss, never mind tackle Journal of Education Policy 145 Downloaded by [Massey University Library] at 15:04 21 December 2014 unjustifiable inequalities. Undemocratic because the interventions are chosen by unaccountable 'strategy leaders' without any consultation with those who must enact them. As such, their recommendations are educationally and socially dysfunctional and therefore should not be part of school reform in a democracy. There are other options which merit as much, if not more, debate and support than these dystopian McKinsey reports, but these options need to be explained at length elsewhere (see Coffield and Williamson 2011)' [pp 145-146].
Methodology	N/A

	TEMPLATE
Standard bibliographic information	Cooper, R., Slavin, R. E., & Madden, N. A. (1998). Success for all: Improving the quality of implementation of whole-school change through the use of a national reform network. *Education and Urban Society, 30*(3), 385-408. doi: 10.1177/0013124598030003006
Country of Origin	USA
Key words	Educational Change Elementary Education Federal Programs National Surveys Network Analysis Principals Professional Development Program Implementation Success for All Program
Abstract	The relationship between participation in national reform network activities and the quality of the Success for All program implementation is examined. Results of a research survey of principals and facilitators indicate that the success of the reform program relies on networking among teachers and schools through participation in national conferences and local support activities.
Type of Research	Mixed methods
Key themes or findings.	• Examines role and importance of national reform network participation in implementation of one of country's most successful whole-school reform efforts – Success for All (SFA). • SFA program to comprehensively restructure elementary schools that serve children at risk of failure. Attempt to ensure each child will in adequate basic skills. To adopt SFA, at least 80% of staff need to vote for it in secret ballot. • Program encourages partnerships across districts and states. Concept of collaboration. Also concept of increased leadership responsibilities – professional development – networks expand the pools of educators capable of providing leadership in diverse settings [p 390] • Data 'suggest that participation in national and local network activities can affect the quality of implementation of whole-school change' [p 398]. Focus here on participation in national conference and participation in local support activities. Networking plays important role in facilitating school change. • Need leadership and staff commitment to reform otherwise it won't happen. • Change can be difficult as 'ethos of many school cultures have been developed over time by individuals who remain at the institution' [p 400]
Methodology	Questionnaires (370 sample from 225 schools), one-to-one + group interviews and school site observations.

Standard bibliographic information	Darling-Hammond, L. (1998). "Teachers and teaching: Testing policy hypotheses from a National commission report." *Educational Researcher* 27 (1): 5-15. doi: 10.2307/1176922.
Country of Origin	USA
Key words	Education Teaching Educational outcomes
Abstract	N/A
Type of Research	Discussion paper
Key themes or findings.	• 'Key things that make a difference to educational outcomes are * What teachers know and can do is one of the most important influences on what students learn * Recruiting, preparing, and retaining good teachers is the central strategy for improving our schools. * School reform cannot succeed unless it focuses on creating the conditions in which teachers can teach and teach well' [p 6]. • 'This analysis of the problem is substantially different from those that have influenced educational policy for most of this century, including the most recent waves of reform. Rather than seeking primarily to restructure the machinery of schooling by urging more or different courses, tests, special programs, and management structures, the commission argued for a focus on the core functions of teaching and learning: on preparing knowledgeable teachers who work in schools focused on supporting their learning and that of their students' [p 6]. • 'the success of society's quest for higher standards of learning is likely to be dependent on dramatically increased support for teacher learning and systemic changes in the organization of schools'[p 6]. • 'Using increasingly fine-grained measures of teacher knowledge and disaggregated analyses of large-scale data sets, a number of recent studies suggest that teacher expertise is one of the most important factors in determining student achievement, followed by the smaller but consistently positive influences of small schools and small class sizes' [p 6]. • 'In an analysis of 900 Texas school districts, with a more extensive database than the Coleman study, Ronald Ferguson found that teachers' expertise-as measured by scores on a licensing examination, master's degrees, and experience accounted for about 40% of the measured variance in students' reading and mathematics

	achievement gains at grades one through eleven-more than any other single factor. He also found that every additional dollar spent on more highly qualified teachers netted greater increases in student achievement than did other uses of school resources' [p 6-7]
	• 'The effects were so strong, and the variations in teacher expertise so great that, after controlling for SES, the large disparities in achievement between Black and White students were almost entirely accounted for by differences in the qualifications of their teachers' [p 7].
	• Professional development closely related to classroom activities and more engagement in reform impact positively on student achievement.
	• Of note is the research findings that where students & teachers develop relationships (and with student families) - through being taught more than one subject by the same teacher, or by being taught over some years by the same teacher, achievement increases.
	• 'A recent study of 820 secondary schools nationwide found that those that had undertaken greater levels of restructuring aimed at personalization, higher-order learning for all students, teacher learning and collaboration, and parent and student involvement produced significantly greater achievement gains for students of all achievement levels' [Lee Smith and Croninger in Darling-Hammond, p 11] Recommended more resources for front line of teaching + 'enabling teams of teachers to work with groups of students over more extended periods of time' [p 11]
	• Suggestions: '(1) infuse new knowledge about learning and development in teacher preparation that includes extended clinical work in restructured schools, (2) support strong professional communities and networks that foster both practitioner learning and reform, and (3) restructure schools and schools of education as learning organizations that operate through collegial inquiry and that examine practice through the lenses of professional standards and student learning' [p 12].
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Darling-Hammond, L., Wei, R. C. & Andree, A. (2010). "How High-Achieving Countries Develop Great Teachers." *Stanford Center for Opportunity Policy in Education.*
Country of Origin	USA
Key words	Professional learning Teacher skills Teacher knowledge High achieving countries USA policy
Abstract	Research shows that professional learning can have a powerful effect on teacher skills and knowledge, and on how well students learn. To be effective, however, professional learning for teachers needs to conducted in the ways that it is many high achieving countries—continuously, collaboratively, and with a focus on teaching specific content to particular learners Studies of U.S. professional development show that a small minority of American teachers receive the kind of sustained, job-embedded professional development that research indicates can change teaching practice and improve student achievement. This brief looks at how high-achieving countries organize professional learning for teachers, and draws a set of policy lessons for the United States.
Type of Research	Research brief
Key themes or findings.	'As Michael Barber and Mona Mourshed noted in a recent international study: The experience of [high-performing] school systems suggests that three things matter most: 1. getting the right people to become teachers; 2. developing them into effective instructors and; 3. ensuring that the system is able to deliver the best possible instruction for every child' [p 1]. - PD of less than 14 hrs (per yr) has no impact on teacher effectiveness, but 50 hrs over a 6 to 12 month period impacts on student achievement - "with gains of up to 21 percentile" points on standard tests – [p 2] 'How is it that teachers in European and Asian nations have so much more intensive professional learning opportunities? One of the key structural supports for teacher learning is the allocation of time in teachers' work day and week to participate in such activities.' [p 3] 'When time for professional development is built into teachers' working time, their learning activities can be ongoing and sustained, and can focus on particular issues and problems over time' [p 4]. 'While relatively few countries have established national professional development requirements, Singapore, Sweden, and the Netherlands require at least 100 hours of professional development per year, beyond the many hours spent in collegial planning and inquiry' [p 5]. 'Among its many investments in teacher professional learning is the Teachers Network, established in 1998 by the Singapore Ministry of Education as part of Prime

	Minister Goh Chok Tong's new vision, "thinking schools, learning nation."'. 'The Teachers Network has six main interrelated components: (1) learning circles, (2) teacher-led workshops, (3) conferences, (4) a well-being program, (5) a website, and (6) publications' [p 6]. 'In a Teachers Network learning circle 4-10 teachers and a facilitator collaboratively identify and solve common problems chosen by the participating teachers using discussions and action research. The learning circles generally meet for eight two-hour sessions over a period of 4-12 months. Supported by the national university, Teachers Network professional development officers run an initial whole-school training program on the key processes of reflection, dialogue, and action research and a more extended program to train teachers as learning circle facilitators and mentor facilitators in the field' [p 6]. • 'A study of school leadership in Finland found the inclusion of teachers and other staff in policy and decision-making to be the norm' [p 7] 'teachers are provided with substantial authority to make decisions regarding school policy and management' [p 7]. • 'In high achieving nations, teachers' professional learning is a high priority and teachers are treated as professionals' [p 8].
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Darling-Hammond, L., & McLaughlin, M. W. (1995). Policies that support professional development in an era of reform. *Phi delta kappan, 76*(8), 597-604.
Country of Origin	US
Key words	N/A
Abstract	Policies must keep pace with new ideas about what, when, and how teachers learn and must focus on developing schools' and teachers' capacities to be responsible for student learning.
Type of Research	Discussion paper
Key themes or findings.	• Teachers need to have supports to rethink their own practice in order to update their teaching skills and perspectives. • Professional development (PD) must do the following: ""It must engage teachers in concrete tasks of teaching, assessment, observation, and reflection that illuminate the processes of learning and development; It must be grounded in inquiry, reflection, and experimentation that are participant-driven; It must be collaborative, involving a sharing of knowledge among educators and a focus on teachers' communities of practice rather than on individual teachers; It must be connected to and derived from teachers' work with their students; It must be sustained, ongoing, intensive, and supported by modeling, coaching, and the collective solving of specific problems of practice; It must be connected to other aspects of school change" (82). • PD comes from professional communities extending beyond school buildings: School/university collaborations engaged in curriculum development, change efforts, or research; Teacher-to-teacher and school-to-school networks; Partnerships with neighbourhood-based youth organizations; Teacher involvement in district, regional, or national activities; Policies that support extra-school learning communities; Opportunities for PD within schools; Policy supports for PD within schools. • "To support teaching for understanding and the professional development it requires, new forms of teacher evaluation will need to emphasize the appropriateness of teaching decisions to the goals and contexts of instruction and the needs of students" (89).
Methodology	Research synthesis

TEMPLATE	
Standard bibliographic information	Datnow, A. (2000). "Power and politics in the adoption of school reform models." *Educational Evaluation and Policy Analysis* 22 (4): 357-374. doi: 10.3102/01623737022004357.
Country of Origin	USA
Key words	Whole-school reform Evaluation District reform Education Externally developed reform design
Abstract	States, districts, and schools are promoting and attempting whole school improvement through the use of externally developed reform designs. This article examines how and why schools adopt reforms and the consequences of those processes for reform implementation and sustainability. Case study data are presented on 22 schools, and three types of reform adoption processes are discussed: (a) districts encouraging schools to choose among a set of reforms; (b) districts pushing schools to adopt a particular reform; and (c) principals bringing reform designs to their schools. In no case did the impetus for reform adoption arise among teachers in these schools. Because a hierarchical approach is evident in each of these reform adoption scenarios, data are analyzed in terms of a micropolitical perspective. Findings show that the power relations surrounding reform adoption often thwarted genuine initial buy-in and interest in change among local educators, as well as, in some cases, their subsequent implementation efforts. Educators often also had varying perspectives on how the adoption process occurred, suggesting differences in perspective on the reform itself. Recommendations for how the reform adoption process could be improved are discussed.
Type of Research	Qualitative
Key themes or findings.	• Growing use of externally developed reform designs – have been associated with improving student outcomes • Case study on 22 schools across 3 reforms (external designs) • Power and politics played a role. Individual teachers seldom could exercise informed choice about reform. 'the process of adoption may have influenced teachers' opinions about the reform and their buy-in well into implementation. Thus perhaps it is not the particular reform choice that makes the most difference for successful implementation (though a good fit is obviously important); it is the context for how it was introduced' [p 367]. 'It seems that reforms were more stable in schools when districts did not mandate the adoption process, but simply provided support' [p 367]. • 'when district administrators initiate reforms (particularly a single reform), their choices might be mistrusted by teachers who view them as far removed from their local realities. As a result, school educators might react simply in terms of compliance, rather than spending time inquiring into whether the reform is well

	suited for their school' [p 368]. • Conclusions: 1) 'Policymakers, educators, and design teams need to think about external reforms as part of overall, long-term plans for school change, not as simple technical fixes for isolated school "deficiencies."' 2) Districts and states need to understand the difference between supporting reform and mandating or strongly inducing it'. 3) 'Expand the time in which schools make decisions about reforms'. 4) 'Increase the amount of information schools have about reforms prior to adoption, but also acknowledge information limits', 5) Genuinely increase the level of teacher involvement in reform adoption'. [p 368]
Methodology	Case study on 22 schools (site visits, interviews)

TEMPLATE	
Standard bibliographic information	Datnow, A. (2005). "The sustainability of comprehensive school reform models in changing district and state contexts." *Educational Administration Quarterly* 41 (1): 121-153. doi: 10.1177/0013161X04269578
Country of Origin	USA
Key words	educational reform; sustainability; leadership; accountability; educational policy
Abstract	This article addresses the sustainability of comprehensive school reform (CSR) models in the face of turbulent district and state contexts. It draws on qualitative data gathered in a longitudinal case study of six CSR models implemented in 13 schools in one urban district. Why do reforms sustain in some schools and not in others? How do changing state and district contexts influence reform sustainability in schools? After 3 years, reform efforts ceased in 6 of the 13 schools studied; two other schools were still implementing reforms but at very low levels. Only 5 of the 13 schools continued to implement their CSR models with moderate to high levels of intensity. Findings show that changing district and state contexts affected the sustainability of CSR models in schools differently depending on each school's strategy for dealing with the changes, as well as their local conditions, experiences with reform, and capacity.
Type of Research	Qualitative
Key themes or findings.	• Evaluates effectiveness of whole-school externally developed reform designs • 'For a reform to be sustained, it must become institutionalized. So too, when a reform is institutionalized, it has been sustained over time'. Most reforms do not last – thus most studies do not investigate longitudinal effect. [p 124] • 'This study points to the importance of understanding district and state contexts in the sustainability of comprehensive school reform models' [p 145]. • 'In all schools that dropped reforms (as well as in a couple that sustained reforms, such as Orchid and Jetty), teachers admitted to putting reform related activities aside to prepare students for the state tests' [p 145]. This tends to occur most often in schools with low achievement levels as they cannot justify expending time and resources on a reform that is seemingly not producing "measurable outcomes." And yet, a focus on only these measures of school success may run counter to sustainable school reform efforts. Few would argue with the fact that students should benefit academically on standardized achievement tests, but other measures of student and school performance should also be examined. Measures of success might also address whether a reform leads to long-term school improvement, teacher development, and the creation of a school culture that is ripe for change or whether it

	hinders such efforts [p 147].
	• 'Most educators lamented that test scores were not the proper measure of success for their reform efforts, but they realized the constraints under which they operated' [p 145].
	• 'Reform sustainability or expiration did not result from individuals or institutions acting in isolation from one another. Forces at the state, district, design team, schools, and classroom level all interacted to shape the longevity of reform'. [p 145]
	• 'The only schools that did not suffer or experience conflicts in the face of these state and district demands were those that had reforms well institutionalized—these were high capacity schools by all observers' estimations. Reforms had become taken-for-granted features of daily life at the schools, and these three schools enjoyed strong reputations and protected positions in the district' [p 145].
Methodology	A longitudinal study of the implementation of six externally developed school reform models in 13 schools in urban district. More than 300 interviews.

TEMPLATE	
Standard bibliographic information	Datnow, A. and Stringfield, S. (2000). "Working together for reliable school reform." *Journal of Education for Students Placed at Risk 5* (1-2): 183-204. doi: 10.1080/10824669.2000.9671386.
Country of Origin	USA
Key words	Reform Education School improvement externally developed reform design whole-school reform
Abstract	In this article we summarize major findings from diverse, multiyear studies conducted by the Systemic and Policy Research team of the Center for Research on the Education of Students Placed At Risk. This article is based on findings from 16 projects and more than 300 case studies, the majority of which have been multiyear and multimethod. We conclude that efforts to implement diverse reforms are more likely to be effective when educators at various levels (e.g., state, district, reform design team, school) share goals and work in concert to co-construct highly reliable reforms. Findings from our studies are discussed, as are implications for future research.
Type of Research	Meta-analysis
Key themes or findings.	• 'We know that the improvement of schools is possible when the reform effort is well thought-out, when teachers are active agents in the change process, when there are sufficient resources and time to support reform, when capable leadership is present, and when school cultures change along with school structures' [p 184]. • 'Equally commonplace is our knowledge that reforms, even demonstrably effective reforms, often are not sustained' [p 184]. • Where 'educators chose reforms that were well matched to schools' needs, interests, and cultures…. these schools typically had more success in implementing and sustaining reforms' [p 191]. • 'level of implementation is a significant predictor of student achievement gain'. For positive cases, the 'level-of-implementation gain was over and above any general positive effect of participation in a particular program' [p 193]. • 'We found that clear, strong district support positively impacted reform implementation, and the lack thereof often negatively impacted implementation'. [p 194] • 'externally developed reforms must allow enough flexibility for teachers to find them workable in their schools and in classrooms' [p 195-196]. • Long-term sustainability linked to 'the alignment of the "cultural logic" of the reform design and that of the local reformers' [p 196] and 'integrating reform structures into the daily lives of the school Community' [p 196-197]. • 'In these schools, changes in principals could be described as resulting in shifts from visionary to

	cooperative leadership. High-quality professional development was continuously provided at each school.' [p 197]. • 'The effect of these regularly recurring system failures was that teachers learned to retreat to the safety of their own classrooms. When new reforms came along, they looked for ways to incorporate them as superficially as possible' [p 198].
Methodology	Synthesis of findings of 16 studies where externally developed reform design. All involved conducting longitudinal, qualitative case studies of stability and/or change over time, combined in most cases with quantitative studies of student achievement.

<table>
<tr><td colspan="2" align="center">TEMPLATE</td></tr>
<tr><td>Standard bibliographic information</td><td>Datnow, A., Hubbard, L. & Mehan, H. (1998). Educational reform implementation: A co-constructed process. Research report 5. Santa Cruz : CA: Center for Research on Education, Diversity and Excellence.</td></tr>
<tr><td>Country of Origin</td><td>USA</td></tr>
<tr><td>Key words</td><td>Administrator Role
Change Agents
Change Strategies
Cooperation
Educational Change
Interprofessional Relationship
Organizational Change
Organizational Climate
Power Structure
Program Descriptions
Qualitative Research
State Regulation
Teacher Role
Florida
Kentucky</td></tr>
<tr><td>Abstract</td><td>This research report argues for viewing the complex, often messy process of school reform implementation as a "conditional matrix" coupled with qualitative research. As illustration, two studies (of six reform efforts in one county and of implementation of an untracking program in Kentucky) are reported. Preliminary analysis reveals that the reform implementation process is marked by several important considerations: (1) reform efforts in schools do not succeed on simple technical considerations alone, nor in a linear fashion; (2) consequences of actions taken in one context become the conditions for actions taken in other contexts, as part of a complex dynamic shaped by the structural and cultural features of school and society; (3) the implementation process is viewed differently from different perspectives; (4) school culture mediates educators' actions and structural constraints; and (5) school site educators do not respond to design team or government actions passively and automatically. The actions of educators in Kentucky and Florida in the face of state mandates suggest that the way in which power is interpreted must be examined as well as the way in which it is imposed.</td></tr>
<tr><td>Type of Research</td><td>Discussion paper</td></tr>
<tr><td>Key themes or findings.</td><td>'Reform efforts in schools do not succeed simply on technical considerations, nor do they proceed in a linear fashion, fixed in time and space. Analyzing the policy implementation process as a conditional matrix affords a better opportunity to understand the complexities of a successful prototype's implementation than does a unidirectional (especially top-down) interpretation.
2. The consequences of actions taken in one context become the conditions for actions taken in other contexts. Some educators may initiate reform efforts, others may push or sustain them, still others may resist or actively subvert them. This range of actions shows</td></tr>
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	that the agency of educators is part of a complex dynamic, shaping and shaped by the structural and cultural features of school and society' [p 14].
Methodology	N/A

	TEMPLATE
Standard bibliographic information	Dellar, G. B. (1998). "School climate, school improvement and site-based management." *Learning Environments Research* 1 (3): 353-367.
Country of Origin	Australia
Key words	school climate, school improvement, site-based management, teachers' perceptions
Abstract	This article examines the relationship between school organisational climate and the school's preparedness to undertake restructuring and improvement. Over the last two decades, much research into school improvement and effectiveness has indicated the importance of school climate for a school's efforts to change. For school-level personnel, an understanding of the nature of the prevailing climate would seem valuable in determining the school's willingness and capacity to embark on school improvement initiatives and to evaluate the impact that such initiatives have on the nature of the school's climate. The research reported here was conducted in three phases. The first phase involved the assessment of the prevailing organisational climate in 30 secondary schools drawn from three State education systems in Australia. The second phase involved analysing and documenting the principles and school- level process associated with the establishment of site-based management in the three State education systems. The third phase sought teachers' perceptions about the impact of site- based management on school improvement planning, collaboration and curriculum leadership, and classroom practices. The research indicated the existence of an important relationship between organisational climate and the school's capacity to implement and sustain authentic site-based management. Where the prevailing organisational climate is negative, tailored 'front- end' strategies designed to improve the climate might be undertaken prior to the school embarking on substantial school improvement initiatives. Finally, assessing organisational climate can provide information about a school's preparedness to undertake change, and a re-assessment of climate following a change initiative can provide evaluative data about the extent of change within the school.
Type of Research	Quantitative
Key themes or findings.	'A positive organisational climate reflects a high degree of professional involvement among staff, strong peer cohesion, the existence of participatory decision making throughout the school and a high level of support for innovation and change' [p 365]. 'These data suggest a dilemma for those charged with managing restructuring and reform. Given that the establishment of site-based management has the potential to improve the organisational climate of a school dramatically, the need for such changes is strongest where a negative organisational climate exists' [p 366].

Methodology	Questionnaire: SOCQ (School Organisational Climate Questionnaire) administered to Thirty secondary schools from school districts in Western Australia, Victoria and New South Wales (over 700 responses), + document analysis + questionnaire: SDPCPQ (School Development Planning and Classroom Practice Questionnaire) to stratified sample of initial sample

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Standard bibliographic information	Desimone, L. (2002). How can comprehensive school reform models be successfully implemented? *Review of Educational Research* 72 (3): 433-479. doi: 10.3102/00346543072003433.
Country of Origin	USA
Key words	comprehensive school reform, implementation, whole-school reform.
Abstract	Comprehensive school reform, or CSR, a currently a popular approach to school improvement, is intended to foster schoolwide change that affects all aspects of schooling (e.g., curriculum, instruction, organization, professional development, and parent involvement). Federal, state, and local legislation and funding have supported CSR implementation, and in 1997 Congress enacted the Comprehensive School Reform Demonstration program, which gives financial support to schools adopting such reforms. This article reviews and synthesizes the literature that documents CSR implementation, positing that the more specific, consistent, authoritative, powerful, and stable a policy is, the stronger its implementation will be. It finds that all five policy attributes contribute to implementation; in particular, specificity is related to implementation fidelity, power to immediate implementation effects, and consistency, authority, and stability to long-lasting change.
Type of Research	Synthesis of the Comprehensive school reform implementation literature
Key themes or findings.	- Current focus of reform in USA is on CSR, whole-school reform. 'policies that gain influence through being authoritative are persuasive to teachers, principals, students, and other stakeholders and therefore are more likely to become institutionalized than policies that gain their influence through power, which lasts only as long as the rewards and incentives last' [p 439]. Lit review uses this framework (Porter et al.) to assess CSR implementation. - Need policy to be specific, have PD, review through information and monitoring, be consistent with other reform efforts at school. - Can obtain 'normative authority by developing genuine buy-in by giving teachers the opportunity to collaborate in local and national networks' [p 447]. - Importance of strong principal leadership – studies have found that schools with strong principal leadership have stronger implementation and better student outcomes. Effective principals are also able to adapt their style [p 449] Importance of stable leadership – high turnover has a negative impact on implementation [p 454] - Importance of resourcing for reform – especially time. Also importance of parental and community involvement. - School reform is slow – can take 5-10 years. Needs long-term commitment [p 455]. 'Findings show that while each attribute contributes to

	implementation, specificity is related to implementation fidelity, power is related to immediate effects, and authority, consistency, and stability seem to be the driving forces of long-lasting change. The analysis also demonstrated that the attributes are to a large extent dependent on each another' [p 470].
Methodology	Literature review of CSR against set inclusion criteria

	TEMPLATE
Standard bibliographic information	Doolittle, G., Sudeck, M., & Rattigan, P. (2008). Creating professional learning communities: The work of professional development schools. *Theory Into Practice, 47*(4), 303-310. doi: 10.1080/00405840802329276
Country of Origin	US
Key words	N/A
Abstract	If professional learning communities offer opportunities for improving the teaching and learning process, then developing strong professional development school (PDS) partnerships establish an appropriate framework for that purpose. PDS partnerships, however, can be less than effective without proper planning and discussion about the aims of those partnerships. We argue that creating effective partnerships requires time upfront to establish ground rules, clarify the tasks to be undertaken, identify supports required for successful implementation, and ensure that a shared vision and mission exist between partners. Utilizing essential questions for organizing such a collaborative venture, and illustrating effective partnerships in three schools, the researchers describe strategies for developing P-12 professional learning communities that are positive, effective, and durable.
Type of Research	Qualitative
Key themes or findings.	• "Each school learning community had its own set of unique challenges for improving the teaching and learning process. The schools in our examples were unfamiliar with educational change models and lacked sufficient capacity to initiate, implement, or institutionalize the initiatives by themselves" (309). • "Multiple opportunities to discuss our professional learning community values not only developed the necessary trust with school partners, but also helped build commitment to the improvement process" (309). • "Inasmuch as real change requires time for implementation, it is necessary to build capacity and deal with faculty concerns early on, when communicating and obtaining agreement about the intended outcomes of the partnership" (309).
Methodology	Case studies

	TEMPLATE
Standard bibliographic information	Duffy, F. M, & Reigeluth. C.M. (2008). The school system transformation (SST) protocol. *Educational Technology* 48 (4): 41-49.
Country of Origin	USA
Key words	Transformational change School districts Whole school change Paradigm change
Abstract	This is the second in a series of articles about creating and sustaining systemic transformational change in school districts. The first article described the AECT FutureMinds: Transforming America's School Systems initiative for helping state education agencies (SEAs) facilitate paradigm change in their school districts. This article describes a methodology for creating and sustaining paradigm change that the FutureMinds initiative will use to help those SEAs transform school systems in their states. The methodology is called the School System Transformation (SST) Protocol. Prior to describing the methodology, the authors describe the context for the design, development, and implementation of the methodology.
Type of Research	Discussion paper: School as a complex system. Theoretical model for school district reform
Key themes or findings.	• Change made to one part of system requires change to other parts – cannot be made in isolation. Talks about changes as paradigm shifts. Continuous improvements needed. • Replication of what has worked elsewhere often fails due to unique features of context. • Describes the School System Transformation (SST) protocol developed by the authors – 'designed to create and sustain change in school districts' [p 45]. SST has five phases (but back and forth expected): Prepare, Envision, Transform, Sustain, Evaluate.
Methodology	Discussion of a theoretical model for school district reform

	TEMPLATE
Standard bibliographic information	Edwards, F. (2012). Learning communities for curriculum change: key factors in an educational change process in New Zealand. *Professional Development in Education, 38*(1), 25-47. doi: 10.1080/19415257.2011.592077
Country of Origin	NZ
Key words	Curriculum implementation Educational change Learning community Networks Professional development
Abstract	Increasingly school change processes are being facilitated through the formation and operation of groups of teachers working together for improved student outcomes. These groupings are variously referred to as networks, networked learning communities, communities of practice, professional learning communities, learning circles or clusters. The formation and support of these types of groups to build capacity has been a major feature in the professional support landscape for New Zealand schools for a number of years, with sustainability and longevity of these groups seen as success criteria. A professional learning community approach was adopted by the New Zealand Ministry of Education to help schools implement the revised New Zealand Curriculum by facilitating the development of community members' capacities and expertise in school curriculum design. In this article I report on my experience as the facilitator of one professional learning community of nine schools that worked together over a two-year period. Three significant phases in the life of this community are identified and illustrated: establishing, converging, and diverging. I contend that sustainability and longevity are not necessarily key determinants of a community's success, but that success can be attained through the community's ability to flexibly achieve its purposes and prepare for future change.
Type of Research	Qualitative
Key themes or findings.	• Key features contributing to change process: Capacity building; Leadership; Conceptualizing the growth and change seen in a learning community as a lifecycle or a series of phases; Using monitoring of effectiveness of learning communities; Connections with other communities should have an 'organic ending' when relevance, interest, and value decrease. • Most relevant factors to understanding professional learning community (PLC) in study were capacity-building, the role of leadership, and re-conceptualisation of the life phases of the PLC, and, something not included in the initial 'key features,' external factors. • Self-reported actions showed growth in personal capacity which then gave PLC members increased group capacity. • Initial leadership was taken by researcher, but after three meeting, researcher notes a shift toward a distributed leadership model.

	• Life cycle model encouraged a three stage process (establish, converge, diverge) that "allowed many of the schools to make initial substantial progress as a group, but as the group members moved to the divergence phase it was important that the 'strings were cut' to allow schools to continue the development work that would reflect their own school community, rather than to try to maintain the progress in a step-lock fashion with other schools" (43). • External support was required from external experts, wider networks, challenging events in complex institutional changes.
Methodology	Action research

TEMPLATE	
Standard bibliographic information	Elmore, R. F. (2002). *Bridging the gap between standards and achievement*. Washington: DC: Albert Shanker Institute.
Country of Origin	US
Key words	N/A
Abstract	N/A
Type of Research	Discussion paper
Key themes or findings.	- Identifies and endorses 'consensus view' of professional development (PD) as one which "Focuses on a well-articulated mission or purpose anchored in student learning of core disciplines and skills; Derives from analysis of student learning of specific content in a specific setting; Focuses on specific issues of curriculum and pedagogy (Derived from research and exemplary practice; Connected with specific issues of instruction and student learning of academic disciplines and skills in the context of actual classrooms); Embodies a clearly articulated theory or model of adult learning; Develops, reinforces, and sustains group work (Collaborative practice within schools; Networks across schools); Involves active participation of school leaders and staff; Sustains focus over time—continuous improvement; Models of effective practice (Delivered in schools and classrooms; Practice is consistent with message); Uses assessment and evaluation (Active monitoring of student learning; Feedback on teacher learning and practice)" (7). "There is little evidence that this consensus has had a large-scale effect on the practices of schools and school systems" (10). "More direct linkages between professional development and accountability will fail—or at the very least will be relatively ineffective—to the extent that they turn professional development into a tool for control" (12). "The incentives that are available to policymakers are fairly blunt instruments: publication of test scores; student promotion, retention and graduation; identification and classification of schools by performance levels; cash awards to individuals or schools; and, the takeover or reconstitution of failing schools. The characteristic that all of these incentives share is that they have virtually no relationship to the knowledge and practice of improvement" (20). "School personnel are more likely to work

	collaboratively to improve performance if the work itself is rewarding and if the external rewards support and reinforce work that is regarded as instrumental to increased quality and performance" (21).
	• "It seems improbable, however, that a large-scale improvement process could work without strong, stable and consistent collective incentives for the improved knowledge and skill of individual educators as well as for the school's development of a more coherent internal accountability system" (22).
	• "The existence of capacity in a school is evident in the interaction among teachers and students around content. Investments in capacity that do not directly affect this interaction are unlikely to improve either the quality of instruction or student learning. It also suggests that there are three entry points, or portals, for the development of capacity: teachers, students, and content. Professional development works as a capacity-building device to the extent that it enters each of these portals and acknowledges the relationship among them" (24).
	• "Developing the capacity to lead instruction requires a differentiated role for 'leaders' and a model of distributed leadership in which those with different roles and competencies could work cooperatively around the common task of instructional improvement. This same argument applies to creating and sustaining capacity using professional development. To improve themselves, systems need to be able to identify people who know what to do, to develop the capacity of those in the organization to learn what to do, and to create settings in which people who know what to do teach those who don't" (26).
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Farley-Ripple, E. N., & Buttram, J. L. (2014). Developing collaborative data use through professional learning communities: Early lessons from Delaware. *Studies in Educational Evaluation, 42*, 41-53. doi: 10.1016/j.stueduc.2013.09.006
Country of Origin	US
Key words	Educational policy Leadership Data Decision-making Faculty development Communities of practice
Abstract	In 2010–2011 the Delaware Department of Education (DE DOE) mandated that all grade or subject area teachers have 90 min weekly to engage in professional learning communities (PLC) in which collaborative data use was the central activity. The purpose of this research is to learn from the early implementation experiences of four elementary schools in two districts, with particular attention to whether and how schools' implementation fostered collaborative use of data. Findings suggest the mandate resulted in the establishment of scheduled collaborative time and teachers' collaborative use of data in all schools. However, the nature of collaborative work and the ways in which data were employed varied in ways that relate to key school and district differences.
Type of Research	Mixed Methods
Key themes or findings.	• "Evidence from our limited sample suggests that the state mandate [requiring implementation of PLCs], by itself, produced opportunities for collaborative teacher use of data" (49). • "Our findings suggest that mere compliance is not sufficient for developing the type of collaborative practices likely to impact teacher knowledge or practices or, ultimately, student learning" (49). • "Our findings… reemphasizes [sic] the importance of conditions previous research has demonstrated as essential for data use, including the provision of structured time, access to data systems, a culture of professional community, and instructional leadership exerted by both district and school leaders" (49). • "Our research documents a routine established by the state, which moved down through districts, to school leaders, and to teachers. This created opportunities at multiple levels of the system for the routine to be (mis)understood, (mis)communicated, and adapted by local leadership" (49). • "[Our] results provide some empirical support for the conceptualization of data use as consisting of both action- and analysis-oriented activities… Relatedly, both qualitative and quantitative analyses suggest that teachers need support to connect what they see in the data to decisions about curriculum and instruction. The role of instructional specialists in teachers' collaborative

	data use – as well as principals' allocation of those resources as a form of instructional leadership – seems to be one mechanism in helping teachers make those connections" (49-50).
	• "Our research emphasizes the role of leadership at multiple levels of the system. Findings confirm the importance of a number of contextual factors often cited on data use or professional community, including school culture, access to data, structured time, and professional development. However, we attribute these conditions to the decisions and actions of leadership at both the school and district levels… Relatedly, for leaders at both levels to effectively support implementation, they must possess sufficient knowledge of the reform, of data, and of instruction to make decisions and take actions that effectively support schools and teachers" (50).
	• "Mandates and polices for PLCs can create opportunities for change, but by themselves, are insufficient to create meaningful reform and can result in uneven or inconsistent implementation" (50).
	• "District leadership should focus on communicating a consistent vision and expectations for data use. This includes providing ongoing professional development for school and teacher leaders to strengthen their understanding of data use and how it can impact teacher instruction and actively monitoring school leaders' efforts in their individual schools. Central offices can also provide resources to all schools, such as centralized data use centers to facilitate access to and deprivatization of data and access to instructional specialists" (50).
	• "School leaders need to translate district vision into clear expectations to their schools. School leaders should focus on building a school culture that supports collective responsibility and deprivatized data and practice. Collective responsibility is unlikely to flourish without shared understandings of how all students are performing as well as how teachers are instructing. This entails access to a variety of data that is shared vertically and horizontally" (50).
	• "School leaders potentially can wield direct influence scheduling time for collaboration, deciding who participates in these collaborations, assigning instructional specialists to work with groups of teachers, and actively participating in and monitoring collaborative work in a supportive capacity. These decisions can create opportunities for modeling and reinforcing data use for analysis-oriented tasks and action-oriented tasks and communicate the importance of collaborative work in leveraging improved student learning" (50).
Methodology	Case study

TEMPLATE	
Standard bibliographic information	Fauth, B., Decristan, J., Rieser, S., Klieme, E., & Büttner, G. (2014). Student ratings of teaching quality in primary school: Dimensions and prediction of student outcomes. *Learning and Instruction, 29*, 1-9. doi: http://dx.doi.org/10.1016/j.learninstruc.2013.07.001
Country of Origin	Germany
Key words	Teaching Quality Student Ratings Primary School Validity Teacher Popularity
Abstract	The contribution examines theoretical foundations, factorial structure, and predictive power of student ratings of teaching quality. Three basic dimensions of teaching quality have previously been described: classroom management, cognitive activation, and supportive climate. However, student ratings, especially those provided by primary school students, have been criticised for being biased by factors such as teacher popularity. The present study examines ratings of teaching quality and science learning among third graders. Results of multilevel confirmatory factor analyses (N ¼ 1556 students, 89 classes) indicate that the three-dimensional model of teaching quality can be replicated in ratings of third graders. In a longitudinal study (N ¼ 1070 students, 54 classes), we found ratings of classroom management to predict student achievement, and ratings of cognitive activation and supportive climate to predict students' development of subject-related interest after teacher popularity is controlled for. The analyses show that student ratings can be useful measures of teaching quality in primary school.
Type of Research	Quantitative
Key themes or findings.	• "we were able to confirm classroom management to be predictive of student learning, whereas supportive climate and cognitive activation are predictive of students' interest" (6). • "Our study confirmed the empirical relationship between student ratings of teaching quality and teacher popularity among primary school students. Referring to classroom level, teachers with high teaching quality might be more popular as a result. At the individual level, we can assume that a student who feels more affiliated with his or her teacher will tend to judge the teacher's teaching quality in a more positive manner" (7). "This study provides evidence that the individual value of student ratings depends on the expected outcome, the aspect of teaching measured, and the level of analysis" (8).
Methodology	Multi-level confirmatory factor analysis

	TEMPLATE
Standard bibliographic information	Felner, R. D., Favazza, A., Shim, M., Brand, S., Gu,, K., & Noonan , N. (2001). "Whole school improvement and restructuring as prevention and promotion: Lessons from STEP and the project on high performance learning communities." *Journal of School Psychology* 39 (2): 177-202. doi: 10.1016/S0022-4405(01)00057-7.
Country of Origin	USA
Key words	STEP HiPlaces Prevention Restructuring Whole school improvement
Abstract	We describe two research-tested approaches, the School Transitional Environment Project and its successor, the Project on High Performance Learning Communities, that have contributed to building a developmentally based design for comprehensive school improvement called the High Performance Learning Communities Model. The model seeks to modify the ecology of schools and schooling in order to build the principles of prevention and promotion into "whole school" change. Findings from a series of studies are presented that show that whole school change efforts, when implemented comprehensively and with appropriate intensity and fidelity, may powerfully influence the prevention of socioemotional, behavioral, and academic difficulties, as well as promotion of the acquisition of the full range of developmental competencies necessary for life success, well-being, and resilience.
Type of Research	Critical review of implementation of two reform projects
Key themes or findings.	'School Transitional Environment Project (STEP), is focused on enhancing school adjustment and decreasing risk and the onset of adaptive difficulties during and following the transition to middle/junior high school and/or high school. This initiative is focused around the experience of a key life transition by students'. [p 178] 'the Project on High-Performing Learning Communities (Project HiPlaces) emerged from STEP as we sought to capitalize on its strengths both for students and for systematic broader whole school improvement efforts. A primary goal of Project HiPlaces continues to be to respond to the needs of practitioners and policy makers for a knowledge base that guides systematic and increasingly effective reforms in public education. That is, to help provide a model for "what works" in educational reform. The project's focus is on all students in grades K–12' [p 178]. 'For us, what determines whether what a school is doing is "working" is whether it results in the promotion of the highest levels of performance, achievement, and positive developmental outcomes for all students' [p 178]. 'it appears that in cases where schools attempt to implement these practices but do them poorly (e.g., one

	or two common planning times per week, interdisciplinary instruction without common planning time, large teams), there may be no effect or even negative effects, especially on teacher attitudes and student performance' [p 198].
	• 'It also appears that the patterns of gains obtained by reforms are neither linear nor independent' [p 198].
	• 'Consistent with much prior work, we found that students in more traditionally structured schools show declines in achievement/adjustment indicators. It is not until substantial transformation has been accomplished (e.g., structural changes that are necessary for creating small learning communities, changes in norms and some instructional practices) that preventive effects (e.g., the absence of declines that would otherwise appear) are found for these students at risk' [p 199].
	• 'Finally and critically, the findings show that for students at risk, broad-range enhancements in achievement and adjustment are not obtained until implementation is mature, comprehensive, and being conducted with a high degree of fidelity (Felner et al., 1997a)' [p 199].
Methodology	Critical review of implementation of two reform projects

TEMPLATE	
Standard bibliographic information	Fullan, M. (2011). *Choosing the wrong drivers for whole system reform.* Melbourne, Australia: Centre for Strategic Education.
Country of Origin	USA + Australia focus
Key words	School reform School improvement
Abstract	N/A
Type of Research	Discussion paper
Key themes or findings.	- Educators and students need to be central driving force for system wide reform success. - Right drivers for reform are to look to build capacity, develop group work, look at pedagogy & systemic solutions. These are labelled as effective as they work directly on changing the culture of schools [p 5]. These need to work interactively. - The wrong way is to look to structural & procedural change. - Key though is to intrinsically motivate those involved - expected to bring about the changes - they need to be motivated & competent to do so. Need to change culture of school system. - By focusing on accountability via standards, testing etc. as a dominant driver, will not generate intrinsic motivation and will not achieve whole school reform. This focus also does not change instruction or pedagogy. 'Whole system success requires the commitment that comes from intrinsic motivation and improved technical competencies of groups of educators working together purposefully and relentlessly' [p 8] Need to build widespread capability – focus on professional learning. Need to develop the entire teaching profession – against performance pay for this reason. 'Systems are successful as systems because 95 per cent or more of their teachers become damn good' [p 10]. 'high social capital and high human capital must be combined, and of the two the former is more powerful' [p 11]. 'Every high performing system studied by the McKinsey group combined policies to attract and develop a high quality teaching force along with strategies and incentives for leaders and peers to work together' [p 12]. 'at the heart of the matter is instructional improvement linked to student learning – all teachers, all the time' [p 13]. - Needs to be systemic in practice.
Methodology	N/A

<table>
<tr><td colspan="2" align="center">TEMPLATE</td></tr>
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Standard bibliographic information	Fullan, M. (2006). The future of educational change: System thinkers in action. *Journal of Educational Change, 7*(3), 113-122. doi: 10.1007/s10833-006-9003-9
Country of Origin	Canada.
Key words	Educational change Educational innovations Educational leadership Educational planning Academic achievement
Abstract	In addressing the future agenda of educational change, this paper advances the notion of sustainability as a key factor in developing a new kind of leadership. This new leadership, if enduring, large scale change is desired, needs to go beyond the successes of increasing student achievement and move toward leading organizations to sustainability. Currently, there is a lack of development of leaders toward system thinking. An argument is made for linking systems thinking with sustainability in order to transform an organization or a system. In order to accomplish this goal, it is necessary to change not only individuals but also systems. The way to change systems is to foster the development of practitioners who are "system thinkers in action." Such leaders widen their sphere of engagement by interacting with other schools in a process we call lateral capacity building. When several leaders act this way they actually change the context in which they work. Eight elements of sustainability, which will enable leaders to become more effective at leading organizations toward sustainability, are presented. Within the explication of the eight elements, prior research is considered, difficulties are surfaced, and challenges are issued to change contextual conditions in order to effect large scale, sustainable educational change.
Type of Research	Scholarly Argument
Key themes or findings.	This article is a scholarly argument and no empirical research findings are presented.
Methodology	Scholarly argument

	TEMPLATE
Standard bibliographic information	Fullan, M. (2000). The return of large-scale reform. *Journal of Educational Change* 1 (1): 5-27. doi: 10.1023/A:1010068703786.
Country of Origin	USA focus, some UK
Key words	Educational reform Large-scale reform Curriculum reform Change management Implementation National reform School reform
Abstract	Education Reform on a large scale was first attempted in the 1960s. It failed to make a difference largely because advocates of reform ignored issues of implementation and did not address local institutions and cultures. In the 1990s, we see a return to large-scale reform. This time there is a greater appreciation of the complexity of the task, and greater attention paid to implementation strategies as well as a growing sense of urgency about the need for reform. This article reviews three "types" of large-scale reform and the emerging lessons being learned. The three forms of reform reviewed through case studies and associated research are: 1. whole school district reform involving all schools in a district; 2. whole school reform in which hundreds of schools attempt to implement particular models of change, and 3. state or national initiatives in which all or most of the schools in the state are involved. Eight factors and issues are identified and discussed – factors, if addressed, promise to achieve reform on a larger scale than ever before.
Type of Research	Evaluative case study review
Key themes or findings.	• Details historical overview of educational reform and reasons for implementation failure of reforms in the 1960s, e.g. many schools were under pressure to adopt reforms for which they did not have the capacity (individually or organizationally) to put into practice. • Increased pressure to reform now (increased trend since 1990s) but also a growing appreciation of the complexity of achieving reform. • In school district reform, Elmore and Burney (1998) found that principals are the key actors in instructional improvement and that common work among principals and teachers across schools is a source of powerful norms about system-wide instructional improvement. In terms of sustainability, models which are dependent on personnel in key roles need to consider whether the culture is sufficiently developed and internalized to survive their departure. • From Bryk et al. (1998) study: Importance of policies, goals and procedures to support reform + advances in knowledge and skill and dispositions for cooperative working as well as rigorous external accountability.

	• US Annenberg Challenge funds school district reforms. Concept is that there are no pre-defined projects. Choose own problem and solutions, work collaboratively, 'hope replacing despair' at system level, systemic approach. Evaluations have found positive outcomes (satisfaction, increased participation, increased skills of teachers). Common features of school district reform efforts can be identified: • A focus on "systems" of schools; • A devotion to changing teaching practices linked to improved student performance; • A mobilization of multi-level partnerships; • School-level/district rapport; • The development of an infrastructure of pressure and support; • Capacity-building of learning skills and learning communities for students, teachers, parents and others; • Data-driven inquiry and ongoing assessments of student and school performance; • A preoccupation with equity and accountability. Overall: • With greater know-how can have success and rapidly BUT long-term success is fragile if change is not institutionalized. Can be easily undone by a change in leadership or direction. In short, additional effort and development is needed for reforms to be sustained, leading to continuous improvement beyond the initial investment. • Schools and school systems that are most effective do not take on the most number of innovations – they are instead selective, integrative and focussed. • large-scale reform cannot be achieved unless the system promotes commitment in educators and the public, that they are all shareholders with a stake in the success of the system as a whole. • the more that the school works collaboratively on improvement at the school level, the more it engages critically with external standards and policy • Inquiry oriented standards and goal setting for accountability.
Methodology	Evaluative case study review

	3000 students or more) which we have inherited. In this sense reculturing (increasing school capacity) and restructuring (e.g., reducing the size and structure of high schools) may have to go hand-in-hand' [p 10]. • 'highly effective leadership is always in the minority (about 20% of the schools and districts), and never sustained. Until leadership is widespread, we will never get more than episodic, small-scale success' [p 14].
Methodology	Critical review

	TEMPLATE
Standard bibliographic information	Fullan, M. (2007). Change the terms for teacher learning. *National Staff Development Council, 28*(3), 35-36.
Country of Origin	US
Key words	N/A
Abstract	N/A
Type of Research	Discussion paper
Key themes or findings.	- Professional development as a term is a major obstacle to progress in teacher learning; - We need to deeply appreciate the meaning of noted educator Richard Elmore's observation (2004) that improvement above all entails "learning to do the right things in the setting where you work" (p. 73); - Student learning depends on every teacher learning all the time; - The first three components depend on deprivatizing teaching as teachers work together to continuously improve instruction; - Teachers' working conditions are inimical to the four previous points.
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Fullan, M. (2009). Large-scale reform comes of age. *Journal of Educational Change* 10 (2-3): 101-113. doi: 10.1007/s10833-009-9108-z.
Country of Origin	Canada but international focus
Key words	Large scale reform Capacity building Leadership for change Whole system improvement Historical review
Abstract	This article reviews the history of large-scale education reform and makes the case that large-scale or whole system reform policies and strategies are becoming increasingly evident. The review briefly addresses the pre 1997 period concluding that while the pressure for reform was mounting that there were very few examples of deliberate or successful strategies being developed. In the second period--1997 to 2002--for the first time we witness some specific cases of whole system reform in which progress in student achievement was evident. England and Finland are cited as two cases in point. In 2003--2009 we began to observe an expansion of the number of systems engaged in what I call tri-level reform--school/district/government. As Finland, Singapore, Alberta, Canada, Hong Kong, and South Korea continued to demonstrate strong performance in literacy, math and science, Ontario joined the ranks with a systematic tri-level strategy which virtually immediately yielded results and continues to do so in 2009. The nature of these large-scale reform strategies is identified in this article. It can be noted that very little productive whole system reform was going on in the United States. Aside from pockets of success at the level of a few districts since 2000, and despite the presence of a 'policy without a strategy' in the form of No Child Left Behind the US failed to make any progress in increasing student achievement. In the final section of the paper I consider the early steps of the Obama administration in light of the 'theory of action' of whole system reform identified in this article and predict that there we will see a great expansion and deepening of large-scale reform strategies in the immediate future, not only in the U.S. but across the world.
Type of Research	Discussion paper
Key themes or findings.	'the explicit strategic action focusing on whole system reform began post-2002' [p 104] - Difficulty in sustaining positive results of reform. - Transplanted systems do not work – importance of context. 'everyone agrees that high quality teachers are critical, and that leaders and teachers working together focusing on student learning and achievement is essential. But there are sharp differences concerning the policies and strategies for reaching these outcomes' [p 107]. - From McKinsey report re factors that account for high performing countries: 'four big factors: (1) attracting high quality people to the teaching profession (academics plus suitability for teaching); (2) a focus on

	and strategies for developing quality instructional practices on an ongoing basis on the job; (3) cultivating, selecting, and developing instructionally oriented leaders (especially principals, but also others at the district and state levels); and (4) continuing data-based attention to how well individual students, schools, and sets of schools are doing with early intervention to address any problems [p 108]. • 'one cardinal rule in systems reform is never, ever, endorse *one factor at a time* as key' [p 108]. 'Successful system reform usually means that a small number (up to half dozen) of powerful factors are interacting to produce substantial impact. It is the interaction effect that accounts for the results' [p 108]. • 'effective system leaders these days 'listen, link and lead', and 'model, teach and learn' [pp 19-110]. • 'For system reform in education such leadership must show up at all levels of the system—teacher leaders, principals, district administrators, and government including especially presidents, prime ministers, premiers, governors, ministers, state superintendents, director generals, deputy ministers and their direct reports.' [p 110] • Future looking ideas for US: 'paying teachers and principals higher salaries to teach in the most challenging schools' [p 110] + 'emphasis on capacity building, especially with respect to 'deep instructional practice', and in strategies for 'raising the bar and closing the gap' in student achievement' [p 110]. • Learn from studies such as Hattie (2009) meta-analysis and developing research in area and cases where reform is happening, e.g. Singapore, Hong Kong, Finland, Ontario, Alberta, England etc... • Neuman's (2009) research on the most effective and successful non-school programs came up with 7 principles: 'actively target the neediest children, begin early in child's lives, emphasize coordinated services, focus on boosting academic achievement through high-quality instruction, deliver instruction by trained professionals, acknowledge that intensity (depth, consistency) matters, and hold themselves accountable for results' [p 111].
Methodology	Evaluative review

TEMPLATE	
Standard bibliographic information	Gamage, D., Adams, D., & McCormack, A. (2009). How does a school leader's role influence student achievements? A review of research findings and best practices. *International Journal of Educational Leadership Preparation, 4*(1), 1-15.
Country of Origin	USA
Key words	Leadership, student achievement
Abstract	Currently, school systems around the globe are focusing on student achievements empowering school leaders along with curriculum and accountability frameworks. This paper focuses on a comprehensive review of literature on the role of school leadership towards improving student achievements based on research findings and best practices. It refers to numerous research projects conducted in many different school systems based on quantitative, qualitative and mixed method approaches comprising small scale medium size and mega research projects for the benefits of all types of school stakeholders on how a leader can do his or her best to improve student achievements.
Type of Research	Qualitative and Quantitative literature review.
Key themes or findings.	• No one leadership style can claim to be the perfect leadership style to positively impact on student achievement. • Principals need to be flexible & adapt to use appropriate leadership styles at different times to impact on various factors - such as creating a collaborative working environment, high levels of commitment, motivation, ownership, developing trust and a healthy school culture. These then can impact on higher productivity & increased student achievement. • Evidence suggest that pedagogical leadership styles with more hands on work by Principals are more effective than transformational leadership styles.
Methodology	Literature review.

TEMPLATE	
Standard bibliographic information	Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal, 38*(4), 915-945. doi: 10.2307/3202507
Country of Origin	US
Key words	N/A
Abstract	This study uses a national probability sample of 1,027 mathematics and science teachers to provide the first large-scale empirical comparison of effects of different characteristics of professional development on teachers' learning. Results, based on ordinary least squares regression, indicate three core features of professional development activities that have significant, positive effects on teachers' self-reported increases in knowledge and skills and changes in classroom practice: (a) focus on content knowledge; (b) opportunities for active learning; and (c) coherence with other learning activities. It is primarily through these core features that the following structural features significantly affect teacher learning: (a) the form of the activity (e.g., workshop vs. study group); (b) collective participation of teachers from the same school, grade, or subject; and (c) the duration of the activity.
Type of Research	Mixed Methods
Key themes or findings.	"Our results indicate that sustained and intensive professional development is more likely to have an impact, as reported by teachers, than is shorter professional development. Our results also indicate that professional development that focuses on academic subject matter (content), gives teachers opportunities for 'hands-on' work (active learning), and is integrated into the daily life of the school (coherence), is more likely to produce enhanced knowledge and skills" (935). "To improve professional development, it is more important to focus on the duration, collective participation, and the core features (i.e., content, active learning, and coherence) than type" (936). "Our data provide empirical support that the collective participation of groups of teachers from the same school, subject, or grade is related both to coherence and active learning opportunities, which in turn are related to improvements in teacher knowledge and skill and changes in classroom practice" (936). "Our results give renewed emphasis to the profound importance of subject-matter focus in designing high-quality professional development" (936). "Our results suggest a clear direction for schools and districts: in order to provide useful and effective professional development that has a meaningful effect on teacher learning and fosters improvements in classroom practice, funds should be focused on providing high-

	quality professional development experiences. This would require schools and districts
	• either to focus resources on fewer teachers, or to invest sufficient resources so that more teachers can benefit from high-quality professional development" (937).
Methodology	Survey analysis

	TEMPLATE
Standard bibliographic information	Goe, L. (2007). *The link between teacher quality and student outcomes: A research synthesis*. Washington, D.C: National Comprehensive Center for Teacher Quality.
Country of Origin	US
Key words	N/A
Abstract	While many studies attest that some teachers contribute more to their students' academic growth than other teachers, research has not been very successful at identifying the specific teacher qualifications, characteristics, and classroom practices that are most likely to improve student learning. Unfortunately, this is just the information that educational policymakers need most. In an effort to pinpoint teacher quality variables across studies for which there is strong agreement, Goe (2007) recently undertook a research synthesis for the National Comprehensive Center for Teacher Quality. This particular synthesis--which is available online (www.ncctq.org/link.php)--examines dozens of research studies that link a number of teacher quality variables to student achievement, as measured by standardized tests. While many studies have been conducted on the variables described in the following section, Goe focused only on studies in which authors tied their findings explicitly to teacher quality. Goe's analysis unearths many contradictory and weak conclusions, but the synthesis also identifies a few strong and consistent predictors of student achievement. This Research and Policy Brief culls the associations between teacher quality and student achievement that Goe identifies, with the goal of elucidating trends relevant to current educational policymaking.
Type of Research	Research synthesis
Key themes or findings.	• "A great deal of research has been done on teacher quality using student learning as the outcome measure. Despite all the time and effort spent researching this topic, in only a few aspects of teacher quality does strong and consistent evidence suggest that certain dimension make a significant difference in student learning. Many aspects of teacher quality that have been measured have resulted in findings that are inconsistent across studies or have such small effects that they are of no *practical* significance, even when they are statistically significant. Much of the research currently being reported purports to provide evidence for the importance of some aspects of teacher quality; but when the studies are collected and synthesized, it becomes apparent that there is not a consistent message. Some studies report that a particular aspect matters, and other studies report that the same aspect of teacher quality does *not* matter" (3). • "There is one aspect of teacher quality where a consensus across studies has clearly emerged: The

	effects of teachers with degrees in mathematics and appropriate certifications, and possibly higher level mathematics courses, appear to be strongly and consistently related to student achievement in mathematics" (4).
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Goldspink, C. (2007). Rethinking educational reform: A loosely coupled and complex systems perspective. *Educational Management Administration & Leadership* 35 (1): 27-50. doi: 10.1177/1741143207068219.
Country of Origin	Australia
Key words	Agency theory, Complexity theory, Educational reform, Public choice, School improvement
Abstract	This article critically examines two sets of ideas that have influenced educational reform in the recent past: managerialism and market approaches. It is argued that while each can be demonstrated to have led to useful change, neither provides a basis for future improvement in education. A recent example of change within the State School sector of South Australia is used to provide a grounding point for the development of a set of principles to guide future reform. These principles draw on a well-established set of ideas: that of educational systems as 'loosely coupled' and recent advances in the application of complex systems concepts to organizational management. These concepts, and the South Australian example, suggest the potential benefits from using self-organizational properties to improve institutional learning. Unlike the 'rationalist' management and market approaches, the alternative model emphasizes the need for a focus on people, relationships and learning rather than structures and centrally determined standards for conformance.
Type of Research	Critical examination of managerialism and market approaches to educational reform, analysis of South Australia reform
Key themes or findings.	- Compares managerialism and market approaches to educational reform/ Argument that managerialism approaches to reform tend to place greater administrative responsibilities on principals at the cost of educational leadership. Argument that under market approaches to reform, 'aspirational goals or outcomes for education are difficult to measure and tend to be replaced in contracts with short-term 'outputs' with a high potential for goal displacement' [p 35] - Suggests that the education system is resistant to change. - Effective change requires: appeal to teachers and administrators intrinsic motivation; allow for high degree of flexibility; a 'non-deficit' approach to reform – i.e. a non-deficit view of current system; learning-oriented rather than blame based evaluation. - Education systems and curricula based on constructivist theories mean that educational reform which draws on or embraces constructivism is more likely or be compatible. - Stakeholders need to be involved in the learning about change phase; focus needs to be on long term social & individual benefits rather than quantifiable short-term outputs

Methodology	Critical analysis and case study

TEMPLATE	
Standard bibliographic information	Gunter, H., Rayner, S., Butt, G., Fielding, A., Lance, A., &, Thomas, H. (2007). Transforming the school workforce: Perspectives on school reform in England. *Journal of Educational Change 8* (1): 25-39. doi: 10.1007/s10833-006-9017-3.
Country of Origin	UK
Key words	Whole school reform Change management School workforce Leadership Organisational improvement
Abstract	This paper describes the experience of change management observed as part of an evaluation of the Transforming School Workforce Pathfinder Project commissioned by the UK Government for the English education system. The 32 Pilot Schools made interventions in organisational practice in ways that required them to think differently about work. Changes in the number, type and deployment of the school workforce combined with thinking about the nature of work have challenged existing practices. In particular, a focus on change management teams drawn from the whole school workforce, supported by an external school workforce advisor, has required schools to examine the nature of decision-making and participation. We intend to draw on evidence from eight case study schools and through this examine the implications for how change is understood and practiced. We critically engage with the government's preference for a particular model of change to bring about organisational improvement, and we reveal a pluralistic and dynamic field both within practice and theorising.
Type of Research	Case studies from an evaluation of the Transforming School Workforce Pathfinder Project (UK) which was piloted by 32 schools.
Key themes or findings.	• Eight case studies from an evaluation of the Transforming School Workforce Pathfinder Project (UK) which was piloted by 32 schools – they made changes in their practices to find ways to free up teachers from admin to focus on teaching. It was a one year pilot project. • A model of change was developed: Mobilise, Discover, Deepen, Develop and Deliver and was to be implemented by a Change Management Team supported by an external School Workforce Advisor. Change plans and additional resourcing/funding had to be agreed by the Ministry. • The evaluation process consisted of teacher questionnaires, interviews, group discussions with students, documented evidence. • 'Across the 32 schools the TSW Project did impact by reducing the working hours of teachers, led to changes in role boundaries between teachers and other members of the school workforce, and made support staff more prominent and effective in schools' [p 28]. • 'The qualitative data clearly revealed that the Project was perceived as a success as it was linked to evidence of visible positive differences to working lives' [p 29].

	• Issues: 'there is a danger of losing some people along the way and of change fatigue' [p 32]; regular reporting of progress to Ministry was cited as an issue; short-term nature of posts (2 years) made it difficult to recruit right caliber of people and make sustainable change • 'What matters is how claims are made for what the change can do for schools in comparison with how and what those involved experience as the actual change, as they witness and feel it' [p 34]. • 'The experienced reality was that such a process took time: some were prepared to go with it at the start, others became convinced along the way, and others remain to be convinced. [p 37]
Methodology	Case study evaluation with questionnaires, interviews, group discussions with students, documented evidence.

TEMPLATE	
Standard bibliographic information	Guskey, T. R., & Yoon, K. S. (2009). What works in professional development? *Phi Delta Kappan, 90*(7), 495-500.
Country of Origin	US
Key words	N/A
Abstract	A research synthesis confirms the difficulty of translating professional development into student achievement gains despite the intuitive and logical connection. Those responsible for planning and implementing professional development must learn how to critically assess and evaluate the effectiveness of what they do.
Type of Research	Research review
Key themes or findings.	"At all levels of education, those responsible for planning and implementing professional development must learn how to critically assess and evaluate the effectiveness of what they do" (498). "Practitioners at all levels must demand better evidence from consultants and purveyors of new strategies and practices" (498). "Implementation of any new professional development strategy should always begin with small-scale, carefully controlled, pilot studies designed to test its effectiveness" (498-99). "Researchers as well as practitioners must pursue greater rigor in the study of professional development" (499). "The amount of valid and scientifically defensible evidence we currently have on the relationship between professional development and improvements in student learning is exceptionally modest. Nine studies from an initial group of 1,343 potentially relevant citations represent a very small percentage. Given this limited number of studies, we also have to be cautious about making a definitive conclusion about the effectiveness of specific elements of professional development" (499).
Methodology	N/A

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<tr><td colspan="2" align="center">**TEMPLATE**</td></tr>
<tr><td>**Standard bibliographic information**</td><td>Guskey, T. R. (2003). Analyzing lists of the characteristics of effective professional development to promote visionary leadership. *NASSP Bulletin, 87*(637), 4-20. doi: 10.1177/019263650308763702</td></tr>
<tr><td>**Country of Origin**</td><td>US</td></tr>
<tr><td>**Key words**</td><td>N/A</td></tr>
<tr><td>**Abstract**</td><td>In recent years, different researchers and research agencies, teacher associations, national education organizations, and the U.S. Department of Education have published lists of the characteristics of effective professional development to guide school leaders in their improvement efforts. This study analyzed 13 of the better known of these lists to determine whether they were derived through similar procedures, based on similar frames of reference, and included the same elements or characteristics. Results show that individual characteristics vary widely in their frequency of inclusion in the lists and that no characteristic is consistently named in all lists. In addition, research evidence supporting most of the identified characteristics is inconsistent and often contradictory. Implications for leaders interested in improving professional development activities are discussed, as well as ways to enhance efforts to identify the characteristics of effective professional development.</td></tr>
<tr><td>**Type of Research**</td><td>Literature Review</td></tr>
<tr><td>**Key themes or findings.**</td><td>Analysis of 13 studies of professional development (PD) showed:

"There is no relationship between the identified characteristics [of effective PD] and the date of publication of a list… although certain characteristics appear on most lists, none is included in all" (9).
"Research rarely includes rigorous investigations of the relationship between the noted characteristics and improvements in instructional practice or in measures of student learning outcomes" (9).
"The most frequently mentioned characteristic of effective professional development [11 out of 13 studies] is enhancement of teachers' content and pedagogic knowledge… however, nearly all of the studies relating this characteristic to improvements in student learning focus exclusively on achievement in mathematics and/or science" (9).
"Ten of the lists include the provision of sufficient time and other resources as essential to effective professional development" (11).
"Although effective professional development clearly requires time, it also seems clear that such time must be well organized, carefully structured, and purposefully directed" (12).
"Another consistently noted characteristic is the promotion of collegiality and collaborative exchange…. For collaboration to bring its intended benefits it, too, needs to be structured and purposeful, with efforts
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	guided by clear goals for improving student learning." (12).
	• "Most of the lists and the *NSDC Standards* stress the inclusion of specific evaluation procedures" (12).
	• "The majority of lists recognize the need for professional development activities to be aligned with other reform initiatives and to model high quality instruction" (12).
	• "Most lists also stress that professional development should be school or site based, even though significant research evidence suggests this may not always be effective (see Holloway, 2000; Latham, 1998)" (12-13).
	• "There appears to be little agreement among professional development researchers or practitioners regarding the criteria for effectiveness in professional development" (14).
	• "Perhaps because of the lack of agreement on the criteria for effectiveness, many of the currently identified characteristics of effective professional development can be best described as 'Yes, but. . .' statements" (15).
	• "These results show that although the promise of research-based professional development remains largely unfulfilled, it need not remain so" (16).
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Hairrell, A., Rupley, W. H., Edmonds, M., Larsen, R., Simmons, D., Willson, V., . . . Vaughn, S. (2011). Examining the impact of teacher quality on fourth-grade students' comprehension and content-area achievement. *Reading & Writing Quarterly, 27*(3), 239-260. doi: 10.1080/10573569.2011.560486
Country of Origin	US
Key words	None provided.
Abstract	In this study we examined the effects of dimensions of teacher quality on students' comprehension and vocabulary performance. Participants were 36 teachers and their respective 679 students in 2 medium-size school districts in central Texas, both of which served high proportions of children from low-socioeconomic status households. We matched schools in Districts 1 and 2 on the previous year's reading achievement performance and then assigned them to 1 of 2 experimental conditions—comprehension or content vocabulary—through stratified random assignment, with each condition represented in multiple schools in each district. Teachers in each condition participated in a distributed 15 hr of content- and curriculum-based professional development over an 18-week period. The intervention was for 30 min, 3 times a week. We examined the following dimensions of teacher quality: teacher qualifications, instructional practices, quality of strategy use, treatment fidelity, and instructional effectiveness. We used student measures of reading comprehension, content vocabulary, and social studies knowledge to explore the effects of teacher quality. Teachers' education, fidelity, and indicators of teacher quality were significantly related to student outcomes on a standardized measure of reading comprehension.
Type of Research	Mixed methods
Key themes or findings.	• "The most prevalent and consistent implementation challenge reported by teachers was an inadequate amount of time to fully implement the PD practices in their teaching" (252). • "Results of structural equation modelling indicated that three teacher variables [degree, fidelity, and teacher quality] were related to student performance on a standardized measure of reading comprehension" (243). • "The teachers in this study who adhered more closely to the Professional Development materials [which were focused on evidence-based practices for vocabulary and comprehension instruction] had a greater impact on student achievement than those who did not" (254). • "Quality instructional materials combined with quality delivery can enhance student learning on standardized measures" (254). • "The Professional Development significantly influenced overall teacher quality, and levels of teacher quality were also significantly related to vocabulary learning. Our analyses provide evidence that participation in high-quality PD is associated with higher ratings of teacher

	quality" (255).
	• "A Professional Development model that provides teachers with the knowledge and skills to incorporate effective strategy and vocabulary instruction into their social studies instruction can improve the quality with which instruction is delivered" (256).
Methodology	Structural equation modelling and grounded theory

TEMPLATE	
Standard bibliographic information	Hamann, E. T. (2005). Systemic high school reform in two states: The serendipity of state-level action. *High School Journal 89* (1): 1-17.
Country of Origin	USA
Key words	Educational reform School reform Case study
Abstract	Maine and Vermont have been national leaders in state-level coordination of high school reform. Both recently developed almost inter-changeable, new, voluntary, statewide frameworks that describe multiple ways high schools should change. Both frameworks—Promising Futures (Maine Commission on Secondary Education 1998) and High Schools on the Move (Vermont High School Task Force 2001)—were published in book form and include extensive bibliographies grounding their claims that they are research based. Both frameworks recommend principles and practices for improving high schools for all students. Both frameworks were drafted primarily by leading local educators with only modest support from experts based beyond the state's boundaries. Despite these similarities, the strategies for implementing these frameworks in each state have varied and, because of this, the two frameworks' prospects of having enduring favorable impact also appear to vary. Using historical and ethnographic methods to conduct two policy implementation case studies, this paper describes both framework's development and then focuses on early implementation. Together the cases illustrate how more than an adequate whole-school reform framework is necessary to raise the prospect of enduring high school improvement. They also illustrate the potential of anthropological inquiry to the study of educational policy development and implementation.
Type of Research	Case studies of Maine and Vermont reforms
Key themes or findings.	• Describes state-level coordination of high school reform in Maine and Vermont - have been national leaders with statewide reform frameworks • Talks about pressure to transfer practices from 'successful' schools to 'less successful' schools – 'scaling-up' • Literature shows challenges in sustaining change due to personnel changes • Literature shows viable reform needs to be systemic and continuity across policies in system • Maine and Vermont are two of the top three states for investment in education and very active in reform. Reform based around collaborative relationship across schools, shared tasks and personalized learning. • Where reform appeared to work (Maine more so than Vermont) it wasn't to do with framework itself – key appeared to be consistent leadership, resourcing (staff and money), continued changes to align efforts at

	different tiers of the education. But yet to see whether there is an impact on student outcomes.
Methodology	Historical and ethnographic case studies

	TEMPLATE
Standard bibliographic information	Hargreaves, A., Halász, G., & Pont, B. (2007). *School leadership for systemic improvement in Finland*. Paris: France: OECD.
Country of Origin	Finland
Key words	Educational reform, leadership, distributed leadership, collaboration, principal.
Abstract	This is a report and no abstract was supplied
Type of Research	Qualitative; Descriptive;
Key themes or findings.	• Describes in detail what the Finns have done to their education system to produce their results. • Finland is notable for its deviation from Global Educational Reform Movement (GERM) which emphasises testing and targets, curriculum prescription and market competition. • In Finland there is no national testing regime. The state steers but does not prescribe the curriculum with trusted teams of high quality teachers writing much of the curriculum at the municipality level in response to students' needs. • It has transformed its education system in the last 50 years from being a centrally planned and hierarchical system in the 1970s into a highly decentralised system of governance following the economic collapse of the early 1990s. • "Finland's distinctiveness and effectiveness as an economic, social and educational success cannot be found in "silver bullets" – in particular practices that can be readily transposed to other countries so they too could experience the "miracle" of educational and economic transformation in the way that Finland has. Rather, it is the intersection and integration of the moral, political, structural, cultural, leadership and learning-based aspects of Finland, within a unitary whole that defines and explain the nation's success" (p.11) • One of the keys to Finland's success appears to be the high quality of its teachers. Teaching is a highly respected profession as teachers are seen to build a wider social mission of economic prosperity, cultural creativity and social justice that is central to the Finish identity. Teaching is seen as the desired occupation of high school graduates and only one in ten students being admitted to ITE programmes. • "The Finnish model cannot be copied wholesale, for it is a model or strategy that arises out of alignment between and integration of a deep set of cultural and social values, a particular kind of social and economic state,

	and a distinctive approach to educational reform. However, the political and cultural differences that characterise Finnish society along with other elements such as relatively small size or ethnic composition should not be used to excuse its relevance and importance for other settings either. Yet again, the temptation to "cherry pick" particular parts of the Finnish strategy for proposed adoption and transference to other nations is equally problematic if any preferred element is not seen in relation to all the others that make up Finland's complex social, economic and educational system. The challenge, rather, is to promote mutual learning and interaction across countries about the deeper principles and practices that underpin Finland's educational model - and adjust these through thoughtful adaptation within different cultures and contexts." (p.11)

- Finland places no emphasis on individual testing or measurement driven accountability.
- There is a commitment to and wide spread culture of learning in schooling and in society in general.
- They are pedagogically conservative.
- "To sum up: learning rather than measured performance defines the focus and the form of systemic leadership in Finnish education." (p.16)
- A strong positive culture of trust, cooperation and responsibility.
- The principals in one city that they went to work to help all students in the city rather than giving a competitive edge to the students in their school.
- All principals do some teaching. This lends them credibility among their teachers, enables them to remain connected to their children, and ensures that pedagogical leadership is not merely rhetoric but a day-to-day reality
- Shared leadership is relatively new. It tended to be delegation of managerial roles rather than working together—contrived collegiality.
- The changes to more managerial models of leadership is part of a national response to expected social, economic and demographic changes (brought on by things like immigration since they joined the EU)
- "Such instances of contrived collegiality (Hargreaves, 1994) can create cynicism about the cooperative process and they serve as a warning that distributed leadership needs to extend beyond allocation of tasks to teams, and more into shared responsibilities for improving teaching and learning where everyone, not just the principal, becomes pedagogical leaders." (p.25)
- Some argue that they are good at cooperation but still learning to collaborate.
- "Although cooperation might produce heightened effectiveness, continuous improvement and dramatic transformation in teaching and learning require more thoroughgoing within-school collaboration that currently seems less evident in Finland" (p.17)
- "Principals and teachers are trusted, to a degree, because of their high qualifications, expertise and widespread commitment and responsibility" (p.17)
- "distributed leadership here is not a set of practices initiated and handled by principals or senior officials.

	Leadership, rather, is already distributed throughout the culture and organisation of the schools" (p.21)
	• The informal endemic approach to distributed leadership is dominant but more formal systems of teamwork and decision making are coming in.
	• Principals now feel that they have more and more work and responsibilities, shortage of time, increased pressures and a sense of being overwhelmed.
	• Interventions (as opposed to cooperative problem solving) are virtually unknown.
	• There are 416 small Municipalities, some of the largest might encompass whole cities. The Municipalities have great power about what goes on in schools.
	• Schools are obliged to report on how they cooperate with other schools.
	• High performing Finland rests on a culture of high-trust, actively engaged and cooperative professional relationships.
	• "No single part of the overall innovation can or should be extracted or transposed from this society-wide example, since the components are part of a complex system which is mutually self-reinforcing. It is hard to imagine how Finland's educational success could be achieved or maintained without reference to the nation's broader and commonly accepted system of distinctive social values that more individualistic and inequitable societies may find it difficult to accept. In this respect, one of Finland's lessons for other nations may be that successful or sustainable educational reform comes with widespread social and economic reform." (p.26)
	• "Leadership currently contributes to Finnish high performance not by concentrating or perseverating on performance outcomes, particularly measurable ones, but by paying attention to the conditions, processes and goals that produce high performance – a common mission; a broad but unobtrusive steering system; strong municipal leadership with lots of local investment in curriculum and educational development; teachers who already are qualified and capable at the point of entry; informal cooperation and distributed leadership; principals who stay close to the classroom, their colleagues, and the culture of teaching; and (from the principal's standpoint) being first among a society of equals in the practical and improvisational practice of school-based improvement." (p.25)
	• "Informally and practically, leaders also seem to be able to concentrate on knowing their schools, colleagues and communities well – unencumbered by external initiatives – and often promoted from among the people with whom they have taught." (p.25)
	• "The systemic reform in educational leadership and improvement that we analysed, while it is in its early stages, has already produced some positive results, with greater cooperation and cooperation between administration and practice." (p. 31)
Methodology	Case study.

TEMPLATE	
Standard bibliographic information	Harris, A, & Jones, M. (2010). Professional learning communities and system improvement. *Improving Schools 13* (2): 172-181. doi: 10.1177/1365480210376487.
Country of Origin	Wales
Key words	Professional learning communities System-wide improvement Reform Distributed leadership School effectiveness School improvement
Abstract	This article outlines the progress and impact of professional learning communities within, between and across schools, as part of the implementation of whole system reform in Wales. It describes the way in which professional learning communities are being developed to support improvement and change across the education system in Wales. The article focuses on a group of schools that piloted a model of professional learning communities that subsequently have become a key part of the reform process in Wales and it highlights some of the challenges faced by the schools in establishing and sustaining professional learning communities. The article concludes by suggesting that professional learning communities offer one way of generating changed professional practice that can positively contribute to system-wide improvement.
Type of Research	Reporting on piloting of a model of professional learning communities before full implementation
Key themes or findings.	• In Wales a major reform effort is underway to transform the entire education system – part of the National 'School Effectiveness Framework' (SEF). • Professional learning communities within, between and across schools are being established to build capacity for change. • Model in Wales 'endorses a move from individual professionalism, to collective professionalism' – argued that 'only through such mutual dependence and collective working' can large-scale reform be generated. • Three key principles on which model is based: 1) Entire system collaboration and networking, 2) central and non-negotiable focus on pedagogical improvement and improving learner outcomes, 3) use of action enquiry approaches – schools choose their own focus and collect data accordingly. • Findings of pilot study: All the pilot schools demonstrated early evidence of changed professional practice. • Challenges: There can be structural and school cultural issues in building professional communities across schools – can require a lot of negotiation and support where this is a new way of working. Time pressures can be a major challenge – the work cannot be an extra task, it needs to be integrated into routines to be sustainable.

Methodology	Critical review of professional learning communities and pilot of Welsh model

TEMPLATE	
Standard bibliographic information	Harris, D. N. (2009). Teacher value-added: Don't end the search before it starts. *Journal of Policy Analysis & Management, 28*(4), 693-699.
Country of Origin	US
Key words	Teacher Effectiveness Educational Accountability -- United States Academic Achievement Educational Quality Teacher Competencies Outcome Assessment (Education) Education -- United States Value-Added Assessment (Education) United States
Abstract	The article discusses the policy decisions on the use of value-added measures of teacher performance for accountability purposes in the U.S. It notes that it is worth starting the measurement credentials ensures quality instruction by providing incentives for teachers and performance based on observations of actual instructions in the classroom. It adds that the outcome measures will measure teacher's contribution to student's learning and to measure teacher contribution to student outcome is more difficult.
Type of Research	Research-based Editorial
Key themes or findings.	"Teacher value-added measures probably provide some useful information and at little cost" (693). "This information is arguably at least as useful for some purposes as credentials and measures of observed performance" (693). - We know almost nothing about how to use this information productively" (693). "Teacher value-added appears to be positively correlated [(0.3-0.5 range)] with principals' confidential assessments of teachers" (694). "Even if principals knew exactly how much teachers contributed to student achievement, we would not expect the confidential principal assessment to equal teacher value-added" (694). "There is no truly objective way to both accurately and objectively evaluate the quality of instruction. Also, even within a given grade, principals' personal biases are likely to creep into their professional judgments" (697). "Performance assessments might be less useful for accountability purposes, but more useful for helping teachers figure out how to improve, working in collaboration with their principals, mentors, and other peers" (697).
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Heck, R. H., & Hallinger, P. (2014). Modeling the longitudinal effects of school leadership on teaching and learning. *Journal of Educational Administration, 52*(5), 653-681. doi: 10.1108/JEA-08-2013-0097
Country of Origin	USA and Hong Kong.
Key words	Leadership, Effectiveness, School improvement, Student learning, Teaching quality, School leadership, School change, Effects of leadership, Instructionally focussed leadership
Abstract	Purpose – The purpose of this paper is to test a multilevel, cross-classified model that seeks to illuminate the dynamic nature of relationships among leadership, teaching quality, and student learning in school improvement. The study's primary goal is to shed light on the paths through which leadership influences student learning. At the school level, the model examines the mediating effect of the school's instructional environment on leadership and student learning. At the classroom level, it examines how instructionally focussed leadership can moderate teacher effects on student learning. Then these multiple paths are examined in a single model that seeks to test and highlight the means by which leadership contributes to school improvement. Design/methodology/approach – The current study employed a multilevel longitudinal data set drawn from 60 primary schools in one state in the USA. Using a cross-classification approach to quantitative modeling, the research analyzes the complex cross-level interactions that characterize school-level and classroom level practices that contribute to school improvement and student learning. Findings – The results illustrate the utility of specifying multilevel relationships when examining the "paths" that link school leadership to student learning. First, leadership effects on student learning were fully mediated by the quality of the school's instructional environment. Second, the findings indicated that the classroom-related paths examined in this study directly influenced the measures of student math achievement. Third, the research found that instructionally focussed school leadership moderated the effect of individual teachers on student learning. Fourth, the results suggest that school leaders can enhance student outcomes by creating conditions that lead to greater consistency in levels of effectiveness across teachers. Practical implications – The study makes substantive contributions to the global knowledge base on school improvement by testing and elaborating on the "paths" that link school leadership and student learning. More specifically, the findings offer insights into strategic targets that instructional leaders can employ to enhance teacher effectiveness and school improvement. Thus, these results both support and extend findings from prior cross-sectional and longitudinal studies of leadership and school improvement. Originality/value – This is the first study that has tested a conceptualization of leadership for learning in a single "cross-classified longitudinal model" capable of capturing interactions among leadership, classroom teaching processes and growth in student learning. The research illustrates one "state-of-the-art" methodological approach for analyzing longitudinal data collected at both the school and classroom levels

	when studying school improvement.
Type of Research	Quantitative:
Key themes or findings.	• First, leadership effects on student learning were fully mediated by the quality of the school's instructional environment. • Second, the findings indicated that the classroom-related paths examined in this study directly influenced the measures of student math achievement. • Third, the research found that instructionally focussed school leadership moderated the effect of individual teachers on student learning. • Fourth, the results suggest that school leaders can enhance student outcomes by creating conditions that lead to greater consistency in levels of effectiveness across teachers. • Although most researchers assume that leadership impacts students' learning through the quality of teaching, they are unaware of any studies of the effect of leadership on student achievement that have included measure of classroom teaching.
Methodology	Quantitative modeling of multilevel longitudinal data set.

TEMPLATE	
Standard bibliographic information	Heck, R. H. (2009). Teacher effectiveness and student achievement: Investigating a multilevel cross-classified model. *Journal of Educational Administration, 47*(2), 227-249. doi: 10.1108/09578230910941066
Country of Origin	US
Key words	Teachers, Quality, Students, Quality improvement
Abstract	Purpose – The purpose of this paper is to show how increasing teacher effectiveness is central to school efforts to improve student outcomes. This study aims to examine successive teachers' effects on student achievement. The premise advanced is that teacher effectiveness is an individual resource that varies across classrooms within schools, as well as a collective resource that varies across schools. Design/methodology/approach – The methods used represent an attempt to expand the scope of previous studies about ways in which schools affect student learning by examining a multilevel constellation of teacher-related effects (e.g. classroom effectiveness, collective teaching quality, school academic organization) that can be changed to increase educational effectiveness. The sample consisted of 9,196 students, cross-classified in 511 and 527 classrooms, and nested in 156 elementary schools. Findings – First, the effectiveness of successive teachers was related to student achievement in reading and math. Second, collective teacher effectiveness, as an organizational property of schools, was positively associated with achievement levels. Third, the stability of the school's teaching staff and the quality of its academic organization and teaching processes were positively related to achievement levels. Originality/value – Findings are consistent with studies that have found that differences in teacher effectiveness matter in explaining student achievement. They also suggest that teacher effects tend to accumulate within and between schools to provide noticeable academic advantage or disadvantage. The results imply promising avenues through which a leadership focus on hiring and retaining high-quality teachers and facilitating improved academic processes can yield increased school effectiveness.
Type of Research	Quantitative
Key themes or findings.	• First, the effectiveness of successive teachers was related to student achievement in reading and math. • Second, collective teacher effectiveness, as an organizational property of schools, was positively associated with achievement levels. • Third, the stability of the school's teaching staff and the quality of its academic organization and teaching processes were positively related to achievement levels.
Methodology	Fixed-effect modelling

TEMPLATE	
Standard bibliographic information	Herner-Patnode, L. (2009). Educator study groups: A professional development tool to enhance inclusion. *Intervention in School and Clinic, 45*(1), 24-30. doi: 10.1177/1053451209338397
Country of Origin	US
Key words	Educator study groups Professional development Response to intervention
Abstract	Professional development can take many forms. The most effective development includes individual educators in the formation and planning process. Educator study groups are one form of professional development that allows major stakeholders in the education process the autonomy to develop individual and group goals. This often translates into an improved ability to read research and translate it effectively in the classroom. This article focuses on the organization and planning process needed to create study groups with the focus of improving the inclusion of students with diverse needs in the general education classroom.
Type of Research	Qualitative/Prescriptive
Key themes or findings.	• Discusses steps for designing educator study groups (ESG). • Reviews research on ESG and claims ESG can be "an effective tool to facilitate collaboration among special and general educators and thus help promote inclusion and access to the general education curriculum within a school environment" (25). • No evidence provided from author's implementation of ESG. Primarily a research-based 'how-to' article that does not include data from intervention.
Methodology	Action Research

Standard bibliographic information	Hertling, E. (1999). Implementing Whole-School Reform. . *ERIC Digest Number 128*.
Country of Origin	USA
Key words	Reform Whole school reform School performance
Abstract	This Digest examines the key issues surrounding the implementation of school wide reform. It discusses how whole-school reform results can be dramatic but that schools must take special care with implementing the reforms. It examines the importance of outside assistance in reform efforts and reports that design teams are typically used by schools contemplating reform. Such teams can integrate reform efforts into one comprehensive effort, rather than trying to implement fragments. However, in choosing a school-reform model, the most important first step is a thorough self-study; once a school's strengths and weaknesses are accounted for, the model has a much greater chance of success. After a model is chosen, the school must set clear goals for student outcomes and must be sure to have open communication between the design team and the school. The next biggest challenge that reform-minded schools face is that of funding. Federal funding is available, but it does not cover all costs, and it is recommended that states and districts create an investment fund that draws on public and private sources to support the implementation of reform models. Finally, other factors that affect implementation--strong leadership, teacher commitment, and a supportive student body--are discussed.
Type of Research	Discussion paper
Key themes or findings.	'schoolwide programs can produce compelling results such as substantial gains in student achievement. However, there is a catch. The designs must be well implemented, and that is where many schools and districts have run into problems'. 'In 1998, the RAND Corporation released a study of schools that were implementing whole-school designs. Two years after adopting the designs, only about half of the schools were implementing the core elements of the programs schoolwide...' 'If the school carefully and realistically identifies its strengths and weaknesses, as well as what staff expects from a design, its chance of successfully implementing reform is much greater'. Must choose design of own free will not have one enforced. 'Schaffer and colleagues (1997) point out that in many schools where reform failed, principals did not keep the staff aligned to the goals of the design. As well, many principals were not knowledgeable about basic precepts of the reform program, and therefore could not provide good leadership'.

	• Teacher commitment essential but wider buy-in also necessary 'School leaders can garner support for reform by communicating clearly with students, parents, and community members.
Methodology	Discussion paper: An examination of the key issues surrounding the implementation of schoolwide reform

<div style="text-align: center">TEMPLATE</div>

Standard bibliographic information	Hopkins, D., & Levin, B. (2000). Government policy and school development. *School Leadership & Management 20* (1): 15-30. doi: 10.1080/13632430068851.
Country of Origin	n/a
Key words	Educational reform Educational system
Abstract	The last 10 or 15 years of this century have been a time of great challenge as well as considerable excitement for educational systems around the world. Governments everywhere have been embarking on substantial programmes of reform in an attempt to develop more effective school systems and raise levels of student learning and achievement. We see in these policy initiatives an unfortunate paradox that inhibits them from realising their aspirations. The community of educational change researchers and practitioners has finally begun to learn something about how ongoing improvement can be fostered and sustained in schools. However, government policy on education has not taken adequate account of this knowledge about school development, with the result that an enormous potential source of synergy has been lost and student learning continues to lag behind its potential. Our argument in this article is that as a consequence of this gap government efforts to improve schooling are less effective than they might be and that many school improvement efforts have to swim against the current of government regulation. Following our analysis of this central irony in educational policy, we go on to outline an approach that would be more likely to help governments achieve their educational objectives by building policy initiatives more explicitly on the knowledge base of school development.
Type of Research	Discussion paper
Key themes or findings.	• 'the dramatic increase in educational reform efforts in most Western countries over the past decade is having insufficient impact on levels of student achievement' [p 19] • 'any strategy to promote student learning needs to give attention to engaging students and parents as active participants, and expanding the teaching and learning repertoires of teachers and students respectively' [p 20]. • Needs to be systemic and coherent and focus on implementation – 'teachers' behaviours and practices as well as their beliefs and understandings' [p 21] • 'the reason government policy does not impact directly on outcomes is because by and large it lacks an implementation or more broadly a school development perspective' [p 21]. • 'If we are interested in raising levels of student achievement then an explicit focus on teaching and learning needs to be at the centre of policy making' [p 22]. • One size does not fit all…

	• **'Proposition One** Schools will not improve unless teachers develop, individually and collectively. Whilst teachers can often develop their practice on an individual basis, if the whole school is to develop then there need to be many staff development opportunities for teachers to learn together. **Proposition Two** Successful schools seem to have ways of working that encourage feelings of involvement from a number of stake-holder groups, especially students. **Proposition Three** Schools that are successful at development establish a clear vision for themselves and regard leadership as a function to which many staff contribute, rather than a set of responsibilities vested in a single individual. **Proposition Four** The co-ordination of activities is an important way of keeping people involved, particularly when changes of policy are being introduced. Communication within the school is an important aspect of co-ordination, as are the informal interactions that arise between teachers. **Proposition Five** Schools which recognise that enquiry and reflection are important processes in school improvement and it easier to gain clarity and establish shared meanings around identified development priorities, and are better placed to monitor the extent to which policies actually deliver the intended outcomes for pupils. **Proposition Six** The process of planning for development allows the school to link its educational aspirations to identifiable priorities, sequence those priorities over time, and maintain a focus on classroom practice'. [p 25] • 'policies need to support people in learning how to use data effectively, and this has not been nearly as prominent a theme in policy' [p 27] • Important to focus directly on teaching and learning
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Hord, S. M. (2009). Professional learning communities. *Journal of Staff Development, 30*(1), 40-43.
Country of Origin	US
Key words	Communities of practice Teachers -- In-service training -- Management Authority School principals Tasks Professional education Learning Education Constructivism (Education) Educational ideologies Students Leadership Schools
Abstract	Information on professional learning communities (PLC) in which educators work together to improve student learning is provided. This information relates to the work of professional learning communities, the relationship between constructivism and the professional learning community, and the conditions needed by professional learning communities to implement constructivist learning.
Type of Research	Research review
Key themes or findings.	Conditions for PLC success: - Community membership: Members must decide how their learning will proceed along with sharing and discussing team-group learning. This provides a common purpose for the school. - Leadership: Principal defines purpose for meetings while supporting and leading "collaborative dialogue about students' needs and how staff's learning can contribute to student learning" (42). - Time for learning: Also important is the principal's role in soliciting teachers' cooperation in finding or creating time for meetings" (42). - Space for learning: "Principals must identify space that can accommodate the entire faculty" (42). - Data use support: "Someone must be responsible for organizing the various sources of data in formats that are user-friendly…. Eventually, all teachers should learn how to do this task so that they have ready access to current data" (42-43). - Distributed leadership: "As the staff learns to use appropriate conversation modes, select the best decision-making model for their needs, and engage in conflict resolution, the principal removes himself or herself as the 'sage on stage' to become the 'guide on the side,' working in democratic participation with the staff" (43).
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Huggins, K. S., Scheurich, J. J., & Morgan, J. R. (2011). Professional learning communities as a leadership strategy to drive math success in an urban high school serving diverse, low-income students: A case study. *Journal of Education for Students Placed at Risk, 16*(2), 67-88. doi: 10.1080/10824669.2011.560525
Country of Origin	US
Key words	N/A
Abstract	Utilizing a qualitative case-study design, this study explored how a mid-sized urban high school professional learning community was used as a reform effort to increase student achievement in mathematics on standards-based assessments. From a year-long interaction with the math professional learning community, which consisted of 3 school leaders and 6 teachers, principal leadership emerged as most significant in the professional learning community process for increasing teacher and student learning. Through detailed observations of professional learning community meetings and teachers' classrooms, this research was able to trace changes in teacher practices that resulted from the professional learning community meetings. Results indicate that school leaders may have to take responsibility for providing instructional processes and practices that are characterized by structure, pressure, and support to ensure that teacher learning and change in teacher practice that leads to improved student learning occur within professional learning communities.
Type of Research	Qualitative
Key themes or findings.	"The main point of this case for the role of the school leader is that Dr. Holloway [principal] frequently participated directly in the math professional learning community to drive changes in teaching behaviors that could lead to improved student learning in the subject area, math, the subject area her school struggled with the most" (84). "This case study is the first research to make direct connections between discussions in a professional learning community and changes in classroom teaching practices, connections that were found through prolonged in-depth observation of a professional learning community and teachers' classrooms and not teacher self-reporting alone" (84).
Methodology	Case study

TEMPLATE	
Standard bibliographic information	Hursh, D. (2005). Neo-liberalism, markets and accountability: Transforming education and undermining democracy in the United States and England. *Policy Futures in Education 3* (1): 3-15.
Country of Origin	USA, England
Key words	Education System reform Political reform England USA Standardization
Abstract	Education in both England and the United States has undergone a profound change over the last two decades as part of neo-liberal and neoconservative political reforms. The reforms have been characterized by efforts to standardize the curriculum, to implement standardized tests in order to hold students, teachers, and schools accountable, to increase school choice, and to privatize education provision. While the reforms in both countries have similarities, differences in the structures of schooling and in the relative political strength of neoconservatives and neo-liberals help to account for policy divergence.
Type of Research	Discussion paper
Key themes or findings.	• 'The education reforms of the last two decades have resulted in systems that emphasize individualism, competition, markets, and auditing through standardized tests and other accountability measures' [p 13].
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Hynds, A., & McDonald, L. (2010). Motivating teachers to improve learning for culturally diverse students in New Zealand: Promoting Māori and Pacific Islands student achievement. *Professional Development in Education, 36*(3), 525-540. doi: 10.1080/19415250903319275
Country of Origin	NZ
Key words	N/A
Abstract	This study, concerning teacher motivation, developed from an initial evaluation of a school-university professional development programme, designed to improve classroom practice and achievement for culturally diverse students. The evaluation answered a broad range of questions. A key theme to emerge related to factors that influenced teacher engagement. Subsequently, this follow-up study sought to investigate participants' perceptions of those key motivational factors that initiated and sustained engagement. Findings indicated that a range of extrinsic and intrinsic motivational interactive elements influenced teachers' participation. Intrinsic motivators included the benefits of theory-practice links, opportunities to improve student outcomes, a collaborative partnership approach and personal factors such as teachers' commitment to social justice. Other inducements were more extrinsically centred, such as the achievement of qualifications and fee payment. Study findings emphasise the need for school-university partnership programmes to consider the complex dynamic and interactive quality of motivational factors and for the need to recognise the importance of both extrinsic and intrinsic elements.
Type of Research	Qualitative
Key themes or findings.	• "teachers' motivation to become involved and maintain their involvement [in Quality Teaching Research and Development in Practice Project (QTR&D)] related to four key areas" (526): 1) Teacher professional issues; 2) Personal factors; 3) Opportunities to collaborate; 4) Inducement issues • "The focus on improving teaching practice and the opportunities for improving student learning outcomes were perceived as important factors that could attract others" (533). • "Although extrinsic motivational factors were identified, the study has clearly confirmed a central role for intrinsic factors. Personal programme goals were particularly significant for many teachers, and one of these goals—the pursuit of social justice for students—was noteworthy as a motivating force" (536).
Methodology	Coded interviews

TEMPLATE	
Standard bibliographic information	Jacobson, S. (2011). Leadership effects on student achievement and sustained school success. *International Journal of Educational Management, 25*(1), 33-44. doi: 10.1108/09513541111100107
Country of Origin	USA
Key words	Educational leadership Academic achievement Schools School principals Teacher leadership Leadership
Abstract	Purpose -- The purpose of this paper is to examine the effects of leadership on student achievement and sustained school success, especially in challenging, high-poverty schools. Design/methodology/approach -- The paper combines a review of the leadership literature with findings drawn from longitudinal studies of the International Successful School Principalship Project (ISSPP). Findings -- Direction setting, developing people and redesigning the organization were practices common to successful principals in all contexts, including those in challenging, high-poverty schools. How these practices manifested varied in relation to national context and tradition. Distributed teacher leadership and professional self-renewal emerged as processes central to sustaining success, and, in at least one US case, a change in organizational governance was necessary to allow these processes to continue over time. Originality/value -- The paper adds to the literature on leadership effects on student achievement and sustaining school success, especially in challenging high-poverty schools
Type of Research	Qualitative literature review.
	• Simply put, collegial relations and collective learning are at the very core of building a school's capacity for sustained improvement (Bezzina, 2006). • Collectively, the initial ISSPP cases reveal that leadership for student success in all schools, especially those in challenging, high-poverty communities, is a dynamic, ongoing process. This suggests that one- to two-year examinations of what has transpired in a school are insufficient to truly understand leadership effects over time, especially as we come to understand that school improvement cannot be dependent upon one person.
Methodology	Literature review

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Standard bibliographic information	Janas, M. (2001). Striking a Balance. *Kappa Delta Pi Record, 38*(1), 24-27. doi: 10.1080/00228958.2001.10518510
Country of Origin	US
Key words	N/A
Abstract	Unlike staff-development directives generated by schools and districts, a self-coaching framework helps teachers address individual professional interests and goals.
Type of Research	Discussion paper
Key themes or findings.	- Advocates for self-coaching for teachers as a supplement to professional development programs. "A delicate, albeit necessary, balance must be struck between external directives and individual professional interests and goals. **A** self-coaching framework is a great reflective tool to help teachers at every career stage assess their needs, set goals, and plan their own professional development" (24). "More flexible than life coaching—from a helping professional—and peer- coaching, self-coaching depends only on the individual. Self-coaching bridges the borders of the past, present, and future as teachers proactively examine their own characteristics, concerns, and needs to create an individualized plan" (26).
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Jensen, B., Hunter, A., Sonnemann, J., & Burns, T. (2012). *Catching up: learning from the best school systems in East Asia*: Grattan Institute.
Country of Origin	Australia
Key words	School reform Improvement Whole-school reform
Abstract	N/A
Type of Research	Quantitative and qualitative
Key themes or findings.	- Top performing countries: 'Hong Kong, Shanghai, Korea and Singapore all focus on the things that are known to matter in the classroom, including a relentless, practical focus on learning, and the creation of a strong culture of teacher education, research, collaboration, mentoring, feedback and sustained professional development…. The four East Asian systems have found ways to connect high-level strategy to what others have been trying to achieve in the classroom'. - Does not suggest that systems can be replicated as culturally dependent… 'High-performing education systems in East Asia have successfully increased performance while maintaining, and often increasing, equity' [p 10]. 'The world's best school systems are rarely the world's biggest spenders' [p 10] 'High performance in education systems in East Asia comes from effective education strategies that focus on implementation and well-designed programs that continuously improve learning and teaching'[p 12]. 'A body of international research has identified the common characteristics of high-performing education systems.17 They: • Pay attention to what works and what doesn't. They attend to best practice internationally, give close attention to measuring success, and understand the state and needs of their system. • Value teachers and understand their profession to be complex. They attract high quality candidates, turn them into effective instructors and build a career structure that rewards good teaching. • Focus on learning and on building teacher capacity to provide it. Teachers are educated to diagnose the style and progress of a child's learning. Mentoring, classroom observation and constructive feedback create more professional, collaborative teachers'. [p 13] 'High-performing education systems in East Asia are implementing what works. The systems studied in this

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		report have introduced one or several of the following reforms. In particular they: • Provide high quality initial teacher education. In Singapore, students are paid civil servants during their initial teacher education. In Korea, government evaluations have bite and can close down ineffective teacher education courses. • Provide mentoring that continually improves learning and teaching. In Shanghai, all teachers have mentors, and new teachers have several mentors who observe and give feedback on their classes. • View teachers as researchers. In Shanghai teachers belong to research groups that continuously develop and evaluate innovative teaching. They cannot rise to advanced teacher status without having a published paper peer reviewed. • Use classroom observation. Teachers regularly observe each other's classes, providing instant feedback to improve each student's learning. • Promote effective teachers and give them more responsibility for learning and teaching. Master Teachers are responsible for improving teaching throughout the system'. [p 13]
		• 'Developing learning and teaching is time-intensive. There is no point pretending it isn't. Trade-offs are required to improve learning and teaching'. [p 14]
		• 'Hong Kong is a prime example of successful education strategy and implementation. Since 1999, it has reformed the entire education system using a 'whole-system implementation approach' [p 24].
		• 20% design, 80% implementation – focus needs to be [p 31].
		• 'Below are ten elements of the Hong Kong system that were used as implementation tools to improve learning and teaching: a) Curriculum b) Student assessment c) Teaching and learning resources d) School leadership e) Academic research f) Teacher professional development and in-school support g) Teachers' teaching and working time h) School accountability: whole-school inspections i) School accountability: focus inspections j) School autonomy' [p 32]. 'School principal training – to create role models with high-level skills in the new pedagogy and lead behavioural and cultural change in schools'. [p 50] 'Curriculum leaders led teams of teachers and had a direct influence on how reforms were implemented in their school. They were the school champions of effective implementation of new pedagogy'. [p 37] Extensive training for this. Continuing professional development programme for teachers. 150 years in 3 year cycle. Mentoring and professional development.
		• HK sequenced parts of reform and piloted and improved more radical components.
		• Teacher career pathways in Singapore – one component among others. 'The most direct and effective way of raising teacher quality is to improve teacher education and recruitment in tandem with improving teachers' professional learning' [p 51]. Have sole provider of ITE – aim is to attract top 30% of high school grads [p 56]. Student teachers are paid employees. 'Potential principals undertake a six month (full-time) Leaders in

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	Education Programme (LEP). The program is focused on elements of leadership and critical self-reflection rather than technical administration'. [p 69].
	• 'Teachers in Singapore can follow different career tracks, each with their own levels of promotion: • Senior Specialist Track – teachers with high-level specific skills and education knowledge. Positions mostly held in the Ministry of Education. • Leadership Track – leaders are spread across the system managing departments, schools or clusters of schools. • Teaching Track – provides promotional opportunities for teachers with excellent subject, pedagogical and assessment knowledge. • The Enhanced Performance Management System (EPMS) for teachers is a comprehensive development-oriented system that is linked to teacher pay. It includes extensive planning of teachers' activities, frequent coaching and mentoring, reflection and feedback, and is strongly linked to professional learning' [p 107]. Linked to lowering attrition rate. No direct mention of teacher quality or student outcomes. There is performance-based pay in Singapore.
	• Shanghai and Hong Kong have teacher mentoring.
	• Shanghai and Singapore have research based professional learning communities (Shanghai school + District and Municipal government level).
Methodology	Analysis of PISA results from 5 countries and policy areas and programmes

TEMPLATE	
Standard bibliographic information	Jepsen, C. (2005). Teacher characteristics and student achievement: evidence from teacher surveys. *Journal of Urban Economics, 57*(2), 302-319. doi: 10.1016/j.jue.2004.11.001
Country of Origin	US
Key words	N/A
Abstract	Teachers and peers are believed to have a strong influence on student achievement, but the specific characteristics that affect student achievement are hard to identify. This paper utilizes teacher survey data to investigate teacher characteristics that are not usually available in administrative data, as well as more readily available attributes such as experience and education. Classroom fixed effects explain a large portion of within-student variation in test score growth, suggesting a potentially important role for teachers and peers. Teacher characteristics are generally insignificant predictors of student achievement, especially for the lower grades.
Type of Research	Quantitative
Key themes or findings.	• "Using a simple student- and classroom-fixed effects specification, the set of classroom fixed-effects explain between 25 and 40 percent of the within-student variation in test score growth. In other words, classrooms matter. This finding suggests a large role for teachers and peers in affecting student achievement" (15). • "few teacher characteristics have significant impacts on student achievement as measured by classroom fixed effects. The results are particularly weak for the first-grade cohort. For the third grade cohort, there is some evidence that teacher experience is positively associated with classroom effectiveness in both mathematics and reading" (15). • "Teacher education and certification, on the other hand, do not have significant impacts on student achievement for either cohort" (16). • "The finding that smaller class size is not associated with higher student achievement does contradict the general finding of modest gains for smaller classes" (16).
Methodology	Regression analysis

TEMPLATE	
Standard bibliographic information	Johnson, C. C., Kahle, J. B., & Fargo, J. D. (2007). Effective teaching results in increased science achievement for all students. *Science Education, 91*(3), 371-383. doi: 10.1002/sce.20195
Country of Origin	US
Key words	N/A
Abstract	This study of teacher effectiveness and student achievement in science demonstrated that effective teachers positively impact student learning. A general linear mixed model was used to assess change in student scores on the Discovery Inquiry Test as a function of time, race, teacher effectiveness, gender, and impact of teacher effectiveness in prior years, over a 3-year period. Effective teaching was identified through a series of classroom observations using the Local Systemic Change Classroom Observation Protocol (Horizon Research, 1999). This study found that effective teaching increases student achievement and closes achievement gaps for all students. Findings from this study provide evidence that effective teaching each year may be the key to eliminating achievement gaps in science.
Type of Research	Quantitative
Key themes or findings.	• "Students of effective teachers in this study scored significantly higher on the DIT science assessment than students of neutral or ineffective teachers during each year of the study. In contrast, students in the classes of ineffective or neutral teachers performed lower than students of effective teachers across all years of the study" (381-82). • "This study indicates that students who are in classes of effective teachers perform at a high level each year, regardless of their previous teacher(s) effectiveness rating" (382). • "students who had previously had effective teachers and then were placed with an ineffective teacher experienced a setback in their learning. These findings reveal little or no residual effect on students' learning of science from prior years of study" (382). • Further, students who have effective teachers in the first or second year but who have an ineffective teacher in the next year will have a science achievement assessment score lower than those students who study all 3 years with effective teachers" (382). • "Students in this study were from diverse backgrounds and socioeconomic groups. However, all groups were positively impacted by effective teachers in science and were able to perform at a significantly higher level than their peers in classrooms of ineffective teachers. White and minority students both experienced similar and significant gains when studying with effective science teachers. In fact, mean gain scores for minority students were slightly higher than they were for white students.

	These findings provide support for assessing and addressing the effectiveness of science instruction in urban schools, where typically high minority populations are found" (383).
Methodology	General Linear Mixed Model (Longitudinal)

TEMPLATE	
Standard bibliographic information	Johnson, C. C., & Fargo, J. D. (2010). Urban school reform enabled by transformative professional development: Impact on teacher change and student learning of science. *Urban Education, 45*(1), 4-29. doi: 10.1177/0042085909352073
Country of Origin	US
Key words	Science Education Teacher Change Student Achievement Professional Development
Abstract	This longitudinal study of middle school science teachers explored if a teacher participation in the transformative professional development (TPD) program resulted in change in instructional practice as well as a significant increase in student learning. Four participating schools were matched and randomly assigned to intervention and control groups. Teacher and student outcomes were compared. Eight teachers from Bryce and Zion Middle Schools participated in the 2-week summer institute, followed by monthly release day professional development sessions focused on implementing instruction outlined in the National Science Education Standards. Student achievement was assessed using the pre- or post-instruments. Students of teachers at treatment schools experienced significantly larger gains than students at the control schools. TPD intervention teachers experienced increase in teaching effectiveness. Findings in this study revealed the positive impact that whole-school, sustained, collaborative, professional development programs have on improving teacher practice and student achievement at the school level.
Type of Research	Mixed methods
Key themes or findings.	"The TPD model focused on teachers' personal, professional, and social development (Bell & Gilbert, 1996) within the context of knowing their learners through a focus on culturally responsive pedagogy and addressing the climate of low expectations in urban schools" (23). "TPD enabled teachers in this study to build supportive relationships, learn about and practice effective instructional strategies in safe environments, and learn how to enable the diverse array of students they teach on a daily basis to excel through relating science instruction to their lives" (24). "Implementation of TPD in this school district resulted in significant student growth in learning of science over the 2 years and visible change in teacher practice for the treatment schools overall. Student achievement findings in this study revealed positive growth across Year 1, but no significant difference between intervention and control schools. However, in Year 2 there was a significant difference in the assessment scores for the intervention schools, Bryce and Zion, who scored significantly higher than did students at Meadow and

	Hill Middle School. This study further contributes to the research base, which demonstrates that time is needed for teacher change in instructional practice to result in a positive impact on student learning outcomes (Johnson, Kahle, & Fargo, 2007b; Supovitz & Turner, 2000)" (25).
	• "This study contributes to the current research base in offering another alternative to improving practice in urban school science. Collectively involving all science teachers in a building, giving them a voice in deciding the focus through co-constructing the program and working together to better understand their students resulted in student and teacher growth" (25-26).
Methodology	Longitudinal

	TEMPLATE	
Standard bibliographic information	Kamens, D. H. (2013). Globalization and the emergence of an audit culture: PISA and the search for 'best practices' and magic bullets. In H. D. Meyer & A. Benavot (Eds.), *PISA, Power, and Policy: The Emergence of Global Education Governance* (pp. 117-139). Oxford, England: Symposium Books.	
Country of Origin	USA	
Key words	Large-scale Surveys PISA Education Globalisation	
Abstract	N/A	
Type of Research	Discussion	
Key themes or findings.	• What works in one country and culture may not work in another • Are somewhat cynical that league tables will disappear and that media will focus on policy rather than country standings, arguing that the current cycle will continue with 'fads and fashions designed to cure these ills and bolster national morale'. [p 133]	
Methodology	N/A	

TEMPLATE	
Standard bibliographic information	Kidron, Y., & Darwin, J., (2007). A systematic review of whole school improvement models. *Journal of Education for Students Placed at Risk 12* (1): 9-35. doi: 10.1080/10824660701247226.
Country of Origin	USA
Key words	COMPREHENSIVE school reform SCHOOL improvement programs CURRICULA (Courses of study) -- Management EDUCATIONAL accountability ACADEMIC achievement EDUCATIONAL change SCHOOL administration EDUCATIONAL planning EDUCATION -- Research
Abstract	This article presents a review of widely implemented, externally developed whole school improvement models. The models serve elementary, middle, and high schools and schools operated by education service providers. A systematic review of the research was conducted using rigorous evidence standards. Across models, the whole school improvement approach demonstrates promising results, with the majority of the evidence pertaining to elementary school models. However, there is relatively little research evidence that the majority of the models reviewed positively impact student academic achievement. For the majority of the models, most of the core components (i.e., practices or strategies) are linked to empirical evidence. An examination of the models' designs and materials revealed that model providers offer a range of services and supports for successful implementation. The use of research evidence in conjunction with other considerations is discussed.
Type of Research	Quantitative and qualitative
Key themes or findings.	• 'Herman et al. (1999; also described in Traub, 1999) reviewed results of studies of individual whole school improvement models and found that of the 24 widely adopted school wide reform approaches it examined, eight had strong or promising evidence of positive effects on student achievement, six had marginal evidence for positive effects, and 10 had weak or no evidence. A recent meta-analysis of the student achievement outcomes of 29 leading K-12 CSR models reported that "the overall effects of CSR are significant and meaningful and appear to be greater than the effects of other interventions that have been designed to serve similar purposes and student and school populations" (Borman et al., 2002, p. 34). A 2004 review of the federal CSR Program by the Office of Management and Budget (OMB) found that performance and management were "adequate" in terms of meeting its program objectives' [p 11]. • 'impact of whole school improvement programs on students' academic achievement. Across types of models and elementary, middle, and high school grade levels,

	there is a moderately sized effect on overall student achievement (average effect size is 0.48). The research base for elementary school reform models is larger and demonstrates a somewhat larger average effect size (0.58) compared to middle and high school models and ESPs (0.49 and 0.38 respectively)' [p 19].
	• 'Across all models examined, about two-thirds of the evidence for positive effects was reported for students in schools serving predominantly low socioeconomic status (SES) minority populations' [p 22].
	• 'The majority of the models provided evidence that they do provide sufficient services and supports to enable successful implementation' [p 24]. 'The findings of the review reported in this paper suggest that the whole school improvement approach appears to be promising. Many of the studies reviewed demonstrated statistically significant positive impacts on student outcomes, and moderate to large effects sizes for those outcomes' [p 25].
	• 'With such a wide range of designs and varying focuses across models, it is often difficult to compare the evidence of one model with another' [p 26].
	• 'repeated finding, uncovered through site visits to schools, was that the implementation of whole school designs is complicated and tied to many limiting factors such as teachers' resistance to change and lack of district support. However, in schools that served significant numbers of both poor and minority students, implementation levels were significantly lower. Across its implementation studies, RAND Corporation found that implementation was higher in elementary schools than in secondary schools and was higher in smaller schools than in larger ones' [Rand in Berends, p 27]
Methodology	Mixed methods data analysis using data from systematic literature review of comprehensive school models: 22 elementary school reform models, 18 middle and high school reform models, and 7 Education Service Providers (ESPs, also known as Education Management Organizations or EMOs) models

TEMPLATE	
Standard bibliographic information	Kyriakides, L., Christoforou, C., & Charalambous, C. Y. (2013). What matters for student learning outcomes: A meta-analysis of studies exploring factors of effective teaching. *Teaching and Teacher Education, 36*, 143-152. doi: http://dx.doi.org/10.1016/j.tate.2013.07.010
Country of Origin	Cyprus
Key words	Quality of teaching Meta-analysis Teaching factors Educational effectiveness Theory testing and development
Abstract	Meta-analysis comprises a powerful tool for synthesizing prior research and empirically validating theoretical frameworks. Using this tool and the dynamic model of educational effectiveness as a guiding framework, in this paper we present a meta-analysis of 167 studies investigating the impact of teaching factors on student achievement. The factors of the dynamic model were found to be moderately associated with student achievement; in contrast, factors not included in the model were weakly associated with student learning, with the exception of two factors associated with constructivism. In discussing the study findings, we consider their theoretical, methodological, and practical implications.
Type of Research	Meta-analysis
Key themes or findings.	• "A meta-analysis was used to examine teaching factors related to student outcomes. The dynamic model of educational effectiveness was used as a guiding framework. An integrated approach of effective teaching is empirically supported. The need for conducting more experimental and longitudinal studies is highlighted. The study findings suggest teaching practices that can be used in teacher education" (143). • "One of the main findings of this meta-analysis is that the factors found to have an effect on student outcomes—be they (meta) cognitive, affective, or psychomotor—were not associated only with either direct and active teaching approaches or more constructivist approaches. For example, the analysis showed factors related to direct instruction (e.g., time management, structuring) or constructivism (e.g., orientation, modeling) to both contribute to student outcomes" (149). • "by being agnostic to the teaching approach pursued in instruction and by considering what exactly the teacher and the students do during the lesson and how they interact—regardless of whether their actions and interactions resonate more with the one or the other approach—might be more productive" (149). • "the findings of this meta-analysis—and particularly the

	weak to inexistent effect of several moderators on the factors examined in this meta-analysis—seem to suggest that the teaching factors examined in this study are, at least to some extent, generic in nature" (150).
	•
Methodology	Inclusion criteria outlined on p. 146.

	TEMPLATE
Standard bibliographic information	Kythreotis, A., Pashiardis, P., & Kyriakides, L. (2010). The influence of school leadership styles and culture on students' achievement in Cyprus primary schools. *Journal of Educational Administration, 48*(2), 218-240. doi: 10.1108/09578231011027860
Country of Origin	Cyprus
Key words	Schools, Leadership, Organizational culture, Learning methods, Principals, Cyprus
Abstract	Purpose – This study aims to examine the validation of both the model of direct effects and the model of indirect effects of principals' leadership on student academic achievement. Design/methodology/approach – A longitudinal study was conducted in which 22 schools, 55 classes and 1,224 Cypriot primary students participated. Specifically, achievements in Greek Language and Mathematics were assessed at the beginning and at the end of the same school year. Moreover, leadership style of school principals and teachers as well as school and classroom culture was measured. Findings – The findings provide some empirical support for the model of direct effects of principals' leadership on student academic achievement. Moreover, student achievement gains were found to be related with five factors at the school level: the principals' human resource leadership style and four dimensions of organizational culture. At the classroom level, three dimensions of learning culture significantly influence student achievement in each subject. Finally, relationships between effectiveness factors operating at different levels were identified. Originality/value – The article presents an original empirical study which examined the relationship among school leadership, school culture and student achievement in order to validate both the model of direct effects and the model of indirect effects of school principals on student achievement.
Type of Research	Quantitative: longitudiallongitudinal study.
Key themes or findings.	• The findings provide some empirical support for the model of direct effects of principals' leadership on student academic achievement. • Moreover, student achievement gains were found to be related with five factors at the school level: the principals' human resource leadership style and four dimensions of organizational culture. • At the classroom level, three dimensions of learning culture significantly influence student achievement in each subject. • Small but statistically significant in primary schools, but not secondary schools. • Finally, relationships between effectiveness factors operating at different levels were identified.

Methodology	Quantitative

	TEMPLATE
Standard bibliographic information	Leithwood, K., & Sun, J. (2012). The nature and effects of transformational school leadership: A meta-analytic review of unpublished research. *Educational Administration Quarterly, 48*(3), 387-423. doi: 10.1177/0013161X11436268
Country of Origin	Canada
Key words	Effect size, meta-analysis, review, school leadership, transformational leadership
Abstract	Background: Using meta-analytic review techniques, this study synthesized the results of 79 unpublished studies about the nature of transformational school leadership (TSL) and its impact on the school organization, teachers, and students. This corpus of research associates TSL with 11 specific leadership practices. These practices, as a whole, have moderate positive effects on a wide range of consequential school conditions. They also have moderately strong and positive effects on individual teachers' internal states, followed by their influence on teacher behaviors and collective teachers' internal states. TSL has small but significant positive effects on student achievement. Research Design: This synthesis of unpublished research results is accomplished by a systematic series of meta-correlations and is compared with the results of earlier systematic reviews of published TSL research. Findings: Among the conclusions arising from the study is that several of the most widely advocated models of effective educational leadership actually include many of the same practices. Conclusions: More attention by researchers, practitioners, and researchers needs to be devoted to the impact of specific leadership practices and less to leadership models.
Type of Research	Quantitative meta analysis.
Key themes or findings.	• Their analysis of the data found that transformational school leadership had a moderate positive effect on school conditions, a moderately strong effect on individual teachers & a small but significant effect on student achievement. • They suggest that to impact on student achievement requires transformational leadership coupled with instructional leadership, since student achievement is bound into teacher practice which is the factor that directly affects it. • When leadership was shared between Principals and teachers, working relationships were stronger and student achievement was higher. • "Effective leadership strengthened the professional community, encouraging teachers to work together to improve their practice and to improve student learning." • "These findings suggest, in sum, that each TSL leadership practice adds to the status of consequential school conditions. Each condition is complex, and improvement requires leaders to enact a wide range of practices. A narrow set of leadership practices seems unlikely to work".

	• "These results indicate that leaders influence teachers mainly through people-developing practices, namely, modeling behaviors (.54), providing individualized support (.52) and intellectual stimulation (.50), and achieving a shared vision and agreed-on goals for the organization (.50), a direction-setting practice" • "One reasonable interpretation of these two sets of results is that TSL has direct effects on teachers' internal states and behaviors and these, in turn, influence school conditions." • They call for a reconceptualization of leadership to reflect the practices that seem important • Strengthen the technical core of a school (i.e. instruction). • There should be an integrated model with a direct focus on teaching and curriculum. • Future research should look at individual components rather than whole models of leadership. • Future research should concern itself with what we already know about what affects student learning rather than looking at complex models looking at the indirect effects of leadership on student achievement.
Methodology	Meta-analysis of previously unpublished data from quantitative research on transformational school leadership.

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Standard bibliographic information	Leithwood, K., Harris, A., & Hopkins, D. (2008). Seven strong claims about successful school leadership. *School Leadership & Management, 28*(1), 27-42. doi: 10.1080/13632430701800060
Country of Origin	Canada and the UK
Key words	Principal, leadership, leadership practices
Abstract	This article provides an overview of the literature concerning successful school leadership. It draws on the international literature and is derived from a more extensive review of the literature completed in the early stage of the authors? project. The prime purpose of this review is to summarise the main findings from the wealth of empirical studies undertaken in the leadership field.
Type of Research	Literature review
Key themes or findings.	• This is a summary of their more substantial 2004 literature review. • Well written analysis of research they reviewed. • Thematic approach they take puts the research into contexts, For example, those which cite direct relationship between principal leadership & improved student outcomes tend to be qualitative studies carried out in exceptional schools, which makes it hard to generalise the findings. They do conclude the following 7 points. 1. School leadership is second only to classroom teaching as an influence on pupil learning. (in addition to the evidence that they cite they say that to their knowledge there is no research that suggests that a school can turn around (make positive) student achievement without an effective leader.) 2. Almost all successful leaders draw on the same repertoire of basic leadership practices: building vision and setting directions; understanding and developing people (although the evidence is not sufficiently fine grained to inform us how these practices are enacted); redesigning the organisation; and managing the teaching and learning programme. 3. The ways in which leaders apply these basic leadership practices—not the practices themselves—demonstrate responsiveness to, rather than dictation by, the contexts in which they work. 4. School leaders improve teaching and learning indirectly and most powerfully through their influence on staff motivation, commitment and working conditions. 5. School leadership has a greater influence on schools and students when it is widely distributed. 6. Some patterns of distribution are more effective than others. 7. A small handful of personal traits explain a high

	proportion of the variation in leadership effectiveness.
Methodology	Literature review.

TEMPLATE	
Standard bibliographic information	Leithwood, K., & Mascall, B. (2008). Collective leadership effects on student achievement. *Educational Administration Quarterly, 44*(4), 529-561. doi: 10.1177/0013161X08321221
Country of Origin	Canada
Key words	Shared leadership; Distributed leadership; Student achievement; Influence
Abstract	**Purpose:** This study aimed to estimate the impact of collective, or shared, leadership on key teacher variables and on student achievement. As well, it inquired about the relative contribution of different sources of such leadership and whether differences among patterns of collective leadership were related to differences in student achievement. **Methods:** Evidence included 2,570 teacher responses from 90 elementary and secondary schools in which four or more teachers completed usable surveys. Student achievement data in language and math averaged over 3 years were acquired through school Web sites. Data were analyzed using path-analytic techniques. **Findings:** Collective leadership explained a significant proportion of variation in student achievement across schools. Higher-achieving schools awarded leadership influence to all school members and other stakeholders to a greater degree than that of lower-achieving schools. These differences were most significant in relation to the leadership exercised by school teams, parents, and students. Principals were awarded the highest levels of influence in schools at all levels of achievement. **Implications:** Influence seems to be an infinite resource in schools. The more those in formal leadership roles give it away, the more they acquire.
Type of Research	Quantitative
Key themes or findings.	• Collective leadership explained a significant proportion of variation in student achievement across schools. Higher-achieving schools awarded leadership influence to all school members and other stakeholders to a greater degree than that of lower-achieving schools. These differences were most significant in relation to the leadership exercised by school teams, parents, and students. Principals were awarded the highest levels of influence in schools at all levels of achievement. • "Results suggest that collective leadership does explain significant variation in student achievement across schools. The influence of collective leadership was most strongly linked to student achievement through teacher motivation. Finally, patterns of leadership influence differed among schools with different levels of student achievement" (554).
Methodology	Path-analytic technique (LISREL)

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	TEMPLATE
Standard bibliographic information	Leithwood, K., Patten, S., & Jantzi, D. (2010). Testing a conception of how school leadership influences student learning. *Educational Administration Quarterly, 46*(5), 671-706. doi: 10.1177/0013161X10377347
Country of Origin	Canada
Key words	leadership, mediating variables, academic press, collective teacher efficacy, professional learning communities
Abstract	Purpose: This article describes and reports the results of testing a new conception of how leadership influences student learning ("The Four Paths"). Framework: Leadership influence is conceptualized as flowing along four paths (Rational, Emotions, Organizational, and Family) toward student learning. Each path is populated by multiple variables with more or less powerful effects on student learning. Leaders increase student learning by improving the condition or status of selected variables on the Paths. Research Methods: Evidence includes teacher responses to an online survey (1,445 responses) measuring distributed leadership practices in their schools (N = 199) and variables mediating leaders' effects on students. Grade 3 and 6 math and literacy achievement data were provided by the province's annual testing program. The 2006 Canadian Census data provided a composite measure of school socioeconomic status. Path modeling techniques were used to test six hypotheses. Results: The Four Paths model as a whole explains 43% of the variation in student achievement. Variables on the Rational, Emotions, and Family Paths explain similarly significant amounts of that variation. Variables on the Organizational Path were unrelated to student achievement. Leadership had its greatest influence on the Organizational Path and least influence on the Family Path. Implications: School leaders and leadership researchers should be guided much more directly by existing evidence about school, classroom, and family variables with powerful effects on student learning as they make their school improvement and research design decisions.
Type of Research	Mixed method
Key themes or findings.	- The article is an attempt to arrive at a coherent understanding of how leadership influences student learning. - They defined their own 'paths' drawing together variables into groups in order to test out their hypotheses. "Rational Path - the knowledge and skills of school staff members about curriculum, teaching, and learning. The two variables representing this path (academic press and disciplinary environment) had significant and very similar effects on student achievement. In general, exercising a positive influence on these variables calls on leaders' knowledge" "Emotions Path - the feelings, dispositions, or affective states of staff members, both individually and collectively, about school-related matters". The impact

of the collective teacher efficacy outweighed teacher trust by a substantial margin.

- "Organizational Path- features of schools that frame the relationships and interactions among organizational members including, for example, structures, cultures, policies, and standard operating procedures". Neither of the variables (use of instructional time and the professional learning community) made a significant contribution to student learning. (They cite Hattie (2009) who had identified an effect size of 0.62 for professional development on student achievement.)
- "Family path - Unalterable family-related variables are those over which the school has no influence (e.g., parental education, parental income). Alterable family variables, sometimes referred to as family educational culture". For the two variables, computers in the home made important positive contributions to student achievement but adult help had negative effects.
- The Rational and Family Paths explain identical amounts of variation in achievement (.26), followed by the Emotions (.21) and Organizational (–.08) Paths.
- There are similar relationships between leadership and the Rational Path (.56) and leadership and the Organizational Path (.57)
- Relationships between leadership and the Emotions Path, although significant, are much weaker (.15 in both models). Leadership is not related to the Family Path (–.07).
- The Path influenced most by leaders (Organizational) had the least influence on student learning.
- PLC are the dominant innovation in schools across North America but there is minimal evidence about their contribution to student achievement. Only a small handful of studies have reported data about PLC effects on achievement.
- SES explained more variation in student achievement across schools than did any other single variable or individual Path.

Methodology	Mixed methods, longitudinal research project. Research Methods: Evidence includes teacher responses to an online survey (1,445 responses) measuring distributed leadership practices in their schools (N=199) and variables mediating leaders' effects on students. Grade 3 and 6 math and literacy achievement data were provided by the province's annual testing program. The 2006 Canadian Census data provided a composite measure of school socioeconomic status. Path modeling techniques were used to test six hypotheses

Standard bibliographic information	Lester, J. H. (2003). Planning Effective Secondary Professional Development Programs. *American Secondary Education 32*, no. 1: 49-61.
Country of Origin	US
Key words	N/A
Abstract	This article summarizes data from a study involving secondary teachers and administrators. The purpose was to answer the question, "What makes professional development effective for secondary educators?" Participants embrace the notion that student performance can be enhanced through improved classroom practice. Active high school teachers say successful professional development experiences begin with activities that become an integral part of practice rather than those perceived to be additional tasks. Findings suggest that collaborative professional development generates enthusiastic participation, teachers who are willing to comply with accountability standards, and a positive impact on student learning as new ideas are implemented in the classroom.
Type of Research	Qualitative
Key themes or findings.	1. **Teachers are eager to learn about best practices.** "In my conversations with classroom teachers, I learned that they are willing to assume the role of learner when they feel the learning is valuable to them as a professional educator. Job-embedded activities that originate from collaborative professional development planning sessions engage teachers as active participants in their learning" (53). 2. **Teachers want their voices heard.** "Several teachers shared that they appreciated having their ideas included in the agenda. This type of ownership of the teaching and learning that takes place in the professional development setting encourages teachers to be willing to listen to different approaches and to try new ideas that may improve teaching and learning in their class- rooms" (54). 3. **Teachers are doing what they have to do.** "As innovative teachers share their best practice ideas, colleagues also benefit professionally from their expertise. These teachers are inspiring supporters of best practices among col- leagues, and they are effective presenters, mentors, and consultants for special interest topics and discussions" (54). 4. **Teachers need a structured professional development program.** "Key components of effective professional development emerged as respondents reflected on elements of a professional growth action plan. It is suggested that these components be considered as groups are formed and teachers begin to accomplish their professional growth goals. They include topics and procedures that are

	mutually agreed upon through collaboration among all involved; an established Time and Location for regular meetings; and Reflection and Review of the goals and objectives as well as the effectiveness of the professional development process" (55).
	5. **Teachers must be held accountable.** "Teachers can offer valuable suggestions about how professional development sessions are set up and when they can best schedule time to work and share together. After implementation of the plan of action, it is important that teachers be responsible for participation in the program" (55).
Methodology	Analyses of Open-ended Questionnaire and Interviews of teachers (n = 93).

TEMPLATE	
Standard bibliographic information	Lieberman, A. & Pointer Mace, D.H. (2009). The Role of 'Accomplished Teachers' in Professional Learning Communities: Uncovering Practice and Enabling Leadership. *Teachers and Teaching 15*, no. 4: 459-470.
Country of Origin	US
Key words	Professional Learning Communities; Multimedia Representations of Teaching; Records of Practice; Technology and Teacher Learning; Professional Development; Educational Reform
Abstract	This paper describes the signature role played by accomplished, experienced teachers in professional learning communities, and the importance that these practitioners make their teaching public and shared. In so doing, the authors describe how accomplished practices can be shared between classrooms and between practitioners with varying levels of experience. The authors examine five different examples, three from programs developed by the Carnegie Foundation for the Advancement of Teaching and two studies done on and with the National Writing Project, and ask: how do teachers learn by uncovering their own teaching practices? What conditions support teacher learning? And lastly, how do teachers learn to lead in professional communities and contribute to educational reform? The authors conclude that robust, lasting professional development must begin with what teachers know and do, effecting educational reform from within the classroom.
Type of Research	Descriptive
Key themes or findings.	• "Conceptually we learn that 'accomplished teachers' are those that open themselves up to the process of inquiry into their own practice; they accept it as a part of teaching and learning for themselves (and others)" (469). • "In practice, what we have described here can be organized in a school, as part of a district professional development effort, or a stand-alone professional development network. It can take the form of individual teacher research projects, adopting an 'authorial stance' toward practice by creating texts (as multimedia or written cases), collaborating on a grade level with particular problems that lend themselves to group action research projects or the establishment of professional development where teachers teach teachers their most successful strategies" (469).
Methodology	Case Studies

<table>
<tr><td colspan="2" align="center">TEMPLATE</td></tr>
<tr><td>Standard bibliographic information</td><td>Little, J. W. (2002). Professional community and the problem of high school reform. International Journal of Educational Research 37 (8): 693-714. doi: 10.1016/S0883-0355(03)00066-1.</td></tr>
<tr><td>Country of Origin</td><td>USA</td></tr>
<tr><td>Key words</td><td>Case study
School reform
Whole school
Subject department
Professional learning community</td></tr>
<tr><td>Abstract</td><td>A two-year qualitative study of mathematics and English teachers in two urban comprehensive high schools investigated how teacher community serves as resource for teacher development and school reform. A school engaged in whole-school reform sustained high teacher commitment and school-level community by constituting professional community strongly at the school level, but its departments displayed varying capacity and disposition to examine problems of teaching and learning at the classroom level. In the second school, innovative teacher communities were constituted strongly at the department level in English and mathematics, but suffered problems of stress and turnover due to weak organizational supports for teacher development and school reform. Findings point both to the potential contribution of professional communities situated in subject departments and the challenge of capitalizing on such communities to advance whole-school reform. The study suggests complex relationships among organizational context, teacher community, teacher development, and institutional reform.</td></tr>
<tr><td>Type of Research</td><td>Qualitative case study review of reform in 2 high schools in USA</td></tr>
<tr><td>Key themes or findings.</td><td>

Discusses case study of two high schools, one' a ''whole-school reform'' strategy that subordinates subject identity to whole-school community; and a ''strong department'' model strongly oriented toward reform goals' [p 696]
'Both case study schools might reasonably be considered among the targets of state policies aimed at reducing disparities in student achievement and educational attainment' – improving teacher quality through support for professional development was a focus.
Methods: observation, interviews, pen-and-paper instruments, school documents, audio- and video-taped records of situated interaction among teachers [p 697].
One school launched a 'whole-staff investigation into issues of student success or failure' [p 697]. While this school 'achieved a rather phenomenal record of schoolwide teacher engagement in reform and commitment to teaching, … its conception of whole-school reform and its emphasis on whole-school professional community left it more weakly organized for helping teachers improve teaching practice in those subject domains in which school success is now measured' [p 700]. Time to deal with the actual issues was cited as problematic.

</td></tr>
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	• The second school developed professional communities within each of the subject departments. This meant 'Dedicated time and activity focused on problems of teaching and learning' [p 704]. • Findings showed three main 'threats to the sustainability of professional community': 'heavy reliance on individual initiative and effort; weak organizational supports for teachers' collective work and professional development; and growing external pressures for accountability linked to a centrally defined regime of standards and testing' [706-707]. It was also commented that 'Leadership expectations took their toll on teachers' with higher staff turnover [p 708]. Issues that strong departmental learning communities don't necessarily contribute to overall school development. • Across both cases, the importance of ensuring funding for professional development was highlighted as was importance of compatibility between 'teachers' own conceptions and aspirations, individually and collectively, and the conceptions expressed in administrative language and organizational practice' [p 708]
Methodology	Qualitative case study review of reform in 2 high schools in USA

TEMPLATE	
Standard bibliographic information	Lomos, C., Hofman, R. H., & Bosker, R.J. (2011). Professional Communities and Student Achievement – a Meta-Analysis. *School Effectiveness and School Improvement 22*, no. 2: 121-148.
Country of Origin	Netherlands
Key words	Professional Community; Meta-analysis; Secondary Education; Student Achievement
Abstract	In the past 3 decades, the concept of professional community has gained considerable momentum in the theoretical and empirical studies in this field. At the same time, the concept has faced conceptual and methodological difficulties in that as yet no universal definition has been formulated and that its operationalization differs in the various empirical studies conducted on the subject. This study presents a comprehensive synthesis of the theories currently available and their implications for the conceptualization and operationalization of the professional community concept including a meta-analysis of the studies that investigated the effect of professional community on student achievement. Our meta-analysis reported a small but significant summary effect (d = .25, p < .05), indicating that within a school environment professional community could enhance student achievement. Furthermore, the need for the conceptual and empirical validation of the concept's key dimension was discussed.
Type of Research	Quantitative
Key themes or findings.	"Our meta-analysis reported a small but significant summary effect (d = .25, p < .05), indicating that within a school environment professional community could enhance student achievement. Furthermore, the need for the conceptual and empirical validation of the concept's key dimension was discussed" (121). "there are some indications that the different components of the concept of professional community as distinguished theoretically can indeed be measured as separate variables or that these variables can be integrated into one factor, based on the assumption that these components all refer to the underlying constructs of professionalism, learning, and community" (137). "When including these effects in the meta-analysis, the 95% confidence interval of the summary effect did not cross the zero line, indicating a significant overall result, with a summary effect size of .25. Although relatively small, this result shows that the relationship between professional community and student achievement is positive and significant" (137). **Limitations:** "A first limitation is the small number of studies included in the analysis, which has reduced the reliability of generalizing the results" (137). "all five studies differed regarding the concepts and measurements employed, the model specifications used,

	and the type of outcomes obtained" (138).
	• "In addition, with respect to the relative weight of the final results as presented by the studies, the pooled effect is significant, but it should be pointed out that this result has been mainly determined by the considerable weight of one study, namely Lee and Smith (1996), which reported a small effect" (138).
Methodology	Meta-analysis

TEMPLATE	
Standard bibliographic information	Louis, K. S., Dretzke, B., & Wahlstrom, K. (2010). How does leadership affect student achievement? Results from a national US survey. *School effectiveness and school improvement, 21*(3), 315-336. doi: 10.1080/09243453.2010.486586
Country of Origin	USA
Key words	leadership; trust; instruction; student achievement
Abstract	Using survey responses from a national sample of US teachers, this paper provides insight into 2 questions: (1) Do 3 specific attributes of leadership behavior – the sharing of leadership with teachers, the development of trust relationships among professionals, and the provision of support for instructional improvement – affect teachers' work with each other and their classroom practices? and (2) Do the behaviors of school leaders contribute to student achievement? We tie this investigation of school leader behaviors to 2 additional factors that have also received increasing attention in research because they have been shown to be related to student achievement: professional community and the quality of classroom instruction. Our analysis provides an empirical test of the notion that leadership variables are positively related to student learning. It also suggests that both shared and instructionally focused leadership are complementary approaches for improving schools.
Type of Research	Quantitative
Key themes or findings.	- They found that "instructional leadership, shared leadership and trust in the principal, when considered together, are positively related to student learning." pg 330, but that there were differences between primary & secondary settings - primary more easily influenced by leadership effects. - although principal instructional leadership has significant effects on teachers' working relationships (professional community), its effects on instruction are limited. - It is the relationships between adults in the school (either principal/teacher or teacher/teacher) that seems to lead to stronger focused instruction. - Easier to establish in primary rather than secondary. - They call for additional support for secondary school leaders to establish the kind of instructional leadership that is workable in their more complex settings. - They suggest that the situation is complex though & many factors intertwine. - Shared leadership and instructional leadership are important but they are indirectly related to student achievement. "Increasing teachers' involvement in the difficult task of making good decisions and introducing improved

	practices must be at the heart of school leadership." (332)
	• When principals and teachers share leadership, teachers' working relationships with one another are stronger and student achievement is higher.
	• There is limited amount of research that links policies and practices at the school level to high quality instruction at the classroom level.
	• They caution about over interpreting their findings. The work is conducted on one country, there are limitations in the use of SEM, there are variables missing from the SEM model that might have an impact. They call for further analysis.
Methodology	Quantitative Structural Equation Modelling (SEM)

TEMPLATE	
Standard bibliographic information	Marzano, R. J., Waters, T., & McNulty, B. A. (2005). *School Leadership That Works: From Research to Results*. Alexandria, VA: Association for Supervision and Curriculum Development.
Country of Origin	USA
Key words	School management and organization Educational leadership EDUCATION / Administration / General
Abstract	Book, so no abstract
Type of Research	Meta analysis
Key themes or findings.	• US studies only. • calculated total direct and indirect effects. • Average correlation between leadership and achievement was 0.25. • effect is slightly lower in secondary schools. • results are higher than in other studies, possibly because of a large number of unpublished and non-peer-reviewed works. • Their aim was to discover specific behaviours so only pursue studies that had specific behaviours & not where they had been collapsed into broad areas. • The top 11 are: situational awareness; acting as change agent; knowledge of curriculum, instruction and assessment; shared culture; protection of instructional time; flexibility and comfort with dissent; teacher input into decision making; monitoring impact on student learning; orderly procedures; provision of resources; and outreach to stakeholders. • While they found that principals can have a profound effect on student achievement, both positive & negative, they "didn't produce any straightforward explanations". pg 38.
Methodology	70 studies, 60 of which were unpublished theses.

TEMPLATE	
Standard bibliographic information	McLaughlin, M. W, & Mitra, D. (2001). Theory-based change and change-based theory: Going deeper, going broader. *"Journal of Educational Change 2* (4): 301-323. doi: 10.1023/A:1014616908334.
Country of Origin	USA
Key words	School reform Reform design Evaluation Theory-based reform
Abstract	This article examines the questions of sustaining and extending theory based educational change reforms, which are designed by laboratories outside of schools and whose motivating theoretical base assumes change in elemental aspects of classroom practice. This article defines sustainability of theory-based reform as more than maintaining current implementation, rather as deepening reforms in ways that allow for flexible response to changes in student, curricular, and school contexts. It draws upon five years of research in schools and classrooms engaged in one of three theory-based reforms to discuss five essential factors affecting sustainability: resources, reformers' learning, knowledge of the first principles of the reform and the support of a community of practice, the principal, and the district. This article then turns to "scaling up." Rather than merely replicating structures, extending theory-based reform to new sites requires building compatibility between the normative base of the reform with that in the classrooms, schools and districts in which they are growing as well as the capacity of the classroom, school, and district to see it through. This article suggests three main factors that reform founders must focus upon to scale up their reforms – attention to site selection, a proactive stance toward district contexts, and planned transfer of authority. The article concludes that issues of invention, implementation, sustainability, and scale occur simultaneously when going deeper and broader with theory-based change.
Type of Research	Mixed methods: Quantitative and qualitative
Key themes or findings.	• fifteen schools, located in eight districts, representing the three reform efforts: FCL (two districts, three schools); SFT (one district, four schools); CDP (three districts, six schools. All FCL, CDP sites were public elementary schools, all basically self-contained classrooms. SFT sites were initially middle schools, with data collection including the elementary schools during the last year of the study' [pp 303-304]. • Importance of seeing implementation as ongoing: 'The on-going interaction of reform, learning and context means that implementation is, itself, a process requiring ongoing invention' [p 307]. • Importance of those designing the reform to do so in concrete reference to the classroom and or teachers to have the opportunity to understand the theory and the 'why': 'Without understanding the theory upon which their new practice is based, teachers lack the capacity for

	self critique or for providing reflective feedback for colleagues, so practice likely will stagnate' [p 307]. • 'The classroom-based projects we examined typically lacked such a school-level professional community understanding of the reform, and teachers found it difficult to continue their project work as a consequence' [p 309]. • Importance of principals have an in-depth understanding of the reforms and impacts on practice • One example of reform efforts undermined when one key leader left. • 'You have to think about whether what you are doing is going to be robust enough to survive when everything around it is unstable and changing' [p 313]. • Importance of inducting new staff to school norms and values. Helps with sustainability of reform. • 'one problem of scale is to build reform-centered knowledge, material, and leadership capacity within the many layers of the school system so that informed judgments can be made about the extent to which school and district practices adhere to core principles, even though material and practices may have evolved over time' [p 317]. • Issues of both implementation and scale require development of leadership and commitment to first principles of the reform at all levels of the system' [p 319]
Methodology	Quantitative (surveys) and qualitative (field work – interviews, observations, teacher focus groups, document analysis)

TEMPLATE	
Standard bibliographic information	McLaughlin, M. & Talbert, J. (2003). *Reforming districts: How districts support school reform.* Seattle, WA: Center for the Study of Teaching and Policy.
Country of Origin	USA
Key words	School reform School district Student achievement Professional learning communities Inquiry
Abstract	School districts have participated in multiple rounds of education reform activity in the past few decades, yet few have made headway on system-wide school improvement. This paper addresses the questions of whether districts matter for school reform progress and what successful "reforming" districts do to achieve system change and to navigate the pitfalls associated with system change efforts. Using multi-level survey data and four-year case studies of three reforming California districts, the paper offers new evidence of district effects on school reform progress and improved student outcomes and develops a picture of a reforming district. The reforming districts featured in this analysis offer instructive exception to conventional wisdom—or myths—about district reform. One myth predicts that teachers and principals will resist a strong district role. Yet, our research provides evidence that a weak central office in fact limits schools' reform progress, while a strong district role is effective and welcomed when it uses a strategic conception of responsibilities and leadership between system levels. A second myth about district reform holds that turnover or personnel "churn" will derail efforts to establish and sustain a consistent reform agenda. While this statement is true in many instances, in two districts studied, turnover in top leadership positions did not trigger significant change in district priorities or norms because planning processes and inclusive communication strategies over time had embedded them in district culture. A third myth asserts that local politics will defeat a serious reform agenda; yet, leaders in each reforming district articulated unambiguous goals and priorities and, with strong board support developed over many years, were able to navigate local political waters and protect a strong district role. Each of the reforming districts studied was a self-conscious "learning organization," investing in system-wide learning—in the central office, in schools, in cross-school teacher networks, and in units such as the business office that typically are excluded from professional development focused on instruction. This research suggests that taking the district system as the "unit of change" is essential to advancing equitable and sustainable reform.
Type of Research	Review of Bay area (US) school reforms through longitudinal survey data, test data and qualitative case studies
Key themes or findings.	• View in literature that there has been a lot of district school reform but poor record in successful or sustainable reform. • 'Without an "inquiry stance," and without various forms

	of student data, teachers are unable to make connections between what they do in the classroom and student outcomes' [p 7].
	• 'The character and strength of teachers' professional community within the school also emerges as a significant factor in most all accounts of educational improvement' [p 7].
	• Findings show that 'the extent of district support for school reform made a significant difference in schools' reform progress. In addition, we found that productive district-school relationships led to mutual gain' [p 10]
	• 'several key conditions that characterize reforming districts: a system approach to reform; learning community at the central office level; coherent focus on teaching and learning; a stance of supporting professional learning and instructional improvement; data-based inquiry and accountability' [p 10].
	• 'By engaging the system and stakeholders in defining problems, foci, and strategies for change, reforming districts build wide commitment to reform goals and broaden leadership for change to include school administrators, teachers, parents, and the community' [p 13]. This means shared accountability for continuous improvement.
	• Supporting reform: 'three key foci for this learning—establishing a coherent focus on teaching and learning, providing instructional support that is responsive to school needs, and engendering data-based inquiry and accountability' [p 15]
	• 'Reforming districts improve system performance by using data on trends in organizational conditions and student achievement … We found considerable evidence … that such district practice results in improved teaching and learning' [p 20].
	• 'turnover in top leadership positions did not trigger significant change in district priorities or norms because, over time, planning processes and inclusive communication strategies had made them part of the fabric of district culture' [p 23].
	• Conclusions: System change takes time; 'school reform makes a difference for teaching and student learning outcomes across the system' [p 25]
	• Challenge: How to build an effective communication structure across a number of schools?
Methodology	Review of Bay area (US) school reforms through longitudinal survey data, test data and qualitative case studies

TEMPLATE	
Standard bibliographic information	McNally, S. (2005). Reforms to schooling in the UK: A review of some major reforms and their evaluation. *German Economic Review 6* (3): 287-296.
Country of Origin	UK
Key words	UK School reform School system Reforms Evaluation
Abstract	We aim to give a brief overview of some important reforms to the school system in the UK and existing evidence on their consequences. These reforms include a change in the type of secondary school open to pupils – from a selective to comprehensive system; a change in the examination system; quasi-market reforms; area-based initiatives; reforms to the content and structure of teaching; payments to encourage the pursuit of education beyond compulsory schooling.
Type of Research	Summary paper
Key themes or findings.	• 'There are a number of changes in educational participation and attainment that appear to be linked to the change in the examination system' [p 290]. • EiC programme raised student achievement – effect seen after about 2 years. Area based programme 'The main strands of the EiC programme are the employment of 'Learning Mentors', to help students overcome educational or behavioural problems; the provision of 'Learning Support Units' to provide short-time teaching and support programmes for difficult pupils'. 'The EiC programme has been implemented in all state schools within LEAs that were selected on the basis of their high level of disadvantage'. [p 292]
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Melton, T. D., Mallory, B. J., & Chance, L. (2013). The Relationship of Leadership and Student Achievement Across Societal Cultures. [Article]. *Procedia - Social and Behavioral Sciences, 106*, 3052-3061. doi: 10.1016/j.sbspro.2013.12.352
Country of Origin	USA
Key words	Leadership, GLOBE
Abstract	School leaders are aware that their effectiveness is often defined by student performance as measured by test scores. Of particular interest in the global arena are the results of the TIMSS and PISA international assessments that rank student performance by country. While researchers and educators seek to account for the high achievement on these assessments, many turn to the characteristics and behaviors of school leaders to explain the difference in rankings. However, to view effective school leadership behaviors and characteristics from a global perspective poses some challenges, as societal culture influences the leadership process. As way to investigate leadership by societal cultures across the globe, the investigators of this study turned to The Global Leadership and Organizational Behavior Effectiveness (GLOBE) research survey, in which a research team described a large number of characteristics and behaviors, or universal leadership dimensions, to assess the different ways in which various societal clusters viewed leadership. The investigators of this study explore the relationship of global leadership using the GLOBE cultural leadership dimensions and student achievement as measured by TIMMS and PISA within cultural clusters. Findings indicated that four universal leadership dimensions, including charismatic/values based leadership, participative leadership, autonomous leadership, and self-protective leadership, were identified through ANOVA to be significant in predicting student achievement, which led the researchers to conclude that administering the GLOBE Survey to school leaders is necessary to determine the importance and value of the leadership dimensions relative to educational leaders across all cultures.
Type of Research	Quantitative
Key themes or findings.	- Looked at GLOBE research survey data and compared with PISA & TIMMS achievement data to see what leadership styles impacted on student achievement. - A criticism of GLOBE research is that it conceptualizes leadership from middle managers in the food processing, financial services and telecommunications industries and not from education. The research team justifies the use of GLOBE data because they are universal principles, behaviours and characteristics. - Found charismatic/values based leadership and autonomous leadership impacted positively on student achievement, self-protective leadership, and participative leadership impacted negatively, while humane & team

	styles were not related to student achievement.
	• Leadership occurs in situational contexts and within cultures. Culturally contingent differences were found to influence conceptualisations of leadership.
	• Cautioned that their analysis should be considered exploratory.
Methodology	The investigators of this study explore the relationship of global leadership using the GLOBE cultural leadership dimensions and student achievement as measured by TIMMS and PISA within cultural clusters.

TEMPLATE	
Standard bibliographic information	Ministry of Education. (2010). *A Vision for the Teaching Profession*. Retrieved from http://www.minedu.govt.nz/~/media/MinEdu/Files/TheMinistry/Consultation/WorkforceAdvisoryGroup/WorkforceAdvisoryGroupFinalReportPDF.pdf
Country of Origin	NZ
Key words	Teaching profession Teachers
Abstract	N/A
Type of Research	Government report
Key themes or findings.	• Provides the vision of the changes for NZ teaching profession • 'A comprehensive body of research clearly indicates that effective teachers are the main factor in raising the achievement and fostering the ongoing engagement of students' [p 10]. • 'International research by McKinsey and Company finds that the world's top performing education systems are focused on training and developing teachers. For example by ensuring that: beginning teachers receive more than • 20 weeks training/coaching in schools at least • 10% of working time is used for professional development teachers have an exact knowledge of specific weaknesses in their practice systematic research is conducted into effective instruction and fed back into policy and classroom practice.2' [p 9] • Pedagogical leadership more important than transformational leadership. • BES evidence re impacts of leadership on student achievement: promoting and participating in teacher learning and development (0.84 effect size), planning coordinating and evaluating teaching and the curriculum (0.42) and establishing goals and expectations (0.42). [p 11] • 'Career pathways of teachers will be varied with some moving on to leadership roles in schools while others choose to remain teaching predominantly in the classroom'. [p 15] • Acknowledgement that rewards, including financial ones, do not necessarily impact on student achievement. [p 16] • 'Establishing a model that has clear standards for progression while allowing teachers to direct their own career paths, and school leaders to exercise professional judgment around capability building, recognition, and progression of their staff, will

	support a more flexible, productive and capable profession which takes ownership for its own development needs' [p 16].
Methodology	N/A

	TEMPLATE
Standard bibliographic information	Mourshed, M., Chijioke, C., & Barber, M. (2010). *How the world's most improved school systems keep getting better*. London: McKinsey Company.
Country of Origin	International comparisons
Key words	School systems Improvement Reform Student achievement Intervention Sustainability Education
Abstract	N/A
Type of Research	Evaluation: Quantitative and qualitative
Key themes or findings. (highlight as appropriate) • **System** • **Leadership** • **Coaching**	• Discussions with leaders about success: 'few were certain about why they had been successful: they often did not have a "theory of the case" about why what they did worked. Even fewer had a mental map of how all the changes they made fit together as a coherent whole. Some even thought they had just been lucky' [p 11]. • Looks at sustained improvers and promising starts • 'The systems focused on in this research demonstrate that significant improvement in educational attainment can be achieved within as little as six years' [p 14] • NZ is classified on their measures as being in the 'fair' group, but is on the boundary of 'good'. • Interventions used successfully: 'Fair to good: at this stage the interventions focus on consolidating the system foundations; this includes the production of high quality performance data, ensuring teacher and school accountability, and creating appropriate financing, organization structure, and pedagogy models' [p 20]. • Interventions used successfully: 'Good to great: the interventions at this stage focus on ensuring teaching and school leadership is regarded as a full-fledged profession; this requires putting in place the necessary practices and career paths to ensure the profession is as clearly defined as those in medicine and law' [p 20]. • 'The sustaining practices of the new pedagogy are characterized by the internalization of teaching practices. They are not merely about changing the explicit structure and approach of the system, but about how teachers think about teaching. … We have found that there are three ways that improving systems commonly do this: by establishing collaborative practices between teachers within and across schools, by developing a mediating layer between the schools and the center, and by

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| | | architecting tomorrow's leadership' [p 21].
• 'These practices are supported by an infrastructure of professional career paths that not only enable teachers to chart their individual development course but also make them responsible for sharing their pedagogical skills throughout the system. In general, collaborative practices shift the drive for change away from the center to the front lines of schools, helping to make system improvement self-sustaining'. [p 22]
• 'The most successful systems actively foster the development of the next generation of system leadership from within, ensuring that there is a continuity of purpose and vision in sustaining the system's pedagogy and improvement' [p 22].
• 'It's a system thing, not a single thing' [p 25]
• 'systems moving from good to great, characterized by higher skill educators, provide only loose, central guidelines for teaching and learning processes, in order to encourage peer-led creativity and innovation inside schools, the core driver for raising performance at this stage'. [p 26]
• Common interventions Fair to good: 'Data and accountability foundation – Transparency to schools and/or public on school performance – School inspections and inspections institutions Financial and organisational foundation – Optimization of school and teacher volumes – Decentralizing financial and administrative rights – Increasing funding – Funding allocation model – Organizational redesign Pedagogical foundation – School model/streaming – Language of instruction – Language of instruction' [p 28]
• Common interventions Good to great: 'Raising calibre of entering teachers and principals – Recruiting programs – Pre-service training – Certification requirements Raising calibre of existing teachers and principals – In-service training programs – Coaching on practice – Career tracks – Teacher and community forums School-based decision-making – Self-evaluation – Independent and specialized schools' [p 28]
• Feature of great to excellent. 'The system facilities school-based learning communities to create peer-led support and accountability to each other' [p 43]
• 'introduced school clusters19 to create a peer-based forum for school leadership development and the sharing of effective teaching and learning practices across schools. It also changed its school inspection model, replacing the previous highly centralized model with a more collaborative one focused on self-assessment and quality assurance. Throughout the latter period, Singapore worked intensively on strengthening the caliber of its teachers and principals so that they could make the best use of their greater freedoms. It established a system that accommodated three career tracks (Leadership, Teaching, and Senior Specialist), narrowed recruitment into teaching to the top one-third of each graduating cohort, expanded professional development to one hundred hours per year, and creating mentorship pairings for school leaders'. [p 52]. Promising people are identified centrally – not self-selecting. Newly appointed principals receive lots of PD |

	'~75% of process interventions undertaken by our sample systems dealt with school delivery' [p 57] Most dominant process, was part of PD, 'Technical training, structured collaborative practice, coaching, career tracks, certification requirements' [p 57] - Information about how different countries have contextualized reforms (or interventions) and importance of doing so. 'The Anglo-American and poor to fair systems follow a consistent pattern in announcing ambitious student achievement targets publicly, conducting regular testing to assess performance against these targets, and then making assessment results visible to stimulate school motivation and discussion on how to improve'. [p 69]. 'For a system's improvement journey to be sustained over the long term, the improvements have to be integrated into the very fabric of the system pedagogy' [p 72]. 'Collaborative practices shift the drive for improvement away from the center to the front lines of schools, helping to make it self-sustaining' [p 73]. Importance of sustaining change across changes in leadership. 'The power of collective capacity is that it enables ordinary people to accomplish extraordinary things – for two reasons. One is that knowledge about effective practice becomes more widely available and accessible on a daily basis. The second reason is more powerful still – working together generates commitment'. [Fullan, 2010, here p 74]. 'In his synthesis of over 50,000 studies and 800 meta-analyses of student achievement, John Hattie drew one major conclusion: "The remarkable feature of the evidence is that the biggest effects on student learning occur when teachers become learners of their own teaching."31 This is the essence of collaborative practice: teachers jointly engaged in an empirical, routine, and applied study of their own profession'. [p 75] - Career pathways: Lithuania started in 1996 'The collaborative practices described here, supported by a system of professional development, can unleash sustained improvement; over time shifting the source of a system's improvement away from central leadership to the educators themselves. Teachers are in a position to sustain improvement because they draw motivation from seeing the impact on their own work, as well as from their ownership in shaping educational practice' [p 79]. 'In China, teaching and development teams, or JiaoYanZu, work together within schools and across schools to plan how the curriculum will be taught, to share learnings, and observe each other's practice. These teams serve as the pedagogical backbone of the school system'. [p 79] - Also teacher professional pathways in China. 'We found that sustaining system improvement in the longer term requires integration and intermediation across each level of the system, from the classroom to the superintendent or minister's office' [p 81] School clusters can take on this role – Singapore, Boston cited

	as examples of clusters sharing experiences and practice. • 'Each of these improving systems has written a consistent story of improvement by ensuring the leaders who shepherd the system share the experience and ownership of the system's pedagogy' [p 89].
Methodology	Analysis of assessment and other quantitative data (575 interventions across the 20 systems), interviews with more than 200 system leaders and their staff, supplemented by visits to view all 20 systems in action.

<table>
<tr><td colspan="2" align="center">TEMPLATE</td></tr>
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Standard bibliographic information	Mulford, B., Kendall, D., Edmunds, B., Kendall, L., Ewington, J., & Silins, H. (2007). Successful school leadership: What is it and who decides? [Article]. *Australian Journal of Education (ACER Press), 51*(3), 228-246. doi: 10.1177/000494410705100302
Country of Origin	Australia
Key words	Educational leadership Education -- Evaluation Educational leadership -- Evaluation Educational change Educational quality Australia -- Politics & government -- 1945- Education & state School administration School administrators -- Rating of Perception Student participation Academic achievement School principals Comparative education Education -- Aims & objectives
Abstract	Arguments presented in this paper and the evidence from the Tasmanian Successful School Principals Project support broadening what counts for successful schools and school leadership. This broadening needs to embrace student outcomes, including non-cognitive social outcomes such as student empowerment In examining who should provide the evidence for successful school leadership the need for triangulation, that is, multiple sources of evidence, became clear. Research employing only principal perceptions of success, especially on the importance of and improvement in student outcomes, should be examined much more critically than has occurred in the past. Reprinted by permission of the publisher.
Type of Research	Qualitative;
Key themes or findings.	• Authors suggest that school leadership be judged not just on academic & cognitive measures, but non-cognitive as well. • Lit review indicates that school leadership has indirect impact on student outcomes • But student success is complex & delineated by a number of factors - not all subject to the effect of school. • Found that principals' opinion over inflated success. • Students' success measures are only weakly related to principal characteristics.
Methodology	Qualitative by survey

<div align="center">**TEMPLATE**</div>

Standard bibliographic information	Mullen, C. A. & Schunk, D. H. (2010). A view of professional learning communities through three frames: Leadership, organization, and culture. *McGill Journal of Education 45* (2): 185-204.
Country of Origin	North America
Key words	Professional learning communities Mentoring Change
Abstract	In this discussion of professional learning communities (PLCs) in North American public schools, we examine three theoretical frames – leadership, organization, and culture. Issues related to learning are infused throughout our presentation of the frames. Based on our analysis of the current literature on this topic, PLCs offer a promising tool for system-wide change and collaborative mentorship in public schools. Implications for collaborative mentorship within PLCs are uncovered in relation to the professional learning of teachers and leaders and their community development. We dovetail the literature on learning, learning communities, and mentoring in order to identify such expanded possibilities for school teams that are supported by practical examples of change.
Type of Research	Qualitative: review and analysis of models of professional learning communities
Key themes or findings.	• Looked at professional learning community through examining three frames – leadership, organization and culture. Focus is predominantly on within (a single) school change. • 'Research shows that the PLC idea is a potentially potent strategy for organizational change, specifically school improvement' [p 193] • School improvement is only possible through school communities that serve as a vehicle for across-the-board, whole-school learning. Needs change in routine structures, change in workplace culture. Bring in community and parental support. • Principles which inform professional learning community work include: a common impetus for change; a shared vision and common goals regarding the need for universal design in the school; the belief that all members of the school team are equal and that increased collaborative planning among staff can support the needs of all learners; encouragement of risk taking and the sharing of ideas; recognition that professional inquiry is crucial and that teaching strategies should be research-supported; and attention on planning for assessment that is reflected in school-wide action. • Role of PLC principal is to create the conditions that help colleagues to continually improve collective capacity for student learning and achievement – changes don't all originate from PLC principal. 'The cult of heroic leadership is misleading, over-emphasizing the

	role of individual leaders at the cost of understanding more deeply the change process' [p 190] • Within an effective PLC model, 'mentoring activity is relational, systematic, and system-wide; all are involved in co-learning and identity development as collaborative mentors' [p 195].
Methodology	Critical analysis of models of professional learning communities

	TEMPLATE
Standard bibliographic information	Nettles, S. M., & Herrington, C. (2007). Revisiting the importance of the direct effects of school leadership on student achievement: The implications for school improvement policy. *Peabody Journal of Education, 82*(4), 724-736. doi: 10.1080/01619560701603239
Country of Origin	
Key words	School leadership, principals, student learning, leadership practices, leadership behaviours.
Abstract	Much is left to be known regarding the impact of school principals on student achievement. This is because much of the research on school leadership focuses not on actual student outcomes but rather on other peripheral results of principal practices. In the research that has been done in this area, significant relationships have been identified between selected school leadership practices and student learning, indicating that evidence existed for certain principal behaviors to produce a direct relationship with student achievement. Further, although these relationships typically account for a small proportion of the total student achievement variability, they are of sufficient magnitude to be of interest and additional investigation. Actions taken to better understand and improve the impact of principals on the achievement of students in their schools have the potential for widespread benefit, as individual improvements in principal practice can impact thousands of students. It is in this light that potential direct effects of principal practices should be revisited.
Type of Research	Scholarly Inquiry
Key themes or findings.	• Significant relationships have been identified between selected school leadership practices and student learning, indicating that evidence existed for certain principal behaviors to produce a direct relationship with student achievement. • Further, although these relationships typically account for a small proportion of the total student achievement variability, they are of sufficient magnitude to be of interest and additional investigation. • Actions taken to better understand and improve the impact of principals on the achievement of students in their schools have the potential for widespread benefit, as individual improvements in principal practice can impact thousands of students. • It is in this light that potential direct effects of principal practices should be revisited.
Methodology	Critical review

	TEMPLATE
Standard bibliographic information	Nye, B., Konstantopoulos, S., & Hedges, L. V. (2004). How large are teacher effects? *Educational Evaluation and Policy Analysis, 26*(3), 237-257. doi: 10.3102/01623737026003237
Country of Origin	US
Key words	Experiments Teacher effects Teacher experience
Abstract	It is widely accepted that teachers differ in their effectiveness, yet the empirical evidence regarding teacher effectiveness is weak. The existing evidence is mainly drawn from econometric studies that use covariates to attempt to control for selection effects that might bias results. We use data from a four-year experiment in which teachers and students were randomly assigned to classes to estimate teacher effects on student achievement. Teacher effects are estimated as between-teacher (but within-school) variance components of achievement status and residualized achievement gains. Our estimates of teacher effects on achievement gains are similar in magnitude to those of previous econometric studies, but we find larger effects on mathematics achievement than on reading achievement. The estimated relation of teacher experience with student achievement gains is substantial, but is statistically significant only for 2nd-grade reading and 3rd-grade mathematics achievement. We also find much larger teacher effect variance in low socioeconomic status (SES) schools than in high SES schools.
Type of Research	Quantitative
Key themes or findings.	• "because of random assignment of teachers and students to classrooms in this experiment, our results provide stronger evidence about teacher effects. The results of this study support the idea that there are substantial differences among teachers in the ability to produce achievement gains in their students" (253). • "If teacher effects are larger than school effects [as this study finds], then policies focusing teacher effects as a larger source of variation in achievement may be more promising than policies focusing on school effects" (254). • "The finding that teacher effects are much larger in low-SES schools suggests that the distribution of teacher effectiveness is much more uneven in low-SES schools than in high-SES schools. To put it another way, in low-SES schools, it matters more which teacher a child receives than it does in high-SES schools" (254). • "While the present analysis supports the finding that teacher effects are large enough to be important, it was less successful in identifying teacher characteristics that could be used to predict which teachers are more effective" (255).
Methodology	Hierarchical Linear Modelling

<table>
<tr><td colspan="2" align="center">TEMPLATE</td></tr>
<tr><td>Standard bibliographic information</td><td>Opfer, V. D. & Pedder, D. (2011) The Lost Promise of Teacher Professional Development in England. European Journal of Teacher Education 34, no. 1: 3-24.</td></tr>
<tr><td>Country of Origin</td><td>UK</td></tr>
<tr><td>Key words</td><td>United Kingdom;
Professional Development;
School Based Teacher Education;
Teacher Development</td></tr>
<tr><td>Abstract</td><td>This paper explores three influences on the effectiveness of teacher professional development for improving schools - the individual teacher, the learning activities in which teachers participate and the structures and supports provided by schools for teacher learning. It does so by relying on survey data collected for a national study of teacher professional development in England. The analysis indicates that while the professional development of teachers in England is generally ineffectual and lacks school level systems and supports, the professional development and supports for professional learning by teachers in high performing schools display many of the characteristics associated with effective professional learning. Given the results showing a link between school factors and professional learning and the lack of influence of individual teacher factors, the paper concludes that the previously reported importance of school capacity in influencing learning and improvement is supported by the findings.</td></tr>
<tr><td>Type of Research</td><td>Descriptive</td></tr>
<tr><td>Key themes or findings.</td><td>"[Effective professional development is found] for teachers in high performing secondary schools who participate in professional development activities that are longer in duration, more active and more collaborative in implementation. High performing schools also tend to engage in practices to support teacher learning – systems and support for learning, creation of social capital conditions and supports for collaboration and networking. Conversely, teachers in the lowest performing schools report high levels of performance management conditions and participate in activities that are short in duration" (21).
"The high levels of performance management reported by teachers in low performing schools along with their reports of narrower professional learning opportunities suggests a lack of positive alignment. Further, it suggests the possibility that performance management and professional learning may be aligned in negative and punitive ways for these teachers" (21).
"We found very little evidence of differentiation in individual teacher orientations to learning at schools with differing levels of achievement. Given the results showing a link between school factors and characteristics of professional development activities and school achievement and the lack of influence of individual</td></tr>
</table>

	teacher factors, the previously reported importance of school capacity in influencing learning and improvement is supported by our findings (Earley and Bubb 2004; Loxley et al. 2007; Reynolds et al. 2002). Teachers in low performing schools did show higher levels of individual orientation to professional learning than teachers in schools with higher achievement. However, it could be argued that this is further evidence of the importance of the school in teacher professional learning – because the school fails to support their learning, teachers in low performing schools turn inward to improve their practice." (21).
	• "Schools require help and guidance to develop these necessary capacities to support teaching and learning: they cannot do it on their own" (22).
Methodology	Analysis of data from national (UK) sample of teachers. (n= 1126)

TEMPLATE	
Standard bibliographic information	Owen, S. (2014) Teacher Professional Learning Communities: Going Beyond Contrived Collegiality toward Challenging Debate and Collegial Learning and Professional Growth. *Australian Journal of Adult Learning 54*, no. 2 : 54-77.
Country of Origin	AU
Key words	Professional Learning Community PLC Teacher Professional Learning
Abstract	Professional learning community (PLC) is a current 'buzz' term in business and educational contexts, seemingly referring to anything from decision making committees to regular meeting groups or collegial learning teams. This paper explores the concept of a PLC within three significantly innovative schools, based on an examination of the relevant literature and also focusing on surveys and interviews. Findings indicate that, while there is broad consistency across the literature and within the innovative school cases in terms of core PLC elements of shared vision and values, collegiality, joint practical activities and student learning data, teacher inquiry and leadership support and opportunities, there are some pivotal PLC characteristics which heighten the professional learning impact. In this paper, using vignettes from the case study schools, these pivotal characteristics are related to developmental phases of PLC establishment. This offers valuable insights about nurturing more learning-focused PLCs, with significant benefits for teacher professional growth and ultimately for student learning.
Type of Research	Qualitative
Key themes or findings.	• "Findings indicate that, while there is broad consistency across the literature and within the innovative school cases in terms of core PLC elements of shared vision and values, collegiality, joint practical activities and student learning data, teacher inquiry and leadership support and opportunities, there are some pivotal PLC characteristics which heighten the professional learning impact" (54). • "Through nurturing, financial supports and clear expectations, teacher PLCs can be helped to move beyond contrived collegiality" (74). • "Engagement in challenging debates within professional learning communities supports staff professional growth, more transformative educational practices and ultimately, student learning" (74).
Methodology	Case study

TEMPLATE	
Standard bibliographic information	Pedder, D., & Opfer, V. D. (2012). Professional learning orientations: Patterns of dissonance and alignment between teachers' values and practices. *Research Papers in Education, 28*(5), 539-570. doi: 10.1080/02671522.2012.706632
Country of Origin	UK
Key words	Teachers' Professional Learning; Professional Learning Orientation; Learning Values; Learning Practice; Dissonance
Abstract	Through its positive influence on teachers' classroom practices and their students' learning, effective professional learning of teachers is an important condition for school improvement. However, the Teaching and Learning International Survey reports that teachers' professional development in most countries falls short of meeting the needs of teachers. This paper reports analysis of survey data collected for a national study of teachers' professional development in England, although the issues it raises have international relevance. Through factor analysis four underlying dimensions of teachers' learning orientations were identified and used as the basis for developing profiles of teachers' professional learning values and practices through cluster analysis. Based on these profiles, five distinctive groupings of teachers were identified: 'engaged learners', 'moderate learners', 'infrequent learners', 'individual explorers' and 'solitary classroom learners'. The concept of dissonance between values and practice is a strong theme in the findings and for policy development. The main findings are that only a minority of teachers are 'engaged' learners. There is a prevailing individualist approach to learning among the majority of teachers. And there are important between and within school differences in the mix of teachers' learning orientations. This leads to recommendations for more differentiated forms of support for promoting effective professional learning in schools.
Type of Research	Quantitative
Key themes or findings	• "Analysis of our data suggests that teachers do not, on the whole, tend to incorporate these teacher learning orientations successfully into their practice. Taking our sample as a whole, our data suggest that teachers tend to sustain high levels of well-aligned internally oriented practices and values: developed by teachers individually and in the privacy of their classrooms. The reflective practitioner model of teachers' learning, depicted in this orientation, is alive and well in schools in England. Teachers also tended to record fairly high levels of well-aligned externally oriented practices and values: again, developed by teachers individually but drawing on a range of search strategies and resources external to the teacher's direct classroom teaching environment" (562). • "Individual teachers need to balance externally focused search for new ideas beyond their own classrooms with

	internal reflection on practices and values tested and developed in their classrooms if they are to learn continuously instead of continuously complying with new ideas without effect" (562).
	• "teachers tended to record lower levels of collaborative practices and values, with values significantly ahead of practices, and even lower levels of research-oriented practices and values, with practices below values even at these low levels" (562).
	• "of 1076 teachers, only 345 were identified as engaged learners, characterised by high levels of closely aligned practices and values for all four professional learning orientations. Our cluster analysis showed that the remaining 731 teachers tended not to integrate all four orientations into their professional learning. Our data suggest that the majority of teachers need support in developing more integrated orientations to professional learning" (562).
	• "Our data show a prevailing individualist tendency amongst the majority of teachers in England which, by itself, is ineffective for supporting improvements in pupils' learning. Teachers need to build in more collaborative, enquiry-oriented approaches to professional learning. This way they can open up more opportunities for mutual engagement and constructive critique from colleagues, pupils and school leaders, and more opportunities for subjecting their assumptions and normal practices to test and critique with reference to published research reports and through undertaking and reporting their own research and development" (563).
	• "Our analysis also suggests a great deal of within and between school variation in terms of teachers' learning orientations. Distinctive teacher learning profiles were recorded by teachers, particularly in relation to gender and career stage. Our data also indicate considerable between school variation in the mix of teacher learning profiles among their teaching staff. There were some interesting patterns of difference between primary and secondary schools: a slightly higher proportion of engaged learners in primary (35%) than secondary (29%) schools and a lower proportion of infrequent learners in primary (11%) than secondary (21%) schools" (563).
Methodology	Factor and Cluster analysis of 1126 teacher surveys.

TEMPLATE	
Standard bibliographic information	Peterson, P. L., McCarthey, S.J. & Elmore, R.F. (1996). Learning from school restructuring. *American Educational Research Journal 33* (1): 119-153. doi: 10.2307/1163383.
Country of Origin	USA
Key words	Writing Reform Restructure
Abstract	We analyzed cases of restructuring experiments in three elementary schools, each with ethnically diverse populations, located in large urban school districts in different parts of the United States. Over 2 years, we gathered data on views and classroom writing practices of two teachers in each school through on-site interviews and observations. We also interviewed the principal and other support personnel. We found that these three schools did successfully restructure; changes included new student grouping patterns, new ways of allocating time for subject matter, teachers meeting together as a whole school or in teams, and access to new ideas through professional development opportunities. Through close analyses of teachers' classroom practices, we learned that changing teachers' practice is primarily a problem of learning, not a problem of organization. While school structures can provide opportunities for learning new practices, the structures, by themselves, do not cause the learning to occur.
Type of Research	Qualitative
Key themes or findings.	• Advocates of restructuring have assumed that teachers will discover new pedagogies and practices by being exposed to new ideas and by working in organizations that promote more collegial interaction. We question this premise because we believe that the problem of how teachers acquire new knowledge and skill is considerably more complex than researchers or reformers have assumed'. [p 150]
Methodology	Interviews and observations

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Standard bibliographic information	Phillips, K. J. R. (2010). What Does "Highly Qualified" Mean for Student Achievement? Evaluating the Relationships between Teacher Quality Indicators and At-Risk Students' Mathematics and Reading Achievement Gains in First Grade. *The Elementary School Journal, 110*(4), 464-493. doi: 10.1086/651192
Country of Origin	US
Key words	N/A
Abstract	Policymakers and researchers continue to search for ways to improve K–12 education, which has led to an increased focus on teacher quality as an impetus for educational improvement. As such, current legislation under No Child Left Behind (NCLB) calls for highly qualified teachers in every classroom. But are the characteristics associated with highly qualified teachers associated with increases in student achievement gains? This article explores the relationships between first graders' achievement gains and policy-relevant teacher quality indicators. Using data from the Early Childhood Longitudinal Study (ECLS-K), this study finds that NCLB successfully places emphasis on at-risk students—a category of students who would, in theory, benefit most from improved teacher quality; however, little support is offered for the perspective that NCLB's indicators of teacher quality are related to achievement gains for either at-risk students or for nonrisk students.
Type of Research	Quantitative
Key themes or findings.	"only a select few of the policy relevant teacher quality indicators were related to student achievement gains. Of those few, full or advanced teacher certification was negatively related to student achievement gains in mathematics (484). "The second important finding of this study is that subject-specific graduate degrees (in this case, graduate degrees in elementary or early childhood education) were positively related to students' reading achievement gains" (484). "This study also highlights a third issue by demonstrating that the achievement gains of at-risk students are more sensitive to teacher quality indicators than the gains of non-risk students" (485). "At-risk students made increased achievement gains in mathematics when their teachers had taken additional child development courses" (485).
Methodology	Fixed-effects analysis of previous longitudinal study

TEMPLATE	
Standard bibliographic information	Porter, A. C., & Gamoran, A. (2002). Progress and Challenges for Large-Scale Surveys. In A. C. Porter & A. Gamoran (Eds.), *Methodological Advances in Cross-National Surveys of Educational Achievement* (pp. 3-26). Washington, DC: National Academy Press.
Country of Origin	USA
Key words	International surveys Methodology Large-scale Cross-national Education Achievement Policy
Abstract	N/A
Type of Research	Discussion
Key themes or findings.	• One of the suggested benefits of international comparative education surveys is that 'education in one country can be better understood in comparison to education in other countries' (p 4). • Importing 'the pedagogy of one nation into another, whatever the achievement standing of the first nation' is unlikely to be effective (p 11). • Despite improvements in survey methodology 'substantial challenges remain, including a need to develop a better appreciation of differences in the social and cultural contexts in which education takes place in different nations'. [p 4] • 'In light of the contextual differences between countries, the value of international studies may lie more in their potential for generating hypotheses about causal explanation than in their use as platforms for testing hypotheses' [p15] • integration of qualitative and quantitative data has been limited. [p 21] • Argue for further consideration and documentation of impact of international surveys on student achievement.
Methodology	N/A

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<tr><td colspan="2" align="center">TEMPLATE</td></tr>
<tr><td>Standard bibliographic information</td><td>Potaka, P. (2010). School leadership and student outcomes: Identifying what works and why - a new way forward? Journal of Educational Leadership, Policy and Practice, 25(1), 22- 30.</td></tr>
<tr><td>Country of Origin</td><td>New Zealand</td></tr>
<tr><td>Key words</td><td>School principals
School management and organization
Academic achievement
Educational change
School improvement programs
Educational leadership--Research
New Zealand</td></tr>
<tr><td>Abstract</td><td>New perspectives on leadership are always welcome since they challenge currently held ideas, lead us to examine our beliefs and practices and so advance our thinking on the subject. The report, School leadership and student outcomes: Identifying what works and why: Best Evidence Synthesis Iteration (BES), is arguably the most significant report on leadership produced in New Zealand for many years. It highlights tensions in the principal's role and raises important issues for policy makers and practitioners. Because of the likely impact of the report it deserves and demands the respect that can be provided by rigorous critique. No ideas should be accepted uncritically no matter how daunting the task of critique may appear. Our teachers and children have a right to expect their leaders to undertake 'due process' even if such an examination should cover only a limited part of the report. The critique offered here comes from the perspective of a practising principal who is open to ideas that might help meet leadership and learning challenges in schools.</td></tr>
<tr><td>Type of Research</td><td>Opinion piece</td></tr>
<tr><td>Key themes or findings.</td><td>• Critique of the BES on Leadership by a practicing NZ principal.
• Generally endorses the findings of the BES but argues that the findings need testing rather than blind adoption</td></tr>
<tr><td>Methodology</td><td>Scholarly critique</td></tr>
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TEMPLATE	
Standard bibliographic information	Resnick, L. B., & Hall, M.W. (1998). Learning organizations for sustainable education reform. *Daedalus 127* (4): 89-118. doi: 10.2307/20027524.
Country of Origin	USA
Key words	Reform
Abstract	N/A
Type of Research	Discussion
Key themes or findings.	• Mentions nested learning communities in New York and talks about how over a 10 year period the teaching improved with indicators showing an increase in student achievement. • 'School-based learning communities can produce improvements in student achievement when they develop individual teaching capacity and when they facilitate a common learning culture in a school as a whole' [p 111]
Methodology	N/A

	TEMPLATE
Standard bibliographic information	Riley, K., & Torrance, H. (2003). Big change question: As national policy-makers seek to find solutions to national education issues, do international comparisons such as TIMSS and PISA create a wider understanding or do they serve to promote the orthodoxies of international agencies? *Journal of Educational Change 4*(4), 419-425.
Country of Origin	UK
Key words	International surveys TIMSS PIRLS Education Policy
Abstract	N/A
Type of Research	Discussion
Key themes or findings.	• 'Many aspects of the indicators are positive when they generate debate and dialogue' [p 420-421] • 'The problems arise, however, when politicians seek simplistic solutions to the education challenges which their own countries face and seek off-the-shelf solutions which are highly context specific' [p 421]
Methodology	N/A

	TEMPLATE
Standard bibliographic information	Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement. *Econometrica, 73*(2), 417-458. doi: 10.1111/j.1468-0262.2005.00584.x
Country of Origin	US
Key words	Student achievement, Teacher quality, School selection, Class size, Teacher experience
Abstract	This paper disentangles the impact of schools and teachers in influencing achievement with special attention given to the potential problems of omitted or mis-measured variables and of student and school selection. Unique matched panel data from the UTD Texas Schools Project permit the identification of teacher quality based on student performance along with the impact of specific, measured components of teachers and schools. Semi-parametric lower bound estimates of the variance in teacher quality based entirely on within-school heterogeneity indicate that teachers have powerful effects on reading and mathematics achievement, though little of the variation in teacher quality is explained by observable characteristics such as education or experience. The results suggest that the effects of a costly ten student reduction in class size are smaller than the benefit of moving one standard deviation up the teacher quality distribution, highlighting the importance of teacher effectiveness in the determination of school quality.
Type of Research	Quantitative
Key themes or findings.	• "This analysis identifies large differences in the quality of instruction in a way that rules out the possibility that the observed differences are driven by family factors" (449). • "Similar to most past research, we find absolutely no evidence that having a master's degree improves teacher skills. • There appear to be important gains in teaching quality in the first year of experience and smaller gains over the next few career years. However, there is little evidence that improvements continue after the first three years. • Class size appears to have modest but statistically significant effects on mathematics and reading achievement growth that decline as students' progress through school. • Any differences in school resource effects by family income are small" (449-50). • "Rather the substantial differences in quality among those with similar observable backgrounds highlight the importance of effective hiring, firing, mentoring, and promotion practices" (450).
Methodology	Fixed-effect modelling

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<tr><td>**Standard bibliographic information**</td><td>Robinson, V. M. J., & Timperley, H. S. (2007). The leadership of the improvement of teaching and learning: Lessons from initiatives with positive outcomes for students. *Australian Journal of Education), 51*(3), 247-262. doi: 10.1177/000494410705100303</td></tr>
<tr><td>**Country of Origin**</td><td>New Zealand</td></tr>
<tr><td>**Key words**</td><td>Teachers -- In-service training -- Research
Educational leadership
Academic achievement -- Research
Meta-analysis
Educational leadership -- Research
Teacher development
Outcome assessment (Social services)
Effective teaching -- Research
Educational change
School administration
Education -- Aims & objectives
Academic achievement
Teacher-student relationships
Influence (Psychology)
Teachers -- Training of
Change agents
Leadership -- Social aspects</td></tr>
<tr><td>**Abstract**</td><td>The purpose of this study was to examine how leaders foster school renewal by facilitating and participating in the types of teacher professional learning and development that improve student academic and non-academic outcomes. The methodology involved a backward mapping strategy that takes as its starting point, not theories of leadership, but professional development initiatives that have made a demonstrable impact on the students of the teachers involved. Seventeen studies with evidence of such impact were analysed for descriptions of the leadership practices involved in each initiative. Through an iterative process of review and critique, these descriptions were categorised into the leadership dimensions associated with teacher professional learning that resulted in improved student outcomes. The analysis revealed five leadership dimensions that were critical in fostering teacher and student learning: providing educational direction; ensuring strategic alignment; creating a community that learns how to improve student success; engaging in constructive problem talk; and selecting and developing smart tools. The analysis showed that leadership of the improvement of learning and teaching is highly distributed in terms of both who leads and how it is enacted. Such leadership is embedded in school routines that are aligned to improvement goals, and involves the use of smart tools that are designed to assist teachers' learning of more effective pedagogical practices. Reprinted by permission of the publisher.</td></tr>
<tr><td>**Type of Research**</td><td>Qualitative; Theoretical;</td></tr>
</table>

Key themes or findings.	• Teachers have the most impact on student achievement. • Leaders can have a small impact through activities such as promoting and participating in teacher learning and development. • There is an assumption that if teachers learn then so do their students but this is rarely tested. • These studies were not leadership studies and so the role of the leader in the success of the initiative in inferred. • There was almost no mention of the Principal as leader. • Often the leader was a teacher leader or from outside the school (university based researcher, PD facilitator etc.).
Methodology	A backward mapping strategy that takes as its starting point professional development initiatives that have had an impact on the students of the teachers involved.

TEMPLATE	
Standard bibliographic information	Robinson, V. M., Lloyd, C. A., & Rowe, K. J. (2008). The impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational administration quarterly, 44*, 635–674. doi: 10.1177/0013161X08321509
Country of Origin	New Zealand
Key words	leadership; principal; leadership theory; achievement; outcomes; meta-analysis
Abstract	Purpose: The purpose of this study was to examine the relative impact of different types of leadership on students' academic and nonacademic outcomes.
Type of Research	Meta-analysis.
Key themes or findings.	• This article is based on the BES on School Leadership and student outcomes • Findings: The first meta-analysis indicated that the average effect of instructional leadership on student outcomes was three to four times that of transformational leadership. • Inspection of the survey items used to measure school leadership revealed five sets of leadership practices or dimensions: establishing goals and expectations; resourcing strategically; planning, coordinating, and evaluating teaching and the curriculum; promoting and participating in teacher learning and development, and ensuring an orderly and supportive environment. • The second meta-analysis revealed strong average effects for the leadership dimension involving promoting and participating in teacher learning and development and moderate effects for the dimensions concerned with goal setting and planning, coordinating, and evaluating teaching and the curriculum. • Conclusions and Implications for Research and Practice: The comparisons between transformational and instructional leadership and between the five leadership dimensions suggested that the more leaders focus their relationships, their work, and their learning on the core business of teaching and learning, the greater their influence on student outcomes. The article concludes with a discussion of the need for leadership research and practice to be more closely linked to the evidence on effective teaching and effective teacher learning. Such alignment could increase the impact of school leadership on student outcomes even further. • A number of limitations and cautions are also included.
Methodology	Meta analysis.

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Standard bibliographic information	Robinson, V. M. J. (2008). Forging the links between distributed leadership and educational outcomes. *Journal of Educational Administration, 46*(2), 241-256. doi: 10.1108/09578230810863299
Country of Origin	NZ
Key words	Distributive control, Leadership, Influence, Schools, Quality improvement
Abstract	Purpose – Several arguments have been put forward about why distributed leadership in schools should contribute to the improvement of teaching and learning. This paper aims to investigate the extent to which conceptual and empirical research in the field is aligned to this goal. Design/methodology/approach – The discussion of alignment was structured around two differing and overlapping conceptions of distributed leadership. The first conception examines the distribution of the leadership of those tasks designated by researchers as leadership tasks. The second conception examines the distribution of influence processes. Findings – The paper finds that the first conception has the advantage of giving leadership educational content by embedding it in the tasks and interactions that constitute educational work. The selected leadership tasks are typically not specified, however, in ways that discriminate the qualities required to make a positive difference to student outcomes. The knowledge base needed to make such discrimination is found in outcomes-linked research on the selected educational tasks rather than in research on generic leadership and organisational theory. There is also little attention to the influence processes that are at the heart of leadership. While the second approach pays more attention to these influence processes, its generic treatment of leadership limits the possibility of finding and forging stronger links to student outcomes. Originality/value – The paper highlights that research which integrates both concepts of distributed leadership, in suitably modified form, is likely to be a productive way of making stronger links between distributed leadership and student outcomes. The linkage requires more explicit use of the evidence base on the improvement of teaching and learning.
Type of Research	Conceptual
Key themes or findings.	• The paper finds that the first conception has the advantage of giving leadership educational content by embedding it in the tasks and interactions that constitute educational work. The selected leadership tasks are typically not specified, however, in ways that discriminate the qualities required to make a positive difference to student outcomes. The knowledge base needed to make such discrimination is found in outcomes-linked research on the selected educational

	tasks rather than in research on generic leadership and organisational theory. There is also little attention to the influence processes that are at the heart of leadership. While the second approach pays more attention to these influence processes, its generic treatment of leadership limits the possibility of finding and forging stronger links to student outcomes.
	• "Research on distributed leadership in schools, like research on educational leadership itself, is only very loosely coupled to research on the improvement of teaching and learning. This separation has meant that theoretical and empirical work in distributed leadership does not yet serve the goal of educational improvement, even though that goal is espoused by many writers in the field" (254).
Methodology	Conceptual analysis

TEMPLATE	
Standard bibliographic information	Robinson, V., Hohepa, M., & Lloyd, C. (2009). *School leadership and student outcomes: Identifying what works and why*. New Zealand Ministry of Education.
Country of Origin	New Zealand
Key words	Educational leadership, pedagogical leadership, transformational leaderhip, educational change, school administration.
Abstract	NA
Type of Research	Quantitative & Qualitative Best Evidence Synthesis
Key themes or findings.	- focused on the complex relationship between educational leadership and student outcomes and on the particular leadership dimensions that are crucial to improving student outcomes. - examined 134 studies, of which 61 were from New Zealand. - Of the 134 studies, only 27 of the studies quantified the relationship between leadership and student outcomes. - The effect sizes for the 13 studies looking at transformational leadership indicated both positive and negative effects on student outcomes. The average effect size was a relatively weak 0.11. - For the 16 studies looking at pedagogical leadership, 8 were weak and 8 were moderate to large. The average effect size was a moderate 0.42, almost four times the impact of transformational leadership. - Identified five characteristics of effective leadership. - of the five dimensions, the effect size for dimension 4 (promoting and participating in teacher learning and development) had a strong effect size (0.84) that was more than twice that of any of the other dimensions. Dimension 1 (establishing goals and expectations) and dimension 3 (planning, coordinating and evaluating the curriculum) both had a moderate effect size of 0.42. Dimension 2 (resourcing strategically) and dimension 5 (ensuring an orderly and supportive environment) has effect sizes of 0.31 and 0.27 respectively.
Methodology	Best Evidence synthesis

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Standard bibliographic information	Sahlberg, P. (2006). Education reform for raising economic competitiveness. *Journal of Educational Change 7* (4): 259-287. doi: 10.1007/s10833-005-4884-6.
Country of Origin	General but case study focus on Finland
Key words	Economic competitiveness, Education reform, Educational change, PISA, Learning, Teaching
Abstract	Globalization has increased economic competition within and between countries and the world's regions. Economic competitiveness is commonly seen as a valid index for judging a country's level of economic prosperity. Many recent large-scale education reforms have been justified by the urgent need to increase labor productivity and promote economic development and growth through expanded and improved education. It is generally assumed that to increase economic competitiveness, citizens must acquire knowledge, skills and attitudes necessary for civic success and the knowledge-based economy. This article argues that what schools are expected to do in order to promote economic competitiveness often contradicts commonly accepted global education reform thinking. Experience in many countries indicates that increased standardization of teaching and learning, for example, may be counterproductive to the expectations of enhanced economic competitiveness. The conclusion is that rather than competition between education systems, schools and students, what is needed is networking, deeper co-operation and open sharing of ideas at all levels if the role of education in economic competitiveness is to be strengthened. The key features of education reform policies that are compatible with competitiveness are those that encourage flexibility in education systems, creativity in schools and risk-taking without fear on the part of individuals.
Type of Research	Critical review and analysis
Key themes or findings.	• Discusses relationship between globalization, economic competitiveness, studies such as PISA and educational reform. • There has been a theoretical shift to focus on 'learning' and 'understanding' where assessment is fundamental part of learning and clustering of schools and communities is encouraged. Active participation and construction rather than direct instruction is promoted. 'However, due to participation in the Global Education Reform Movement many countries are moving to opposite direction: what seems to be valued is conventional knowledge in selected core subjects that can be reproduced in tests using lower level intellectual processes'[p 271]. The paper argues that changes in teaching and learning in schools are often contradictory and are rarely capable of being implemented. • Many 'education reforms aimed at promoting economic

	competitiveness in the knowledge economies take the form of centrally steered structural and programmatic directives. Only rarely are these changes directly related to what teachers and students are doing in schools and classrooms' [p267].
	• Focus on standards and accountability has led to micro-managing of curriculum and what teachers and learners do in schools. Comparisons across schools and countries by use of test scores are reductionist.
	• What works in one country, in terms of reform, may not work in another – country specific solutions are needed.
	• There seems to be a lack of correlation between a country's quality of education and economic competitiveness
	• Looks at Finland's success in PISA against economic and educational policies. 4 key features: 1) policy development based on integration, 2) strategic framework development and change has been based on a long-term sustainable vision, 3) 'roles of governance and public institutions have been central in policy developments and implementation of both education and economic reforms' [p 281], 4) highly educated workforce, e.g. teachers who hold Masters degree. Also mention that Finnish education system is relatively 'test-free' and that the focus is 'on developing understanding, fostering an interest in learning and cultivating open trust-based relationships between teachers and students' [p 282]
	• In educational reform one issue is that the focus is frequently on the development and implementation of the plan but lacking in the ability to modify and reshape throughout the process.
Methodology	Critical review and analysis

TEMPLATE	
Standard bibliographic information	Sanders, W. L., & Rivers, J. C. (1996). Cumulative and residual effects of teachers on future student academic achievement.
Country of Origin	US
Key words	N/A
Abstract	The Tennessee Value-Added Assessment System (TVAAS) was designed and has been demonstrated to be an efficient and effective method for determining individual teachers' influence on the rate of academic growth for student populations (Bock & Wolfe, 1996, Sanders, Saxton, & Horn, (in press); Sanders & Horn, 1995). This method requires three key components: a testing process which produces scales that have a strong relationship to the curriculum and which produces measurement that extends above and below grade level, the construction and ongoing expansion of a longitudinal data base, and a statistical process that enables a multivariate, longitudinal analysis to produce unbiased and efficient estimates of the desired effects.

The TVAAS database (approximately 3 million records for Tennessee's entire grade 2-8 student population) provides access to histories of individual student measurements of achievement in mathematics, reading, language arts, science, and social studies available from TCAP achievement test administrations beginning in 1990 and continuing through 1996. The availability of this data affords the unique opportunity to investigate the cumulative effects of teachers on student academic achievement over grade levels. In other words, does the influence of an effectiveness in facilitating academic growth for his/her students continue when these students advance to future grades?

Thus, the purpose of this research report is to present the preliminary results of estimates of cumulative teacher effects in mathematics from grades 3 to 5 using the data from two of Tennessee's larger metropolitan systems. This research in ongoing and will be expanded to cover a greater diversity of districts, grade levels, and academic subjects. A secondary objective was to decompose the data from teacher effectiveness groups in an attempt to understand which achievement levels of students were being offered opportunities to make satisfactory academic growth. The data were further decomposed to observe any differential responses over ethnic groups. |
| **Type of Research** | Quantitative |
| **Key themes or findings** | • "Differences in student achievement of 50 percentile points were observed as a result of teacher sequence after only three years.
• The effects of teachers on student achievement are both additive and cumulative with little evidence of compensatory effects.
• As teacher effectiveness increases, lower achieving |

	students are the first to benefit. The top quintile of teachers facilitate appropriate to excellent gains for students of all achievement levels.
	• Students of different ethnicities respond equivalently within the same quintile of teacher effectiveness" (1).
Methodology	Mathematics test score data for single cohort of students as they tested from Grades 3-5.

TEMPLATE	
Standard bibliographic information	Schmoker, M. (2004). Tipping point: From feckless reform to substantive instructional improvement. *Phi Delta Kappan 85* (6): 424-434.
Country of Origin	USA
Key words	Large-scale reform School improvement Instruction
Abstract	Even though we already know the best way to improve instruction, we persist in pursuing strategies that have repeatedly failed. Mr. Schmoker urges us to break free of our addiction to strategic planning and large-scale reform.
Type of Research	Discussion paper
Key themes or findings.	• Building professional learning communities is "the most promising strategy for sustained, substantive school improvement' [McLaughlin in Scmoker, p 424]. Professional learning communities are 'probably the most practical, affordable, and professionally dignifying route to better instruction in our schools' [p 430]. Suggestion also that this leads to gains in student outcomes [p 431]. Also promotes inquiry based approach. • Reform notoriously difficult, hard to achieve impacts on quality of teaching. Reform frequently guilty of 'committing to far more activities and initiatives than anyone could possibly monitor, much less successfully implement' [p 425] • Need clear and limited number of goals, e.g. 'simple, measurable statements linked to student assessments — not commitments to offer workshops or implement programs' [p 426] • Quotes Fullan 'we still do not know how to achieve comprehensive reform on a wide scale' [p 426] • 'the most productive thinking is continuous and simultaneous with action — that is, with teaching— as practitioners collaboratively implement, assess, and adjust instruction as it happens' [p 427] • Favours short-term focused but continual professional learning community based practice,' continuous succession of small, quick victories in vital areas' [p 427].It's the cumulative effect of these short-term activities that benefits. • Need to be cautious of time and effort demands on teachers. • Claims disappointing results from external whole-school reforms. Change is complex.
Methodology	Discussion paper

TEMPLATE	
Standard bibliographic information	Schwartz, A. E., L. Stiefel, and D. Y. Kim. (2004). The impact of school reform on student performance evidence. *Journal of Human Resources 39* (2): 500-522.
Country of Origin	USA – New York focus
Key words	School reform Experimental approach School size Student performance
Abstract	This paper evaluates the impact of the New York Networks for School Renewal Project, a whole school reform initiated by the Annenberg Foundation as part of a nationwide reform strategy. It uses data on students in randomly chosen control schools to estimate impacts on student achievement, using an intent-to-treat design. After controlling for student demographic, mobility, and school characteristics, the authors find positive impacts for students attending reform schools in the fourth Grade, mixed evidence for fifth Grade, and slight to no evidence for sixth Grade. On average, there is a small positive impact. The paper illustrates how relatively inexpensive administrative data can be used to evaluate education reforms.
Type of Research	Quantitative experimental approach – analysis of effects on experimental schools compared with control group of schools
Key themes or findings.	• Collaborative working across schools – aim to improve performance through reducing school size; increase or change resources; encourage parental and community involvement in student learning • There were positive impacts for students attending reform schools in the fourth Grade, mixed evidence for fifth Grade, and slight to no evidence for sixth Grade. On average, there is a small positive impact.
Methodology	Quantitative experimental approach – comparisons of control and experimental schools

<table>
<tr><td colspan="2" align="center">TEMPLATE</td></tr>
<tr><td>Standard bibliographic information</td><td>Sebastian, J., & Allensworth, E. (2012). The influence of principal leadership on classroom instruction and student learning: A study of mediated pathways to learning. Educational Administration Quarterly, 48(4), 626-663. doi: 10.1177/0013161X11436273</td></tr>
<tr><td>Country of Origin</td><td>USA</td></tr>
<tr><td>Key words</td><td>Instructional innovations
Classroom management
Learning
Academic achievement
School administration
Educational planning</td></tr>
<tr><td>Abstract</td><td>Purpose: This study examines the influence of principal leadership in high schools on classroom instruction and student achievement through key organizational factors, including professional capacity, parent–community ties, and the school's learning climate. It identifies paths through which leadership explains differences in achievement and instruction between schools and differences in instruction among teachers within the same school. Research Design: Multilevel structural equation modeling was used to examine the relationships among principal leadership, school organizational structures, classroom instruction, and student grades and test gains on ACT's Education Planning and Assessment System. Measures of principal leadership and school organizational structures were collected from teacher surveys administered to all high school teachers in Chicago Public Schools in the 2006–2007 school years. Findings: Within schools, variation in classroom instruction is associated with principal leadership through multiple pathways, the strongest of which is the quality of professional development and coherence of programs. Between schools, differences in instruction and student achievement are associated with principal leadership only via the learning climate. This suggests that in high schools, establishing a safe, college-focused climate may be the most important leadership function for promoting achievement school-wide. [ABSTRACT FROM PUBLISHER]</td></tr>
<tr><td>Type of Research</td><td>Quantitative</td></tr>
<tr><td>Key themes or findings.</td><td>Focussing on high schools looked at what effect principal leadership had on student achievement.
Within schools, variation in classroom instruction is associated with principal leadership through multiple pathways, the strongest of which is the quality of professional development and coherence of programs.
Principal leadership is important for influencing targeted individual teachers or subsets of teachers so their overall influence on student achievement across the whole school is small.
Leadership has small, positive indirect relationships with test scores (EPAS gains) as well as GPAs through the school learning climate.
Between schools, differences in instruction and student achievement are associated with principal leadership</td></tr>
</table>

	only via the learning climate, which then, they suggest allows for teacher impact on student achievement. The relationship is indirect and small.
	• Between schools, there are no significant direct or indirect paths of influence through interaction with parents, professional community, quality of programs, and professional development.
	• This suggests that in high schools, establishing a safe, college-focused climate may be the most important leadership function for promoting achievement school-wide.
	• There is a small negative direct effect of leadership on academic demands.
	• Certain aspects of professional community—teacher collaboration, socialization of new teachers, and reflective dialogue—are also related to academic demands, showing that those teachers who work more collaboratively with other teachers tend to have higher academic demands compared to other teachers in the school.
	• The limitations of using SEM and the omission of important variables.
	• The analysis is a secondary analysis of teacher's self-reported data from a wider survey.
	• Although researchers recognize the importance of classroom instruction, there is limited work and little consensus on how to incorporate instruction into studies of leadership.
Methodology	Multilevel structural equation modeling. Secondary analysis of teacher self-reported data and student achievement records.

TEMPLATE	
Standard bibliographic information	Sharpe, L. & Gopinathan, S. (2002). After effectiveness: New directions in the Singapore school system? *Journal of Education Policy 17* (2): 151-166. doi: 10.1080/02680930110116507.
Country of Origin	Singapore
Key words	Educational reform School system Education policy Macro societal change
Abstract	The educational reforms being enacted in Singapore can be considered exceptional in that they are being undertaken within a highly effective system. We explore these reforms using Brown and Lauder's ideal-typical analysis of 'neo-Fordist' and 'post-Fordist' models of national economic development. Singapore's reforms have been extensive, ranging from changes to early childhood education through to tertiary education. We examine the nature of state-market relations in education within the context of Singapore's 'soft authoritarian' political culture and assess the chances of success of the reforms.
Type of Research	Qualitative evaluation of case
Key themes or findings.	- The Singapore Economic Development Board in its Industry 21 document sets out key goals, e.g. ' `to establish Singapore as a world-class education hub, internationally renowned for its intellectual capital and creative energy'. Example of system making significant changes (move away from an `efficiency-driven', i.e. centralized, standardized, top-down system to an `ability-driven' system i.e. produce creative, thinking and autonomous students) at time when receiving attention for high standards in international surveys, e.g. TIMSS. - There has been decentralization of the education system but also an increase in centralized activity by the MOE; e.g. the reforms are clearly state initiated. - Key changes include: changes to the way schools are to be managed and inspected, inclusion of a wider range of measures in school performance tables, e.g. physical fitness, new self-appraisal model, changes to ITE, new programme for the training of school leaders, which involves sharing sessions by chief executives and principal officers of selected business corporations and trips abroad to study exemplary schools - Looked at two Singapore schools where principals were among the first to take advantage of autonomy allowed by decentralization. Have seen positive improvements in student grades and continuation to post-secondary education.
Methodology	Qualitative evaluation of case

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	was school SES
Methodology	Multiple regression analysis of leadership questionnaires, instructional management scales and student achievement variables.

TEMPLATE	
Standard bibliographic information	Sinnema, C., Sewell, A., & Milligan, A. (2011). Evidence-informed collaborative inquiry for improving teaching and learning. *Asia-Pacific Journal of Teacher Education, 39*(3), 247-261. doi: 10.1080/1359866X.2011.597050
Country of Origin	NZ
Key words	Collaborative Inquiry; Outcomes-Linked Evidence; Social Studies
Abstract	Evidence-informed collaborative inquiry is central to the improvement of teaching and learning for diverse students. This research investigated the impact of a professional learning intervention on the improvement of social studies teachers' practice, and their students' learning. Data were gathered from 26 primary and secondary teachers before, during, and after a year-long research and development project. Analysis of interviews, observation notes, teachers' reports, and reflective journals revealed how *both* engagement with outcomes-linked evidence and collaborative inquiry supported and challenged teachers to improve their classroom practice, and positively impacted on a range of outcomes for their learners. We illustrate this through two vignettes of teachers' inquiries.
Type of Research	Qualitative
Key themes or findings.	• "The shifts for learners were less apparent than shifts in teachers' pedagogies, but the degree to which this can be stated definitively is constrained by the nature of teacher-reported evidence" (257). • "the use of evidence-informed collaborative inquiry appears a highly critical factor in shifting teacher practice in ways that can impact positively on their students" (257). • "a significant finding relates to those teachers who made the most compelling shifts in terms of outcomes for Maori and Pasifika students" (257). • "most teachers reported that their engagement with research evidence supported them in making shifts, *especially* when that research linked teaching to student outcomes" (257). • "The findings of this research lead us to the view that evidence-informed collaborative inquiry is a powerful approach. By contrast, discrete, decontextualised and purely instrumental approaches to the use of evidence ignore the greater gains that might be made by locating evidence use in the context of collaborative partnerships" (258).
Methodology	Case study

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Standard bibliographic information	Skourdoumbis, A., & Gale, T. (2013). Classroom teacher effectiveness research: A conceptual critique. *British Educational Research Journal, 39*(5), 892-906. doi: 10.1002/berj.3008
Country of Origin	AU
Key words	N/A
Abstract	Teacher effectiveness research now informs the rationale of much Australian education policy aimed at redressing student under-achievement. The approach draws a 'straight line' between teacher practice and student outcomes, 'controlling' for and ultimately dismissive of other possible influences. The paper calls into question this conception of teaching–learning relations, particularly the extent to which teaching practice can be reasonably quantified and improvements in students' academic achievement can be solely attributed to and/or sole responsibility placed on the pedagogic strategies employed by teachers. Drawing on the theoretical resources of Foucault and Bourdieu, the paper argues further that teacher effectiveness research is flawed in both means and ends. It concludes that in its ranking of student and teacher performance, such research actually works against the purposes of education; specifically, authentic teaching and learning.
Type of Research	Critical
Key themes or findings.	• "In teacher effectiveness research, the subjugated teacher symbolically and emblematically constrained through models of teacher effectiveness, becomes the focus of attention. Qualifying explications of likely and possible causes and influences of student performance and achievement are elided" (903). • "the evaluation of learning outcomes is desirable if it ascertains the depth of authentic and active learning based primarily on affirmative and substantial educational experiences" (903). • "any declarative evaluation of learning outcomes should propound and endorse affective teacher practice, a missing component of current evaluative analyses of teacher performance and student learning outcomes" (903). • "Indeed, it is perhaps the development of the non-cognitive skill sets of students that much of contemporary metricated forms of teacher effectiveness research cannot measure or speak to" (903). • "The need to embrace educational interventions that complement the modern era is a decisive and basic flaw and limitation of positivist classroom teacher effectiveness research" (904). • "Teacher effectiveness research in its current forms functions to undermine and subvert [teaching strategies that cater for the diverse needs of students underpinned

	by the coherent organisation of schools]" (904).
Methodology	Literature Review

TEMPLATE	
Standard bibliographic information	Slater, H., Davies, N. M., & Burgess, S. (2012). Do teachers matter? Measuring the variation in teacher effectiveness in England. *Oxford Bulletin of Economics & Statistics, 75*(4), 629-645. doi: 10.1111/j.1468-0084.2011.00666.x/abstract
Country of Origin	UK
Key words	Teachers Measurement
Abstract	Using a unique primary dataset for the UK, we estimate the effect of individual teachers on student outcomes, and the variability in teacher quality. This links 7,305 pupils to the individual teachers who taught them, in each of their compulsory subjects in the high-stakes exams at age 16. We use point-in-time fixed effects and prior attainment to control for pupil heterogeneity. We find considerable variability in teacher effectiveness, a little higher than the estimates found in the few US studies. We also corroborate recent findings that observed teachers' characteristics explain very little of the differences in estimated teacher effectiveness.
Type of Research	Quantitative
Key themes or findings.	• "We have shown that teachers matter a great deal: having a one-standard deviation better teacher raises the test score by 27% of a standard deviation" (643). • "showing the importance of teacher quality for the high-stakes GCSE outcomes means that family background is not everything" (644). • "We have shown that the observed characteristics of teachers in our data do not predict our measure of their quality well." (643).
Methodology	Regression analysis

	TEMPLATE	
Standard bibliographic information	Sleegers, P., den Brok, P., Verbiest, E., Moolenaar, N. M., & Daly, A. J. (2013). Toward conceptual clarity: A multidimensional, multilevel model of professional learning communities in Dutch elementary schools. *The Elementary School Journal, 114*(1), 118-137.
Country of Origin	Netherlands
Key words	Learning communities -- Research Elementary schools -- Research Elementary schools -- Netherlands Netherlands
Abstract	Despite the popularity of professional learning communities (PLCs) among researchers, practitioners, and educational policy makers, studies on PLCs differ significantly on the dimensions and capacities used to conceptualize them. Further, the interrelatedness of different dimensions and capacities within PLCs is not often well conceived nor examined in terms of learning at multiple (individual, team, school) levels. In an effort to address this gap, this study assesses the multidimensional, multilevel nature of PLCs using data from 992 teachers from 76 Dutch elementary schools. Findings indicate that professional learning communities within elementary schools can be conceptualized and assessed by 3 strongly interconnected capacities that are represented by 8 underlying dimensions. This conceptual structure empirically emerged as equivalent at both the teacher and school levels. By providing increased insight into the multidimensional, multilevel nature of the concept of PLCs, this article aims to add conceptual clarity to the study of PLCs in elementary education.
Type of Research	Quantitative
Key themes or findings.	- Identified and tested for building of 3 capacities in PLCs: organizational, personal, & interpersonal. "Our results showed that shared teacher perceptions within a school (school-level perceptions of PLCs) as well as individual teachers' perceptions within a school (teacher-level perceptions of PLCs) can be represented by three strongly interconnected capacities (personal, interpersonal, and organizational capacity)" (131). "Although our findings offer an important contribution to a deeper understanding of the multidimensional, multilevel nature of the concept of PLCs, they do not inform us about ways to solve one of the key conceptual and empirical challenges that face PLCs—the notion of what constitutes 'community' (132).
Methodology	Multi-level factor analysis

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Standard bibliographic information	Soehner, D., & Ryan, T. (2011). The interdependence of principal school leadership and student achievement. *Scholar-Practitioner Quarterly, 5*(3), 274-288.
Country of Origin	Canada
Key words	Teacher Effectiveness Academic Achievement Instructional Leadership Principals Correlation Predictor Variables Administrator Behavior Administrator Effectiveness Administrator Role Ontario
Abstract	This review illuminated principal school leadership as a variable that impacted achievement. The principal as school leader and manager was explored because these roles were thought to impact student achievement both directly and indirectly. Specific principal leadership behaviors and principal effectiveness were explored as variables potentially impacting both teachers and student achievement. Leadership was considered a variable that could improve teacher efficacy although it could also diminish this capacity when school leadership was ineffective.
Type of Research	Qualitative literature review.
Key themes or findings.	• Concludes that principal leadership & principal effectiveness impact indirectly on student achievement. • Principals are held accountable for student achievement although most studies show that they have little direct effect on it. • The view that principals have a direct effect has largely been abandoned and replaced with a focus on looking for the indirect effect. • Interestingly, they highlight the importance of personal professional development by teachers in addition to those that the school encourages/requires them to go on. This includes doing extra qualification, reading scholarly articles or action research/professional inquiry. • They highlight the importance of demonstrating a democratic approach to managing and leading the school for leaders to be effective. • Also the importance of teachers' self-efficacy in student achievement and the important role that leaders have in teachers' self-efficacy. • The Principal is the key player when fostering trust amongst staff. Effective principals expect and help teachers plan and implement effect and engaging lessons.
Methodology	Literature review

<table>
<tr><td colspan="2" align="center">**TEMPLATE**</td></tr>
<tr><td>**Standard bibliographic information**</td><td>Southworth, G. (2000). How primary schools learn. *Research Papers in Education* 15 (3): 275-291. doi: 10.1080/02671520050128768.</td></tr>
<tr><td>**Country of Origin**</td><td>UK</td></tr>
<tr><td>**Key words**</td><td>primary schools; learning organizations; collaborative cultures; self-evaluating schools; staff development</td></tr>
<tr><td>**Abstract**</td><td>The idea that schools should aspire to be learning organizations has received considerable attention in recent years. However, the gap between aspiration and practice remains wide. Drawing on research conducted over the last decade into how teachers do (and do not) work together, the article addresses issues and obstacles that will need to be tackled if primary schools are to develop along these lines. It suggests that much greater attention needs to be given to the circumstances under which teachers work collaboratively. Drawing on recent research on how knowledge-creating companies are organized, the argument is advanced that some refocusing is required. Particular concern needs to be paid to ways of creating the conditions for learning and teaching schools to emerge and the stages they may need to go through to reach them. Such ideas pose considerable challenges for schools currently working with fixed hierarchies and organizational assumptions.</td></tr>
<tr><td>**Type of Research**</td><td>Synthesis of quantitative and qualitative studies</td></tr>
<tr><td>**Key themes or findings.**</td><td>

- Six projects: 1) 'Primary School Staff Relationships (PSSR) project. This study explored how staff in five primary schools went about working together' [p 276]. 'The research highlighted the importance of leadership and showed how implicit and explicit negotiations, compromises and settlements between individuals and sub-groups were part and parcel of the means by which collaborative cultures were established and sustained' [p276-277] 'The culture of collaboration we identified rested on four interacting beliefs: first, individuals should be valued; second, because individuals are inseparable from the group of which they are a part, groups too should be fostered and valued; third and fourth, the most effective way of promoting these values is by developing a sense of mutual security and openness' [p 277].
- Project 2) whole school curriculum development (WSCD) – different sample of schools (no number given) 'teachers' professional learning lies at the heart of school improvement' [p 277] 'We now believe that the existence of a collaborative culture is a necessary condition for whole school development because it creates trust, security and openness. Yet, these are not sufficient conditions for growth. For growth to take place, at the level of either the individual or the school, teachers must also be constantly learning' [Nias et al., 1992; pp. 247-28) p 277-278].

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	- Project 3: 'Improving the Quality of Education for All (IQEA) project. This was a school improvement project which simultaneously supported and investigated how staff improved pupils' achievements' [p 278]. Outcome not mentioned.
	- Project 4: IQEA project team led to a fourth project, the Essex Primary Improvement (EPSI) Research and Development programme: 'The main findings were, first, that a clear and sustained focus about what the school was tackling was a vital ingredient in improving schools. Second, establishing a focus and checking progress towards it required a variety of systems and processes to be put in place in the schools. These systems were those associated with school self-evaluation namely auditing, monitoring and data analysis. Third, improvement efforts across the 22 schools were variegated. While there were a number of common strands, there were many differences in how staff went about trying to improve their levels of performance. Fourth, all the schools were characterized by a strong concern to improve the quality of pupils' learning and to raise their levels of achievement. However, the attention paid to pupils' learning was not accompanied by an equally strong interest in pedagogy' [p 279].
	- Project 5: 'a small-scale evaluation of school improvement work undertaken for Birmingham LEA in a sample of primary schools' [p 280] 'auditing had helped them to focus on pupils' learning needs. Joint planning and review meetings enabled them to share teaching strategies and tactics with colleagues. The interventions they used made them focus on an aspect of their teaching and develop their teaching repertoires. Using pupil data and benchmarking information challenged teachers' expectations either about pupils' attainments or their rates of progress'. [p 280] 'Planned `intensive interventions' were a feature of the schools' improvement efforts. It was the teachers' targeted actions which brought about the pupils' learning gains and enhanced the quality of teaching'. [p 280]
	- 'staff took as their starting point pupils' achievements and looked at how these could be improved by addressing identified learning needs. They did not, therefore, begin school improvement from outside the classroom and, somehow, try to work towards classroom improvements' [p 280]
	- Project 6: 'University of Reading's School Improvement and Leadership Centre. This project explored how 16 primary schools, with track records of year-on-year improvements in pupil learning outcomes in literacy and numeracy' [p 280]. 'Three sets of process factors were identified from the respondents' testimonies as being strongly associated with their schools' improvements: educational leadership; staff relationships; and a school-wide emphasis on teaching and learning (Southworth and Lee-Corbin, 1999)' [p 281]
	- 'Taken together, these six studies suggest that there is a high degree of correspondence between, on the one hand, teacher and staff development practices and, on the other, the institution's capacity to grow and improve.

	One of the links between these two phenomena is the existence of a professional culture which supports strong professional ties between teachers'. [p 281]
	• 'Given that certain workplace conditions are present, teachers focusing on pupils' learning appear to benefit professionally from this activity. Yet, it cannot be assumed that this, in turn, leads to any shared discussion or developmental concern about pedagogy. There is no guaranteed link between looking at learning and enhancing the quality of teaching. There are signs of collateral advantages for some individuals, but, so far, there is no unequivocal connection between evidence-informed, work-based professional learning and attention to pedagogy, even when there are strong signs of collaborative cultures being in place' [p 282].
	• 'Findings from studies resonate with literature but 'It should also be acknowledged, though, that there is little explicit mention of an evidence-informed approach to school improvement, or to professional learning for that matter' [p 283]. 'Fielding's work is helpful for two reasons. First, he provides a welcome antidote to the uncritical adoption of the notion of learning schools within the educational scene. Second, because as the 1990s have progressed, there has been increasing use of the notion of `learning community' without any attendant scrutiny of the differences between organizations and communities. Nevertheless, interest in learning organizations, communities and schools continues unabated. Fullan (1999) has returned to the topic in his recent book. He repeats his belief that collaborative schools or, as some prefer, professional learning communities are essential for success (p. 30). He also cites the work of Newmann and Wehlage (1995) and their associates as providing the most explicit evidence yet on the relationship between professional community and student performance (pp. 30± 1). Essentially their work suggests that teachers as a group and sub-groups develop what we in England might call an evidence-informed analysis of pupil achievements and progress, relate this to how they are teaching and make continuous refinements individually and with each other. Yet, interesting as this study is, it does not help us to understand how such schools come to be like that'. [p 285]
	• 'Certainly the empirical evidence from the primary school projects reviewed here points to increasing attention being paid to pupils' learning, including sometimes asking the children for their views about their learning. However, there is much less of an emphasis on learning about teaching' [p 287]
	• 'When teachers examine pupils' learning outcomes and progress they are very likely to reflect on their teaching, but this is more likely to be a kind of tacit knowledge development. In other words, it is not that teachers do not learn about their teaching, it is that there is too little explicit knowledge developed which is then accessible for others to benefit from' [pp 287-288] need to become learning schools and teaching schools.
Methodology	School data, interviews, observations

	TEMPLATE
Standard bibliographic information	Stone-Johnson, C. (2014). Not cut out to be an administrator: Generations, change, and the career transition from teacher to principal. *Education & Urban Society 46* (5): 606-625. doi: 10.1177/0013124512458120.
Country of Origin	USA
Key words	Principals Teachers Career pathways Education Transition Administrator
Abstract	This article, based on qualitative interviews conducted between 2007-2008 with 12 middle-career educators in the greater Boston area in Massachusetts, details teachers' career and leadership aspirations in a context of educational change. The findings suggest that teachers who presently are in midcareer struggle with the move toward the principalship, but that generational differences, not the changed educational context, more heavily impact their lack of attraction to the job. Using generational theory, this article offers a critique of the available literature on teachers' career paths, the principal shortage, generational differences, and the quite different work and leadership expectations of the next generation of school leaders.
Type of Research	Qualitative
Key themes or findings.	• 'In the past, the school leadership force relied on experienced teachers moving from the classroom into the principalship to fill its ranks (Blount, 1999; Lortie, 2009). Many teachers, however, are expressing reluctance to move out of classrooms and into the main office (Stone-Johnson, 2009a, 2009b; Howley et al., 2005; Jordan et al., 1994). This is particularly true of middle career teachers, those who have been in the classroom at least 7 years (Stone-Johnson, 2009a, 2009b). Research suggests that the primary reason for this reluctance relates to the job itself and the ways it has changed that make it unattractive to potential new school leaders: many teachers perceive that the role of the principal takes educators out of the classroom and thus away from students (Donaldson, 2007); that it involves too little pay, costly and irrelevant requirements, too many pressures, "too many hats to wear," not enough time, and too little authority (Gilman & Lanman-Givens, 2001, pp. 72-73; Yerkes & Guaglianone, 1998). In the current era since the passage of No Child Left Behind, pressure around standardized test scores has become an additional reason (Bass, 2006). This concern is heightened in urban districts that are more likely to suffer the ill effects of such testing regimes, as it is more often than not within urban districts that resources are scarce, curriculum more tightly scripted and teachers less prepared (Giles, 2007; Lee, 2003)' [607].

Methodology	12 semistructured interviews

TEMPLATE	
Standard bibliographic information	Stoll, L. (1998). School culture. *School Improvement Network's Bulletin 9*: 9-14.
Country of Origin	UK
Key words	School improvement Reform School culture
Abstract	N/A
Type of Research	Research notes
Key themes or findings.	• Compares external versus internal school improvement reform efforts • School culture is hard to change • 'It [change] requires an understanding of and respect for the different meanings and interpretations people bring to educational initiatives, and work to develop shared meanings underpinned by norms that will promote sustainable school improvement' [p 4].
Methodology	N/A

<table>
<tr><td colspan="2" align="center">**TEMPLATE**</td></tr>
<tr><td>**Standard bibliographic information**</td><td>Stronge, J. H., Ward, T. J., Tucker, P. D., & Hindman, J. L. (2007). What is the relationship between teacher quality and student achievement? An exploratory study. *Journal of Personnel Evaluation in Education, 20*(3-4), 165-184. doi: 10.1007/s11092-008-9053-z</td></tr>
<tr><td>**Country of Origin**</td><td>US</td></tr>
<tr><td>**Key words**</td><td>Teacher quality
Teacher effectiveness
Ineffective teacher
Effective teacher
Student achievement
Questioning Student
Learning gains</td></tr>
<tr><td>**Abstract**</td><td>The major purpose of the study was to examine what constitutes effective teaching as defined by measured increases in student learning with a focus on the instructional behaviors and practices. Ordinary least squares (OLS) regression analyses and hierarchical linear modeling (HLM) was used to identify teacher effectiveness levels while controlling for student-level and class/school-level variables. Actual achievement of 1936 third grade students in 85 classrooms on the Virginia Standards of Learning (SOL) Assessment results in English, Mathematics, Social Studies, and Science were compared to expected achievement resulting in an indicator of teacher effectiveness. Based on student learning gains, teachers were divided into quartiles. The statistical modeling approach facilitated comparisons of outcomes that were free of influences of identified extraneous variables. A double blind design was selected for in-depth cross-case studies with teachers from the highest quartile representing highly effective teachers (N = 5) and the lowest quartile the less effective teachers (N = 6). The observation team assessed the third grade teachers (N = 11) based 20 categories within four domains: instruction, student assessment, classroom management, and personal qualities. Key findings indicate that effective teachers scored higher across the four domains. Additionally, effective teachers tended to ask a greater number of higher level (e.g., analysis) questions and had fewer incidences of off-task behaviour than ineffective teachers. The exploratory study identified instructional behaviors and practices of teachers that result in higher student learning gains.</td></tr>
<tr><td>**Type of Research**</td><td>Quantitative</td></tr>
<tr><td>**Key themes or findings.**</td><td>Looked to find what the characteristics & behaviours of effective teachers were. Found them to be
   • "(1) differentiation and complexity of instructional strategies, (2) questioning practices, and (3) level of disruptive student behaviour. Consequently, the study reinforces the link between student learning and these teacher behaviors."
   • "Differentiation and complexity of instruction. The</td></tr>
</table>

	effective teachers in this study demonstrated that they understood the need to alter the lesson presentation and materials in order to promote student learning given that a one-size fits all approach typically is not the best fit. • Questioning. The effective and less effective teachers asked comparable numbers of lower-level questions; the distinction between the two groups occurred with effective teachers asking a far greater number of higher level questions (approximately seven times more). • Disruptive student behaviour. Effective teachers in the study had a disruptive behaviour incident about once every 2 h whereas the ineffective teachers in the case analyses had a disruptive event approximately every 12 min."-from section on Characteristics and Behaviors of Effective Teachers
Methodology	Regression analysis

<table>
<tr><td colspan="2" align="center">**TEMPLATE**</td></tr>
<tr><td>**Standard bibliographic information**</td><td>Stronge, J. H., Ward, T. J., & Grant, L. W. (2011). What makes good teachers good?: A cross-case analysis of the connection between teacher effectiveness and student achievement. *Journal of Teacher Education, 62*(4), 339-355. doi: 10.1177/0022487111404241</td></tr>
<tr><td>**Country of Origin**</td><td>US</td></tr>
<tr><td>**Key words**</td><td>Teacher Effectiveness,
Teacher Quality,
Value-Added Assessment,
Classroom Management,
Instructional Practices,
Student Achievement,
Student Learning</td></tr>
<tr><td>**Abstract**</td><td>This study examined classroom practices of effective versus less effective teachers (based on student achievement gain scores in reading and mathematics). In Phase I of the study, hierarchical linear modeling was used to assess the teacher effectiveness of 307 fifth-grade teachers in terms of student learning gains. In Phase II, 32 teachers (17 top quartile and 15 bottom quartile) participated in an in-depth cross-case analysis of their instructional and classroom management practices. Classroom observation findings (Phase II) were compared with teacher effectiveness data (Phase I) to determine the impact of selected teacher behaviors on the teachers' overall effectiveness drawn from a single year of value-added data.</td></tr>
<tr><td>**Type of Research**</td><td>Quantitative</td></tr>
<tr><td>**Key themes or findings.**</td><td>"A central purpose of the study was to determine if the teaching practices of effective (top-quartile) and less effective (bottom-quartile) teachers differed in any discernable ways" (347).
"The results of the current study support this statement in that the differences in student achievement in mathematics and reading for effective teachers and less effective teachers were more than 30 percentile points" (348).
"the disruptive behavior of students in the top- and bottom-quartile classes was significantly different. On average, bottom-quartile teachers had disruptions in their classrooms every 20 minutes, whereas top-quartile teachers had disruptions once an hour" (348).
"This study found that top-quartile teachers had fewer classroom disruptions, better classroom management skills, and better relationships with their students than did bottom quartile teachers" (349).
"Although we did not find significant differences between effective and ineffective teachers on the dimensions of instructional delivery and assessment, in no way are we suggesting that these teacher skill areas are unimportant" (350).
"The common denominator in school improvement and student success *is* the teacher" (352).</td></tr>
<tr><td>**Methodology**</td><td>Regression-based Hierarchical Linear Modelling</td></tr>
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<tr><td colspan="2" align="center">TEMPLATE</td></tr>
<tr><td>Standard bibliographic information</td><td>Sun, J., & Leithwood, K. (2012). Transformational school leadership effects on student achievement. Leadership and Policy in Schools, 11(4), 418-451. doi: 10.1080/15700763.2012.681001</td></tr>
<tr><td>Country of Origin</td><td>USA & Canada</td></tr>
<tr><td>Key words</td><td>Effect size, meta-analysis, review, school leadership, transformational leadership</td></tr>
<tr><td>Abstract</td><td>Based on a synthesis of unpublished transformational school leadership (TSL) research completed during the last 14 years, this study enquired into the nature of TSL and its effects on student achievement using review methods including standard meta-analysis and vote-counting techniques. Results identify a wider range of TSL practices than typically has been measured in previous TSL research. Results also suggest that TSL has small but significant effects on student achievement, some TSL practices are especially powerful explanations of these effects, and a large handful of variables both moderate and mediate TSL effects on students.</td></tr>
<tr><td>Type of Research</td><td>Quantitative: Meta Analysis</td></tr>
<tr><td>Key themes or findings.</td><td>Adopts a broader view of transformational leadership to acknowledge leader's organizational contexts.
Results identify a wider range of TSL practices than typically has been measured in previous TSL research. Results also suggest that TSL has small but significant effects on student achievement, some TSL practices are especially powerful explanations of these effects, and a large handful of variables both moderate and mediate TSL effects on students.
"Findings show that Building Collaborative Structures and Providing Individualized Support are the most influential sets of practices; their direct effects are significant but small with weighted means r ranging from .15 to .17)." (p.439)
See also Leithwood and Sun (2012)</td></tr>
<tr><td>Methodology</td><td>Meta Analysis of unpublished thesis</td></tr>
</table>

TEMPLATE	
Standard bibliographic information	Sweetland, J. (2008). "Making dissatisfaction divine: An inspired approach to whole-school reform." *International Journal of Whole Schooling* 4 (1): 13-21.
Country of Origin	US
Key words	Change Whole school reform Professional community School improvement
Abstract	Building community and supporting learning are two principles of Whole Schooling. This article describes how Center for Inspired Teaching, a nonprofit educational reform organization, uses these principles to foster professional learning communities in public schools in Washington, DC. When change agents approach disengaged, disempowered faculties with respect and empathy, teachers are more likely to embrace school improvement efforts and involve themselves in changes. Specific suggestions for breaking through initial resistance to change are discussed.
Type of Research	Reflections on The Inspired School model, implemented in a half-dozen public schools in Washington DC.
Key themes or findings.	• Inspired School Model implemented in schools in Washington DC designed to include time for professional learning during the school day. Duration of 3-5 years with goal of becoming self-sustaining. • 'establishing a professional learning community requires serious and sustained efforts to build teachers' sense of personal and collective agency'. [14]. • Need for skilled facilitators for teachers' reflective practice. • For substantive and sustainable change, teachers need to be centrally involved in change process.
Methodology	Qualitative reflections on project.

	TEMPLATE	
Standard bibliographic information	ten Bruggencate, G., Luyten, H., Scheerens, J., & Sleegers, P. (2012). Modeling the Influence of School Leaders on Student Achievement: How Can School Leaders Make a Difference? *Educational Administration Quarterly, 48*(4), 699-732. doi: 10.1177/0013161X11436272	
Country of Origin	Netherlands	
Key words	Structural Equation Models Academic Achievement School Effectiveness School Organization Foreign Countries Instructional Leadership Influences Principals Secondary Schools Student Promotion Classroom Techniques Teaching Methods Administrator Role Leadership Responsibility Leadership Styles Secondary School Students Secondary School Teachers School Culture Learner Engagement Netherlands	
Abstract	Purpose: The aim of this study was to examine the means by which principals achieve an impact on student achievement. Research Design: Through the application of structural equation modeling, a mediated-effects model for school leadership was tested, using data from 97 secondary schools in the Netherlands. Findings: The results showed a small positive effect of school leadership on the mean promotion rate in schools, mediated by a development-oriented school organization and favorable classroom practices. The promotion rate may be considered as a measure of efficiency. No indications of direct positive effects of school leader activities on student achievement were found. This might be the result of the relatively small differences in overall student achievement and school leader behavior between the schools studied. Conclusions: The results underline the important role school leaders play in school effectiveness and offer valuable insight in how school leaders actually can make a difference. School leaders were found to have a strong influence on development orientation in schools, which shows similarities with the idea of the "learning organization." This study points to the importance of school context. The results show that contextual variables have considerable effects on several variables in the model.	
Type of Research	Quantitative:	
Key themes or findings.	• No indications of direct positive effects of school leader activities on student achievement were found. • The results underline the important role school leaders	

	play in school effectiveness and offer valuable insight in how school leaders actually can make a difference.
	• School leaders were found to have a strong influence on development orientation in schools, which shows similarities with the idea of the "learning organization."
	• This study points to the importance of school context.
	• The results show that contextual variables have considerable effects on several variables in the model.
Methodology	Structural equation modeling.

TEMPLATE	
Standard bibliographic information	Timperley, H. S., Parr, J. M., & Bertanees, C. (2009). Promoting professional inquiry for improved outcomes for students in New Zealand. *Professional Development in Education, 35*(2), 227-245. doi: 10.1080/13674580802550094
Country of Origin	NZ
Key words	N/A
Abstract	Increasing attention is being paid to professional development as a way to improve outcomes for students but its promise has not always been realised. Broadly speaking, approaches to professional development have either focused on developing better prescriptions for teaching practice or on collaborative reflective inquiry into practice. Neither approach has been particularly effective in achieving substantive improvement in student outcomes. In this paper, a third approach is described, one associated with substantive gains in student achievement on reading comprehension and the deeper features of writing in New Zealand. In essence, teachers are supported to identify their professional learning needs through an analysis of their students-learning needs, to build their pedagogical content knowledge in sufficient depth to address their students-learning needs and then to check both formally and informally whether their changed teaching practices are having the desired impact.
Type of Research	Mixed Methods
Key themes or findings.	• "Promoting engagement in teacher communities and collaborative inquiry processes may be more respectful of professionalism but there is very weak evidence of impact on valued student outcomes" (240). • "The approach we have described in this paper is different from either the prescriptive or typical collaborative inquiry approaches in that it focuses professional inquiry on student learning needs from which teaching learning needs are identified. Although detail is provided for one illustrative case only, the overall approach had a significant impact in over 218 schools over two cohorts. By linking inquiry into student learning to teacher learning, teachers can gain an understanding of what it is they need to learn to improve outcomes for students and have a compelling reason to engage" (240). • "Developing the needed depth of pedagogical content knowledge and inquiry skills takes time. The project described in this paper took place over two years. Other syntheses of the professional development literature in mathematics and science (Scher & O'Reilly, 2007) and across curricula (Timperley *et al*., 2008) have demonstrated that at least a year is usually required to achieve substantive outcomes for students" (241). • "Another challenge such an approach to professional

	development is that it cannot rely on a program for which content and activities are sequenced in advance of knowing what it is the teachers need to learn" (241).
	• "The essence of the approach is that teachers are supported to identify their professional learning needs through an analysis of their students' learning needs, to build their pedagogical content knowledge in sufficient depth to address their students' learning needs and then to check both formally and informally whether their changed teaching practices are having the desired impact. To be successful, teachers must see the professional learning opportunity as a learning journey in which they are fully and respectfully engaged" (242).
Methodology	Experimental intervention/Action research (218 primary schools, involving 2440 teachers).

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<tr><td colspan="2" align="center">**TEMPLATE**</td></tr>
<tr>
<td>**Standard bibliographic information**</td>
<td>Timperley, H., & Alton-Lee, A. (2008). Reframing teacher professional learning: An alternative policy approach to strengthening valued outcomes for diverse learners. *Review of research in education, 32*(1), 328-369. doi: 10.3102/0091732X07308968</td>
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<tr>
<td>**Country of Origin**</td>
<td>NZ</td>
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<tr>
<td>**Key words**</td>
<td>N/A</td>
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<tr>
<td>**Abstract**</td>
<td>This chapter engages in the debate about what counts as professional knowledge from the perspective of improving outcomes for diverse learners. We begin by highlighting the importance of assumptions about appropriate roles for teachers and how those assumptions have shaped the debate about what teachers need to know. Then we consider some myths and evidence about teacher agency that have contributed to a recent international shift in policy attention to the importance of teacher knowledge and, more particularly, how to develop teacher agency and capability.</td>
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<tr>
<td>**Type of Research**</td>
<td>Best Evidence Synthesis</td>
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<tr>
<td>**Key themes or findings.**</td>
<td>

BES identifies a 3-tier inquiry process that proceeds along 1) Identifying student learning needs; 2) Identifying teacher learning needs; 3) Identifying effectiveness of action from inquiries A & B. (See Figure 3, p. 354).
"In many of the effective interventions, there was a sense of purpose for engagement, typically through identifying a problem to be solved" (351).
"Assuming congruence between existing cognitions and new knowledge, even when teachers seek new knowledge, can be a risky assumption that appears to be made by many of those providing professional development for teachers. The problem of dissonance is rarely mentioned" (351-52).
"continued engagement was motivated by teachers' and leaders' continuing to take responsibility for identified problems with student outcomes together with the belief they had the capability to solve them" (353).
"The findings of this BES signal also the need for attention from policy to the time needed to allow the multiple opportunities for professionals to learn new knowledge and skills if deep change is to occur" (360).

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<td>**Methodology**</td>
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TEMPLATE	
Standard bibliographic information	Valentine, J. W., & Prater, M. (2011). Instructional, transformational, and managerial leadership and student achievement: High school principals make a difference. *NASSP Bulletin, 95*(1), 5-30. doi: 10.1177/0192636511404062
Country of Origin	USA
Key words	principal, leadership, achievement
Abstract	This statewide study examined the relationships between principal managerial, instructional, and transformational leadership and student achievement in public high schools. Differences in student achievement were found when schools were grouped according to principal leadership factors. Principal leadership behaviors promoting instructional and curriculum improvement were linked to achievement. Within transformational leadership, the principal's ability to identify a vision and provide an appropriate model had the greatest relationship to achievement. Principal educational level also positively correlated with each leadership factor.
Type of Research	Quantitative
Key themes or findings.	- Looked at high schools only. - The level of education a principal has is related to their perceived competence. - Schools whose principals demonstrated the highest levels of competence (Quartile 4) had achievement scores significantly higher than schools whose principal demonstrated levels of competence placing them in the lowest quartile (Quartile 1). - Principals perceived to be more competent influenced student achievement whatever the school/ community contexts. - All principal leadership functions in some way linked to student achievement. Both instructional leadership & transformative leadership were necessary.
Methodology	Quantitative

TEMPLATE	
Standard bibliographic information	Välijärvi, J., Linnakylä, P., Kupair, P., Reinikainen, P., & Arffman, I. (2000). *The Finnish success in PISA-and some reasons behind it*. Jyväskylä: Institute of Educational Research: University of Jyväskylä.
Country of Origin	Finland
Key words	Finland PISA International surveys Education
Abstract	N/A
Type of Research	Discussion
Key themes or findings.	• The Finnish report concludes that '…there is no single key factor behind Finland's' successful performance in PISA. Rather, Finland's high achievement seems to be attributable to a whole network of interrelated factors…' (p 46). • Recommends focus on 'how we can continue developing … for the benefit of society and the young responsible for its future' (p 4)
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Varjo, J., Hannu, S., & Risto, R. (2013). Finland's PISA Results: An analysis of dynamics in education politics. In H. D. Meyer & A. Benavot (Eds.), *PISA, Power, and Policy: The Emergence of Global Education Governance* (pp. 51-76). Oxford, England: Symposium Books.
Country of Origin	Finland
Key words	Finland PISA International surveys Education Global rankings
Abstract	N/A
Type of Research	Discussion
Key themes or findings.	• Provides an analysis of the Finnish PISA results • What works in one country and culture may not work in another • Among last countries in Europe to develop compulsory education system [p 57] • Lack of national testing • Lack of support for school ranking lists • Need to understand policy context of country
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Wallace, M. R. (2009). Making sense of the links: Professional development, teacher practices, and student achievement. *The Teachers College Record, 111*(2), 573-596.
Country of Origin	US
Key words	N/A
Abstract	Background/Context: Although there is substantial evidence that high-quality professional development can improve teacher practices, less evidence exists for the effects of teacher professional development on intermediate outcomes, such as teacher practices, and their ultimate effects on K–12 student achievement. This work links professional development through teacher practices to examine their separate and combined effects on student achievement. Research Questions: When teacher characteristics and teacher preparation program are controlled, what are the effects of teacher professional development on (1) teacher practices in mathematics and reading, and (2) subsequent student mathematics and reading achieve- ment? Population: The study uses students (n = 1,550–6,408) nested within teachers (n = 168–1,029) from six existing databases, two from the 2000 Beginning Teacher Preparation Survey conducted in Connecticut and Tennessee, and four from the National Assessment of Educational Progress (NAEP Mathematics 1996, 2000, and NAEP Reading 1998, 2000). Research Design: This quantitative study employed a hybrid structural equation model built based on relationships indicated by the literature. Using extant large-scale data sets, the model was first tested using the smallest data set and then confirmed using successively larger state and national data sets. Conclusions: Professional development has moderate effects on teacher practice and very small but sometimes significant effects on student achievement when the effects of professional development are mediated by teacher practice. In spite of differences in samples, academic subjects, and assessments, the effects of professional development on teacher practice and student achievement persist and are remarkably similar across analyses.
Type of Research	Quantitative
Key themes or findings.	• "Professional development has moderate effects on teacher practice and very small but sometimes significant effects on student achievement when the effects of professional development are mediated by teacher practice. In spite of differences in samples, academic subjects, and assessments, the effects of professional development on teacher practice and student achievement persist and are remarkably similar across analyses" (573).
Methodology	Hybrid structural equation model

TEMPLATE	
Standard bibliographic information	Watson, C. (2014). Effective professional learning communities? The possibilities for teachers as agents of change in schools. *British Educational Research Journal, 40*(1), 18-29. doi: 10.1002/berj.3025
Country of Origin	UK
Key words	
Abstract	The concept of the professional learning community (PLC) has been embraced widely in schools as a means for teachers to engage in professional development leading to enhanced pupil learning. However, the term has become so ubiquitous it is in danger of losing all meaning, or worse, of reifying 'teacher learning' within a narrowly defined ambit which loses sight of the essentially contestable concepts which underpin it. The primary aim of this paper is therefore to (re-)examine the assumptions underpinning the PLC as a vehicle for teacher led change in schools in order to confront and unsettle a complacent and potentially damaging empirical consensus around teacher learning. This paper examines the characteristics and attributes of the 'effective' professional learning community as identified in the literature, drawing out the tensions and contradictions embodied in the terms professional, learning and community. The paper considers the implications of this analysis for practice, and concludes by offering some insights into the nature of 'school improvement', and the role of PLCs in realizing this.
Type of Research	Literature Review
Key themes or findings.	• "This paper provides a means for understanding how PLCs could become motivated and seek to initiate change within the institution through an awareness and creative use of the dissonance arising from the coexistence of justified competing/conflicting values. Recognising what is discordant in values may therefore act as a driver for change. However, it does not imply that all PLCs are motivated to seek this kind of change and indeed PLCs may function as a means to silence dissatisfaction through the hegemonic appeal to 'community' and its normalising function as arbiter of ideological control. Moreover, as this paper has also shown, the easy assumptions that underpin the notion of community are not self-evident truths which lead inexorably to enhanced professional learning and school improvement" (27).
Methodology	N/A

TEMPLATE	
Standard bibliographic information	Witziers, B., Bosker, R. J., & Krüger, M. L. (2003). Educational leadership and student achievement: The elusive search for an association. *Educational administration quarterly, 39*(3), 398-425. doi: 10.1177/0013161X03253411
Country of Origin	The Netherlands.
Key words	Meta-analysis; educational leadership effects; school leadership and student achievement
Abstract	This study revisits the existing scholarly debate on the possible impact of the principal's leadership on student achievement. Both "direct effect" and "indirect effect" models are discussed. A quantitative meta-analysis examines to what extent principals directly affect student outcomes. The small positive effects found in this meta-analysis confirm earlier research findings on the limitations of the direct effects approach to linking leadership with student achievement. Finally, lines of future research inquiry are discussed.
Type of Research	Quantitative meta analysis
Key themes or findings.	The burgeoning accountability policies for education represent an international interest in answering the question of the degree to which the expectation that school leaders influence student outcomes is a valid expectation. In contrast to this simple and hopeful view, the literature reveals much complexity. • "That is, correlations between leadership and student achievement are below .10, which implies a maximum effect size expressed as Cohen's d of .20. In Cohen's (1989, p. 25, 79) terminology, this is a small effect. Although it indicates that not more than 1% of the variation in student achievement is associated with differences in educational leadership, one should bear in mind that the measures used in the studies are far from perfectly reliable and thus may lead to an underestimation of the association." • "That there is no evidence for a direct effect of educational leadership on student achievement in secondary schools." • "Studies conducted in the Netherlands on average show no effects of educational leadership." • "When looking into specific leadership behaviors, "defining and communicating mission" has the largest effect (Cohen's d), ranging from .30 to .38. However, these latter findings are not very robust: The exclusion of outliers (studies with extreme low or high effects) led to significantly lower average values." • "Analyses in which differences between countries are modeled do not give clear indications that leadership matters more in the United States than in other countries (except, as already indicated, for the Netherlands, where it does not seem to matter much)." • Better conceptualisations of leadership are needed.

	• Studies tend to focus on cognitive student outcomes only. • Most studies rely on surveys looking at natural variation which are, by definition, small. • Despite repeated calls, the number of peer-reviewed articles on the indirect model of school leadership is small. • Indirect models may better explain the relationship.
Methodology	Meta analysis

TEMPLATE	
Standard bibliographic information	Yoon, K. S., Duncan, T., Lee, S.W.Y., Scarloss, B. & Shapley, K.L. (2007) *Reviewing the Evidence on How Teacher Professional Development Affects Student Achievement. (Issues & Answers. Rel 2007-No. 033).* Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest.
Country of Origin	US
Key words	Professional Development Academic Achievement Achievement Gains Elementary School Students Elementary School Teachers Educational Research In-service Teacher Education Literature Reviews
Abstract	The Regional Educational Laboratory - Southwest (REL Southwest) conducted a systematic and comprehensive review of the research-based evidence on the effects of professional development (PD) on growth in student achievement in three core academic subjects (reading/ELA, mathematics, and science). The primary goal of this study was to address the question, What is the impact of teacher participation in professional development on student achievement? Nine studies emerged as meeting What Works Clearinghouse (WWC) evidence standards, from more than 1,300 manuscripts identified as potentially relevant. Although the number of studies that met evidence standards was small, the average overall effect size of 0.54 was observed when examined within the three content areas included in the review. The consistency of this effect size indicates that across all forms and content of PD, providing training to elementary school teachers does have a moderate effect on their students' achievement. However, because the average number of contact hours averaged almost 49 hours across the nine studies, the total contact hours must be substantial to get such an effect size. Because of the limited number of studies and the variability in the PD that was represented among the nine studies we examined, we were unable to make any conclusions about the effectiveness of specific PD programs or about the effectiveness of PD by form, content, or intensity. The following are appended: (1) Methodology; (2) Protocol for the review of research-based evidence on the effects of professional development on student achievement; (3) Key terms and definitions related to professional development; (4) List of keywords used in electronic searches; and (5) Relevant studies, listed by coding results. (Contains 3 boxes, 2 figures, 9 tables, and 3 notes.) [This report was produced for the National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences (IES) by Regional Educational Laboratory Southwest administered by Advance Research.]
Type of Research	Literature Review

Key themes or findings.	• Study reviewed 1,300 research projects to see what if any professional development (PD) impacted on student outcomes. 9 out of 1,300 studies met the criteria they used to determine "What works Clearinghouse" standards. • Found that sustained PD - over 49 hrs did impact significantly. • Suggests from this analysis of the research that effective (high quality) PD is characterized by the following: "It is sustained, intensive, and content-focused—to have a positive and lasting impact on classroom instruction and teacher performance; It is aligned with and directly related to state academic content standards, student achievement standards, and assessments; It improves and increases teachers' knowledge of the subjects they teach; It advances teachers' understanding of effective instructional strategies founded on scientifically based research; It is regularly evaluated for effects on teacher effectiveness and student achievement" (2). • "Few studies meet evidence standards. But the average effect size of 0.54 in mathematics, science, and reading and English/language arts—and the consistency of that effect size—indicates that providing professional development to teachers has a moderate effect on student achievement across the nine studies. Average control group students would have increased their achievement by 21 percentile points if their teacher had received professional development" (4). • As a literature review, no analysis is provided of what types of PD were used, only whether studies fit within What Works Clearing House protocol and how PD correlated with student achievement.
Methodology	What Works Clearing House protocol for literature reviews (See pp. 7-8).

Appendix 3: Bibliography for templates

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