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**UNDERSTANDING**

**CHARTER SCHOOLS**

## 1 Can charter schools improve the achievement of disadvantaged pupils?

BY STEVE THOMAS

When the Government announced that it would be introducing charter schools—a kind of self-governing state school with more independence than regular state schools—to New Zealand, it specified that their primary objective would be to help turn around New Zealand’s persistent problem with the underachievement of its poorest performing school pupils.<sup>1</sup> Many of these poorly performing pupils are members of what may be considered to be disadvantaged populations, with those from low-income groups, Maori and Pasifika children overrepresented.<sup>2</sup> As the Government moves ahead with what it has renamed “Partnership Schools,” or *Kura Hourua*, it is important for New Zealanders to ask whether, and to what extent, charter schools can make a positive difference to the educational achievement of specific groups of pupils who consistently underperform.

Before we can begin to answer this question, we must note that there is no such thing as *a* charter school; rather there are *many* charter schools operating in different ways, in a multitude of locations, and serving a diverse range of pupils.<sup>3</sup> Charter schools are a model of state school in which the state issues a licence and funding to a provider who operates the school. Providers vary from school to school and could be, for example, groups of parents, not-for-profit community groups, religious groups, entrepreneurial school leaders, businesses or education management organisations.<sup>4</sup> Charter schools are given some freedom from the usual rules and regulations under which regular state schools are required to operate, including the freedom to offer a different curriculum to the national curriculum, flexibility of operating hours, and/or the ability to employ non-credentialed teachers. In return for these sorts of freedoms, operators are ideally held to high standards of accountability for meeting the conditions of their licence, and these can be revoked if they do not perform.<sup>5</sup> Charter schools have been operating in different parts of the world, such as in the United States, England and Sweden, for a number of years, taking different forms in different places. One thing that becomes eminently clear from the emerging charter school research is that charter schools do not produce uniform outcomes.<sup>6</sup>

This *Research Note* examines what the highest quality charter schools research has to say about how effective charter schools have been for disadvantaged pupils. It does so by focussing on the evidence of charter schools' impacts on the achievement of certain types of disadvantaged pupils—low-income pupils, English language pupils, ethnic minority group pupils, and special education pupils—in the United States. United States charter schools are examined because they are very similar to the charter school model that has been proposed for New Zealand, and they have been operating for a period of years, making it possible to begin evaluating their successes and failures. For more discussion about how we determined what characterises the highest quality research, see the companion explanatory note on how to read charter schools research.<sup>7</sup> It is worth recognising that the findings examined in this *Research Note* are to do with pupils' test score achievement gains. This is not the only aspect of education that is important, but it is one significant and measurable factor.

### What does high quality research say about the impact that charter schools have had on different kinds of disadvantaged pupils?

The general picture to be drawn from high quality charter school studies is mixed. It seems that charter schools can have significant positive impacts for particular groups of disadvantaged pupils, but they do not always succeed at this.

What follows is a summary of the findings from high quality research on the impact that United States charter schools have had on the four populations of disadvantaged pupils that we have chosen to examine. For each group of pupils a table also summarises the statistically significant impacts—that is, the estimated impacts which were not likely to be the result of random chance—from each of the relevant, high quality studies we have compiled.

#### Low-income pupils

The most promising impact that charter schools have had among disadvantaged populations has been for low-income pupils. Many high quality studies have estimated that low-income pupils who attended charter schools made small to medium-sized achievement gains in reading and mathematics compared to similar pupils in regular state schools.

Some studies have shown that those improvements have also increased over time. One of the most positive such results comes from a 2010 preliminary observational study of middle charter schools which are part of the Knowledge is Power Program (KIPP)—a charter school programme that is specifically targeted at low-income pupils. Educational researchers Christina Clark Tuttle and others looked at eleven KIPP schools and noted that the gains which pupils were experiencing after three years were equivalent to 1.2 years of extra learning in mathematics and to 0.9 years of extra learning in reading.<sup>8</sup> These results show that over time, it could be possible for the low-income pupils attending these schools to close the achievement gap between themselves and more advantaged pupils in the wider population.

Further, even in studies that have shown poor results for low-income pupils attending charter schools, there is some evidence that these pupils are making more progress at charter schools than they would be at regular state schools. For instance, Stanford University's Center for Research on Education Outcomes (CREDO) 2009 multi-state observational charter school study found that though low-income pupils at charter schools made negative achievement gains in reading and mathematics—that is, their learning did not progress as far as it should have—they still made more progress at charter schools than did their matched regular state school peers.<sup>9</sup>

In summary, while the effect sizes are generally very small,<sup>10</sup> it may be concluded that it is possible for some charter schools to make a positive difference to the achievement of low-income pupils and that some charter schools can make a big difference to their learning over time.

Table 1, below, presents the statistically significant impacts from charter schools for low-income pupils, as reported by the high quality studies examined.

**Table 1. Statistically significant results of charter school studies examining the achievement of low-income pupils in reading and mathematics**

Study	Negative impact						Positive impact					
	Reading			Mathematics			Reading			Mathematics		
	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE
Clark, Gleason and Others (2011)—in second year <sup>11</sup>										0.17		
Witte (2011)—Milwaukee (after 3 years) <sup>12</sup>			-0.87									
Clark Tuttle and others (2010)—KIPP middle schools after three years <sup>13</sup>							0.28			0.48		
CREDO (2009)—after two years <sup>14</sup>			-0.80			-0.70						

NOTE: This table, and the ones that follow, summarise the achievement gains in reading and mathematics of specific groups of disadvantaged pupils in charter schools. The impacts are reported in terms of effect sizes, in units of standard deviations. An effect size of  $\pm 0.1$  standard deviation, or less, represents a small impact on achievement; from  $\pm 0.2$  to  $\pm 0.4.99$  a medium impact; and  $\pm 0.5$  or more a large impact.

**English language pupils**

A second population of pupils that high quality studies have shown may have benefited from charter schools are those who are learning English as a second language (or English language pupils). Though there is as yet only a limited amount of high quality data available on this group, indications are that English language pupils who attend charter schools have made some improvements in reading and mathematics over and above those of similar pupils in regular state schools.

In 2011, education researchers Julian Betts and Y. Emily Tang conducted a meta-analysis of a number of studies on charter schools. They estimated that charter schools enabled English language pupils to make positive, small- to medium-sized achievement gains, especially in the area of reading in the middle school years.<sup>15</sup> Moreover, the 2009 CREDO study found that though English language pupils at charter schools did not make the desired level of progress in reading and mathematics, they still made more progress at charter schools than did their matched regular state school peers.<sup>16</sup>

In summary, while the evidence from high quality studies is relatively scarce, it may be concluded that it is possible for some charter schools to make a broadly positive difference to the achievement of English language pupils, perhaps most especially in the middle school years.

Table 2, below, presents the estimated, statistically significant impacts from charter schools for English language pupils, as reported by the high quality studies examined.

**Table 2.** Statistically significant results of charter school studies examining the achievement of English language pupils in reading and mathematics

STUDY	Negative impact						Positive impact					
	Reading			Mathematics			Reading			Mathematics		
	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE
Betts and Tang (2011)—middle school years <sup>17</sup>								0.38			0.5	
Betts and Tang (2011)—combined school grades <sup>18</sup>							0.05			0.03		
CREDO (2009)—after 2 years <sup>19</sup>	-0.13				-0.06							

### Ethnic minority group pupils

Charter schools’ impact on the achievement of ethnic minority group pupils is mixed. High quality studies indicate a range of both negative and positive effects, which are difficult to draw conclusions from because many of the findings are not statistically significant. This makes it difficult to know how reliable those findings are. Some of the most recently published high quality studies indicate how typical this trend is. Educational researchers Melissa Clark, Philip Gleason and others, for example, found in their 2011 observational study of middle charter schools that there were no statistically significant differences in achievement at state tests in mathematics and reading between Hispanic or non-white pupils and white pupils.<sup>20</sup> Betts and Tang’s 2011 meta-analysis also did not find a clear pattern for charter school impacts on ethnic minority group pupils’ achievement.

Yet even given this mix of results, some evidence indicates that charter schools in particular cities have had a more generally positive impact on the achievement of ethnic minority pupils. Though they do not specifically examine pupil sub-groups in their 2005 lottery evaluation of Chicago’s charter schools, economists Caroline Hoxby and Jonah Rockoff, for example, found that pupils who attended Chicago’s charter schools—who were predominantly African-American or Hispanic and poor—for a sustained period of time made achievement gains that represented about half of the achievement gap between the average disadvantaged minority pupil in Chicago’s regular state schools and the average middle-income, non-minority group pupil in a suburban district.<sup>21</sup> Comparable evaluations of New York City’s charter schools and some of those aligned with KIPP, have found similar results. These results are thought to be attributed to the fact that successful charter schools have made solving disadvantaged pupils’ learning and behavioural issues part of the school’s core purpose, instead of treating such pupils as special cases in remedial or alternative programmes, as may happen in regular state schools.<sup>22</sup> In this way, charter schools with a focussed mission—often directed toward improving the achievement of those pupils marginalised in or by the regular state schooling system—are the ones most likely to be successful at boosting ethnic minority group pupils’ achievement.<sup>23</sup>

In summary, the dominant, general trend evident from high quality studies is that charter schools have a negligible to small, negative impact on ethnic minority group pupils’ achievement. And yet, there are instances where pupils from ethnic minorities have made positive achievement gains when they attend charter schools that operate in certain cities where higher concentrations of poor, educationally disadvantaged children live. This suggests that there may be something to note about the leadership, mission and organisation of these schools. It is possible to conclude that, under certain circumstances,

charter schools may make a positive difference to the achievement of ethnic minority group pupils, although this outcome cannot be guaranteed.<sup>24</sup>

Table 3, below, presents the estimated statistically significant impacts from charter schools for ethnic minority group pupils, as reported by the high quality studies examined.

Table 3. Statistically significant results of charter school studies examining the achievement of ethnic minority pupils in reading and mathematics												
STUDY	Negative impact						Positive impact					
	Reading			Mathematics			Reading			Mathematics		
	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE
Betts and Tang (2011) – African American <sup>25</sup>										0.03		
Betts and Tang (2011) – Hispanic <sup>26</sup>	-0.07									0.05		
Betts and Tang (2011) – Native American <sup>27</sup>				-0.10								
Witte (2011) – Milwaukee, African-American, after 3 years <sup>28</sup>		-0.38			-0.21							
CREDO (2009) – African-American, after 2 years <sup>29</sup>	-0.15			-0.16								
CREDO (2009) – Hispanic, after 2 years <sup>30</sup>	-0.06			-0.07								
Zimmer (2009) – African-American, non-primary charter schools <sup>31</sup> (Texas)	-0.08						0.05	(San Diego)				
Zimmer (2009) – Chicago, Hispanic, non-primary charter schools <sup>32</sup>	-0.14			-0.14								
Zimmer (2009) – Texas, Hispanic, non-primary charter schools <sup>33</sup>				-0.10								
Nicotera, Mendiburo and Berends (2009) – Indianapolis, African-American <sup>34</sup>										0.24		
Nicotera, Mendiburo and Berends (2009) – Indianapolis, Hispanic <sup>35</sup>									0.88			

### Special education pupils

For special education pupils, the preponderance of the evidence from high quality studies seems to indicate that they have not done much better at charter schools than they would have at regular state schools. In some cases, they have achieved worse at charter schools. These results give some reason for concern because the charter school model ought to—and can, according to some accounts—be a way of providing tailored, high quality special education.<sup>36</sup>

Though impact studies have not indicated why special education pupils are not faring better in charter schools, it is possible to speculate about the reasons. Whether or not charter schools are accessible to special education pupils is a continuing debate.<sup>37</sup> In the United States, charter schools have been criticised for enrolling a lower percentage of pupils with disabilities than regular state schools. For example, a 2012 federal General Accounting Office report found anecdotal evidence that this could be because fewer parents of disabled pupils are choosing to send their children to charter schools (perhaps because there are good programmes in regular state schools), or that some charter schools might be discouraging disabled pupils from attending.<sup>38</sup> Public school districts may also have an impact, too, as they might choose not to place disabled pupils in charter schools. Another possible explanation is that charter schools do not identify special education pupils at as high a rate as regular state schools do because they try to educate them through regular school programmes.

It could also be that special education pupils are doing better in some charter schools than they would be in regular state schools, but that they are just doing better in ways that standardised tests in reading and mathematics cannot measure. Charter schools may be helping pupils with behavioural problems or helping pupils to develop social skills, for instance.<sup>39</sup> Secondly, it may be that special education pupils in charter schools have not been given the attention or instruction that they needed to achieve.<sup>40</sup> For example, charter schools with more traditional curricula and approaches to teaching and learning might have struggled to boost special education pupils' achievement. A final explanation is that charter schools might not have access to the funding or specialised classrooms that are required to help special education pupils to succeed.<sup>41</sup>

In summary, it seems on the face of it that special education pupils do not fare very well in charter schools. However, no studies have been able to clarify why this is the case. More research is required in order to determine whether special education pupils actually do receive a poor quality education from attending charter schools, or if they are either benefiting educationally in other ways, or if a charter school can be set up in such a way as to raise the level of special education pupils' achievement.

Table 4, on the following page, presents the estimated statistically significant impacts from charter schools for special education pupils, as reported by the high quality studies examined.

**Table 4. Statistically significant results of charter school studies examining the achievement of special education pupils in reading and mathematics**

STUDY	Negative impact						Positive impact					
	Reading			Mathematics			Reading			Mathematics		
	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE	SMALL	MEDIUM	LARGE
Betts and Tang (2011)—middle schools <sup>42</sup>											0.44	
Betts and Tang (2011)—combined school grades <sup>43</sup>							0.01			0.01		
Witte (2011)—after three years <sup>44</sup>		-0.28			-0.31							
CREDO (2009)—after two years <sup>45</sup>		-0.24		-0.19								
Clark Tuttle and others (2010)—KIPP middle schools after three years <sup>46</sup>								0.28			0.48	
CREDO (2009)—after two years <sup>47</sup>			-0.80			-0.70						

**Conclusions: Charter schools’ impacts on disadvantaged pupils**

The findings from high quality studies suggest that for some disadvantaged pupils, charter schools can have a positive impact on pupil achievement.<sup>48</sup> Many of the studies showed good results for low-income pupils and English language pupils in charter schools. And yet high-level studies indicated that charter schools were not seeing better achievement, and were sometimes seeing worse achievement for ethnic minority group pupils and special education pupils. Even this finding is not universal however—particular charter school programmes for ethnic minority group pupils have had positive results. More research needs to be done to determine whether there could be better ways of setting up charter schools for special education pupils as well. While the impact of United States charter schools should not be assumed to be directly replicable in New Zealand, they do give some indication that charter schools have potential to be effective for some of the most disadvantaged pupils in the school system.

Some groups, including the teacher unions, the NZEI and the PPTA, and Massey University’s Education Policy Response Group (EPRG), have claimed that charter schools should not be introduced because either they “don’t work” or because some research indicates that charter schools can make no more, or even less, difference to pupils’ achievement than regular state schools do.<sup>49</sup> In doing so, they have relied a lot on the CREDO study’s negative findings. This interpretation is far from the truth, however. There is no such thing as a general charter school effect for disadvantaged pupils, but there is much variation in how, where, and with whom charter schools operate—all of which can have a significant bearing on how successful a particular charter school is at raising disadvantaged pupils’ achievement. It is important to note that the variation is not random.<sup>50</sup> Charter schools do seem to perform better in New York City, Boston, Chicago or New Orleans,



for example, but worse in Ohio or Arizona. The task is to understand why charter schools in some places have performed better than others, and to learn from those differences.

With all of this in mind, it will be vital for those planning New Zealand’s Partnership School model to be aware of the variability of charter schools’ performance amongst disadvantaged pupils and, therefore, to design the Partnership School pilot with a thorough, scientific evaluation in mind. They would do well to involve experienced economists and educational researchers in the pilot’s design and to employ them to evaluate its impact on Partnership School pupils as compared with pupils who attend comparable regular state schools.<sup>51</sup> This would further require the collection and use of more comprehensive background data on pupils’ achievement, their characteristics and their family background than has, perhaps, been collected and used before in New Zealand education research.<sup>52</sup> Decision-makers should also consider the organisational factors that seem to be associated with charter schools that have been successful at improving disadvantaged pupils’ achievement when designing the pilot, such as having a focussed mission on improving disadvantaged pupils’ performance, and employing staff and using resources in ways which are directed towards achieving that mission.<sup>53</sup> Politicians should also agree to let the pilot schools run for a decent length of time—at least five years—given that immature charter schools, like all new schools, can produce negative results in their first years.<sup>54</sup> This will be critical for assessing whether Partnership Schools have been able to have a positive impact on disadvantaged pupils.

ENDNOTES

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- 1 New Zealand Model of Charter School Working Group, “Terms of Reference” (Wellington: 2012), 1; Partnership Schools Working Group, *Frequently Asked Questions* (2012), <http://partnershipschools.education.govt.nz/FAQs> (accessed 8 August 2012).
  - 2 M. Telford and S. May, “PISA 2009. Our 21st century learners at age 15” (Wellington: Ministry of Education, 2010), 12, 28, 38; Ministry of Education, “Annual Report 2011” (Wellington: 2011), 15; OECD, “PISA 2009 Results: Executive summary” (Paris: 2010), 9-10.
  - 3 J.R. Betts and P.T. Hill, “Key Issues in Studying Charter Schools and Achievement: A review and suggestions for national guidelines,” *NCSRP White Paper Series, 2* (Seattle, Washington: National Charter School Research Project; Center on Reinventing Public Education; University of Washington, 2006), 1.
  - 4 C. Lubienski, “Do Quasi-markets Foster Innovation in Education? A comparative perspective,” *Education Working Papers, 25* (Paris: OECD, 2009), 29-30; The Center for Comprehensive School Reform and Improvement, “Reopening as a Charter School,” *Public Impact What Works When?* (Washington D.C.: 2005), 4.
  - 5 Ministry of Education, “Developing and Implementing a New Zealand Model of Charter School,” *Regulatory Impact Statement* (Wellington: 2012), 1, 4.
  - 6 For example, American charter school researcher Robin Lake writes that “[d]espite some promising overall findings ... charter school performance and practices continue to be very difficult to summarize. Chartering turns out to be less of a cohesive movement than a collection of distinct local efforts with vastly different approaches and results.” R.J. Lake, “Should Charter Schools Be More Different Than Alike?” in *Hopes, Fears and Reality 2008. A balanced look at American charter schools in 2008*, ed. R.J. Lake (Washington D.C.: Center on Reinventing Public Education; University of Washington Bothell, 2008), xi.
  - 7 S. Thomas, “How to Read Research about Charter Schools’ Impacts on Pupils’ Achievement,” *Understanding Charter Schools* (Auckland: Maxim Institute, 2012).
  - 8 C.C. Tuttle et al., “Student Characteristics and Achievement in 22 KIPP Middle Schools. Final Report” (Washington D.C.: Mathematica Policy Research Inc., 2010), 29-32.
  - 9 Center for Research on Education Outcomes (CREDO), “Multiple-Choice: Charter school performance in 16 states” (Stanford, CA: CREDO; Stanford University, 2009), 28.
  - 10 For example, see J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” *National Charter School Research Project* (Washington D.C.: Center on Reinventing Public Education, 2011), 31-32. These are some places where the effects have been larger. For example, economist Caroline Hoxby and others’ study of New York City’s charter schools indicates that attending charter schools there had the same impact on disadvantaged pupils’ test score performance as attending a school in one of the affluent, high-performing New York City school districts. C.M. Hoxby, S. Murarka and J. Kang, “How New York’s Charter Schools Affect Achievement, August 2009 Report,” Second Report in Series (Cambridge, MA: New York City Charter Schools Evaluation Project, 2009), IV-8, 13-14. Some limitations of this study, in particular an issue with slight over-estimates for findings above grade 3, are discussed in S.F. Reardon, “Review of “How New York City’s Charter Schools Affect Achievement” (Boulder and Tempe: Education and the Public Interest Center & Education Policy Research Unit, 2009).
  - 11 M.A. Clark et al., “Do Charter Schools Improve Student Achievement? Evidence from a national randomized study,” *Working Paper*, Mathematica Policy Research (2011), 16â.
  - 12 J.F. Witte et al., “Milwaukee Independent Charter Schools Study: Report on two- and three-year achievement gains,” *SCDP Milwaukee Evaluation, 25* (Fayetteville: School Choice Demonstration Project; University of Arkansas, 2011), 12-15. Witte and others note that attrition may have affected the robustness of the three year estimates for low-income pupils and for African-American pupils. J.F. Witte et al., “Milwaukee Independent Charter Schools Study: Report on two- and three-year achievement gains,” 25, 29-30.
  - 13 C.C. Tuttle et al., “Student Characteristics and Achievement in 22

- KIPP Middle Schools. Final Report,” 29-32.
- 14 Center for Research on Education Outcomes (CREDO), “Multiple-Choice: Charter school performance in 16 states,” 28.
  - 15 J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” 31.
  - 16 Center for Research on Education Outcomes (CREDO), “Multiple-Choice: Charter school performance in 16 states,” 29.
  - 17 J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” 31.
  - 18 J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” 31.
  - 19 Center for Research on Education Outcomes (CREDO), “Multiple-Choice: Charter school performance in 16 states,” 29.
  - 20 M.A. Clark et al., “Do Charter Schools Improve Student Achievement? Evidence from a national randomized study,” 15-16.
  - 21 C.M. Hoxby and J.E. Rockoff, “Findings from the City of Big Shoulders,” *Education Next* Fall (2005): 57-58.
  - 22 B. Gross, “Inside Charter Schools. Unlocking doors to student success” (Seattle: National Charter School Research Project; Center on Reinventing Public Education (CRPE); University of Washington, 2011), 21.
  - 23 B. Gross, “Inside Charter Schools. Unlocking doors to student success,” 21; J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” 29-30; M.A. Clark, et al., “Do Charter Schools Improve Student Achievement? Evidence from a national randomized study,” 23.
  - 24 J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” 30-32.
  - 25 J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” 30-32.
  - 26 J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” 30-32.
  - 27 J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” 30-32.
  - 28 J.F. Witte et al., “Milwaukee Independent Charter Schools Study: Report on two- and three-year achievement gains,” 14.
  - 29 Center for Research on Education Outcomes (CREDO), “Multiple-Choice: Charter school performance in 16 states,” 29.
  - 30 Center for Research on Education Outcomes (CREDO), “Multiple-Choice: Charter school performance in 16 states,” 29.
  - 31 R. Zimmer et al., “Charter Schools in Eight States: Effects on achievement, attainment and integration” (Santa Monica, CA: RAND Corporation, 2009), 46-47.
  - 32 R. Zimmer et al., “Charter Schools in Eight States: Effects on achievement, attainment and integration,” 46-47.
  - 33 R. Zimmer et al., “Charter Schools in Eight States: Effects on achievement, attainment and integration,” 46-47.
  - 34 A. Nicotera, M. Mendiburo and M. Berends, “Charter School Effects in an Urban School District: An analysis of student achievement gains in Indianapolis.” Prepared for “School Choice and School Improvement: Research in State, District and community contexts” conference Vanderbilt University, 25-27 October” (National Center on School Choice; Vanderbilt University, 2009), 27.
  - 35 A. Nicotera, M. Mendiburo and M. Berends, “Charter School Effects in an Urban School District: An analysis of student achievement gains in Indianapolis,” 27.
  - 36 R.J. Lake and J. Jacobs, “New Options for Serving Special-Needs Students,” in *Hopes, Fears and Reality. A balanced look at American charter schools in 2008*, ed. R.J. Lake (Seattle: National Charter School Research Project; Center on Reinventing Public Education (CRPE); University of Washington, 2008), 33-42.
  - 37 S. Waslander et al., “Markets in Education. An analytical review of empirical research on market mechanisms in education,” *OECD Education Working Papers*, 52 (OECD Publishing, 2010), 57.
  - 38 United States Government Accounting Office, “Additional Federal Attention Needed to Help Protect Access for Students with Disabilities,” *Report to Congressional Requesters*, GAO-12-543 (Washington D.C.: 2012), 21.
  - 39 T.R. Sass, “Charter Schools and Student Achievement in Florida,” *Education Finance and Policy* 1, no. 1 (2006): 115, 119.
  - 40 Cf. Center for Research on Education Outcomes (CREDO), “Multiple-Choice: Charter school performance in 16 states,” 50.
  - 41 Cf. R.J. Lake and J. Jacobs, “New Options for Serving Special-Needs Students,” 40-41.
  - 42 J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” 31.
  - 43 J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” 31.
  - 44 J.F. Witte et al., “Milwaukee Independent Charter Schools Study: Report on two- and three-year achievement gains,” 14.
  - 45 Center for Research on Education Outcomes (CREDO), “Multiple-Choice: Charter school performance in 16 states,” 25.
  - 46 C.C. Tuttle et al., “Student Characteristics and Achievement in 22 KIPP Middle Schools. Final Report,” 29-32.
  - 47 Center for Research on Education Outcomes (CREDO), “Multiple-Choice: Charter school performance in 16 states,” 28.
  - 48 R.J. Lake, “Should Charter Schools Be More Different Than Alike?” viii.
  - 49 New Zealand Educational Institute, *NZEI Questions and Concerns about Charter Schools* (2012), <http://www.nzei.org.nz/site/nzeite/files/misc%20documents/charter%20schools.pdf> (accessed 3 July 2012); Post Primary Teachers’ Association, *Issues in Education: Charter schools* (2012), <http://www.ppta.org.nz/index.php/-issues-in-education/charter-schools> (accessed 16 April 2012); Education Policy Response Group, “Charter Schools for New Zealand” (Massey University College of Education, 2012), ii, vi.
  - 50 For example, Betts and Tang noted that 90 percent of the variation in results which they found across the studies in their meta-analysis was real variation rather than “statistical noise.” J.R. Betts and Y.E. Tang, “The Effect of Charter Schools on Student Achievement: A meta-analysis of the literature,” 55.
  - 51 M. Schlotter, G. Schwerdt and L. Woessmann, “Econometric Methods for Causal Evaluation of Education Policies and Practices: A non-technical guide,” *CESifo Working Paper*, 2877 (Munich: CESifo GmbH, 2009), 29. Cf. M.A. Clark et al., “Do Charter Schools Improve Student Achievement? Evidence from a national randomized study,” 6.
  - 52 Cf. Education Policy Response Group, “Charter Schools for New Zealand,” 87; and P.T. Hill and J.R. Betts, “Improving State and Local Assessments of Charter Schools,” in *Hopes, Fears and Reality 2006. A balanced look at American charter schools in 2006*, eds. R.J. Lake and P.T. Hill (Washington D.C.: Center on Reinventing Public Education; University of Washington Bothell, 2006), 42-43.
  - 53 B. Gross, “Inside Charter Schools. Unlocking doors to student success,” 22.
  - 54 The CREDO study noted that first year charter school pupils “suffer a sharp decline in academic growth.” Center for Research on Education Outcomes (CREDO), “Multiple-Choice: Charter school performance in 16 states,” 7. Similarly, see R. Zimmer et al., “Charter Schools in Eight States: Effects on achievement, attainment and integration,” 41-45.