

RESEARCH AREA & SOURCE	DESCRIPTION & MAIN FINDINGS / ARGUMENTS
<p>Assessment</p> <p><i>The Curriculum Journal 18, 3 - 25</i></p>	<p>Miller, D. & Lavin, F. (2007) 'But now I feel I want to give it a try': formative assessment, self-esteem and a sense of competence.</p> <p>This study investigated whether the use of formative assessment techniques had an impact on learners' self-esteem. Previous studies had indicated an improvement in achievement, but evidence of impact on self-esteem had been largely anecdotal. The study used the Rosenberg self-esteem scale as a pre- and posttest as well as qualitative data gained from interviews, focus group discussions and questionnaires conducted with both teachers and students. Self-esteem was operationalised as a combination of self-worth and self-competence and the measurement instrument allowed for the separation of components.</p> <p>Main Findings:</p> <ul style="list-style-type: none"> ● <u>General</u> - There were gains in both sub-constructs (self-worth and self-competence) as well as in the combined measure of self-esteem. All gains were statistically significant. ● <u>Gender-specific</u> – Both genders made gains in all three measures. The gain for boys was greater on all three measures. The gain for girls on the sub-construct of self-worth was not statistically significant but all other gains were. ● <u>Specific to ability groups</u> – All groups made statistically significant gains on all measures but the gains for lower ability groups and higher ability groups were greater than those for middle ability groups. The gains for middle ability groups were not statistically significant. ● <u>Learners identified as having negative views of their ability</u> – teachers identified learners who lacked confidence in ability to learn at the start of the intervention. This group made much greater gains in all measures when compared with other learners. ● <u>Learners with prior experience of formative assessment</u> – gains in self-esteem were much lower for students with no prior experience of formative assessment and not statistically significant. ● Qualitative data supported the findings of the pre- posttest on measures of self- esteem. ● Qualitative findings also suggest that the use of formative assessment over time causes learners to focus more on the quality of their work. ● The findings also suggest that the underlying basis of some learners' self-esteem shifts from performance relative to peers to a focus on improvement in their own work. ● Teachers also noted that their beliefs about learning and their style of teaching had been affected by engaging in formative assessment. <p>The researchers believe their data indicate that:</p>

	<ul style="list-style-type: none"> ● Those who may benefit most include learners who previously had a lack of self-competence. ● The positive effects of formative assessment may take some time to become evident due to the need not only to train learners in procedures but also to allow them to come to value the idea of formative assessment. ● Though it cannot be directly inferred from the data the self-esteem theory would indicate that gains in self-competence may cause a small increase in feelings of self-esteem, but if these are subsequently enhanced by positive comments from others they may further enhance self-worth, which depends on affirming messages from significant others. Thus the two-part construct of self-esteem is of particular value.
<p>Leadership</p>	<p>Lingard, B., Hayes, D., Mills, M., & Christie, P. (2003) <i>Leading Learning</i>. Philadelphia: Open University Press.</p> <p>This book is written based on the results of the Queensland School Reform Longitudinal Study. The study mapped back from student performance to assessment tasks and pedagogy and then attempted to determine what the characteristics of school organization were that supported the kind of pedagogy and assessment practices that led to high levels of achievement in both the academic and social spheres. The pedagogy and assessment sections of the research were written up into a book that was summarized in the May PTC summaries. This volume concerns the results of the study that pertained to leadership.</p> <p>Main Findings:</p> <ul style="list-style-type: none"> ● The task of the school leader is to lead by creating and sustaining the conditions which maximize both academic and social learning of students and teachers which involves creating the space within the school and the support structures necessary to allow teachers to engage in intellectual discussion about their work. ● Official policies as well as the professional literature about the principalship tend to constitute the role of the principal as being that of manager rather than educator. ● Definition of teacher leadership - a teacher who (a) has a clear sense of commitment to providing quality learning experiences for ALL students and (b) attempts to influence the learning of students beyond their own classroom ● Teachers who had the highest levels of productive pedagogies (see May summary) were more likely to believe they could make a difference. Those with low levels tended to ascribe student outcomes to sources other than their own teaching (social background, a shoddy curriculum etc) ● A large percentage of teacher-leaders (see above definition) had a drive to learn and approached their work as an intellectual activity. ● In schools where productive pedagogies were apparent there was <ol style="list-style-type: none"> 1. a high level of substantive conversation among staff related to both student work and teachers' work. (and indicator of professional learning community) 2. a substantial amount of professional development focused on student learning and related to overall school goals

	<ol style="list-style-type: none"> 3. an overall purpose that could be seen to focus on stimulating student achievement 4. teacher responsibility for student learning 5. a high level of dispersed leadership (which does not equate with dispersed management) 6. a high degree of social and emotional support for teachers <ul style="list-style-type: none"> ● As a result effective school leadership must attend to: <ol style="list-style-type: none"> 1. a focus on curriculum, pedagogy and assessment as a central activity 2. vision, purpose and school goals 3. dispersal of leadership 4. social relations within the school 5. management structures and strategies 6. relationships outside the school ● Case studies demonstrated that curriculum change can be used as a vehicle for reform (study schools increased enrolment and student retention rates by using curriculum changes) ● School leadership must focus on the behaviors and strategies appropriate for individual school contexts. Successful school leaders shape what is considered appropriate discourse within their school context and solidly focus it on student learning. ● Strength of professional community (as measured by traditional indicators) alone does not always equate with ideal outcomes. In some case study schools factors such as teacher ideologies interfered with the potential positive effects – therefore it is important to consider the interplay of all factors within a given context.
<p>Teacher Quality</p> <p><i>The New York Times August 15, 2007</i></p>	<p>Dillon, S. (2007) Imported from Britain: Ideas to Improve Schools.</p> <p>This is not a strictly empirical study. The article reports a comparison made by Sir Michael Barber of school systems around the world.</p> <p>Main Findings:</p> <ul style="list-style-type: none"> ● All great school systems (including Finland, Singapore, South Korea and Alberta, Canada) have one feature in common - they all recruit their teachers from the top third of university graduates. (US teachers tend to come from the bottom third) ● South Korea attracts teachers with high pay and has accepted large class sizes as a trade-off. ● Finland attracts top-tier graduates because of the exceptionally high public respect for teachers.
<p>Teaching Strategies</p> <p><i>Innovations-report 01 August, 2007</i></p>	<p>Devitt, J. (2007) Phonics, Whole-Word, and Whole-Language Processes Add Up to Determine Reading Speed.</p> <p>A study done at New York University using 11 adult readers. A text was manipulated in ways that attempted to knock out the effects of each of three reading processes (whole word recognition, phonics and whole -language processes) on reading speed.</p> <p>Main Findings:</p> <ul style="list-style-type: none"> ● Letter by letter decoding accounted for 62 percent of reading speed, whole-language processes accounted for 22 percent and

	<p>holistic word recognition accounted for 16 percent.</p> <ul style="list-style-type: none"> ● The results showed that the three processes are additive, meaning that the contribution of each process to reading speed is the same whether the other processes are functioning or not and none are redundant. The processes appear to be not working on the same words.
<p>Assessment / Curriculum Implementation / Standardized Testing <i>Education Week July 30, 2007</i></p>	<p>Cech, S. (2007) 12-State Study Finds Falloff in Testing Gains After NCLB. The study reviewed here uses the results of both state and the federal NAEP.</p> <p>Main Findings:</p> <ul style="list-style-type: none"> ● Initial progress in reading and math after the introduction of NCLB has virtually come to a halt in recent years. ● Achievement gaps in reading between black and Latino students and white students have not been closed. ● Initial progress in closing gaps in achievement in math has halted.
<p>Curriculum Implementation / Curriculum Development</p>	<p>Schmidt, W., McKnight, C., Houang, R., Wang, H., Wiley, D., Cogan, L. & Wolfe, R. (2001) <i>Why Schools Matter: A Cross-National Comparison of Curriculum and Learning</i>. San Francisco, CA: Jossey-Bass.</p> <p>This study is an analysis of data from the TIMSS (Third International Mathematics and Science Study) research. The analysis is on two levels. The data are analyzed to produce a model of curriculum which can be said to be a composite of the elements in an education system which together contribute to opportunities to learn for students. The elements of this model are : content standards (as a measure of curriculum intent), amount of textbook space allocated to a topic (as a measure of potential curriculum implementation), number of teachers teaching a topic within a country (as a measure of curriculum implementation) and percentage of time in Grade 8 spent teaching a topic (as a measure of curriculum implementation). All curricular indications were converted to quantitative measures for the purpose of the study. A further indication - namely, percentage of textbook space devoted to complex performance expectations is also used occasionally in the study though unfortunately is not included in the model. The model is then used to analyze the connections between various elements of the model itself and their cross-national variations. These cross-national variations in curriculum structure are then compared with gains in achievement during Grade 8 as represented by results on the TIMMS test in order to examine some of the costs / benefits of particular curricular structures. It is important to note two considerations of this study. Firstly, achievement was included as gains in achievement during the eighth grade rather than achievement status at a point in time so that it was possible to relate these to the eighth grade curriculum. Secondly the purpose of the study was primarily cross-national comparison so that drawing any conclusions for smaller units that national systems is fraught with difficulty.</p> <p>Main Findings:</p>

Interactions between elements of the curriculum model

- In terms of intended curriculum, the number of topics in Math included in content standards ranged from 10 in Japan to all 44 of the TIMMS topics in the USA. Among those countries planning to cover the fewest topics, several were among the top seven performing countries.
- There was considerable variation among countries in terms of textbook space devoted to complex performance expectations as well as considerable variation across topics within a country.
- Even in countries with national content standards determined by a central body, there was no country where the percentage of teachers who covered that topic in Grade 8 was close to 100%.
- For Science textbook coverage affected instructional time, but content standards did not affect textbook coverage or instructional time, though they did increase the number of teachers teaching the topic. Textbook coverage, however, did influence instructional time.
- For Math content standards influenced instructional time and teacher coverage both directly and indirectly through their influence on textbook coverage.
- For both Math and Science the amount of textbook space devoted to a topic was the biggest influence on teacher implementation, increasing both the number of teachers who taught a topic and the percentage of time they allocated to a topic. The researchers conclude that textbook coverage is a strong indicator of teacher implementation.
- Textbook space accounted for between 10 and 70 percent of the variance of instructional time in Math across countries and between 20 and 70 percent of the variance in Science.
- The role of the textbook varies widely across countries.
- Strong relationships exist between the 4 curricular indications examined when considering profiles of topics, hinting that curriculum should not be considered as a set of separate topics but as vectors of topics. Profiles of opportunities to learn across topics may be more relevant than considering single topics.
- Generally the amount of textbook space allocated was greater in countries where the topic was included in the content standards.
- One relationship was constant throughout different kinds of analysis - that of textbook space to teacher implementation.
- The relationships between curriculum indications can be seen as a measure of the degree of coherence of curriculum or curricular alignment within a country.
- In all cases countries where the content standards were set by a single central body had a higher level of curricular coherence, though the relation between content standards and teacher implementation may have been indirect via textbook space.

The relationship of curricular structures to achievement gains

- Four out of five of the topics in Math where student gains were the highest were also in the top five topics in terms of curricular emphasis indicating that opportunities to learn as actualized by the curricular indications in this study do make a difference in terms of student learning
- None of the top five topics in Science where student gains were highest were in the top five according to emphasis - this result is possibly related to the fact that there was far less agreement across countries as to what the top 5 topics were in Science as opposed to Math.
- In examining pair-wise relationships between curricular indications and achievement, every indication was related positively to achievement indicating that more emphasis in any area could lead to gains.
- When controlling for the other curricular indications, the relationship of instructional time to achievement gain for Math became only marginally significant, indicating that part of the increase in instructional time is related to inclusion in content standards or increase in allocation of textbook space.
- In general content standards in Math affect teacher implementation both directly and indirectly through textbook space.
- In Science increased textbook space was related negatively to achievement gain, but when some anomalous topics were removed, the relationship became insignificant.
- In Science content standards were not related to teacher implementation.
- In Math when other indications were controlled for, the indication which was related to gain for the largest number of countries was textbook space, though in some countries the main relationship to gain was defined by content standards.
- In Science the variable related to gain for the largest number of countries was the percentage of textbook space devoted to complex performances. An average of 25 percent of the variation in gain can be explained by this variable.
- When the percentage of instructional time was converted to a figure in hours it was found that the rate of increase of achievement gain by hours of instruction was not constant. The rate of gain rapidly accelerated after 9 hours of instruction per topic. Prior to that there was no relationship between instructional time and achievement gain.
- Though this analysis really pushed the limits of the available TIMMS data, the researchers used proportion of textbook space as an indicator of instructional time devoted to more demanding expectations in Math. In this analysis the rate of achievement gain was more linear and the researchers hypothesize that this variable leads to more learning.
- For the topic of equations and formulas, the topic given the most emphasis in Grade 8 Math over all the countries in the study, the only curricular indication linked to achievement gain was the percentage of textbook space devoted to complex performances.
- Analyses were conducted for each topic separately using whichever measure of opportunity to learn had correlated most strongly with gain in that subject, a measure of the country's GNP and a measure of how demanding instruction was created from

items on the TIMSS teacher questionnaire relating to instructional activities. The results were that GNP related to gain in around half the topic areas, BUT in no case did controlling for GNP eliminate the effects of curriculum.

- Up to 40% of cross-national variation in achievement gain in Math can be accounted for by the measures of curricular opportunities used in the study.
- The aspects of curriculum most involved with achievement gain in individual Math topics were textbook space, textbook space devoted to more complex performance demands, no of teachers covering the topic and instructional time. Only content standards were not significantly related to variations in cross-national gains (though they may have been related indirect via textbook space)
- One interesting example topic was 'proportionality'. No curricular indicator was related to gain in this topic area in any of the analyses carried out. However, two other topic areas (congruence from geometry and slope and trigonometry from algebra) were related to gain in proportionality and the curricular indication most related to this gain was textbook space devoted to complex performances.
- In Science all curricular indications were related to gain individual topics (though textbook space was in some cases negatively related), the most prominent being measures of teacher implementation. Content standards played a more prominent role than in Math.
- One interesting example topic was 'Science, Technology and Society'. Amount of textbook space in this case was negatively related to achievement gain. However, study of the topic of 'natural disasters' was positively related to gain in 'Science, Technology and Society' and the curricular indication most related to this gain was textbook space devoted to complex performances.
- The analyses showed clusters of countries with similar curricular structures.
- Finally an analysis of learning within the US was carried out. The results were that opportunities to learn were significantly related to achievement gains. For 5 out of 20 topics, more demanding performance expectations were significantly related to gains. Using the strength of relationships on the curriculum model created increases in gains were predicted for various topics depending on increases in curricular opportunities to learn. The predicted increases were sizeable.

Summary

- **Curriculum when defined as content standards, amount of textbook space allocated to a topic, number of teachers teaching a topic within a country and percentage of time spent teaching a topic does provide opportunities to learn and does result in achievement gains.**
- **Differences in the way these four indications are structured a related to differences in gains.**
- **Learning in one topic can have a significant influence on learning in other topics and so curriculum topics should be**

	<p>considered as profiles of topics.</p> <ul style="list-style-type: none">● The structure and sequence of curriculum should make use of the logic of profiles of topics.● Quality of learning opportunities in the form of more demanding performance expectations is important, not just quantity. Drill and practice alone is not adequate.● The textbook exerts an extremely strong influence over teacher implementation and this should not be ignored.● Inclusion in content standards alone does not guarantee that content will be covered.● The degree of central control of an education system does help achieve curricular alignment, but on its own is not enough to ensure this.