Improving Educational Performance in Alberta

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Improved educational performance has been a priority in Alberta since the early 1980s. This paper discusses the policy context and background of two decades of focusing on educational performance in Alberta. It addresses issues related to using quantitative information to inform decisions and improve performance. The Alberta Initiative for School Improvement (AISI) illustrates how government can collaborate with school authorities and other partners to achieve a common goal. The paper provides some initial results and discusses empirical challenges facing school improvement initiatives.

Introduction

There is an extensive body of research on ways to improve educational performance. Coleman's conclusion that schooling accounts for only 10 percent of variance in student achievement (Coleman et al, 1966) served as a catalyst for intense scrutiny of schools.

> The cumulative research of the last 40 years provides some clear guidance about the characteristics of effective schools and effective teaching. … when the research undertaken during the last four decades is considered as a set, there is ample evidence that schools can and do make a powerful difference in the academic achievement of students. (Marzano, 2000, pp. 1-2)

Meta-analyses in the late 1970s and 1980s demonstrated the consistency of educational effects and placed teaching and learning on a more scientific basis. Meta-analyses have been used to determine the effects of particular programs, contexts, and instructional practices on learning (Wang, Haertel, & Walberg, 1993, p. 252). This technique has led to more meaningful, less biased, and more conclusive statements about previous research. Meta-analysis allows statistical integration of previous research and can point to directions for further research (Hattie, 1992, p. 12).

Educational innovations can be expected to change average achievement outcomes by 0.4 standard deviations and affective outcomes by 0.2 standard deviations (Hattie, 1992). An effect size of 1.0 indicates an

increase of one standard deviation, typically associated with advancing children's achievement by one year, improving the rate of learning by 50%, or a correlation between some variable and achievement of approximately .50 (Hattie, 1992, pp. 5-6).

Wang, Haertel, and Walberg (1993) conducted a study to identify and estimate the influence of educational, psychological, and social factors on learning. They used three methods – content analyses, expert ratings, and results from meta-analyses – to quantify the importance and consistency of variables that influence learning. Regardless of which method is employed, there is moderate to substantial agreement on the categories exerting the greatest influence on school learning as well as those that have less influence. Generally, proximal variables (e.g., psychological, instructional, and home environment) exert more influence than distal variables (e.g., demographic, policy, and organizational). Effective policies (provincial/state, district, and school) require implementation by teachers at the classroom and student level. Cohen (cited in Brandt, 1991) maintains that schools should begin solving problems by addressing proximal variables like curriculum, instruction, and assessment that emphasize student outcomes (Wang, Haertel, & Walberg, 1993, p. 276).

The results of the Hattie, Biggs, and Purdie (1996) meta-analysis support the notion of situated cognition, whereby it is recommended that training should be in context, use tasks within the same domain as the target content, and promote a high degree of learning activity and metacognitive awareness.

Wright, Horn, and Sanders (1997) examined the relative magnitude of teacher effects on student achievement while simultaneously considering the influences of intraclassroom heterogeneity, student achievement level, and class size on academic growth. The results show that teacher effects are dominant factors affecting student academic gain and that the classroom context variables of heterogeneity among students and class sizes have relatively little influence on academic gain. Thus, a major conclusion is that teachers make a difference (p. 57).

Hedges (2000) found that evidence about the effects of class size reductions from three different research designs – small-scale randomized experiments, large-scale econometric studies, and the large-scale longitudinal experiment in Tennessee (Project STAR) – is mutually supporting. This converging evidence suggests that the effect of class size reduction from 24 to 15 produces modest, but lasting increases in

academic achievement (p. 193). This 'triangulation' of effects obviates debate about which is the most valid research paradigm and which threats to validity should be evaluated as the most serious (p. 203).

Marzano (1998, 2000) made a compelling case for using the research on instructional improvement by synthesizing the results of a number of meta-analyses. Marzano (2000) summarizes the results of the major school effectiveness studies and some classic syntheses, discusses the research on school, teacher and student variables, and considers the implications of these studies for school reform. In a follow-up report, he and his colleagues present and discuss nine categories of instructional strategies that affect student achievement (Marzano, Pickering, and Pollock, 2001).

The meta-analytic studies included in this introduction attest to the rich research base that policy makers and practitioners can draw on to improve educational performance. An essential ingredient for deciding if interventions do in fact have positive effects is a student assessment or evaluation program. The next section describes Alberta's programs and provides evidence of the impact that information from these programs has on curriculum, the annual planning, reporting and accountability cycle, and educational improvement.

Student Assessment in Alberta

Student performance is an important policy direction in Alberta, which has a long history of monitoring the success of the educational enterprise. Student assessment policies include annual provincial assessment programs, and participation in national and international studies of achievement.

The introduction of student assessment programs, evaluation policies, and public reporting requirements in the 1980s led to increased public interest in education. In 1994 the government moved to province-wide planning for more and better reporting of information to enhance public accountability. See the appendix for a synopsis of selected assessment and accountability reforms.

Student achievement is addressed in Goal 2 (Excellence in Learner Achievement) of Alberta's annual planning and reporting accountability cycle. The expected outcomes for this goal are that learners (1) demonstrate high standards across a full range of areas (optimizing

human potential) and that (2) they complete programs. This goal has three core measures (achievement test and diploma exam results, and high school completion) and three supplementary measures (international competitiveness of students, provincial apprenticeship exam results, and educational attainment). Alberta Learning conducts an annual appraisal of provincial performance (met target, no change, improved performance, performance decline) and identifies opportunities for improvement (Alberta Learning, 2001).

Provincial

Alberta prescribes provincial curricula for all subjects from K-12. Students are assessed annually at grades 3, 6, 9 and 12 to determine how well they are meeting provincial standards; 85% of students are expected to achieve the acceptable standard, of which 15% (of all students) are expected to achieve the standard of excellence. The Achievement Testing Program assesses student performance in the core subjects (English language arts and mathematics in grades 3, 6 and 9, and social studies and science in grades 6 and 9). The grade 12 Diploma Examinations Program covers eight subject areas: English (and French for francophone students), social studies, mathematics, biology, chemistry, physics and general science. These examinations contribute 50% to a student's final mark. All provincial assessments can be written in French. Teachers are extensively involved in the development of tests and in centrally marking the tests. Results for individual students, schools, school authorities, and the province are posted to a secure website after each test administration, and five-year multiyear reports covering all sessions are posted in September of each year. School and school authority multiyear reports are available on the Internet.

National and International

Alberta also participates in the School Achievement Indicators Program (SAIP) and international studies such as the Second International Assessment of Educational Progress (IAEP II), the Third International Mathematics and Science Study (TIMSS) and the Programme for International Student Assessment (PISA).

National and international assessments provide external points of reference. Jurisdictions can use the results of such assessments to judge the appropriateness of their provincial standards. If provincial performance compares favorably with the best and/or similar countries or provinces and enough students are meeting provincial standards, then standards are deemed appropriate. If performance (1) compares favorably with external counterparts but too few students are meeting

provincial standards, or (2) if performance does not compare favorably but enough students are meeting provincial standards, the provincial standards may need to be reviewed.

Alberta's performance on national and international assessments influenced the policy decision to improve its mathematics program. Despite achieving well on IAEP II and the 1993 SAIP mathematics assessment, and supported by provincial assessments, Alberta decided that mathematics performance was not good enough. Student performance in mathematics was clearly not as good as in science (which ranked third worldwide in IAEP II, a rank confirmed by TIMSS in 1995). Therefore, Alberta identified mathematics as a priority for improvement and raised its curriculum standards by developing a more rigorous mathematics curriculum. Alberta cooperated in the development of the Western Canadian Protocol mathematics framework for K-9 in 1993, and implemented a new curriculum based on this framework by 1997. Since provincial assessment programs are aligned to mandated curricula, new standards were established for the grades 3, 6, and 9 mathematics assessments in 1998. As well, implementation of the revised *Programs of Study for Pure and Applied Mathematics 30* (replacing the current high school programs which culminate in Mathematics 30 and 33) began for students entering grade 10 in September 1998. Provincial implementation of diploma examinations for these two courses was scheduled for 2000/2001 for Pure Mathematics 30, and 2001/2002 for Applied Mathematics 30 (McEwen, 1998).

The Alberta Initiative for School Improvement

The Alberta Initiative for School Improvement (AISI) is an extension of Alberta's accountability framework that has been in place since the early 1990s. The goal of this program is to improve student learning and performance by fostering initiatives that reflect the unique needs and circumstances of each school authority. AISI provides targeted funding to school authorities for specific local initiatives to improve student learning and performance. This funding is in addition to the basic school grants.

AISI was officially announced on December 15, 1999 at a press conference that included all six partners: Alberta Learning (AL), the Alberta Home and School Councils' Association (AHSCA), the Alberta School Boards Association (ASBA), the Alberta Teachers' Association (ATA), the Association of School Business Officials of

Alberta (ASBOA), and the College of Alberta School Superintendents (CASS).

Development

Development began on August 26, 1999, when the Minister of Learning met with representatives of the above associations to design and develop a successor to the School Performance Incentive Program, which was announced March 11, 1999 as part of the 1999/2000 budget and put on hold June 9, 1999 as a result of opposition from educators and the community alike. The Minister stated at that time that he would proceed only upon agreement by all partners to an improvement program.

The partners met between August and December 1999 to develop the goal, principles, key considerations, and administrative requirements for a student improvement program in Alberta. In December 1999, the *AISI Framework* (AISI Education Partners Steering Committee, 1999) and the *AISI Administrative Handbook* (AISI Education Partners Working Group, 1999) were distributed to school authorities and posted on the Alberta Learning website.

Through AISI, the Government of Alberta is providing $66 million to public school authorities over each of four years, beginning in September 2000. Funded private schools are eligible for 60% of public school funding, an additional $2 million per year. In total, the government is investing more than $270 million in this initiative.

For each project, school authorities must submit a proposal that meets the following criteria: meaningful involvement of the school community, a research and literature base, improvement goals, support of those who will implement the project, appropriate measures, improvement strategies, evaluation methods and data sources, professional development and administrative support, staffing requirements, and a budget. Once all criteria are met, funding is provided for the project.

AISI is a bold approach to supporting the improvement of student learning by encouraging teachers, parents and the community to work collaboratively to introduce innovative and creative initiatives based upon local needs and circumstances. Some quotations from the proceedings of the AISI symposium at the 2000 conference of the Canadian Society for the Study of Education in Edmonton follow:

> … we are thrilled with the possibilities inherent in this project. It breathes life into the concept that it takes a community to raise a child. It validates our vision of the power of partnerships. It demonstrates a change in a way of doing business. Are we there yet? No. Will we get there? Yes!
> (Ayling & Fisher, 2000, p. 40)

> … the AISI project can be a propelling force for school improvement. It has the potential to make good Alberta schools even better. … The school improvement odyssey is under way. (Heck, 2000, p. 57)

> AISI has considerable potential to produce the infrastructure for supporting sustainable improvements in schools. (Earl, 2000, p. 62)

Provincial Support

Since January 2000, AISI partners have provided a series of planning supports to school authorities including 12 overview presentations, 20 intensive implementation workshops, and two sharing symposia.

Other supports include (1) an online annotated bibliography, which is fully searchable by author, title, key word, descriptor, and source; (2) funded support to the four Faculties of Education (University of Alberta, Faculté Saint-Jean, University of Calgary, and University of Lethbridge) so they can provide direct assistance and information to school authorities on related AISI literature, improvement strategies, measures and evaluation; (3) a series of workshops during the 2000/2001 school year; (4) site visitations and ongoing support by the School Improvement Branch; and (5) development of the AISI Clearinghouse.

Alberta Learning sponsored the first annual provincial AISI conference in Edmonton, November 1 and 2, 2001. The department committed $220,000 to reimburse travel and accommodation costs of about 450 educators so they could participate in the conference. All school authorities were invited to nominate projects for presentation. In total, the conference featured 104 projects: 64 in showcase presentations and 40 in poster presentations. Both formal and informal feedback has been extremely positive with delegates already planning to return for the second conference in 2002.

AISI Projects

All school authorities in Alberta are eligible to receive AISI funds for their students. The rate is $121 per registered student in grades 1 to 12 in public school authorities, $73 for private school students (60% of public

school funding), and $61 for Early Childhood Services (Kindergarten) students. In 2000/2001, Alberta Learning provided $68 million for AISI.

There are 74 public (public, separate and francophone districts, and charter schools) and 231 private (115 private school and 116 ECS private operators) school authorities in Alberta. Public school authorities currently have 470 projects and private authorities have 260 projects. Almost all (95%) of the projects will continue for three years.

The projects address a wide range of themes including literacy, numeracy, technology, students with special needs or at risk, early intervention, multiple intelligences, and so forth. Once the electronic retrieval system, which will facilitate easy access and summarization over categories is completed, classification of projects into categories will be possible.

AISI Project Annual Reports

School authorities are currently preparing their first annual reports for each of the 730 projects. All data are handled through the AISI Online Submission System on the secure Alberta Learning Extranet site. Information is carried forward so that only new information has to be added.

School authorities update their approved project plans and provide evidence of success. For quantitative and qualitative measures, three new pieces of information are required: the first-year results and the number of students (or respondents) results are based on, and an explanation of any unmet targets. Figure 1 presents three examples of measures to illustrate these requirements. As well, school authorities will provide a general overall interpretation of the results of all their measures.

For anecdotal records and other observations, there is a section called "Descriptions of Quality" which requires a description of the current situation, desired change, and success indicators. In the annual report, project coordinators describe the evidence of success achieved, estimate the number of students involved, and provide a self-assessment of how well the success indicator was achieved (very well, well, marginally, not at all).

Once the annual reports are submitted to Alberta Learning, they are reviewed by staff in the School Improvement Branch according to the criteria established for all elements of the reports. During the previous

two stages – the review of the proposal and interim progress report – there was considerable dialogue between reviewers and AISI coordinators. Once all requirements are met, Alberta Learning approves the project report and enables access to it on the Internet.

Given the developmental state of the first annual project reports, it is not yet possible to aggregate project results by theme or any other characteristic. In future, we plan to summarize results by converting them to effect sizes and determine the impact over like projects.

FIGURE 1: Illustrative Examples of Results for AISI Project Annual Reports

Measure	Baseline	2000/2001		Number* Measured
		Target	Actual	
Grade 6 English Language Arts	82.5	84.0	83.0	100
Baseline Comment Three-year average of the % of students achieving the acceptable standard on the provincial achievement test in the school (1998, 1999, 2000).				
(**)APAR Comment Students did not reach the target because we were unable to implement all strategies as expected. The slight increase over the baseline suggests we are on the right track.				
Parent Survey	75	80	81	43
Baseline Comment % of grade 6 parents agreeing that school is helping their child to learn effectively. Results are based on the spring 2000 school survey administered to parents.				
(**)APAR Comment We met our target of 5% more parents agreeing that school is helping their children to learn effectively. 43/50 parents responded for a response rate of 86%.				
Student Survey	85		85	92
Baseline Comment Our first-year actual results in June 2001 will establish our baseline.				
(**)APAR Comment 85% of our grade 6 students agree that they are improving their writing skills. The response rate was 92%.				

Note. White areas are carried forward from the current approved version of the project; shaded areas require completion for the first-year annual report.
*For quantitative measures: number of students who were tested or measured; for qualitative measures: number who responded to the survey, interview or other type of measurement instrument.
**Please interpret the results/findings, and if target not met, MUST explain.

Initial Findings

School authorities chose projects that address local needs and priorities. By far the largest number of projects relates to literacy. Because of this widespread interest, Stewart (2001) completed a special study of the approved public literacy projects. Her review found that 127 of the public projects (27%) focused on literacy. These projects involved 46 (64%) of the public authorities, 1,359 schools, 222,573 students, and accounted for $22 million (33%) of total AISI funding. Almost 300 full-time equivalent professional staff was hired for these AISI projects. The most common interventions include reading recovery, balanced literacy, paired reading, and online skills programs. In total, 98 of the 127 projects (77%) used provincial achievement tests as part of their measures. Table 1 summarizes the grade levels involved in these literacy projects.

The second major area of interest is mathematics. By going to the public AISI website and searching on key words of 'improving mathematics, learning mathematics, and numeracy', 48 projects were identified as focusing on mathematics. Table 2 summarizes the grade levels in these projects.

Given this focus on literacy and mathematics, provincial achievement tests in English language arts and mathematics are appropriate measures to suggest the impact of AISI projects on achievement. Alberta Learning produces annual multiyear reports (covering five years of achievement results for schools, districts and the province) for all provincial tests. In order to establish a stable baseline for AISI, weighted three-year averages of the students who wrote and achieved the acceptable standard on the grades 3, 6 and 9 provincial achievement tests in 1998, 1999 and 2000 were calculated.

Table 3 presents the baseline and first-year results on the English and mathematics tests (written in English) achievement tests of all students in the province. Of course change in these results cannot be attributed solely to AISI, but the provincial achievement results suggest that AISI projects are having some impact on the learning of students. The slight increase in the English language arts results translates into 845 more students achieving the acceptable standard over all three grades. The mathematics results are more positive, undoubtedly due largely to the fourth year of implementation of the new mathematics curricula. Cautious optimism, however, suggests that improved literacy may help

TABLE 1: Public AISI Projects Focused on Literacy

Division	Grades	Number of Projects	% of Literacy Projects
I	1-3	42	33.1
II - III	4-9	25	19.7
I - III	1-9	27	21.3
I - IV	1-12	13	10.2
II	4-6	10	7.9
II to IV	4-12	2	1.6
III - IV	7-12	4	3.1
IV	10-12	4	3.1
Total	1-12	127	100

Source: Stewart, 2001

TABLE 2: AISI Projects Focused on Mathematics

Division	Grades	Number of Projects	% of Math Projects
I - IV	1-12	10	20.8
I - III	1-9	9	18.8
III	7-9	8	16.7
III - IV	7-12	6	12.5
IV	10-12	5	10.4
I - II	1-6	3	6.3
II - IV	4-12	3	6.3
II - III	4-9	2	4.2
II	4-6	1	2.1
I	1-3	1	2.1
Total	1-12	48	100.2

Source: Alberta Learning Website, 2001

students in mathematics. Over all three grades, the 2-3% increases translate into 2,453 more students achieving the acceptable standard. This is especially encouraging for grade 6 where the expected percentage of students is now meeting the acceptable standard. Albeit improved, the grade 9 results are still significantly below provincial expectation.

Once the individual AISI project reports have been approved, Alberta Learning will begin an analysis of results over similar projects. The capabilities of the AISI Online Submission System will permit treating the numeric information in the cells as data elements that can be aggregated and analyzed.

TABLE 3: Percentage of Students in Grades 3, 6, and 9 Who Wrote and Achieved the Acceptable Standard on the Provincial Achievement Tests

	Grade 3	Grade 6	Grade 9
English Language Arts[1]			
Baseline (1998/2000)[2]	88.5	84.9	88.2
First Year (2000/2001)	89.4	85.4	89.1
% Change (Y1 – B)	0.9	0.5	1.0
Number of Students[3]	323	176	346
Mathematics[4]			
Baseline (1998/2000)[2]	84.4	82.6	72.1
First Year (2000/2001)	87.5	84.9	74.5
% Change (Y1 – B)	3.1	2.3	2.4
Number of Students[3]	1,026	768	659

Source: Alberta Learning Achievement Test Multiyear Reports, 2001.
Note: At least 85% of students are expected to achieve the acceptable standard on the provincial achievement tests.
[1]Number of students who achieved the acceptable standard in English Language Arts in 2001: grade 3 (35,915), grade 6 (35,176), grade 9 (34,599).
[2]The baseline is a weighted average of the students who wrote and achieved the acceptable standard on the provincial achievement tests in 1998, 1999 and 2000.
[3]Increase in the number of students who achieved the acceptable standard on the achievement test in 2001.
[4]Number of students who achieved the acceptable standard in Mathematics (English) in 2001: grade 3 (33,086), grade 6 (33,397), grade 9 (27,449).

Empirical Challenges

Like all new programs, AISI presents a number of challenges as teams work through their projects. This discussion is confined to issues that have become evident during the first year of implementation and relate to measuring and reporting student performance. Table 4 summarizes the types of empirical challenges discussed in this section.

AISI is a province-wide school improvement program in which individual school authorities (through collaboration and prioritization) decide (1) which areas of student learning and performance need attention, (2) how to go about improving these areas (new teaching strategies), and (3) how to provide evidence that improvement has taken place (measuring student performance). School authorities chose to operationalize AISI by way of 730 projects, some of which are district-

Table 4: Types of Empirical Challenges

Staffing	Measurement Tools	Analysis & Reporting
Commitment	Quantitative & Qualitative	Baseline
Continuity	Provincial Tests	Target
Capacity	Standardized Tests	Results
Time	Local Measures	Interpretation
Sustainability	Descriptions of Quality	Burden

level projects, others school based. Reporting requirements include annual collection and analysis of data that can be accepted as evidence that the strategies work. In other words, school and district staff (administrators, AISI coordinators and teachers) must either possess or develop the skills to provide information that is valid and reliable for measuring and interpreting the effect of their interventions.

Staffing

In some projects people who wrote the proposals did not continue as the project champions or implementers. It is estimated that 10 to 15 percent of the projects underwent a change in project leadership that resulted in issues of commitment, continuity and capacity. While the originator understood the intent of a particular project, those who followed may not. Successors wanted to shape the project in their own ways. Furthermore, staffing changes raise issues of commitment to the project and enthusiasm for the intervention selected to redress whatever shortcomings the project was designed to overcome.

Another challenge is the amount of time and support each project received. Many districts underestimated the amount of work required to support projects. In addition to identifying and selecting appropriate intervention strategies and assessment tools, project leaders must keep staff committed and on track, collect and analyze data from multiple sources, interpret the findings, and complete interim and annual reports. Project coordinators or lead teachers who have all these skills are not common. Large districts with in-house expertise are able to meet these challenges more readily than small authorities where there is no such capacity.

AISI partners anticipated many of the challenges in developing and implementing projects and incorporated safeguards into the principles and key considerations. All projects were required to assign resources to professional development and administrative support in their budgets.

Some authorities chose to use their central office administrators for support so that they could allocate all their AISI funds directly to the schools (e.g., staff and resources). Others provided release time out of AISI funds for on-site or area coordinators. The latter approach seems to be working better, leading some authorities to rethink the amount and type of administrative support required to achieve the maximum benefit from the projects.

Professional development is an ongoing commitment to help project teams develop the necessary skills to conduct all these activities. As in the first year of AISI, the partners will continue to provide provincial workshops to assist project teams. As well, each Faculty of Education in Alberta is receiving AISI funds to provide assistance to project teams. Furthermore, staff in the School Improvement Branch conduct workshops, provide advice, and undertake site visitations.

A key issue will be how to sustain the current enthusiasm and excitement over the life of the initiative. Innovation takes time and a lot of hard work. Milestone celebrations such as the annual conference will help, but more will be needed to help the project teams survive the inevitable trials and tribulations over the next three years.

Measurement Tools

AISI projects have a balance of quantitative and qualitative measures. Most projects that focused on cognitive outcomes incorporated provincial achievement tests and diploma examinations. These tests have the advantages of long-term use by teachers and extensive reporting which obviates the need for school staff to expend resources in test development, analysis and reporting. However, these tests cover only four grades, so projects that include students in grades K-2, 4-5, 7-8, and 10-11 need to find other measures. In addition to the provincial tests, school authorities are using more than 40 other assessment instruments (e.g., Canadian Tests of Basic Skills, Gates-MacGinitie Reading Tests, Schonell Tests, Brigance Tests, etc.).

Many projects have affective and behavioral goals. Such projects do not lend themselves to standardized assessment so project teams have had to develop or adapt local measures. While these instruments may be valid for a particular project, outsiders usually question the degree of confidence in their results. Local measures also require a great deal of work in analyzing, interpreting and reporting results. Most local information comes from administrative data (e.g., attendance) or surveys.

Because these measures generate quantitative data, it will be possible to summarize findings over similar projects.

Most of the private school authorities chose to report their results via descriptions of quality rather than numeric data, which will make it difficult to summarize these narrative accounts. Assuming that the supporting evidence of success achieved is credible, it may be possible to evaluate these projects on the basis of their self-assessments (i.e., X % rated their success indicator as well achieved, Y % as marginally, etc.).

Analysis and Reporting

Project teams have been busy over the summer and fall in analyzing and interpreting their findings, and reporting them through the AISI Online Submission System. Many are finding that the baseline they established at the outset of their project is not appropriate. For example, if a project focused on special-needs students, then a baseline for the school (or district) as a whole would not be a useful basis for comparison; the results for special education students (at the school or district depending on the project) would be more appropriate. Table 3 of the provincial achievement test school and district reports provides information by type of program (e.g., regular, French immersion, English as a second language, special education, virtual schooling), thereby facilitating program-specific comparisons. If a local measure is used, school authorities must generate the data for the target group.

Initially many project teams had not determined what target group they would use, so they indicated that their baseline would be determined (TBD) which was acceptable at the proposal stage. Those who needed to develop and/or adapt measures indicated that their first-year actual results would also serve as the baseline. Again this was acceptable as it is better to have measures that are meaningful than to include ones that are only tangentially related to the goal at hand. If the baseline and first-year actual are identical, there is no need for a target. The actual results then serve two purposes: first as the baseline for the project, and second as the results of the first year. Improvement targets must then be set for the second and third years of the project.

Project teams must explain unmet targets, and are encouraged to interpret their findings. They have two bases for comparison: the actual versus the baseline and the actual versus the target. Some teams have found that the targets they established were optimistic. They are now in a position of having to explain the shortfall and to propose action for the second year. During discussions with project coordinators in the fall workshops,

they observed that (1) some targets were unrealistic, (2) the intervention was not fully implemented, or (3) they did not understand the importance of setting a reasonable target and the implications for their reports.

Another issue is the number of measures proposed for a project. Teams were advised to use measures appropriate to their goals, and encouraged to use multiple measures and sources of data, but to keep the number manageable. The more appropriate the measure, the more valid the inferences that can be drawn from the findings. The larger the number of measures, the greater the analytic and reporting burden. Most of the public projects use both assessment instruments (usually the provincial tests) and surveys.

Over the next year ongoing workshops will assist project coordinators in dealing with issues of number and appropriateness of measures, validity of inferences from diverse sources of information, and reporting.

Conclusion

AISI is still in its infancy. After a year of development by the education partners and a year of project development and implementation by the 730 project teams, we are at the stage where we can look back on two years of effort and observe its successes and challenges.

Taylor and Tubianosa (2001) showcase three school improvement initiatives (Alberta, Ontario and Quebec) that serve as exemplars of transforming results into plans of action, thereby linking assessment and school improvement. They describe AISI as follows:

> Creative, innovative and exciting projects directed at "meaningful and sustainable improvement in student learning and performance" are expected to emerge from this collaborative program (p 81).

This quotation captures the essence of AISI: a collaboration between government and its partners (teachers, administrators, trustees, parents, and universities) in addressing a common goal – improved student learning and performance – through locally developed and implemented projects that address unique needs and circumstances.

The 730 projects are creating new knowledge that will be shared in an online, public AISI Clearinghouse, housing not only the individual project reports and results, but also the products, tools and promising

practices that emerge from the initiative. The Clearinghouse will also include secondary analyses, narrative commentaries, and syntheses that summarize the results of the projects. Currently under development, the Clearinghouse should be operational by 2002 and fully realized by 2004.

AISI is a researcher's dream, not only because it will generate volumes of data for subsequent analysis, but also because of its richness and promise as a new collaborative way of improving education. It also promises to meet four minimum conditions for satisfactory inference from research: longitudinal study, multilevel analysis, replication over time and space, and plausible explanation of the process whereby schools become effective (Goldstein, 1997, p. 376).

Ridgway, Zawojewski, and Hoover (2000) identified a number of challenges to evidence-based policy and practice that are germane to the work of AISI. These include that innovations need new indicators, different effects might show up at different times, long-term follow-up and past experience might not be useful, variability in effect sizes, public perception can be more important than average effect size, public acceptance needs stories based on good parameterization, and a need to go beyond linear, additive models of change. Indeed they recommend a new field of endeavor associated with macro-systemic change (p. 181).

AISI shows that with resources, commitment, and careful strategies, teachers can find new ways to work together to help students learn. Targeted resources and attention go a long way in facilitating school improvement.

AISI Desiderata

May AISI live up to its potential and help Alberta students and teachers become the best they can be. May the research community avail itself of the opportunity for unprecedented study of a province-wide school improvement initiative. May the education community benefit from lessons yet to be imagined!

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Appendix: Selected Alberta Assessment, Accountability, and Improvement Reforms

Year	Reforms
1982	The Achievement Testing Program was introduced in which the core subjects were cycled to test one subject annually in grades 3, 6, and 9.
1984	Diploma examinations were reinstated; they had been withdrawn in 1973. Two high school diplomas were introduced: • The Advanced Diploma required 100 credits (58 specified and 42 unspecified) including completion of four diploma exams: English 30, Social Studies 30, Mathematics 30, and one of Biology 30, Chemistry 30 or Physics 30. • The General Diploma required 100 credits (45 specified and 55 unspecified) including completion of English 30 or 33, and a minimum of 5 credits in mathematics and 3 credits in science.
1989 - 92	High school diploma requirements were revised based on a comprehensive review of secondary education. • By 1992, the Advanced Diploma required 100 credits (76 specified and 24 unspecified) including completion of four diploma exams: English 30, Social Studies 30, Mathematics 30, and one of Biology 30, Chemistry 30, Physics 30, or Science 30. • By 1989, the General Diploma required 100 credits (62 specified and 38 unspecified) including completion of English 30 or 33, Social Studies 30 or 33, and a minimum of 8 credits each in mathematics and in science.
1993	The Government of Alberta introduced the concept of annual business planning and reporting for all departments and agencies receiving public funds.
1994	The first business plan, *Meeting the challenge: Three-year business plan for education 1996/97 to 1998/99*, was released. Alberta returned to a single high school diploma, which requires 100 credits and the completion of English 30 or 33, Social Studies 30 or 33, and approximately grade 11 equivalent mathematics and science.

Year	Reform
1995	The first annual report, *Results report on the three-year business plan for education ECS to grade 12 1995*, was released. Achievement testing was expanded to annual provincial assessment of the core subjects (English language arts, social studies, mathematics, science) in grades 6 and 9, and English language arts and mathematics in grade 3. Diploma examinations were introduced for Social Studies 33, Mathematics 33, and Science 30.
1998	New standards were set for the grade 3, 6, and 9 mathematics achievement tests to reflect the revised *Program of Studies for K-9 Mathematics*.
1999	**Alberta Initiative for School Improvement (AISI)** Goal: To improve student learning and performance by fostering initiatives that reflect the unique needs and circumstances within school jurisdictions. Principles 1. Funding will flow to school jurisdictions and charter schools based upon approved proposals for improving student learning and performance. 2. Proposals can be multi-year (maximum of three years) but must have interim (at least annual) progress measurement targets. Continued funding depends on evidence of success. 3. Funding consisting of an equal amount per registered FTE (Full Time Equivalent) student will be based upon the previous year's September 30th enrolment. 4. The jurisdiction proposal needs to be linked to and become part of the current three-year planning and reporting process for purposes of the school jurisdiction's annual planning, reporting and accountability processes. 5. There will be an appropriate balance of local and provincial measures of performance that includes approved quantitative and/or qualitative measures. 6. Project results will be shared with Alberta school jurisdictions and others while Alberta Learning will act as the "clearinghouse" on behalf of all partners.

Sources: McEwen, 1998, p. 26, and AISI Education Partners Steering Committee, 1999, p. 4.