



WHAT WORKS IN INNOVATION IN EDUCATION

**CANADA: ENCOURAGING THE USE OF SUMMATIVE DATA FOR
FORMATIVE PURPOSES**

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Canadian background

In Canada, through the Council of Ministers of Education, Canada, all provinces and territories participate in a national assessment program that assesses student achievement in mathematics, reading, writing, and science on a four-year cycle. Each province and territory receives their own results as well as an analysis by language. This enables provinces to conduct a secondary analysis that can be used to inform teaching practices. The three Canadian provinces participating in the study, Newfoundland and Labrador, Saskatchewan, and Quebec, encourage schools to use school-level data to inform school planning. In the curriculum guides currently in use in Canadian provinces, the learning goals and standards are clearly articulated. For each learning outcome, suggested teaching and assessment strategies are included. Many provinces and jurisdictions in Canada have developed rubrics and exemplars so that common performance standards and criteria are set.

Le système scolaire du Québec en rénovation

Bien que l'âge obligatoire du début de la scolarisation soit fixé à six ans par la *Loi de l'instruction publique* du Québec, l'âge auquel la plupart des petits Québécois commencent à fréquenter l'école est cinq ans. Toutefois, 15 à 20 % d'entre eux entrent en classe préscolaire une année plus tôt, soit à l'âge de quatre ans afin de compenser les retards accumulés dans les milieux défavorisés. La loi québécoise sur l'enseignement public donne aux étudiants adultes et aux parents d'enfants mineurs la possibilité de fréquenter l'établissement scolaire de leur choix sur le territoire de leur « commission scolaire » d'appartenance. Un élève peut fréquenter un établissement extérieur au territoire de sa commission scolaire seulement si le programme pédagogique répondant à ses besoins particuliers n'est offert dans aucun des établissements de la commission scolaire dont il dépend. Le financement public est tributaire du nombre effectif d'élèves inscrits, ce qui donne lieu à une certaine concurrence entre les établissements relevant d'une même commission scolaire en milieux urbains. Cependant, en zone rurale, où les écoles sont peu nombreuses, le petit nombre d'établissements et le peu de variété des programmes pédagogiques disponibles limitent à la fois le choix et la concurrence.

La plupart des enfants fréquentent l'école publique mais les parents peuvent également choisir l'enseignement à domicile ou une école privée. L'État finance 70 % de l'enseignement privé, le solde étant couvert par des fonds privés, constitués principalement des droits d'inscription acquittés par les parents. Actuellement, 5 % des élèves du primaire et 17 % de ceux du secondaire fréquentent une école privée.

Depuis quelques années, les écoles québécoises se voient conférer une autonomie croissante liée à des responsabilités accrues. Si toutes sont tenues par les encadrements nationaux à remplir la même mission éducative, elles disposent toutefois d'une certaine latitude dans le choix des moyens qu'elles retiennent pour y parvenir. En effet, depuis l'année 1999-2000, les conseils d'établissement, formés d'enseignants, de parents, d'élèves et de représentants de la communauté, sont tenus de développer une démarche d'amélioration continue. Cette démarche mise sur l'engagement de tous les partenaires impliqués dans la réussite scolaire. Elle suppose plusieurs étapes telles : l'analyse de la situation, la précision des objectifs, le choix d'orientations, la mise en place d'une stratégie d'amélioration et la définition des actions à entreprendre pour l'atteinte des objectifs fixés. Dans un souci de cohérence, le même exercice de rigueur est imposé à chaque commission scolaire et au ministère de l'Éducation. De fait, les commissions scolaires et le ministère doivent transmettre des données et soumettre des plans stratégiques précisant leurs objectifs en vue d'une amélioration continue.

Vers des compétences transversales

Le système éducatif québécois fait actuellement l'objet d'une vaste réforme qui vise : le développement des compétences disciplinaires et transversales, la réalisation d'apprentissages

culturellement ancrées, l'adoption d'une démarche active et réflexive et d'une évaluation intégrée à l'apprentissage. Cette rénovation s'appuie sur une conception cognitiviste et socioconstructiviste de l'apprentissage et de l'enseignement. Suivant l'approche par compétences, l'évaluation formative tient une place privilégiée dans le développement de la capacité d'apprentissage autorégulé des apprenants, qui, lui, repose sur l'amélioration progressive des capacités métacognitives. Ainsi, l'évaluation a pour but de soutenir l'élève dans la construction de son savoir et le développement de ses compétences.

Depuis quelques années, le taux d'échec scolaire, surtout chez les garçons, suscite de vives inquiétudes au sein de la société québécoise. Aussi, des recherches et des études d'interventions expérimentales ont été entreprises dans le but de mieux comprendre le phénomène et mieux intervenir auprès des élèves à risque. D'ailleurs, l'un des principes directeurs de la réforme en cours est justement de donner les moyens de réussir à tous les élèves et par conséquent de réduire les taux d'échec et le nombre de redoublements. L'élève ne devrait plus connaître l'échec continu ; au contraire, l'école doit donner au plus grand nombre possible d'apprenants des processus d'acquisition de savoirs qu'ils peuvent mettre à profit lorsqu'ils ont quitté l'école. Le ministère de l'Éducation s'inspire entre autre des récentes recherches menées en sciences de l'éducation qui voient dans la capacité d'autorégulation une compétence cruciale pour la formation tout au long de la vie et pour l'accroissement de l'autonomie de l'individu en perpétuelle situation d'apprentissage.

L'une des ambitions majeures de la réforme est d'intégrer le développement de compétences générales et transférables au développement des compétences disciplinaires. Le Programme de formation vise le développement de compétences qui font appel à des connaissances provenant de sources variées. Le regroupement des disciplines en cinq grands domaines d'apprentissage traduit cette volonté d'établir des relations aussi nombreuses et variées que possible, d'abord entre des champs disciplinaires apparentés, mais aussi entre des disciplines appartenant à différents domaines d'apprentissage. La réforme a été mise en œuvre aux trois cycles du au primaire (entre 2000 et 2003) avec succès grâce à la mobilisation du personnel enseignant. En effet, les instituteurs revendiquaient depuis longtemps une diminution des effectifs par classe. Or, comme la réduction des effectifs va dans le sens des recherches sur l'efficacité de l'enseignement primaire, le gouvernement a décidé de plafonner le ratio à 20 élèves par enseignant au premier cycle.

Au secondaire, le nouveau curriculum est actuellement en phase d'appropriation par quelques établissements et la mise en œuvre de la réforme à grande échelle se fera graduellement entre 2005 et 2009. La culture organisationnelle et les pratiques professionnelles au secondaire étant plus lointaines et étrangères à celles nécessaires à l'implantation de la réforme du curriculum, le gouvernement anticipe une résistance plus forte au secondaire que celle rencontrée à l'ordre primaire. Puisque de nouvelles compétences professionnelles sont à développer, il est permis de croire que certains syndicats d'enseignants se serviront de la réforme pour exiger de meilleures conditions de travail et une augmentation du salaire pour leurs membres. Toutefois, même si les pratiques nouvelles ne sont pas encore instaurées au secondaire, il est fort probable qu'elles s'inscriront dans la suite et la continuité des changements survenus au préscolaire et au primaire.

Politiques d'évaluation formative au Québec

Actuellement, les méthodes d'évaluation qualitatives sont prédominantes au primaire tandis que les méthodes quantitatives se transforment peu à peu au secondaire. Pour sept années encore, l'enseignement secondaire se terminera par cinq épreuves nationales obligatoires portant sur la langue maternelle et la langue seconde de l'élève, les mathématiques, les sciences et l'histoire. Les résultats de chaque établissement sont publiés sur Internet et la plupart des parents s'intéressent aux résultats de leur école et de leur commission scolaire locale.

Dans la foulée de la rénovation du curriculum, le ministère de l'Éducation du Québec a adopté une politique d'évaluation des apprentissages en concordance avec le nouveau programme de formation de l'école québécoise. La vision ministérielle de l'évaluation s'inscrit dans une évolution des pratiques d'enseignement et d'évaluation déjà amorcée au sein du milieu éducatif, plus particulièrement au primaire, compte tenu du calendrier d'implantation de la réforme scolaire.

Les enseignants sont encouragés à appliquer les évaluations dans une optique formative selon laquelle l'évaluation remplit une fonction d'aide à l'apprentissage. Des normes, des critères et des échelles de développement ont été établies pour chacune des compétences du nouveau programme de formation afin d'améliorer l'objectivité et la transparence du processus d'évaluation. L'optimisation des résultats exigeant que la responsabilité de l'évaluation soit partagée, les élèves eux-mêmes interviendront activement dans le processus d'évaluation, en s'auto-évaluant et en évaluant leurs pairs. La réforme se propose aussi de mieux informer les parents sur les différentes pratiques d'évaluation, sur les résultats qui en découlent et de partager avec eux une vision commune de l'évaluation et de l'apprentissage. La première priorité de l'optimisation de l'évaluation est l'amélioration continue de la maîtrise du français : les enseignants de toutes les disciplines devront s'efforcer de faire progresser leurs élèves en compréhension ainsi qu'en expression écrite et orale.

Le calendrier d'implantation de la réforme s'étalant au secondaire de septembre 2005 à septembre 2009, il va sans dire que les pratiques évaluatives ne sont pas actuellement tout à fait redessinées en fonction des nouveaux paramètres curriculaires. Inspirés par les pratiques en développement au primaire, quelques projets novateurs ont toutefois vu le jour au cours des dernières années à cet ordre d'enseignement. À cet égard, le programme PROTIC de la Commission scolaire des Découvreurs se classe au chapitre des plus avant-gardistes par la mise sur pied en 1997 d'un programme de formation axé sur l'intégration des nouvelles technologies de l'information et de la communication au secondaire. Les objectifs poursuivis depuis le début de son existence (1997-1998) par PROTIC vont de pair avec les finalités et les moyens de l'actuelle réforme de l'Éducation du Québec. Dès les premiers jours, les acteurs engagés dans PROTIC orientent leurs efforts sur le développement d'un nouvel environnement d'apprentissage et conçoivent la classe comme une communauté apprenante.

Étude de cas d'une école : les Compagnons-de-Cartier à Ste-Foy

À Ste-Foy, comme dans d'autres banlieues au Québec, les écoles publiques se trouvent en situation de concurrence avec plusieurs écoles privées. Situation qui a posé de sérieuses difficultés au système d'enseignement public au milieu des années 90, si bien que la Commission scolaire des Découvreurs a décidé de prendre les devants pour convaincre les parents que l'enseignement public présente une option valable et adaptée aux besoins des élèves. Afin d'en savoir plus sur les choix des parents, la commission scolaire a réalisé un sondage duquel est ressorti que l'enseignement basé sur les technologies pour développer des compétences complexes suscitait l'intérêt d'un nombre étonnant de parents. Quelques conseillers pédagogiques de la Commission scolaire des Découvreurs en collaboration avec la direction de l'école Les Compagnons-de-Cartier ont alors élaboré un nouveau programme pédagogique pour une école publique. Les parents souhaitent que l'accent soit mis sur le développement de compétences technologiques tout en se préoccupant des moyens à mettre en place pour promouvoir le développement de ces compétences cognitives et métacognitives complexes. Les concepteurs du nouveau programme tenaient en compte que du côté des enseignants, il fallait améliorer le travail d'équipe et l'appréciation formative. Toutefois, les dirigeants de la commission scolaire souhaitent voir émerger sur leur territoire un programme visant l'appropriation et la maîtrise d'une langue seconde.

C'est de ces différentes visions de l'avenir de l'enseignement sur le territoire de la Commission scolaire des Découvreurs qu'est né le concept du programme PROTIC. Il est très vite apparu que la réalisation de ce plan ambitieux exigeait des ressources financières additionnelles. La commission scolaire

a apporté une aide importante à la formation des enseignants dans des domaines tels que la mise en application du socioconstructivisme et le développement des compétences de travail d'équipe, tandis que l'entreprise privée a apporté son concours à l'équipement des salles informatiques. Les enseignants ont, entre autres, privilégié une pédagogie par projets pour l'atteinte des objectifs ci-dessus mentionnés.

Les groupes qui ont participé à la fondation de PROTIC ne l'envisageaient pas à l'époque comme un futur modèle pour toutes les écoles québécoises, mais comme une réponse aux besoins formulés par une communauté spécifique. Aujourd'hui, force est de constater que le modèle pédagogique mis de l'avant par PROTIC, dès 1997, est celui que toutes les écoles secondaires du Québec sont invitées à mettre en place au cours des prochaines années. En effet, le développement de compétences à l'intérieur de projets, l'apprentissage coopératif, le recours aux nouvelles technologies de l'information et des communications comme soutien à l'apprentissage et l'évaluation intégrée à l'apprentissage représentent les principaux paramètres de la réforme québécoise du curriculum. Cela n'empêche pas pour autant certains professeurs et délégués du syndicat enseignant d'émettre des réserves car une augmentation de la charge de travail des enseignants, qui découle de la pédagogie PROTIC, est perçue. Sans remettre en question son efficacité, ils s'inquiètent du nombre d'heures de préparation qu'elle requiert.

Les objectifs ambitieux de PROTIC exigeaient des enseignants ayant un profil particulier sur le plan des compétences pédagogiques et technologiques. Alors que la plupart des enseignants sont recrutés à l'intérieur de leur commission scolaire et affectés ensuite à un établissement, la commission scolaire a choisi de procéder différemment pour PROTIC. Les postes vacants sont d'abord offerts aux enseignants de l'école dans laquelle le programme PROTIC évolue. S'ils ne sont pas comblés, ils sont alors annoncés dans la commission scolaire et s'ils ne sont toujours pas comblés, ils sont alors annoncés publiquement et les professeurs sont recrutés par les dirigeants de l'école elle-même. Pour cela, la commission a dû signer une entente avec le syndicat local des enseignants.

La plupart des enseignants qui, à l'origine, se sont portés candidats et ont été sélectionnés pour PROTIC déploraient le manque de possibilités d'expérimentation et de formation et ont décidé de s'engager dans le programme en raison, entre autres, des possibilités de perfectionnement professionnel qu'il offrait. Plusieurs enseignants ont souligné qu'ils ne s'étaient pas sentis encouragés à s'aventurer hors des sentiers battus et à expérimenter de nouvelles stratégies pédagogiques dans leur ancien établissement ou programme d'enseignement. Ils voyaient donc en PROTIC une chance exceptionnelle à saisir pour des individus créatifs ayant besoin d'un degré d'autonomie supérieur à celui que le système scolaire offrait traditionnellement. La plupart des professeurs instaurent des pratiques de coopération dans leur salle de classe en s'interrogeant sur leurs finalités pratiquaient l'enseignement par projet dans leur précédent établissement. Comme peu d'entre eux avaient l'habitude de se servir d'un ordinateur portable comme outil pédagogique, le groupe d'enseignants a décidé que chacun devait apprendre à s'en servir en classe. Ainsi, ils pouvaient plus facilement constituer une communauté professionnelle d'apprentissage partageant leurs savoirs, entre autres, sur l'usage du portable en classe pour eux-mêmes et leurs élèves.

La sélection des élèves

Un programme comme PROTIC ne peut fonctionner qu'avec des élèves déjà relativement motivés et autonomes (–le programme les fait progresser dans leur autonomie et cultive leur motivation.) C'est pourquoi, l'école sélectionne les élèves. Au départ, PROTIC devait être ouvert aux plus doués, mais les « meilleurs élèves de notre enseignement traditionnel ne sont pas les meilleurs candidats pour PROTIC » (un enseignant de PROTIC). Le recrutement des élèves s'effectue au terme d'une journée entière consacrée à l'observation et à l'évaluation des jeunes candidats. Deux sur trois sont ensuite sélectionnés. 20 % des élèves viennent d'une autre commission scolaire parce qu'ils désirent étudier dans le cadre de la pédagogie PROTIC. L'école a conçu un dépliant d'information sur le programme à l'intention des parents et des élèves intéressés, mais le mode de recrutement qui s'avère le plus efficace est la bouche à oreille. » Peut-

être le concept pourrait-il éventuellement fonctionner avec tous les élèves, mais il faut être intrinsèquement motivé ici. Nos élèves lisent et travaillent beaucoup. Et ce type de travail exige certaines compétences sociales. »

La pédagogie PROTIC

Les élèves ont manifestement beaucoup de plaisir à suivre le programme. « Ils apprécient l'accent mis sur la rigueur méthodologique et sur le travail d'équipe », explique un professeur. « Par rapport à mon ancien établissement, nous tirons beaucoup plus de fierté de notre travail : pas tant de nos notes que de nos réalisations dans le cadre des projets » explique une jeune fille de 13 ans qui a récemment quitté une école privée pour rejoindre PROTIC.

L'enseignement est systématiquement organisé autour de projets développant des compétences disciplinaires et transversales, faisant notamment appel au travail de recherche en groupes. Ainsi, au cours de l'année scolaire 2002-2003, 31 élèves de niveau huit, épaulés par un enseignant de géographie, d'enseignement religieux et de français, ont engagé des recherches sur le conflit israélo-palestinien afin de déterminer s'il est de nature écologique (autour de ressources aquifères rares) ou religieuse. Le projet, qui a démarré en décembre 2002 et s'est achevé en été 2003, a été organisé en deux phases. Dans la première, les recherches ont porté sur le problème de l'accès à l'eau au Moyen-Orient, et dans la deuxième, qui a débuté autour de Pâques, sur les différentes religions, Islam, Judaïsme et Christianisme, et sur leur rôle dans le conflit.

Rassemblés en groupe de quatre autour d'une table, les élèves ont étudié une sous-question du thème général à partir de multiples sources d'information : Internet, logiciels pédagogiques, livres et encyclopédies multimédia. Tous les élèves de PROTIC sont équipés d'un ordinateur portable et se servent du logiciel *Knowledge Forum* pour enregistrer, structurer l'information, construire ou élaborer des connaissances autant à l'intérieur qu'à l'extérieur de la classe. Un groupe a effectué des recherches comparatives sur la purification de l'eau en Israël et au Québec, un autre sur les systèmes d'irrigation et le rôle de l'eau dans l'agriculture israélienne. Dans la deuxième phase, les groupes ont étudié les différentes religions et le point de vue présenté par chacune sur le conflit. Ils ont ensuite présenté leurs résultats et dialogué sur ces différents points de vue.

L'enseignant a également simulé un débat entre Israéliens et Palestiniens, dans le cadre duquel les élèves ont pu mettre à profit leurs nouvelles connaissances pour défendre leur position. Vers la fin du projet, les élèves se sont intéressés au rôle que d'autres puissances internationales, et en particulier les Nations Unies, peuvent jouer dans la résolution du conflit. Juste avant la fin de l'année scolaire en juin, tous ont participé à la réalisation d'un site Internet commun, qui fait état de l'avancée des connaissances du groupe sur le conflit israélo-palestinien. Chaque groupe s'est chargé d'une partie du site, qui rassemble des textes rédigés en français par les élèves, des photos et des diagrammes, des cartes et des graphiques. Les principaux projets de classe s'achèvent par l'élaboration et la réalisation d'un produit commun, un livre ou un site Internet. Toutes les classes du programme PROTIC exploitent les nouvelles technologies de l'information et de la communication dans les projets, diversement selon les matières mais avec un recours étonnant à l'écrit en mathématiques et en sciences et une démarche de recherche plutôt rigoureuse en langue et en sciences humaines.

L'atmosphère de la classe fait penser à l'occasion à celle d'une salle de presse ou d'un bureau dans une entreprise. On y parle beaucoup, mais en règle générale, la discipline et la motivation sont élevées. Certains élèves travaillent seuls, font des recherches sur Internet ou écrivent. D'autres travaillent en groupe, comparent et échangent des informations. La plupart des élèves restent à leur pupitre, mais d'autres se déplacent, échangent avec d'autres groupes et demandent des conseils. L'enseignant oriente et régule l'activité générale de la classe, des équipes et engage les élèves dans des échanges en matière de

contenu ou de processus, circule dans la classe, passe du temps avec les élèves et avec les groupes, examine leur travail, demande des précisions et donne son avis sur la qualité du matériel écrit. (Dire autrement en reliant le tout à l'évaluation telle que discutée en début de texte.) Il y a très peu d'instructions directes pendant le cours. Un élève demande au professeur ce que signifie « Extrême-Orient » ; celui-ci sollicite alors l'attention de toute la classe et transmet la question de l'élève. Un ou plusieurs autres élèves donnent la bonne explication à tous. Quinze minutes avant la fin de chaque cours de 75 minutes, les élèves d'un groupe échangent les connaissances qu'ils ont acquises pendant le cours, discutent des questions en suspens et organisent la suite de leur travail.

La communication se poursuit après la classe. Tous les élèves apportent leur portable chez eux où ils ont accès à leur plate-forme commune sur Internet. « Nous nous envoyons souvent des messages sur notre travail tard dans la soirée » explique un élève. Les enseignants estiment que la communication écrite électronique oblige les élèves à être le plus précis possible dans leur contribution à un travail collectif. Dès qu'un enfant s'exprime de manière trop vague, les élèves de son groupe ou un enseignant répondent via *Knowledge Forum* et demandent une définition plus précise ou une preuve plus convaincante. « Cela oblige nos élèves à travailler de façon professionnelle » explique un enseignant.

Évaluation formative dans PROTIC

Au démarrage de chaque projet, les élèves identifient, à l'intérieur du cadre fourni, leurs objectifs individuels d'apprentissage. « Il est beaucoup plus facile de progresser lorsqu'on a listé ses objectifs par écrit pour soi-même. » Tous les neuf jours, les élèves rédigent un rapport sur les stratégies déployées pour leur apprentissage personnel, celui de leur équipe et la réalisation des objectifs d'apprentissage individuels et du programme. C'est une partie centrale de l'évaluation formative dans PROTIC : ce suivi et cette analyse leur permettent de réguler leur processus d'apprentissage et de changer éventuellement de méthode et de stratégie.

L'interdépendance positive structure le travail de groupe. Un devoir de mathématiques, par exemple, comporte cinq niveaux d'expertise. Pour que le groupe atteigne un niveau plus élevé, chacun de ses membres doit réussir un test. « Nous veillons systématiquement à nous aider et à nous soutenir les uns les autres dans notre apprentissage », explique un élève. Pour améliorer le travail des équipes, les élèves évaluent mutuellement leurs compétences de travail d'équipe, à partir d'une liste de critères établie par les enseignants. « Cela nous aide à résoudre les problèmes de notre équipe entre nous ». Chaque élève effectue approximativement vingt présentations par an devant l'ensemble de la classe, qui les commente sur la base d'une liste de critères établies par l'enseignant.

Les élèves ont aussi un « portfolio d'apprentissage », un dossier dans lequel ils classent leurs travaux personnels importants, réalisés sur support papier les deux premières années et sur support électronique à partir de la troisième secondaire. Les enseignants et les parents ont accès aux portfolios électroniques et peuvent y apporter des commentaires. Les enseignants suivent régulièrement le travail des élèves, ils parcourent le portfolio électronique et mettent leur appréciation sur la qualité du travail, les points forts et ceux qui ont besoin d'être améliorés. De nombreux parents s'intéressent au portfolio de leur enfant.

Après chaque cycle de neuf jours, les élèves se fixent des objectifs et définissent des buts à atteindre. « On s'attache vraiment à l'évolution individuelle ici ». Quatre fois par an, les élèves reçoivent leur bulletin. Trois de ces bulletins sont purement formatifs et présentent les appréciations des professeurs sur le travail de l'élève dans différents domaines ; le quatrième est sommatif et indique si l'élève a réussi ou échoué. Les compétences transversales comme l'organisation, l'emploi des technologies, le travail d'équipe, les compétences en communication et les compétences sociales y sont évaluées. « Je regarde toujours mon bulletin et je décide moi-même des éléments sur lesquels je veux travailler dans les prochains mois ». « Les critères aident vraiment à voir ce qu'on peut faire pour s'améliorer.

« Dans mon ancienne école, j'étais beaucoup moins sûr de mes progrès » remarque un élève. Au départ, la plupart des élèves n'ont pas le niveau d'autonomie que l'on attend d'eux ici car ils étaient beaucoup plus contrôlés et dirigés dans leur ancienne école. Mais au bout de quelques projets, il leur est beaucoup plus facile d'organiser leur apprentissage. « On comprend qu'on est responsable, qu'on est aux commandes. On commence à voir combien de temps il faut consacrer à une tâche pour la mener à bien. »

Un langage commun à l'apprentissage et à l'enseignement

Les entretiens réalisés séparément avec les élèves et avec les maîtres, il montrent de façon évidente qu'ils 'utilisent la même vocabulaire pour discourir des processus associés à l'enseignerment et à l'apprentissage. Même les plus jeunes élèves emploient des mots comme « métacognition » et « auto-évaluation ». L'emploi de ces termes semble s'appuyer sur une connaissance et une compréhension réelles des processus d'apprentissage. Il est évident que les enseignants de PROTIC parlent à leurs élèves de la dynamique d'apprentissage. « Nous avons décidé » explique un des premiers enseignants du programme, « que nous voulions que nos élèves deviennent des experts de l'apprentissage, tout comme ils acquièrent de l'expertise dans les autres domaines sur lesquels nous travaillons ici ».

Le rôle des enseignants

Au Québec, les enseignants sont salariés et appartiennent au secteur parapublic, mais ils ne sont pas fonctionnaires. Cela dit, leur échelle salariale est comparable à celle des pays où les enseignants sont fonctionnaires, car leur revenu augmente avec l'ancienneté. Leur rémunération est négociée entre le ministère de l'Éducation et le syndicat enseignant. Pour devenir enseignants, les étudiants suivent un cursus universitaire de quatre ans couvrant la pédagogie et la didactique disciplinaire. La réussite de l'un des programmes en sciences de l'éducation est officialisée par la remise d'un diplôme de baccalauréat en enseignement primaire, en enseignement secondaire ou en enseignement collégial.

Les savoirs requis pour l'enseignement dans le cadre du programme PROTIC sont parfois différents de ceux appris à l'université. L'intérêt de l'Université Laval pour le rôle de l'enseignant dans un environnement d'apprentissage comme PROTIC est très récent. « Pour être enseignant au programme PROTIC, vous devez accepter de ne plus contrôler tout ce qui se passe dans la classe. Nous ne sommes plus l'unique source de savoir ». Les enseignants conviennent que leur rôle dans PROTIC est parfois différent de l'idée que l'on a traditionnellement du métier d'enseignant ».

Les enseignants ont accès à *Knowledge Forum*, la plate-forme électronique dont se servent les élèves pour stocker et échanger leur travail à toute heure. Ce programme leur permet de répondre aux élèves et aux groupes d'élèves par voie électronique. « La stratégie pédagogique que j'emploie le plus est le questionnement », explique l'un d'eux. « J'essaie toujours de faire comprendre à mes élèves les améliorations qu'ils peuvent apporter à leur travail en leur posant des questions. » Les élèves estiment que leurs enseignants sont très souples. « Ils ont joué un rôle important dans les deux premières années en nous apprenant la méthode de travail et d'apprentissage. Maintenant que nous sommes beaucoup plus autonomes, ils interviennent très peu. » « Le rôle des professeurs est de répondre à nos questions et de maintenir la discipline dans la classe. » Les enseignants laissent les élèves travailler seuls la plupart du temps, mais « lorsque nous avons besoin d'aide, ils passent plus d'une demi-heure avec nous individuellement ». Compte tenu de la grande autonomie des apprenants dans la classe, ce contact semble suffire. Les élèves n'ont pas l'impression d'être laissés à eux-mêmes.

Les enseignants partagent des bureaux situés entre deux salles de classe PROTIC, ils peuvent travailler ensemble plusieurs fois par jour, souvent de manière très informelle. Ils passent souvent une journée entière à préparer ensemble de nouveaux projets multidisciplinaires et sont fiers de leur savoir-faire dans le domaine de la coopération. « PROTIC – c'est une culture, une communauté de pratique ».

« Le côté amusant, c'est qu'on peut vraiment continuer d'apprendre ici en tant qu'enseignant, en construisant de nouveaux projets, en expérimentant ».

Diffusion et extension

Depuis quelques années, les élèves de PROTIC obtiennent d'excellents résultats aux tests nationaux. Les enseignants et les administrateurs y voient la preuve manifeste que le modèle fonctionne. Cependant, si la pédagogie PROTIC a eu un impact considérable sur la perception de l'efficacité des stratégies pédagogiques au sein de la commission scolaire, elle a eu jusqu'ici très peu d'incidence sur les quatre autres établissements secondaires de la commission scolaire. La plupart des visiteurs de l'école viennent d'universités ou d'autres commissions scolaires du Québec et du Canada. « Nous ne faisons pas de prosélytisme, mais notre porte est grande ouverte à ceux qui sont intéressés » expliquent les enseignants de PROTIC. Compte tenu de l'importance attachée dans PROTIC au développement de compétences disciplinaires transversales et métacognitives, il y a tout lieu de penser que la mise en oeuvre de la réforme suscitera un intérêt accru du public à l'égard du programme.

Depuis 2002, PROTIC est pratiquement autosuffisant et requiert très peu de soutien de la part de la Commission scolaire des Découvreurs. C'est aussi une conséquence du désir d'autonomie des enseignants. PROTIC a noué des liens très étroits avec l'Université Laval, sa voisine, et reçoit beaucoup de stagiaires enseignants, certains venus d'aussi loin que la France. À compter de l'automne 2004, une école primaire dont les élèves iront ensuite aux Compagnons-de-Cartier adoptera la pédagogie PROTIC, si bien que les élèves pourront bénéficier d'une pédagogie basée sur les projets et le travail d'équipe tout au long de leur scolarité

Saskatchewan case Study

Saskatchewan: school system and current reforms

Overall there are about 90 school boards in Saskatchewan, most of them provincially-funded school boards, some Catholic (25 % of the population is Catholic) and one Francophone. Representatives of the school boards are elected. Each school board creates its own budget and has taxation powers. Further budget allocation by the Province depends on the school catchment area's ability to raise taxes. Although schooling in Saskatchewan is theoretically organised into three levels: elementary (Kindergarten to Grade 5), middle (Grades 6-9), and secondary (Grades 10-12), most schools in the province are organised as elementary (Kindergarten to Grade 8 – age 5 to 13), and high school (Grades 9 through 12 – age 14 to 17).

Following teacher education, individuals can apply to and receive teaching licenses enabling them to teach in Saskatchewan. These teachers set instructional practice guided by provincial curricula, and assess student learning for 100 percent of a student's mark in Kindergarten through Grade 11. For selected core subjects at the Grade 12 level, teachers specialised in those subject areas can seek accreditation, which requires renewal every five years. Accredited teachers can set 100 percent of a student's Grade 12 mark in a particular subject area, while students of non-accredited teachers are required to write provincial examinations to determine 40 percent of their final Grade 12 mark in that subject area.

Each school board tends to organise three to five days of professional training per year, often inviting educational experts to provide workshops for teachers employed by the school board. In addition, teachers involved in projects get the opportunity to attend special conferences. Action research is strongly promoted as a way of teacher professional development, sometimes supported through grants from the Saskatchewan Teachers' Federation and private foundations.

Sacred Heart School, which will be presented subsequently, was able to do much of its development work thanks to an action research grant from the Stirling MacDowell Foundation. The grant money was used to buy release time for teachers to work on the innovative projects and for further professional development. Opportunities for action research are greatly appreciated and valued by the innovative teachers in the school. They see it as a highly effective strategy to improve teaching and learning. The results of action research funded through grants are published and shared with a wider audience. This provides teachers with opportunities to share their expertise with other teachers beyond their school and even their district. Teachers from Sacred Heart School have had several opportunities to present their research work at conferences in Canada and the United States.

Community schools

In Saskatchewan, the idea of community education has its origin in the 1980s when the first community schools were founded to respond to the needs of urban Aboriginal children. The Community School Model is based on the conviction that effective learning is a family and community affair. The community schools attempt to be open and inclusive places responding to community needs and initiating community development. Community schools serve as community centres, invite members of the community into the school and provide useful experiences such as adult basic education for those living in the community. The Model has expanded over the years and now 15% of all Saskatchewan schools (a total of 98 schools) are organised and managed as community schools. These schools serve underprivileged communities; many support the education and well-being of Aboriginal children.

In support of these efforts, additional government funding since the 1980s has assisted community schools in employing a full-time co-ordinator and two additional teacher assistants (who are often Aboriginal). The co-ordinator's task is to facilitate co-operation between the local community and the school to better meet the diverse needs of children in the school. Teaching assistants help teachers to meet the individual learning needs of children inside and outside the classrooms. They spend time working with individual children or groups of children who need special support.

School Plus: tackling a child's needs in a holistic fashion

The Deputy Minister of the Department of Learning observes growing inequity of student outcomes. The greatest challenge in education is to provide for more successful educational performance for Aboriginal children, over 50% of whom currently do not complete high school. About 20% of Saskatchewan's school-aged population are Aboriginal, the highest percentage among all the Canadian provinces. As the Aboriginal population is the fastest growing ethnic group in the province, it will account for a much greater percentage of the population in the near future.

School Plus is a new initiative in which seven departments of the Saskatchewan government are working together under the leadership of the education department to organise a shared and more co-ordinated responsibility for child well-being. The needs of young people are now seen holistically. Support structures, coordinated in an integrated fashion, can address several areas such as emotional development, nutrition, physical exercise, medical help and cognitive learning opportunities, and can assure optimal development of children and youth. The school, being a common meeting place for most children and youth, is considered the key place for the delivery of different services and is thus supported by a network of agencies. This approach responds to the findings of a number of recent studies that show interconnected and complex social and educational problems can best be solved by bringing educational and welfare strategies in line for the benefit of children and adolescents.

A new kind of leadership is required to manage the School Plus concept geared at educational growth and empowerment. Rather than merely manage and control a school's staff and resources, school leaders

need to communicate well with the diverse stake-holder groups in education including those key to the provision of the new integrated services. They need to integrate, listen to and empower those who are willing to act responsibly. A school that is meant to be the centre of activity within a community requires strong and proactive leadership.

School Plus is being implemented in connection with a second programme geared at providing support for young mothers overburdened with their educational responsibility and care for a young child. Once the programme is fully implemented, each young pregnant woman in Saskatchewan will be visited by a social worker to see whether she is vulnerable to being overburdened and needs support. Women who need extra help can then take part in parental education workshops and get support in providing early learning opportunities for their children.

Saskatchewan Formative Assessment Policies

Until 2002, when Saskatchewan Learning began an Assessment for Learning pilot, no large-scale assessment data for individual schools or school divisions had been made available to schools or to the public. Until that time not every school in Saskatchewan gathered assessment data, and not all who did, made use of the data in a systematic fashion. Recently, there has been growing pressure from parents and communities for greater educational accountability. This development has several reasons. Most parents would like to have more information about schools to be able to make informed choices about education. Most pressure has come from policies pursued in other parts of Canada, particularly in the neighbouring province of Alberta and also in the USA, where assessment data have been gathered and published for a number of years.

A total of 60 schools in nine school divisions took part in an Assessment for Learning pilot in mathematics. In 2003, the pilot was expanded to provide data for all school divisions for the first time; mathematics assessment data for about 80% of the province's grade eight students were available for analysis. Data are gathered through testing students and conducting student and teacher surveys. From 2004 onwards, it is planned to provide school and division specific data in mathematical attainment for all students in grade five, eight and eleven. Beginning with field tests in 2004 and a pilot assessment in 2005, the programme will be extended to include reading and writing. Saskatchewan Learning strongly encourages teachers to use assessment data in a formative way to understand student misconceptions and to improve instruction accordingly. Opportunities are provided for teachers to score the assessments, to see examples of student work against expected standards, to explore the meaning of the assessment data, and to engage in staff planning and action research toward improving student learning outcomes.

Most educators and administrators in Saskatchewan are strongly convinced that change has to occur at the individual school level. For that reason, the debate about the meaning of any assessment data should primarily take place in each school itself. The Department of Learning provides data analysis and feedback, and works with school division personnel and school staffs around judging the adequacy of the results and modelling processes in engaging teachers in planning and action research. Schools can set goals, allocate resources and plan interventions in areas that require improvement, as well as celebrate areas of strength and improvement. The Department believes that using data for effective change in schools does not come about by legislation, nor by sanctions and punishment for failure. Instead, the Department trusts that effective change will occur as schools, over time, experience the effects their planning and interventions have had in improved learning outcomes.

There were initial fears about inappropriate uses of making school-specific assessment data available and observations of negative consequences in other Canadian provinces and in the United States where teachers shouldered most or all of the blame for negative results on summative tests. Communication has been a key to diminishing some of this fear and anxiety, and for promoting utility of the assessment data.

The purposes of the assessment – it's about improvement and shared responsibility, not blame – need to be communicated at an early stage and reinforced at all opportunities.

Consistent with the intended formative use of assessment data, detailed school and division profile results on students' outcomes and opportunities to learn are provided, and overall summative scores are avoided. In this way, staff can engage in reflection, discussion and planning focused on particular topic areas, particular student misconceptions or strategies, and particular classroom practices and student behaviours, and be less concerned with simplistic comparisons or rankings based on less informative summative scores.

Due to the comprehensive and detailed nature of the data provided to schools, local school boards provide resources for the schools' leadership teams to be able to attend data-interpretation workshops to begin analysing the data and planning for action. As a principle, no data are given to a school whose leadership team has not attended the data interpretation workshop. These workshops are clearly focussed on the idea of assessment for learning. Engaging teachers and school leaders in reviewing assessment data, alongside other school and classroom data, enables strengths and weaknesses to be identified and interventions to be planned. Assessment literacy will enhance the teachers' capacity to analyse the instructional strategies that work and lead to tangible results and those that need change or improvement.

School divisions pay for substitute teachers so that the entire school leadership team of a school can attend the workshops, facilitated by Department staff. Workshop participants are taken through a number of activities to better understand the context in which the data were collected, the considerations and cautions related to the interpretation of the data, and how to understand the meaning of the charts and how to judge the adequacy of the results. These interpretation considerations and skills are introduced first with a fictitious set of data and then practised with the team's division reports, and finally with the team's school reports. During the process, educators are introduced to "opportunity-to-learn rubrics", a set of indicators about the school processes, student readiness, and support for learning, and have time to work with the math questions used in the assessment. Key messages communicated to the schools are that the "power of the data are not so much in the numbers but in the discussions related to those numbers" and that "the data do not so much provide the answers, but they can inform the good questions for further investigation." School leadership teams are then encouraged to analyse and discuss the data among themselves. The process following the data analysis mirrors student meta-cognitive learning processes. After the reflection, schools set goals for themselves and plan for action. Subsequently they monitor the results of their own action.

"Opportunity-to-learn measures"

Since 1997 Saskatchewan Learning, the provincial department of education, has developed "opportunity to learn measures". The "opportunity to learn model" implies a shared responsibility for learning among the student him or herself, the family and the teachers and other educators. An "opportunity to learn questionnaire" is handed out to students and teachers as part of the mathematics assessment and contains questions about the processes that contribute to learning such as support structures at home, in the community and in the school. These data can supplement the achievement information and form an integral part of discussions and planning among different stakeholders when contemplating processes and actions intended to improve learning outcomes.

For example, community schools can use "opportunity to learn measures" to stimulate and inform discussions as teachers, parents and community engage in identifying processes and interventions that improve learning and well-being of the students. As with all large-scale assessment data, these measures are indicative rather than definitive and serve as a basis for change and growth - in lay terms, these data do

not tell the whole story and are not used to pass judgement on a school's performance but rather serve as a starting point for discussion and improvement.

School case study: Sacred Heart Community School, Regina

Saskatchewan Learning considers Sacred Heart Community School in Regina an exemplary community school, both for the range of good pedagogical practices in the school as well as for the school's unique culture and ethos. The school is part of Regina Catholic School Division, which is in charge of 29 schools with about 10,500 students in Regina. Catholic schools in Regina are publicly funded and follow the provincial curriculum and other Department-level regulations. For the past six years, the Board has invested in high-level professional development opportunities for all of its schools. Due to a strong commitment to change and improve education at the school the Board invited various Canadian and American expert trainers and spent considerable funds on training resources such as books and videotapes.

At the heart of change and growth lies the philosophy that every child and every staff member can "and do grow" in a school organised as a professional learning community. The Regina Catholic School Division is thus committed to improving its schools based on international expertise about successful instructional and organisational strategies.

Sacred Heart Community School is a publicly funded Catholic elementary school in Regina. It is an inner-city school with approximately 450 students from pre-Kindergarten to grade eight. The majority of students are of Aboriginal ancestry. Most of them live in poverty. Student mobility is high because parents often move within the city or back and forth between a reserve outside the city and the inner city.

When the school's previous principal took over eight years ago, the school was known throughout the city for its low achievement level, violence and vandalism. Few teachers wanted to work there and that was reflected in high teacher mobility. "Neither teachers nor students wanted to come here", according to the School Board's Superintendent. Today, Sacred Hearts "leads in many areas" (superintendent). In terms of teacher collaboration, student assessment and early literacy strategies the school is even considered an example of best practice by Canadian standards.

Initially, the Board had tried to solve the school's problems by investing additional financial resources, but when that didn't show the desired effects, the administrators decided to trust in "the ability of an exceptional educator". The school's change story started when the new principal, an experienced female teacher and administrator who came to the school in 1995, made it a priority to take action against the high level of aggression and vandalism in the school.

The first change she introduced to the school was the complete reorganisation of recess time. After each break there had been a long line of students in front of her office, sent there because of disciplinary issues. One boy, a victim of bullying, admitted to her that the thing he feared most in the school was recess time. In close collaboration with the teachers, the new principal decided to completely restructure the school break. Recognising that students needed a break she replaced recess time with two breaks of 20 minutes each spent with the class either in the gym or outside playing sports and different kinds of games the children enjoyed. The number of disciplinary incidents dropped immediately and that gave everyone in the school the courage to initiate and support further changes in the area of discipline. "You notice," one teacher says, "that there is no end to innovation. You can't just change a little. Once you've made a change and you notice it works, you have to keep growing and changing".

One of the next moves was to address the high level of vandalism in the school. The principal talked to students about it in a special assembly and made them aware that the school's scarce resources could be spent on school trips and books for children instead of paying for the damage done through vandalism. She

promised the students to provide them with the money to have an ice-cream party and go on a school trip if vandalism could be significantly reduced. As had been the case with restructuring recess time, the second innovation turned out to be a success story. When vandalism dropped to almost zero damage she invited the District Superintendent into the school to congratulate the children and to hand them the cheque with the extra money for the school. Vandalism and violence in Sacred Heart Community School have remained low since those days.

Split grades

Early in the history of its change process the school had a grade five class that was highly energetic with little discipline for learning, resulting in a high teacher turnover during the one year. Principal and staff saw the problem as a challenge and decided they needed an innovation that would harness their students' energy and "put it to more positive use". The following year, when the students entered grade 6, they put the class together with younger students so that the grade six students could act as mentors and leaders for the younger grade two students. Again, the change was successful. The two teachers who took on the task of "team-teaching" the class later won an award for one of the most innovative educational projects of the year in Canada.

The unique grade splits have since been expanded to include the entire school. The split grades give each of the older students the opportunity to act as responsible leaders and to mentor younger children. Teachers try to create a culture of mutual help in the classroom. Now all of the school's classes are made up of students of two different age groups. The split grades work especially well providing structures and opportunities for formative assessment. Older students in lower secondary provide individual feedback and support to the younger primary school students.

School like a good home

Aware of the deprived and often unstable conditions in many of the students' homes, the staff decided to turn the school into a place as safe and nurturing "as a good home" to provide the emotional stability necessary for learning. Now, students have access to the school at any time of the day. There is a warm breakfast for all students in the morning before the first lesson starts. Later, students get a snack and a warm lunch. The school's Catholic values are reflected in its core idea that every child deserves "to be treated like the Christ child". This strong value statement is part of the school's mission statement and is openly shared with the children in the school. Children refer to it when they talk about the way they are being treated by teachers and by other students in the school.

Parents are welcome to come into the school at any time. Many of them have had very negative experiences back in their own school days so that Sacred Heart Community School tries to be as welcoming and open as possible. Every year there is a spring tea, where parents come in and are served tea by students and teachers. Furthermore, parents are invited to join field trips and to watch sports activities. Once every year there is a teacher-parent conference. Students present their work and their portfolios to their parents and teachers. Together teachers, parents and student then discuss what the student needs to focus on in his or her own learning and how parents can support learning and development. During those meetings teachers encourage parents to help their children with homework and to take an interest in their child's portfolio.

Meeting individual learning needs

Sacred Heart Community School has developed different methods to meet the individual learning needs of their students. Teaching assistants are available to provide individual student support inside the classroom. Computer programmes as well as library books are clearly marked with regard to their level of

difficulty so that students themselves can look for the resources that best meet their individual learning needs. When a particular topic is being studied among mixed ability students, teachers choose different books for students of different ability level. In one case, for example, seven different books about animals were being used when a class was studying animal behaviour. In the split grades, teachers often use two or more different coloured worksheets, the colours of which indicate the level of difficulty. Students can choose which sheet to work with according to their motivation and ability level.

From grade three onwards, students diagnosed with severe learning disabilities are getting extra support. They are referred to the teaching assistance team and are put on a Personal Programme Plan (PPP) to get the individual support they need. Whereas 2% of all Saskatchewan students are currently on PPP's the percentage of students getting extra support in Sacred Heart Community School is 10%. Teachers observe a correlation between learning difficulties and the high poverty rate in the area. Some of the children from poorer families are more likely to have learning difficulties because of emotional, nutritional or other problems in their homes.

Brain-based learning in a resource-rich school

Classrooms are well-equipped with books for young readers and computers funded through local and provincial taxes. In each classroom there are shelves with a large number of books for the respective age-groups and each of the classrooms is equipped with four networked computers with high speed Internet access. Students and teachers have access to the Internet and use it in the classroom. In the morning assembly, for example, the school principal frequently gives students a little quiz contest (e.g. "How many taste buds are on a human tongue?"). When they enter their classrooms for the first lesson they go onto the Internet and research the answer.

The school has made it a key part of its philosophy to provide students with choices for their own learning. This is seen as part of the school's formative assessment strategy because it enables individual students to pursue their own interests and learning needs. Whenever a student is finished with a task in the classroom he or she is free to work on one of the computers with a range of different ICT learning resources, or to get one of the books from the bookshelves in the classroom or from the student library and sit in the back of the classroom's comfortable reading chairs to read.

In recent years, the teachers have taken part in a lot of training activities in brain-based learning and multiple intelligence teaching. Interestingly, even the children now speak the language of multiple intelligences. They talk about being "picture smart" (visual-spatial intelligence), "word-smart" (verbal intelligence) or "number-smart" (mathematical intelligence). It is part of the school's philosophy that each child discovers those things he or she can do really well. In the classroom teachers encourage children to use their strengths to learn those things that are a bit more difficult for them. In their portfolios children talk about their intelligences. "The teachers help us recognise what we are really good at. They asked me and two other students to write a book about Saskatchewan because we are good at writing", an eleven year old girl reports. The books written by students are laminated and kept on the shelves of the school library. Students are proud of their own work; they walk to the library with me and show me their books on starfish or on dinosaurs.

A playful way to learn about fractions

The following example is taken from a classroom observation in a split grade. Students are eight and twelve years old. Two teachers working in a team start the lesson separately in individual classrooms. The focus is on literacy. Students are to find the spelling and grammar mistakes in a few sentences the teacher has written onto the board. After about 15 minutes, when that task has been successfully completed, the two classes (both of the split grades) meet in the corridor outside the classrooms.

The corridor is nicely decorated with student work, and there is a soft carpet on the floor. Students all sit down on the floor and some grab a pillow from those lying around. The students are obviously used to being taught out here. The two teachers, who are colleagues and friends and have been a teaching team for a number of years, have set up a table, a flipchart and a blackboard in the front of the classroom. They start the lesson asking what students already know about fractions. All information is then recorded on the flipchart. Gathering knowledge about what individual students already know and about potential misconceptions is an important part of integrating formative assessment and teaching.

There are various things on the front table, such as a measuring cup, a small box of donuts and a large box of yellow M & M bags. Telling the students about a visit to a mall the day before, when the teachers decided to buy a donut for themselves and then discussed how to split it given that one of them was very hungry and the other one was just a little hungry, they get into the matter of fractions. During the discussion students take a vote whether they think that $\frac{1}{4}$ donut is smaller or bigger than $\frac{1}{8}$ donut. Now each child is given a large sheet of paper with the title "Eating up Fractions" and a bag of M&Ms.

The children are asked to leave the bag of M&Ms closed and to estimate and write down how many M&Ms there are in the bag in total, and how many M&Ms of each of the different colours. The teachers and an additional teaching assistant walk around to make sure that every child has understood the task. They spend longer periods of time with those children who have problems adding the numbers. Towards the end of the lesson students get to open up their bags. They put the different coloured M&Ms into the respective circles on their sheet of paper, count them and add up the numbers to a sum. They are asked to compare that sum with their estimated sum. Then they write down the fractions of each colour with respect to the total sum. Again, the teachers and the assistant teacher walk around to provide support and feedback to individual students. Some of the older students in the split grades help the younger ones. When the lesson is over students finally get to eat their M&Ms. It is astonishing to watch a group of more than forty children fully concentrated on their math lesson up to the last minute.

Learning portfolios for every child

A pilot scheme in 2002/2003 with all grade three and grade five students has convinced the staff of the effectiveness of electronic portfolios. Starting in September 2004 each child in the Sacred Heart School will be documenting his or her own learning on a continuous basis with the help of such an electronic portfolio. Portfolios will primarily serve as a basis for formative feedback and student self-assessment. Through the portfolios students will be able to track their own progress in writing, in reading and in other areas.

Students keep exemplary pieces of their own writing, document projects they work on, scan in hand-written texts and art work and even record their own reading in their portfolio under different headings. Teachers invite students to share their progress with other students and the teachers provide guidance to the students on how to assess their own work. Benchmarks for portfolios will be related to the proficiency targets developed in the school, and a team of experts in the school is currently creating templates for every grade level. A teacher new to the school has developed user-friendly portfolio software allowing students to do as much work on their portfolios on their own as they possibly can. In the past year, the school has been very pleased with the way older students mentored younger ones in keeping their portfolios updated, saving and spell-checking their work. In the electronic portfolios, learning is documented under the following headlines: the Academic Self, the Social Self, the Artistic Self, the Problem-Solving Self and the Catholic Self. For the students keeping a personal learning portfolio seems to be a genuinely exciting project.

Report cards for formative assessment

Three times a year, students get report cards. The school has already made considerable changes over the past years to adjust report cards to its pedagogy. Now, formative comments are a key part of any report card along with marks. Nevertheless, most teachers in the school feel that they need to go one step further and change the culture of report cards completely. “The report card has nothing to do with what I do in the classroom”, says a teacher who is creating exemplars for the use of rubrics for self- and peer assessment. “The teachers feel that it would make so much more sense to have rubrics on the report card, so that parents can see how they can help their child learn.

According to the teachers there should also be a cross-disciplinary skill part on the report cards. This would provide students, parents and teachers with information on a student’s broader cross-curricular skills such as team skills, communication skills etc. In the meantime, the Catholic school division has noticed that Sacred Heart School is ahead of its time. Teachers from the school have been nominated for a committee that will be developing new report cards for all schools in the Regina Catholic School Division. The school’s open and non-bureaucratic mindset with regard to experimentation is now providing successful models for other schools in the school division.

Newfoundland and Labrador Case Study

Newfoundland and Labrador: school system and current reforms

New Foundland has four different levels of school. Primary education starts with Kindergarten and goes up to grade three. It is followed by elementary education from grades four to grade six Intermediate schools include grades seven to nine and Senior High schools grades 10 to 12. Newfoundland and Labrador has four different levels of schooling. Primary starts with Kindergarten and goes up to grade three, followed by elementary with grades four to six, intermediate with grades seven to nine, and senior high, grades 10 – 12. At the end of each level of school, provincial tests are administered in language arts and mathematics to measure student achievement of the curriculum outcomes for these areas.

Using data for school development

In 1993 a testing programme for the province was introduced and took place every three years. Initially, teachers in Newfoundland and Labrador had expressed some resistance against provincial-level testing. They feared that getting ready for the tests would take up too much of their time, that they would be “teaching to the test” and they would be publicly ranked according to the test results achieved in their classrooms. They also feared that all subjects not tested would lose importance. School districts tried to deal with those fears in a sensible manner. According to the director of the Corner Brook school district the district deliberately established an enrichment programme in music, drama and literature to show the importance given to those subjects not part of the standardised tests.

Since 2001, testing in language arts and mathematics is taking place on an annual basis. The Department of Education advocates that the results of provincial tests be explicitly linked to school development. In some school districts, schools are required to respond to the test data by completing a written analysis of how the school will use the test data to improve the quality of instruction and which specific targets the school will set for itself as a result of the data analysis. Testing in grades three and six does not have an impact on students’ report cards but the grade nine test results may become part of a student’s final grade. In some districts, the results of the provincial tests are to be used as part of a student’s final evaluation, in other districts, only certain sections of the tests are to be used and in other districts, the results of the provincial tests are reported separately from the school’s evaluation. How the results are used is determined by the individual school district student evaluation policy.

Data are being fed back to schools by the Department of Education in a meeting with the school leadership teams. There are no rewards or sanctions for over- or under-performing schools and the data are not compared or ranked with data from other schools. The Department of Education's and the school districts' philosophy is to work with the principal and the teachers of a school to build on the strengths and to address deficiencies identified in the data. Individual schools are encouraged to compare their data from a longitudinal perspective.

Large scale testing has an important formative function because it puts school development on a more empirical, data-driven basis.

Since 2001, schools in Newfoundland and Labrador have been developing action plans based on the provincial test results. School boards manage the planning process. Each school board brings principals together for two days. Consultants from the Department of Education review all test results with the district program staff and school principals. Through this review and subsequent discussions, principals identify learning needs and incorporate them into the school development plan. The consultants are then available to help plan and implement teacher professional development for schools that have identified teacher training as part of their action plan.

According to the director of the school district in Corner Brook, schools that do not explicitly refer to the data in their action plans are asked to revise the plan so that the data are included. In addition to the test data schools are asked to use student and parent surveys to gather evidence on school development needs.

Testing has changed the culture of communication about school achievement in Newfoundland and Labrador and has triggered communication at various different levels. Slightly more than ten years ago, assessment was hardly talked about in schools, now it is driving the change and the school development process, and there is now little resistance to it

All school districts are using the test results in a formative manner. Policy-makers have paid great attention to building ownership among educators. Teachers from across Newfoundland and Labrador have been involved in all aspects of the work ranging from the initial development of tests, the marking of tests to the development of exemplars and the provision of in-service-training about assessment.

New Foundland: formative assessment policies

To enhance assessment literacy in the system the Department of Education has started to provide the schools in Newfoundland and Labrador with rubrics to be used in primary, elementary, and intermediate schools. Rubrics, which are specific guidelines used to evaluate student work, *i.e.*, scoring tools that list criteria for a good-quality piece of work, are a key element of formative assessment. For example, a rubric for an essay might tell students that their work will be judged on organisation, purpose, detail, vocabulary and "mechanics" (spelling, punctuation, grammar). A good rubric also describes levels of quality for each of the criteria, usually on a point scale. Rubrics are most effective when teachers provide students with actual examples of poor, mediocre, and good work. In other words, rubrics help students and teachers define quality. When students use rubrics regularly to judge their own work, they begin to accept more responsibility for the end product. Rubrics also reduce the time teachers spend grading student work and make it easier for teachers to explain to students why they got the grade they did and what they can do to improve. Parents find rubrics useful when helping with homework. It allows parents to know exactly what their child needs to do to be successful. Developing rubrics takes time but it will save teachers time in the long run because it forces them to reflect carefully on what they are going to teach and what they expect students to learn.

The rubrics developed in Newfoundland and Labrador have contributed to the creation of common standards and a common language for assessment, eventually linking formative and summative assessment. From the student perspective requirements and standards will be more transparent aligning self-directed learning, self assessment and the preparation of provincial examinations. In the near future, additional rubrics for senior high schools will be developed. In addition to the rubrics, schools are provided with exemplars of good student work at each of the different levels. Professional workshops delivered by consultants from the Department train teachers to compare and assess student work with the help of both rubrics and exemplars.

For a two week period after the end of each school year, a group of teachers from all over Newfoundland and Labrador meet to mark the criterion-referenced tests in language arts using rubrics and samples of student work at various levels of performance. This work has triggered fruitful discussions about provincial standards. Most teachers now approve of the development of provincial standards based on exemplars because those standards align expectations and allow for more coherent communication between the policy-level, teachers, students and parents. In those schools, where rubrics are consistently being used, students are now beginning to speak the language of rubrics. In Xavier School the English rubric, for example is put up on the wall of a grade eight classroom so that it is visibly present for students. The example on the wall provides students with clear-cut indicators for quality work in an grade eight English classroom and thus enables students to assess their own writing.

Based on the analysis of test results teacher professional development in teaching reading have really improved and provided teachers with a range of professional growth activities. Real improvements have been achieved in primary reading. Through the analysis of test results teachers have improved a range of instructional strategies such as questioning techniques and ways of teaching reading to children with specific difficulties.

Performance-based assessment

Curriculum guides provided to Newfoundland and Labrador teachers contain a range of methods for performance-based, formative assessment. Different forms of self- and peer assessment are encouraged (e.g. journal writing). The use of student portfolios is spreading across Newfoundland and Labrador schools and is used to present student work to teachers and parents.

Teacher professional development

Teachers usually have five professional development days per year. These days can be in the form of in-servicing training for new curriculum or different teaching strategies; they can be school-based days for school development, or they can be professional training days chosen by teachers based on their individual interest. In the Corner Brook School District professional development is now directly linked to assessment. A recent focus in professional development has been on Dufour's et al.¹ model of a professional learning community. Core questions of the approach are: What do we want students to learn? How do we know whether they achieve those outcomes? What do we do if they don't learn/achieve those outcomes? Especially the last question hints at the importance of formative assessment strategies such as using rubrics for teacher feedback, for peer and self-assessment for finding out whether students achieve intended outcomes and helping them to reach defined outcomes.

Teachers are strongly encouraged to conduct action research in their own classrooms and to share the results with their colleagues, because collaborative data analysis triggers reflection about learning

¹. Dufour, R.; Eaker, R.; Baker, R. (1998), Professional Learning Communities at Work: Best Practices for Enhancing Student Achievement, National Educational Service.

strategies, sources of misunderstanding, common misconceptions and lack of motivation among students. The analysis of attainment data provides teachers with hints on what they could change to make their own instructional strategies more effective.

Mathematical test results can, for example, be analysed to identify the most common mathematical misconceptions. With the knowledge about those misconceptions a teacher can reassess his or her own instructional strategy in teaching this particular mathematical topic. The perception and application of research literature or piecemeal experimentation can then provide opportunities for changing classroom practice and for observing and analysing the results by means of actions research.

School case study: Xavier School/Deer Lake

The school, in a small town in Western part of Newfoundland, has 288 students (in 2001/2002) in grades seven to nine. The school was selected by the expert in charge of assessment in the Newfoundland and Labrador Department of Education because it had received comparatively bad results when provincial testing first started but had significantly improved results over the past years because of its commitment to develop instruction based on an analysis of test data and to build a strong professional learning community among teachers and members of the administration.

Today, Xavier School in Deer Lake has a clear focus on meeting the particular needs of adolescents. This philosophy is based on a shared conviction that adolescents need support to balance their social and emotional life in order to concentrate on learning. There is a strong team ethos to achieve this aim. Teachers share information about each student's emotional, social and academic developmental needs. "Everyone here wants children to do well". Compared to other schools some of the teachers have worked in previously, staff in Xavier perceive this school as more welcoming and much more receptive to sharing of ideas and resources. "In dealing with adolescents, when there is no team spirit among the teachers you sink", one teacher explains. A few years ago, teachers in the school used to work in complete isolation, now they set aside half an hour of shared planning time almost every day. All of them consider knowledge about how students learn and achieve now as their most important asset. "Five years ago we were doing a lot of nice projects in the school but we didn't take any interest in academic achievement" reports a teacher.

Before 1999, Xavier School was in a very different condition. At the end of the 1998-99 school year, Xavier had achieved very low achievement scores in mathematics and science. There was little to no co-operation among teachers. "All seemed to be doing their own thing" describes the principal who took over the school in September 1999. The school building was in state of neglect. The staff room was old and poorly kept, corridors were in a terrible shape with ceiling and floor tiles missing all over. In the school library books were scattered all over. Staff meetings were confrontational, and the school council, an association of parents, the principal, and a teacher representative that provides support to the school and provides a forum for parents to be involved in the education of their children was not working well. The new principal was put into office with the clear mandate to change the school around.

A clear mandate from the Department of Education and the local School District to let attainment data drive the process of school development changed the school's culture. To change the climate of the school the new principal introduced a number of changes; some of them were physical and meant to improve the school's outside appearance. The staff room was renovated, refurbished and enlarged and the school bought new furniture for the offices. The expectation for new staff members was that they would work towards increasing student achievement and building a collaborative culture in the staff room and in the school as a whole. School committees were formed to work on staff development, technology, finance, student supervision and the development of a school handbook.

Initially, there was considerable resistance against discussing achievement data in the staff room and against developing a “school growth plan” based on the results of those discussions. By the beginning of 2000, the culture of the school had begun to change. For the first time, on the occasion of midterm reports staff identified those students who were failing core subject areas. Staff discussions centred around what could be done for these students. The school decided to put in place a system of parent volunteers for individual tutoring and to inform the parents of every student who was failing to try to build parent support for getting the students on track. A range of measures were taken to motivate students for learning, one of them being the introduction of an annual awards night to honour exemplary achievement.

The school’s greatest gains have been in academic achievement. Now teachers place a much greater emphasis on curriculum outcomes and pay more attention to the weakest students. Analysing assessment data has become the focus of professional training during the what are called “school growth days”. Since 2000, the staff develops a two year School Growth Plan and aligns professional development activities with the growth plan’s aims. Regular staff meetings are used for a sharing of good teaching practices. There is a culture of recognition in place. The school administration acknowledges teachers’ creativity and efforts. Teachers put activity sheets and other didactical material they use in their lessons into each others mailboxes and discuss strategies they use to teach particular content with colleagues teaching the same or similar subjects.

In 2001, the school introduced school designed mathematics tests at all grade levels tied directly to curriculum outcomes during mid year and at year’s end to complement the provincial criterion-referenced tests (CRTs) These and other tests are being kept in a test bank to which each teacher has access. Now, test data are seen as informing teaching practice: “How well have I as a teacher done in teaching certain concepts?” Student learning has become the focus of teachers’ attention. “We are carefully monitoring and observing learning processes like we have never done before. Much greater attention is being paid to the quality of the individual learning experience”. The systematic use of data to change practice at the classroom level and in the work with individual students show a strong commitment to formative assessment.

The staff members of Xavier School are using a lot of synergies they were hardly aware of five years ago. “All of us had three times as much work when we were working in isolation”. Most of the teachers now also know each other better on a social basis, and meet with each other outside the school. Those friendships have contributed to the school’s strong team ethos developed in recent years.

Formative assessment

Coinciding with a greater focus on analysing test data the teaching staff has developed a stronger professional interest in formative assessment for learning. There is now more reflective journal writing, use of rubrics and portfolios than there was five years ago. The analysis of data makes teachers aware of whole classroom as well as individual student learning needs.

At Xavier School, the language arts teacher helps students to select appropriate reading texts and to determine writing activities. There is a high level of choice for students as the teacher believes that students must be accountable for their own learning. To monitor the type and amount of work that students do, she tracks individual student tasks. To determine if the students understand what it is they are reading, each student must write a summary on the text and their thoughts on it. The teacher provides a written response based on applying a rubric and she conferences with the student.

In their response journal for reading grade nine students in language arts, for example, keep track of what they have read, why they chose a particular book, how they liked it, who their favourite character was and whether they would recommend the book to another student. Every week the language arts teacher

takes her time to read the journals and comment on student writing. She sees evidence that close monitoring and immediate feedback show positive results. One student, for example, had stopped his reading of any book after about twenty pages. By commenting on his journal writing, the teacher entered into a written dialogue with him and found out that the books he had chosen to read had been far too demanding for him. When she decided to suggest books to him rather than letting him select his own reading she observed his sudden pride in being able to finish off and report on an entire book. “Constant interaction on a one-to-one basis, continuous observation and commenting, that’s what makes students learn”, she says.

The mathematics teacher and the students worked through incorrect responses to problems. The teacher prompted the students to think about previous skills that they had learned that might help them solve the problem, to consider the different mistakes students had made and look for commonalities or trends. Through questioning, the teacher succeeded in having the students not only determine the correct solution, but also recognise and identify errors in their work.

Formative assessment using portfolios and rubrics

Most students in Xavier School keep a portfolio of their own best work. In grade nine language arts, for example, students are given 26 broad assignments (different kinds of texts) to complete for their portfolios. In completing the assignment students move at their own pace. To edit and improve their own writing, students make use of the criteria in the language arts rubric that was developed as part of the provincial assessment programme. The same rubric is used for peer and self evaluation. When the teacher is assessing student work she lets her students use the same rubric to do a self-assessment of their paper. “I grade your paper with a rubric, you do it and then we talk about how our assessments match”, she explains her pedagogy to the students. This format gets teacher and student talking to each other about the student’s learning. It enables teachers to discuss attainment with a student on a one-to-one basis.

A mathematics teacher describes his professional role in guiding student learning: “I get different pieces of information about a student, from the after school tutor or the special needs teacher, for example”. He sees it as one of his core tasks to draw all the information together, to make sense of it, to come up with a coherent strategy suited to that individual and to communicate that strategy to all of the adults helping that student learn.

Teachers responded differently to the new provincial focus on attainment data. Testing has triggered both more innovative as well as more traditional methods of teaching and assessment in the school. Some of the teachers find that the recent development has been limiting their creativity. They are trying to stay “on track” and to cover the required outcomes. One teacher admits that it took him more than three years to refocus and that he is now ready to integrate some more innovative forms of teaching. Trying to refocus on the new demands he did for a long time not take any risks in trying out new teaching strategies. By some teachers at the school the change has been perceived as quite dramatic.

Other teachers say that they use a much wider variety of assessment strategies as a result to the new focus on attainment results. A few teachers feel that the policy change has explicitly encouraged them to experiment more, to try out new assessment tools and to spend more time on formative assessment. All teachers at the school are open to the new assessment tools but not all of them have figured out how to incorporate them into their own teaching practice. It seems as if teachers in language arts subjects find it easier to incorporate rubrics, self-assessment and peer assessment into their classroom practice than science and mathematics teachers.

Tutoring and scaffolding for improved learning

A culture of peer tutoring is clearly visible in the school. Students pair up to work together and support each other in English, in mathematics and in science lessons. Sometimes they can choose who to work with. Both in a mathematics as well as in an English class the teachers put together the pairs of students deliberately making sure that a student who is strong in the particular subject helps another student who is not as strong.

In a science lesson about temperature, grade eight students get into groups of four to do an experiment. They measure temperatures of different materials in the room and discuss, why the surfaces of certain materials are always colder than others. The teacher walks around the class to provide extra help to some of the groups. By prompting and scaffolding (providing individual students with hints that enable them to reach the next level) she helps the students in the groups find an answer to the research question.

In a grade nine English class, students are working on their independent research piece for their portfolio. Those, who have almost completed their written assignment, are given a checklist for peer editing. The teacher puts them together in groups of two. Taking turns the students read each others' research pieces and together they then use the checklist and the rubric to improve the quality of each other's written text with regard to expression, structure, grammar and spelling. Most students visibly enjoy working with rubrics: "You can see what you did wrong and how you can fix it. It also makes it a lot easier to set aims for yourself."

Inclusion and integration

In all Canadian provinces students with severe learning disabilities are legally entitled to extra help inside and beyond the classroom. Students with disabilities seem to be well integrated in both Sacred Heart school in Saskatchewan as well as in Xavier School in Newfoundland. During a mathematics lesson a special needs teacher in Xavier School in charge of 13 students comes into the classroom to provide the additional support that one particular student needs for his mathematics learning. In addition, there is after-school tutoring for students who have problems getting their homework done without extra help.

The school's philosophy that every adolescent is different and everyone can learn has greatly contributed to an ethos of equity and inclusion. It obviously works for the students. This principal and practice of dealing positively with difference makes it okay for students with learning disabilities to have a special tutor come in.

Two lower secondary students, whose learning disabilities are too severe to be integrated in classroom teaching, work with a special needs teacher in a separate room. Whenever there is a birthday in the school those two students together with their teachers bake cupcakes for the birthday children. They deliver those cupcakes to the birthday child's classroom and congratulate the respective student. Being in charge of birthday celebrations makes them proud. It gives them a task in the school's daily life and makes them part of the wider school community. The principal tells me that they are fully integrated and well respected by all other students.

Close parent involvement

Parents involvement in the school has really improved over the past years. As parent representative reports: "You can come into the school and the staff room any time and are welcomed". There is close communication between parents and teachers. The new emphasis on formative assessment has contributed to an improved understanding of learning among parents. The parent representative points out how much she and other parents like to read the comments that are now frequently written onto students' work. "They

inform our own behaviour as parents. We can better help our children learn, because knowing the rubric we know what is considered good quality”.

A new culture of success

Both students and teachers notice that most of the school’s change has taken place with regard to the understanding of what “success” actually means. A few years ago, teachers in Xavier School asked “Who is our top student?”. Now, each student is judged individually on a criterion-referenced basis rather than a norm-referenced basis. “Teachers notice how much effort you have put in, how you have improved based on where you were before,” reports a student.

The change has become visible. During the annual awards night held in the autumn to recognise achievements from the previous year more than half of the students are receiving “merit stickers” now. These awards are given to any student who gets an average of 80% and above. In addition, stickers are awarded to students who have improved significantly (regardless of where they stood before), students who have done exemplary work in writing, drama, arts and sports, and students who have taken on responsibility in and for the school community. Success has many different faces.

Conclusion

In the pan-Canadian assessment program, students in all provinces are tested in mathematics, reading and writing, and science on a four-year cycle. Each province receives its own results together with an analysis that can be used to inform policy and teaching practice. In most Canadian provinces and territories, summative assessment data are used to facilitate decision making on several levels: that of the individual student, the school and the system.

New curricula developed at the regional or provincial levels, emphasize the individual learning process and make room for individualized feedback and metacognition. Curriculum guides suggest assessment strategies for each learning outcome. A broad range of different formative assessment practices are visible in classrooms in Saskatchewan, Québec and Newfoundland and Labrador: Rubrics and exemplars developed by the provinces allow for greater transparency about intended learning outcomes and facilitate communication about learning between students and teachers, students and parents, and between teachers and parents.

Students are requested to set learning aims for themselves, to observe, to document and to reflect upon their own learning with the help of portfolios and learning logbooks. These documents are used as a basis for individualised communication about a student’s learning process and results between students, teachers and parents. Elements of self and peer assessment are built into lessons to encourage and develop student metacognition.

Report cards are increasingly expanded to include references to transcurricular skills, to make criteria transparent and to provide formative feedback expressed verbally rather than through a grade. This way of reporting facilitates formative communication about learning and is supposed to help the individual student reflect on learning processes and set learning aims for the future. It is also supposed to help teachers and parents provide the scaffolding necessary to support individual learning processes effectively.

Schools in all provinces are encouraged to use school-level data gained through large scale testing for school planning. District-level and school-level meetings and workshops are used to interpret and make use of summative data in a formative manner to inform school development processes and planning. District level and provincial administrators and policy makers analyse assessment data to inform decision-making about educational resources and policy making.

Although a significant group of teachers still feel pulled in different directions by trying to bridge the classroom demands of combining summative assessment (through standardized testing) and formative assessment, it has nevertheless become widely agreed upon in Canadian education that both forms of assessment need to be seen as two sides of the same coin.

Formative assessment provides individual learners and their support system, namely teachers and parents, with important information guiding the future directions of the learning process. Summative assessment through testing provides individual teachers, entire schools and their leadership as well as school districts and provinces with data crucial for improving the allocation of resources and professional development activities and policies.

In other words, summative and formative assessment are not mutually exclusive, though many teachers are still struggling to find a balance meeting the demands of both. Some teachers see a trade-off between summative and formative assessment and feel that a new emphasis on standardised testing and external evaluation requires a “teaching to the test” at odds with paying sufficient attention to the development of individual learners.

A culture of combining formative and summative assessment requires significant professional development on all levels and intelligent co-operation between the different agents, namely teachers, school administrators and policy-makers. In spite of the remaining tensions between summative and formative assessment, Canada has come a long way toward establishing a coherent multi-level system that incorporates both forms of assessment.