

Update

Ministry

Education and Childcare

Describe: Basic Job Details

Position

Position ID

Position Name (30 characters)

Psychometrician

Current Class

Job Focus

Supervisory Level

Agency (ministry) code

Cost Centre

Program Code: (enter if required)

Employee

Employee Name (or Vacant)

Organizational Structure

Division, Branch/Unit

☐ Current organizational chart attached?

Supervisor's Position ID

Supervisor's Position Name (30 characters)

Supervisor's Current Class

Design: Identify Job Duties and Value

Changes Since Last Reviewed

Date yyyy-mm-dd

2025-10-21

Responsibilities Added:

None - update to new template only.

Minor edits to wording to align with most recent Analytics unit JD and addition of the following statement to Job Purpose/Organizational Context: In addition to providing psychometric oversight and IT support for current provincial assessments and screeners, the unit's advice is also required for the Digital Assessment Platform (DAP).

Replaced early years literacy and numeracy assessments with early years literacy and numeracy **screeners**.

Added references to the new *Protection of Privacy Act (POPA)* and *Access to Information Act (ATIA)* that came into effect June 11, 2025, to replace FOIP Act. Updated ministry references (Alberta Education and Childcare).

Responsibilities Removed:

None

Job Purpose and Organizational Context

Why the job exists:

Provincial Assessment sector (PAS) delivers and administers early years literacy and numeracy screeners, Provincial Achievement Tests (PATs), diploma examinations, and Canadian Adult Education Credential (CAEC) assessments. As part of the analytics unit, the Psychometrician reports to the Senior Manager, Scoring and Reporting. The analytics unit is responsible for providing psychometric advice regarding the design, development, and enhancement of testing, marking, scoring, and results reporting for all provincial assessments (PATs, diploma exams, CAEC assessments and literacy/numeracy screeners), multiple times each school year. There are numerous deadlines associated with the scoring and reporting of provincial assessments. It is crucial that student results are reported accurately, and the data is also used as part of the Assurance Framework. The unit provides psychometric oversight and IT support for current and future provincial assessments. In addition to providing psychometric oversight and IT support for current provincial assessments and screeners, the unit's advice is also required for the Digital Assessment Platform (DAP).

Responsibilities

Job outcomes (4-6 core results), and for each outcome, 4-6 corresponding activities:

Participates in the scoring and reporting for early years screeners (EYS), Provincial Achievement Tests (PATs), diploma examinations, and Canadian Adult Education Credential (CAEC) assessments. Follows the sector's established business rules and proper procedures and ensures results and reports are completed on time without any error.

Receives and responds to the field's various inquiries including POPA requests associated with the provincial assessment scoring, reporting, and interpretations.

Maintains a comprehensive understanding of the sector's data held in Ministry files to effectively deal with stakeholder information requirements and requests.

Conceives, designs, and produces secondary analysis reports and/or cutting-edge graphs (e.g., multi-year roll-up, prior level of achievement, diploma exam completion rates) at various levels using PAT and diploma examination assessment data.

Initiates and provides ad hoc reporting services as well as information/data requests from the sector, the Assistant Deputy Minister (ADM) and department, and from stakeholders, school authorities, schools, parents, students, and members of the public.

Collaborates with the sector's Assessment Specialists/Diploma Exam Leads to develop and monitor the implementation of sound, consistent, and feasible scoring and reporting business rules (e.g., third-read identification rules) for provincial assessments and screeners.

Collaborates with the System Assurance Branch and the Provincial Approach to Student Information (PASI) team and provides leadership and psychometric expertise in assurance and public reporting with respect to initiating new reports and developing reporting policies to ensure that student achievement in provincial assessments is appropriately presented and soundly interpreted in the Annual Report, news releases, technical briefing conferences, and various levels of detailed reports, regular multiyear reports, and subgroup multiyear reports.

Problem Solving

Typical problems solved:

Initiates and develops, as requested by the Deputy Minister (DM) and/or Assistant Deputy Minister (ADM), original and policy-based research and data analyses using the data, technologies, or models obtained from provincial, national, and/or international assessments and surveys to inform sector, division and department decision making.

Designs, develops, implements, and leads operations-based psychometric research and keeps abreast of assessment related issues and trends in support of Alberta assessment and screener programs.

Designs, plans, manages, and coordinates cutting edge initiatives such as the use of IRT in test

development, online assessment methods, statistical equating, computer based and computer adaptive testing, and diagnostic online reporting.

Compiles, reviews, summarizes, and interprets relevant psychometric and educational assessment reports and literature to identify emerging issues of relevance to Alberta.

Actively identifies, through research and development, assessment and information technology related issues and trends that have strategic, operational, and budget implications for the sector and branches.

Collaborates with the leadership team of the sector and the Policy and Planning sector and Legislative Services branch to ensure that assessment related legislation, regulations, policies, and practices are developed with full consideration of current and emerging psychometric and educational assessment trends and technologies.

Prepares briefing notes and recommendations in relation to identified issues and trends.

Serves as the psychometric expert on all vendor-developed psychometrically based IT products.

Contributes to the psychometric and educational assessment literature by publishing (in peer-reviewed journals) manuscripts that present the results of research projects.

Meets and consults with psychometric and educational assessment academics and professionals in Canada and the world to gain advice and/or to discuss on the current psychometric trends, issues, and newly developed assessment models/methodology in support of sector, division, and department needs and priorities.

Types of guidance available for problem solving:

The terms of reference include: Standards for Educational and Psychological Testing (2014), Principles for Fair Student Assessment Practices for Education in Canada (1993), *Protection of Privacy Act (POPA)*, and *Access to Information Act (ATIA)*.

Direct or indirect impacts of decisions:

The psychometrician is one of several positions charged with designing, developing, managing, and monitoring psychometric and statistical procedures for all Alberta provincial assessments and screeners.

This position has a great effect on policy change at the executive level by providing advice, analyses, and data-based evaluations of new initiatives. As well, they determine the psychometric consequences of the change, design, development, and test changes to scoring and reporting systems resulting from the change; work with systems development staff to implement the changes in scoring and reporting systems; and communicate to Assessment Specialists, Diploma Exam Leads, Directors, and other management staff the consequences of the change, its effects on comparability of results over time, and any opportunities the change may create.

With the implementation of a new assessment, or after a change in curriculum, the cut scores for provincial standards have to be set based on proven standard setting processes. The Psychometrician guides the creation of the documentation and materials to be used for the standard setting by managing and overseeing the session, guiding the test developers through the procedure, processing the data collected, providing and explaining item/test level statistical information, and providing procedural and consequence feedback to the participants to ensure that the obtained cut-scores are valid, fair, and defensible.

Key Relationships

Major stakeholders and purpose of interactions:

Significant contact with the Assessment Specialists, Diploma Exam Leads, Directors and other Psychometricians on a daily basis for discussion, information exchange, cross-branch achievement issues, discussion on programs, assessments, and electronic scoring, and to provide expertise in assessment development, design, and scoring.

Contact with representatives from national/international assessment initiatives, academics from post-secondary institutions, auditors, superintendents, principals, teachers, parents, students, and internal

sector staff while designing, developing, and implementing business procedures with psychometric implications.

Input of many stakeholders including other branches and units in the Provincial Assessment sector, and other Alberta Education and Childcare and Government of Alberta departments (eg., Assistant Deputy Minister's office, Auditor, and Deputy Minister's/Minister's office) is sought on a regular basis when designing, developing, and implementing business procedures with psychometric implications.

Required Education, Experience and Technical Competencies

Education Level	Focus/Major	2nd Major/Minor if applicable	Designation
Doctorate	Other		

If other, specify:

Job-specific experience, technical competencies, certification and/or training:

The successful candidate must have a PhD or equivalent in educational measurement or a related field, and experience in statistics with proven ability to solve psychometric and statistical problems. A Master's degree will be considered.

Expert knowledge of the mathematics behind psychometric statistics used to build and test custom scoring and reporting systems.

Expert knowledge of databases for the psychometric aspects of sector systems and functions using software applications such as SPSS, EQS, SIBTEST, Iteman, Lertaps, Bilog, CIPE, Parscale, TESTGRAF, RStudio, Visual Basic, MS Access, MS Excel.

Expert understanding of Classical Test Theory (CTT) and Item Response Theory (IRT) and the ability to use that information to design scoring and reporting systems and to provide expert advice and to support members of the sector.

Behavioral Competencies

Pick 4-5 representative behavioral competencies and their level.

Competency	Level					Level Definition	Examples of how this level best represents the job
	A	B	C	D	E		
Drive for Results	☐	☐	☒	☐	☐	Takes and delegates responsibility for outcomes: • Uses variety of resources to monitor own performance standards • Acknowledges even indirect responsibility • Commits to what is good for Albertans even if not immediately accepted • Reaches goals consistent with APS direction	This position understands the impact that fair, valid, and reliable provincial assessments and screeners have on students' academic goals. This position also understands the need to ensure that results are reported in a timely fashion according to established schedules and maximizes scoring validity and accuracy when presented with unique situations and events.

Creative Problem Solving	○ ○ ● ○ ○	Engages the community and resources at hand to address issues: • Engages perspective to seek root causes • Finds ways to improve complex systems • Employs resources from other areas to solve problems • Engages others and encourages debate and idea generation to solve problems while addressing risks	This position must be able to critically analyze provincial data and initiate, manage, and coordinate projects that serve the psychometrically driven business needs of the sector.
Systems Thinking	○ ○ ● ○ ○	Takes a long-term view towards organization's objectives and how to achieve them: • Takes holistic long-term view of challenges and opportunities • Anticipates outcomes and potential impacts, seeks stakeholder perspectives • Works towards actions and plans aligned with APS values • Works with others to identify areas for collaboration	This position conceives, designs, and conducts policy-based research studies to inform sector and division decision making. It also identifies through research and development activity findings assessment and information technology related issues and trends that have strategic, operational, and budget implications for the sector and division.
Agility	○ ○ ● ○ ○	Identifies and manages required change and the associated risks: • Identifies alternative approaches and supports others to do the same • Proactively explains impact of changes • Anticipates and mitigates emotions of others • Anticipates obstacles and stays focused on goals • Makes decisions and takes action in uncertain situations and creates a backup plan	This position must recognize the changing landscape of education in Canada, anticipate changing priorities, and embrace the challenges presented by working with various stakeholders. This position must also proactively incorporate change into processes if required.