



# European Journal of Mathematics and Science Education

Volume 5, Issue 2, 93 - 104.

ISSN: 2694-2003

<http://www.ejmse.com/>

## Authentic Assessment for Motivating Student Learning and Teaching Effectiveness in Rural, High-Need Secondary Schools in Manitoba, Canada

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Received: February 4, 2024 • Revised: April 23, 2024 • Accepted: May 22, 2024

**Abstract:** This paper derives from a large research project focusing on mathematics and science assessment of student learning in three high-need, rural, and urban secondary schools in Manitoba, Canada. The study employed qualitative methods of semi-structured interviews and classroom video recordings of teaching practice experiences of 12 mathematics and science teachers, with the purpose that explore how authentic assessment forms assist effective teaching to monitor and motivate student learning achievement and growth. The results indicate that about 67% (eight out of the twelve of the participants) of the research participants practice the traditional mode of standard assessment that consists of multiple forms of questioning. The participants' rationale relates to speedy evaluations of student work, preparing feedback reports to parents and students, and objectivity of the assessment process. The other 33% (four out of twelve of the participants) of participants practice authentic assessment that concentrates on: (1) Allowing students to apply what they have learned rather than testing their ability to memorize and regurgitate concepts, (2) Allowing students to personalize their knowledge and values, (3) Encouraging group project-based learning and with the use of rubric for evaluating and monitoring, (4) Promoting deep learning to become life-long learners, (5) Recognizing, acknowledging, and validating diversity in student learning styles, interests, and aspirations, and further, authentic assessment is an excellent opportunity to apply communicative technologies such as podcasts and webinars in learning and undertaking investigations in mathematics and science learning. Furthermore, some participants asserted that authentic assessments are time-consuming, labor-intensive, and resource-demanding, aside from the limited resources and lack of training, which are some of the challenges of implementing authentic assessment. Other participants stated that all teachers must be familiar with using all assessment tools. The paper concludes that the principal plays a critical instructional leadership role in a school-wide implementation of authentic assessment.

**Keywords:** *Authentic assessment, conventional assessments, instructional leadership, investigative mathematics, science learning.*

**To cite this article:** Appiah-Odame, E. K. (2024). Authentic assessment for motivating student learning and teaching effectiveness in rural, high-need secondary schools in Manitoba, Canada. *European Journal of Mathematics and Science Education*, 5(2), 93-104. <https://doi.org/10.12973/ejmse.5.2.93>

### Introduction

Assessment is an indispensable part of effective teaching and learning in that it is the process of collecting data, analyzing, interpreting, and determining how students are learning or have learned to meet specific instructional objectives and ascertaining teaching effectiveness. Educators need effective assessments to ensure effective learning and teaching. For the purpose of this paper, assessment is deemed effective if it contributes immensely to student learning achievement and teaching effectiveness.

However, for decades, three forms of assessment have been dominant in the academic and professional literature: Assessment of learning, assessment for learning, and assessment as learning. Manitoba Education, Citizenship and Youth (2006) conceptualizes assessment of learning as an information collection instrument that allows teachers to judge whether students have attained learning, curricular or instructional objectives. Normally, assessment of learning occurs at the end of the instructional period. For this matter, assessment of learning is also called summative assessment (Kibble, 2017).

Assessment for learning, also termed formative assessment, is the process of gathering information to enable teachers to examine and reflect on the effectiveness of their teaching pedagogies and strategies concerning how students are learning

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to achieve specific instructional programming (Manitoba Education, Citizenship and Youth, 2006). It is suggested that assessment for learning should provide opportunities for students to prepare for assessment of learning (Hume & Coll, 2009).

Manitoba Education, Citizenship and Youth (2006) also characterizes assessment as learning as a process by which students engage in self-assessment—examining and reflecting on their own learning, adjusting or modifying approaches where necessary to attain higher learning growth. Instructional or curriculum objectives also involve peer assessment.

### Literature Review

The primary purpose of the research was to explore how authentic assessment forms assisted teachers in teaching effectively and monitor and motivate student learning achievement and growth. To accomplish this purpose, the researcher used qualitative data collected for a large research project in 2023.

The paper defines authentic assessment as a form of evaluation in which students perform real-world activities that demonstrate their ability to apply essential knowledge and skills to solve problems or issues or creative products that impact student life or life outside of school (Mueller, 2005). Indeed, authenticity is performance-oriented and requires students to demonstrate the application of experience, knowledge, and skills gained in the classroom in various real-world contexts, situations, or scenarios. Teachers create such assessment tasks, along with rubrics, and allow students to select how they want to demonstrate what they have learned. Teachers use constructive feedback and rubrics intermittently to evaluate and monitor student work and learning progress. It is stressed that authentic assessment focuses on the contents of the assessment, whereas assessment for learning, assessment of learning, and assessment as learning look at the purpose of the assessment.

Authentic assessment tool kit could take several forms, such as interviews, story or text retelling, writing samples, individual/group projects, exhibitions, demonstrations, constructed response items, experiments, and research (Callison, 1998). In fact, the choice of a tool from the authentic assessment tool kit depends significantly on the nature of the subject and the skills and knowledge the teacher wants to assess.

The settings for the study consist of three high-need rural and urban secondary schools in Manitoba. These schools have a large indigenous population with high rates of student absenteeism and school dropout. These challenges also impact student academic achievement and push grade 12 graduation rates to a low level in the province. Statistically, indigenous graduation rates in the province of Manitoba hover around 50% relative to that of non-indigenous students (Commission on K-12 Education, 2020). This statistic certainly mirrors the grade 12 graduation rates in those schools selected for the study. In addition, teacher attrition is high in those schools which also negatively affects their student achievement and grade 12 graduation rates.

Historically, Dr. Grant Wiggins (1950-2015) of the United States of America, is one of the pioneers of authentic assessment. He focused on k-12 education, and since then the concept of authentic assessment has spread to higher education in North America and across the globe. Contemporarily, authentic assessment has taken deep roots in the educational literature.

According to Aksu Ataç (2012), authentic assessment has several common names, such as performance assessment, alternative assessment, and direct assessment. As well, authentic assessment has many definitions in the scientific research literature, and this causes enormous confusion about its nature and what it aims to accomplish in the education field. According to Torulf (2008a, 2008b), authenticity defines life beyond school, curriculum, classroom practice, and learning and instruction.

Another similar definition is that authentic assessment “refers to the procedures for evaluating learner achievement or performance using activities and tasks that represent classroom goals, curricula and instruction and real-life situations” (Aksu Ataç, 2012, p. 3). More recently, Villarreal et al. (2018) have defined authentic assessment in terms of realism, contextualization and problematization. They see realism as linking knowledge and skills to real life and work; while they look at contextualization as situations, cases, scenarios, and events where knowledge and skills can be applied (Magoma, 2016). Problematization, to them, involves an understanding that what is learned can be applied to solve a problem or fulfill a need. These definitions share common elements relating to real-life activities and conformity to classroom practices, curricula, and instructional goals of educational institutions. Nevertheless, these definitions assume that the ethos of authentic assessment is in alignment with classroom practices, curricula, and instructional goals of educational institutions. There may be cases where the ethos of authentic assessment may conflict with those of classroom practices, curricula, and instructional approaches. That is why Shane (2021) and Magoma advocate authentic learning and teaching, both of which encourage collaboration, polished products (through constructive teacher feedback and student reflection), multiple solutions/perspectives, interdisciplinary connections, and real-life relevance.

Generally, there is no consensus on elements, ethos, or components of authentic assessment. Despite that, some researchers, scholars, and practitioners have identified the components of authentic assessment that may cause little or no conflict among the community of practitioners and researchers. One of these elements is life beyond school. This implies that authentic assessment tasks mimic the contexts in which adults perform activities in the workplace, civic life,

and personal life (G. Wiggins, 1998). This is reasonable in the sense that school as a microcosm of society cannot be isolated from its activities and culture. Second, authentic assessment is performance-based in that it asks students, as G. Wiggins (1990, 1998) puts it, to do the subject as it is done in a real context. This could involve doing experiments, making a presentation to an audience, engaging in research, or creating a product that helps to solve a local, global, or national problem. Third, the assessment activities require students to use integrated knowledge, skills, and values (G. Wiggins, 1998) efficiently and effectively. Fourth, the assessment allows students a range of flexibility to rehearse, practice and get constructive feedback, and refine performances and products in a reasonable timeframe (Grant et al., 2021; G. Wiggins, 1998). The fifth element is the transfer of knowledge and skills. The assessment should provide students opportunities to transfer theoretical knowledge and skills to practice (Grant et al., 2021). Sixth, authentic assessment is based on demonstration of learning. It gives students the option of how they want to show their learning in accordance with their interests, aspirations, passion, and future careers (Grant et al., 2021). Finally, authentic assessment adores collaboration. It offers opportunities for student interaction in groups or as individuals (Grant et al., 2021).

From the perspective of Larmer (2012) perspective, authenticity relates to the real-world and directly connects to students' lives and issues in their communities. He uses three criteria to determine whether a project is not authentic, partially authentic, and entirely authentic. To Larmer, a project assignment is not authentic because it does not resemble the type of work that people perform outside of school, and its purpose is to fulfill academic requirements.

Larmer (2012) also refers to a partially authentic project assignment as one that stimulates what could happen in the real world outside of school. For entirely genuine projects, Larmer defines fully authentic projects as those that have meaning for students or have a direct impact on the world outside of the classroom. He goes on to say that such projects result in creating products that people use to focus on problems, issues, or topics relevant to students' lives or adult encounters.

Thus, according to Larmer (2012), authentic projects are aligned to the real world and are performance-based in that they solve problems or issues or create products that contribute to a better quality of life. For this reason, Koh (2017) refers to authentic assessment as a performance-based assessment that measures how students apply knowledge and skills rather than what they know or how much they know. Koh concludes that authentic assessment is crucial for nurturing student competencies for the 21st century. Consequently, Koh recommends building teachers' capacity for authentic assessment through professional development programs.

According to G. Wiggins (1998), authentic assessment differs from conventional assessment in several ways. As G. Wiggins asserts, authentic assessment does not simply provide a score to the student as orthodox assessment does. Instead, it gives students constructive information about their skills and knowledge and how they can be improved, if necessary, through well-crafted rubrics and interactive advising. Besides, unlike conventional assessment, which is a disconnect from real-world contexts and constraints, authentic assessment is tied to real-world contexts and limitations regarding utilizing skills and knowledge to solve a problem, create a product, improve a system, defend a value, or advance an argument. According to Nguyen and Walker (2016), growing ideas to authenticate learning ensure life-long learning.

G. Wiggins (1998) also states that whereas the contents of conventional assessment activities are unknown to students or learners, authentic assessment assignments make students aware as much as possible in advance. Further, G. Wiggins asserts that conventional assessment contains items that isolate skills or knowledge. In contrast, integrated, authentic reviews require applying various skills, values, and well-coordinated expertise.

As a matter of fact, traditional or conventional assessments such as multiple-choice tests, true/false, and fill-in-the-blank have faced a barrage of criticisms. The most common criticism is that conventional assessment tools fail to take into consideration the psychological, cultural, and contextual factors associated with the student psychology (Brown, 2022). It is also asserted that conventional assessment does not accommodate diverse learning styles, interests, and passions (Kerka, 1995). Does this suggest that conventional assessment tools are irrelevant to student learning?

It is important to note that G. P. Wiggins (1993) and G. Wiggins (1998), arguably the pioneer scholar of authentic assessment, do not characterize conventional or traditional assessment tools as inauthentic. Rather, he looks at them as less direct and less meaningful to students and neglects the domains of performance and context that are crucial for higher-order thinking, learning, problem-solving, and problem-posing.

Nonetheless, both authentic assessment and conventional assessment have significant roles to play in student learning. In fact, the choice of assessment approach or tool hinges considerably on what skills, knowledge, or values the teacher wants to assess (Quansah, 2018). In other words, to choose an appropriate assessment tool, teachers must understand the topic, subject, or course outcomes and the skills and knowledge associated with those outcomes. At the same time, the assessment tasks should allow students ample opportunities to demonstrate their knowledge and skills without any hindrances.

## Methodology

### *Research Design*

The research was designed as a qualitative study that focused primarily on exploring teachers' approaches to assessing student learning. Twelve respondents representing physics, mathematics, home economics, science, and technology teachers from three separate high schools that participated in the study were purposely selected. Purposive sampling is a non-probabilistic method of selecting research participants based on a researcher's constructed criteria (Obilor, 2023).

Purposive sampling was chosen because the research did not aim to generalize its results to the population of schools and teachers in Manitoba or elsewhere. On the contrary, it intends to offer valuable insights into authentic assessment and how it could benefit student learning and teaching effectiveness (Onwuegbuzie & Leech, 2007). As well the teachers were also purposively selected based on the following criteria: their willingness to participate voluntarily in the study and follow-up studies, to make a video clip of at least 20-35 minutes demonstrating their assessment approaches, and also their assessment knowledge and skills.

As a qualitative study, the data consist of teachers' articulated perspectives, descriptive words and phrases and narratives from their professional experiences and practices of student assessment. Prior to commencing data collection, the candidate submitted a request through the Institutional Review Board (IRB) of Aspen University, Denver, Colorado, and subsequently requested and received permission to interview teachers from within school division(s). A letter was submitted to the superintendent of the school of a school division in Manitoba to seek permission to interview volunteer teachers for data collection. Additionally, it comprises video clips depicting teachers' assessment practices and assigned student learning activities.

Qualitative methods rather than quantitative methods were used in the research for two major reasons. First and foremost, teachers are frontline workers who are intimately connected with student learning difficulties, achievements, and growth. Consequently, social justice dictates that teachers' voices should be heard in this study (Tilley, 2019). Second, teachers have intimate experiences in learning assessment, and for this reason, they can provide vivid descriptions of such experiences and narratives, which cannot be easily translated into quantitative variables (Sofaer, 1999).

Before the commencement of the research, all protocols pertaining to the conduct of research in the school division in Manitoba province were complied with fully. After that, an email was sent to each principal of the selected schools asking for their recommendation of teachers who were deemed knowledgeable and skillful in learning assessment practices. A total of 27 teachers were recommended. Finally, an information letter explaining the purpose of the research and its benefits, consent forms, statement of guarantees of anonymity and confidentiality was sent out to each of the recommended teachers in the selected schools. Electronic mail correspondences with the recommended teachers helped the researcher select 12 teachers who were judged suitable for participation in the research. Of the 12 teachers, 7 were specialized mathematics teachers and 5 were science teachers. The average professional teaching experience of these participants ranges from over ten years in active service.

### *Sample and Data Collection*

The data for the research was collected via video recordings and interviews. All participants are within the age range of thirty to fifty-five years and are in active service and are all teaching one or more of Physics, Mathematics, General Science, Home Economics, and Band. Each participant submitted to the researcher, through email attachments and Microsoft Teams, a video clip of a duration between 20-35 minutes. The video clip shows three samples of student assignments, and the teacher assessment practices, capturing how marks were selected from the mark book (spreadsheet) that represents each student's understanding. The participants were required to submit the video clip two weeks prior to the scheduled interview.

*Semi-interviews:* Each participant was interviewed on the phone for approximately 45 minutes based on the research questions and on questions arising from the video recording. The interviews were only recorded at the express permission of the interviewees. The researcher ensured the interviewer and interviewee were both seen in the video as this helped in noting the body expressions and gestures during data collection for authentication purposes. Each interview was immediately transcribed after it was finished. The interview assisted triangulation of the data from the video recordings.

### *Analyzing of Data.*

The three rural and urban high-need school divisions comprised two from rural settings and one from urban high-need settings in Manitoba. All the schools are publicly funded institutions. The research data was thematically analyzed. Thematic analysis (TA) "is a method of identifying, analyzing and interpreting patterns of meaning (themes) within qualitative data" (Clarke & Braun, 2017, p. 1). This involves categorizing the data into themes that the researcher finds meaningful. A theme is a recurring or repeating idea, concept, or topic throughout the transcripts. Also, a theme could be descriptive, interpretive, or explanatory.

The following four stages were used in the validation of the thematic analysis of the data. The first stage involved familiarization with the interview data and coding using letters. After transcribing the interview data using MAXQDA software, the researcher thoroughly read each interview transcript and watched each video clip to become clear with the content and to note the emerging themes running across them. Prior to the second stage, the transcribed interview data was sent back to participants to proofread; the essence is to ensure that the transcribed data represented what each member posited during the interview for confirmability.

The second stage entailed identifying, labeling, or noting segments of the data that are relevant to the research questions. The resonating words and phrases that were used to identify authentic assessment included but were not limited to the following “relevance or meaningful to student life, family and community,” “realistic, authentic, alternative /assessment,” “relevant learning,” “collaborative learning assignment,” “interdisciplinary,” “useful assignments,” “connections with community/ society,” and “problem-solving.” In other words, phrases of familiarization led to coding and generating themes using tables consisting of “preparing students for adult or civic life,” “knowledge and skills for life,” “constructive feedback,” “project-based learning,” and “using a rubric to monitor and evaluate student work assignments.”

The third stage focused on constructing themes where necessary, reviewing, reflecting, and grouping themes into categories. The last stage was related to describing the meaning of each theme and its significance to the research questions as well as the research purpose. In addition, quotations from the interview and portions of the videoclip relevant to each theme were also noted.

As a check on the accuracy of interpretation of the data, the researcher sent to each participant the interpreted data to confirm its accuracy. This is a highly recommended practice in the literature (Ngozwana, 2018).

### Findings/Results

The thematic analysis of the data from the semi-structured interviews and video recordings indicates that about 67%, representing eight out of the twelve of the participants, use traditional or conventional forms of assessment such as multiple-choice tests, yes/no, true/false, and essay writing during the examination. Respondents have these to say in Table 1, on account of findings based on research question one: what is authentic evaluation, and who are the beneficiaries?

*Table 1. Findings for Research Question 1*

Category	Themes
Teachers' preference for evaluation practice	<ul style="list-style-type: none"> <li>Prefer grading with a need-based student mindset and making students' feedback paramount to improve instruction and in determining success.</li> </ul>
No right or wrong answer except to encourage	<ul style="list-style-type: none"> <li>Authentic assessment is developed to fit the needs of individual students.</li> </ul>
Authentic evaluation and challenges	<ul style="list-style-type: none"> <li>Instead of just looking at the number representing a student's grade and making it feel like that doesn't mean anything, those numbers should be relied on to guide teacher instruction for students to become better.</li> <li>Evaluating according to student level of learning ability because they learn using different strategies and strengths. That is why when evaluating, adapting different strategies is crucial not only dependent on testing, assignments, quizzes, and homework.</li> <li>Authentic evaluation occurs as the final and at the end lessons or units are ways of giving students the opportunity to re-do, or do over, improve, and revise, which are important for encouragement.</li> <li>Students come to classrooms at different learning levels even though they may be in the same grade level; some may be good in comprehension, some good in writing, and some good in oral presentation. Effective teacher's authentic evaluations depict strategies that draw on the strength.</li> <li>Educators concern themselves and look out for whether learners have effectively participated, and are getting something out of their learning, and whether participation will be beneficial to life reality.</li> </ul>
Beneficiaries in context of standard-based grading practices	<ul style="list-style-type: none"> <li>The beneficiaries are the students, but teachers also benefit from knowing how to direct their students, families, and department of education.</li> </ul>

These participants rationalized their preference based on the simplicity, objectivity, and efficiency of the assessment process. For instance, they state that these assessment forms allowed them to prepare quick feedback reports to

parents/guardians and students in relation to other assessment forms. They also asserted that other forms of assessment entail too much subjective judgment on the part of the teacher and that ruins the objectivity of the assessment process.

Regard research question two on practitioner perspective for effective promotion of greatest student motivation to learn and attaining highest achievement, and why, 33% (or four of the twelve) participants as reflected in table two, strongly endorsed and incorporated in their assessment practices with the following characteristics:

- (1) It provides opportunities for students to apply their knowledge and skills to solve practical problems or fulfill practical needs in their lives, families, or communities.
- (2) It mimics student communities' values of collaboration, interactivity and sharing such as project-based learning and group problem-solving.
- (3) It encourages students to integrate personal, familial and community knowledge/perspectives.
- (4) It validates, acknowledges, and recognizes diversity of learning styles and approaches.
- (5) It utilizes rubrics for evaluating and monitoring student assignments or learning activities rather than using alphabetic or numeric codes; and

It promotes deep learning, love of learning and life-long learning. These participants state that such an approach to assessment eliminates the widespread perception among students that learning only occurs at school. According to them, they want to nurture the idea that life is learning and learning happens everywhere in life. Four participants admitted that other forms of realistic assessment (authentic assessment) such as researching local histories of mathematics and science by talking to community Elders or parents/guardians; experimenting with ecological friendly disposal of community wastes; making posters demonstrating how to treat and prevent waterborne diseases; and photographing or drawing pictures of indigenous technological tools and suggestions about how to enhance their effectiveness are excellent ways of encouraging deep-learning, and life-long learning among students in mathematics and science classes.

*Table 2. Findings for Research Question 2*

<b>Categories</b>	<b>Themes</b>
Teachers' experiences regard evaluation tools	<ul style="list-style-type: none"> <li>• Prefer the use of variety of evaluation tools to justify why students are demonstrating understanding with the application of the principles of standard-based grading.</li> <li>• Encouraging students build confidence and exposes them to achieving demonstrable better performance.</li> </ul>
Evaluation as a tool to inspire	<ul style="list-style-type: none"> <li>• Teachers building confidence in learners is huge, and teachers should develop strategies of admonishing students to find other ways tangible enough to improve grades and understanding.</li> <li>• Implement evaluation panacea that does not depend only on paper and pencil, but rather on what learners know and how they respond to assessment questions in classrooms.</li> <li>• Teachers are role-models for giving students makeup and different assessments and assignments to entice the latter group to love coming to school. The tools include feedback, involving students' ideas, summative unit tests, conversations, and others.</li> <li>• Teachers can share evaluation processes outcomes in making the processes attractive and possible with the use of descriptive rubrics, as well as teacher modeling.</li> </ul>
The outcome of the use of evaluation tools	<ul style="list-style-type: none"> <li>• The use of the performance evaluation feedback by teachers as a data collection tool help to inform them of the specific learning outcomes (SLO) attained by students, and the need for professional development's (PDs) through professional learning communities (PLCs) requirements within schools.</li> </ul>
Suggestions for future adaptations to the use of evaluation as tool to inspire	<ul style="list-style-type: none"> <li>• Making students aware of their achievement of goals or and shortfalls based on the outcomes, to further re-engage teacher- student for deeper improvement.</li> <li>• The less self-motivated students show inhibited progress, and there must be a concerted effort by teachers to ensure students buy-in as well as interest to want to achieve success. Teachers continual hammering on concepts and when the positive happenings occur will serve as encouragement process to effective schools.</li> </ul>

One participant stressed the fact that in this era of highly developed communicative technologies, assessment should be useful and relevant to students and their communities by allowing them to use innovative communicative technologies such as webinar, podcast, and webcast. In her perspective: Students in science classes can be asked to work in groups to

create a podcast educating their communities about how to prevent catching the flu or other cold related illnesses during the winter season...school education would then be transformed into a community development tool.

Nevertheless, this form of realistic assignment (authentic assessment), according to the participants, takes much time, effort, and resources to plan and implement. Additionally, they cited large class-sizes as a factor that prevents them from experimenting with authentic assessment. They further stated that teachers need help in planning and designing such assignments or learning activities. One of those participants states emphatically: I guess every teacher knows that realistic problem-solving and inquiries such as those are a catalyst for increasing student learning achievement, love of learning, and enhancing teaching effectiveness. However, the lure of professional practice of conventional assessment is the main problem. Research question three solicited suitable teacher data collection methods, and some research participants stated creativity and congestion are part of strategies to reduce biases and errors when evaluating students' assignments and tests; a summary is captured in Table 3. In fact, realistic (authentic) assessment is a practical tool for promoting student learning growth and achievement through constant constructive teacher feedback, exposing students to creativity and congestion (Table 3), and monitoring via rubrics rather than simply assigning letter or numeric grades to students.

Two participants added that integrative assessments help students to combine a variety of knowledge and skills to solve problems. The participants stated this would avoid unnecessary departmentalization of knowledge.

*Table 3. Findings for Research Question 3*

Categories	Themes
Data Collection Methods	<ul style="list-style-type: none"> <li>Data collection in some subject areas is more based on hands-on, and in middle school, the whole premise of testing and quizzing students as a philosophy has changed over the years to one of more performance activities.</li> <li>Teachers attest conversations, presentations, projects, open-book tests, seeking meta-cognitive information from learners, and journaling must gain priority as quizzes alone do not measure everything.</li> </ul>
Error Reduction and Enhancing Objectivity	<ul style="list-style-type: none"> <li>Teachers have a better chance to make inroads through co-creating criteria with students to openly expose students' creativity and congest.</li> <li>The use of journaling and writing log activities are part of the strategies that reduce biases or errors during the evaluation of students.</li> <li>The use of video (popular culture) in lessons sustains the tenets of flipped classrooms that ensure all lag time due to excessive absenteeism on the side of students will not impede effective and ongoing learning.</li> <li>Teachers have to infuse flexibility in accounting for students knowing and learning appraisal. Seeking alternative ways through which students express an understanding of creativity enhances objectivity.</li> <li>In evaluating students, teachers are cautioned to exhibit fairness in grading rationally, be more descriptive in the course description, and encourage students to make their intentions known to teachers.</li> </ul>

In addition, five participants unanimously agreed that teachers should learn different forms of assessment and select the one that fits the purpose and objective of the lesson they teach. According to these five participants, if the teacher wants her students to become familiar with the characteristics of a mathematical technique or scientific principles, for example, multiple choice and fill-in-the-blanks might be effective assessment tools. These participants also asserted that if the assessment aims at emphasizing critical thinking skills, inquiry, or problem-solving, multiple-choice tests, true/false or yes/no are ineffective tools.

Three other participants stated that for mathematics and science learning to be authentic (useful and relevant to students, their families, and communities) They should involve investigative assignments that require students to collect data and analyze it using mathematical or statistical techniques. They also suggested the use of data from local, national, and international sports and that which Statistics Canada collects periodically. The two participants concluded that using such data to teach mathematics would dispel the deeply ingrained perception among students that mathematics is a school subject rather than a life subject.

### Discussion

Assessment for learning provides opportunities for students to prepare for assessment of learning (Hume & Coll, 2009), and the research data raises many points for discussion. Authentic assessments such as experiments, problem-solving and inquiry allow students opportunities to apply their mathematics and science in realistic ways. Linking back this assertion to research question one on what constitutes authentic assessment and who benefits, students develop critical learning skills in problem-solving and inquiry skills. The aim of the study is to ascertain if assessment for learning

prepares avenues for students' effective learning in the context of students' acquisition of better learning, problem-solving, and critical inquiry skills.

Researchers such as Begley (2010) assert that one of the goals of public education in Canada is preparing students for civic life, and research question four, which expands on facilitating deeper learning now and in the future is addressed in the context of a paradigm shift in civil life after school as critical thinkers. The paradigm shift concerning civil life readiness was unexpected findings that emanated from a third of the participants recruited in this study, and this highlighted participants who wanted to share more on how deeper learning prepares students for future life. Civil life does not only include exercising voting rights but also working with other citizens to resolve community, regional, or national issues, making presentations to audiences, and preparing and making submissions to local, provincial, and national government authorities. It also includes earning a living and contributing to Canadian society. Authentic assessment ensures the attainment of that goal. Nonetheless, per participants' mindsets on variation in evaluation strategies and test data collection methods as contained in research questions two and three, the assertion that not all assessments require authentic assessment and that teachers should use the right assessment tool depending considerably on the goals and purpose of the assessment. These narrative challenges but, also partly draw convergence in the deeply held belief among some researchers that conventional assessment methods should dominate Canadian school assessment (Zwaagstra, 2022). The participants who showed a strong preference for authentic assessment were not advocating its exclusive use in Canadian schools. On the contrary, they stated that Canadian teachers should use assessment tools that fulfill the outcomes of their instructional programming.

Nonetheless, it was crucial that teachers find creative ways to incorporate authentic assessment into their assessment practice to attain balanced assessment. As a matter of fact, the assessment scale must not be tilted always in the direction of conventional assessment.

There are three forms of mathematics tasks: exercise, problem-solving, and investigation (Bailey, 2014). Mathematics exercises are simple questions whose answers may be obtained through memorization and mimicry of teachers' work examples. Mathematical problem-solving requires students to construct their strategies based on previous knowledge and skills to solve real-life or contrived problems. To borrow from the project authenticity concept, according to Larmer (2012), such problems could be partial or full-authentic assessments based on their degree of connections to real life.

However, mathematical investigations involve the process of searching for patterns, posing problems, conjecturing, verifying, and proving observed phenomena using numbers, pictures, symbols, and logic (Bailey, 2014; Nivera, 2017). As the participants have emphasized, mathematical investigations are an authentic assessment as they assist students in understanding the nature and relevance of mathematics in life and careers. Similarly, inquiry-based science assessment also helps students to understand the nature of science and its application in life. These assertions are well-recorded in the literature (Goos et al., 2007; Hatteburg, 2014; Nivera, 2017).

Furthermore, the challenges in implementing authentic assessment, such as lack of training, resources, and large class sizes, could be discussed and addressed in either professional development sessions or school staff meetings.

The participants' criticism that realistic (authentic) assessment is not objective is highly debatable. Certainly, authentic assessments rely on teachers' judgment through rubrics and constructive feedback. Nonetheless, this does not make it invalid or unreliable. After all, numerous programs, policies, and systems in our society rely significantly on human judgment to achieve desirable outcomes. Consequently, it is indefensible for those teachers to hide behind the cloak of objectivity while their students are unmotivated to learn, drop out of school, have low grade 12 graduation rates, and have poor learning achievement. These shortfalls from the previous statement negate the precepts enshrined in fulfilling research question four regarding the future that draws on profound learning.

Developing and sustaining students' interest in learning and increasing their academic achievement is possible when teachers allow students to make choices about how they intend to demonstrate knowledge and skills acquired in the classroom and support them with timely, continuous feedback and rubric monitoring techniques (Kajitani et al., 2020). Assessment has the potential to achieve that goal relative to conventional assessments.

### **Conclusion**

Based on the research data, the paper has established that authentic assessment is an effective assessment tool — a catalyst to motivate students to learn, increase student achievement or learning growth, improve teaching effectiveness and grade 12 graduation rates, and reduce student absenteeism and dropout rates. In light of these significant benefits, this research's findings contribute to the urgency (Brolund, 2016; Brown, 2022) that those schools should adopt authentic assessment as part of their learning and teaching policies.

High schools in the province of Manitoba are facing increasing accountability for student learning and academic achievement. Consequently, critical reflections (Grant et al., 2021) on authentic assessment have a valuable contribution to increasing student learning achievement and improving grade 12 graduation rates.



The implementation or practice of authentic assessment in a school-wide setting requires principals to play an influential instructional leadership role. This involves four major tasks. First, the principal must work with teachers by providing continuing professional support, mentoring, coaching, and guidance in the best practice of authentic assessment (Brolund, 2016). Where the principal lacks knowledge and skills of authentic assessment, seeking professional assistance from colleagues or consultants is one of the best solutions. Second, the principal must communicate a clear vision and goal of authentic assessment to teachers to provide focus and purpose for authentic assessment. Third, other stakeholders, such as parents/guardians and community members should be well-informed about what the school is doing with regards to authentic assessment. Finally, the principal must design and schedule professional development sessions on authentic assessment for teachers.

### Recommendations

The research findings point to some teachers still using old traditional methods of assessing/testing, grading, and evaluating students. Such traditional methods of application put middle and high schoolers at the disadvantage of either failing the grade or dropping out of school because of a lack of morale. Alluding to this revelation, the research recommends that future research projects may focus on how authentic assessment could be made part of the core school improvement agenda with the applications of standard based grading (SBG). Another future research could look at teacher-specific challenges in specific high school subject areas such as mathematics, English language, arts, and science and how these could be effectively addressed by teachers to increase graduation rates in rural and urban high-need schools.

### Limitations

Participants may not have taken an interest in doing credible member checks when the transcribed interview script was sent back for review to confirm by locating the glitches, making corrections, and adding or subtracting what did not represent them. Due to the qualitative nature, the study did not permit the researcher to delve into the use of samples of teachers' grade book records as well as achieved records from the department of education and school division's test scores to present more profound analytical interpretations.

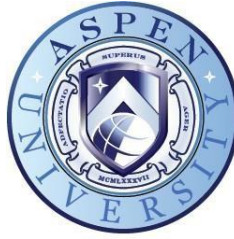
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## Appendix

### Appendix A: Informed Consent Form



Aspen University  
4615 East Elwood Street – suite 100  
Phoenix, Az. 85040

**Title of Project/Study:** *Authentic Assessment and Evaluation as a Catalyst for Motivating High School Students: The Context of Rural and Urban High-Need Settings.*

#### Introduction

As a prospective research study participant, this form aims to provide you with information that may affect your decision to participate in this research and record the consent of those who agree to be involved in the study. The researcher is currently working on my Doctor of Education Degree in Educational Leadership in K-12 Leadership. However, you can talk to anyone you feel comfortable with regarding this research before you decide. This consent form may contain words that you do not understand. Please stop and ask the researcher questions at any time, and you will receive an explanation. If you have questions later, you can ask them anytime.

#### Principal Investigator

Appiah-Odame, Eric. K is inviting you to participate in a phenomenological qualitative research study as part of the recruitment for a doctoral degree at Aspen University.

#### Purpose of the Project/Research

The purpose of this project/study is to seek convergence of practical ideas from individuals, coaches, and collective teachers' lived experiences to contribute to best classroom evaluation practices to motivate students. The study's resolve is to present a variety of scenarios from perspectives of educators lived experiences regarding models of the management of test scores within the applicability context of a flexible school-based system for teachers. The presented explanatory designs contribute to how teachers become self-directed and confident and can make high school students feel motivated to reform assessment and fill the gap in masterminding effective evaluations.

#### Eligibility

You are eligible to participate in this project/research if you:

- Are a teaching principal, a subject coach, middle school teacher, or high school teacher teaching in an urban high-need or rural high school.
- Are not under the direct supervision of or in the same school and are not affiliated with the researcher.

#### Description of the Research Activity

If you decide to participate, then as a participant, you will be asked to:

- Take a schedule interview as a participant, a discussion that will last a duration of the dialogues is expected between 20-40 minutes,
- The interview will take the form of semi-structured open-ended questions, and
- Join in an interview exercise that will be video recorded using Microsoft teams, facetime, and non-chipped cellphone video recordings, aside from taking notes with pencil and paper.
- These representations will connect ten to twelve high school teachers and subject coaches as participants to tap their shared experiences, using a non-probability sampling technique to contribute and consolidate for triangulation and validity of generalized results. In addition, the research methods employed discuss individual evaluation experiences about how a teacher's data management wisdom allows skill exhibition that translates into student learning motivation. The whole interview with all other participants will last within two months, and with a follow-up, members check questions for clarification and confirmability.

#### Risks

If you decide to participate in this project/research study, the risks may include discomfort in answering personal questions

and recalling an uncomfortable event. To decrease the impact of these risks, you can avoid giving personal information that you do not feel comfortable divulging to the researcher. When you experience any emotional distress during and after the interview exercise, contact any member of the research team to discuss your reactions, the anxiety disorder association Manitoba, or the Canadian mental health association at (204)-477-6391 or 1-866-367-3276.

**Benefits**

Benefits of participating in this project/study include:

- Informing educators, teaching principals, and subject coaches of the potential for using evaluations to motivate emerging thinkers and relieve teacher uneasiness during awarding final grades to students.
- Leading schools and classrooms, school leaders sharing ideas will boost teachers’ confidence in developing integrative learning structures and faculty leadership to work harmoniously in defining purpose.
- Encouraging teachers, teaching principals, subject coaches, and students who have little or no motivation to pursue meaningful academic work to become critical thinkers.

**Confidentiality**

All information obtained in this project is strictly confidential unless required disclosure by law. The results of this authentic assessment and evaluation to motivate study will appear in reports, presentations, and publications, but your identity is protected. Appiah-Odame, Eric. K, the principal investigator, will ensure and maintain the confidentiality of all records by using a pseudonym instead of real names. Instead, all collected data in notes from and on audio and video recordings will be assigned codes, saved on flash drives, and secured in a locked file cabinet or password-protected computer file.

The people who will have access to your information are Appiah-Odame, Eric. K, the principal investigator, and the project/dissertation committee.

The researcher will delete all audio/video recordings within a five year timeframe following the making of the electronic recordings and collected paper data destroyed.

**Withdrawal Privileges**

It is okay for you to decline to participate in this evaluation and motivation research study. You are free to stop participating, and there will be no penalty. If you decide to discontinue participation, you may do so at any time by notifying the principal investigator at eric.appiahodame@fsdnet.ca or at (204)-939-0820. Your decision will not affect your relationship with Aspen University or cause a loss of benefits to which you might otherwise be entitled or your position in your current employment. Likewise, withdrawing from this study will not affect your employment status and relationships with Frontier School Division.

**Costs and Payments**

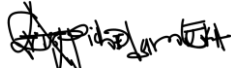
You will not receive any financial cost as a participant; however, as a thank you for your willingness to participate, you will be given a gift card of \$15 in amount.

**Voluntary Consent**

Any questions you have concerning your participation in this research study will be responded to by the student researcher Appiah-Odame, Eric. K, at email: eric.appiahodame@fsdnet.ca and by phone: (204)-939-0820 and the faculty mentor and dissertation chair, Dr. Kathleen, Hargiss, at (727)-501-2488 or e-mail at Kathleen.Hargiss@aspen.edu

If you have questions about your rights as a subject/participant in this research, or if you feel you are sick, you can contact the Institutional Review Board at IRB@Aspen.edu

I attest that I have explained to the above individual the nature and purpose, the potential benefits, and possible risk associated with participation in this research study and have answered all associated questions. By signing this form, you knowingly agree to assume any risks involved. Remember, your participation is voluntary. The principal researcher will forward a copy of this consent form to you. Your signature below indicates that you consent to participate in the above project/study.

Participant’s Signature	Participant Name	Date
	Appiah-Odame, Eric. K	June 7, 2022
Lead Researcher Signature	Name of Researcher	Date