

## Dimensions of Engagement: Definitions and Ways to Incorporate

**E**ngagement is strongly related to student performance on assessment tasks, especially for students who have been typically less advantaged in school settings (e.g., English Language Learners or students of historically marginalized backgrounds) (Arbuthnot, 2011; Darling-Hammond et al., 2008; Walkington, 2013). In the traditional assessment paradigm, however, engagement has not been a goal of testing and concerns about equity have focused on issues of bias and accessibility. A common tactic to avoid bias has been to create highly decontextualized items. Unfortunately, this has come at the cost of decreasing students' opportunities to *create meaning* in the task as well as their motivation to *cognitively invest* in the task thereby undermining students' opportunities to adequately demonstrate their knowledge and skills. This document defines dimensions of engagement from the literature and offers ways for item writers to incorporate them into assessment tasks. These engagement dimensions specifically aim help item writers by designing performance tasks that are engaging to all students of diverse socioeconomic, cultural, and language backgrounds.

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Engagement Dimension	Definition	Ways to Incorporate into the Performance Task with Examples	Questions to Consider	Appended Performance Tasks as Examples
<p><b>Relevance</b></p>	<p>Relevance refers to a motivational condition wherein the student is impelled to action, because s/he perceives that the task will satisfy personal needs, motives, or values (Keller, 1983). Relevance answers the question, why does the educational content matter to the student? and provides the student with a reason for doing a task.</p>	<p>Relevance may be fostered by <b>making a connection to students’ lived experiences, interests, or prior knowledge</b>. These connections create a <b>“need to know”</b> for students and gives them a reason for doing the task. For example, a grade 11 math performance task called Speeding Tickets asks students to judge the “fairness” of a state’s system for assigning speeding fines to drivers. Students must assess and compare two states’ penalty systems in order to propose a fairer speeding fine system. Sixteen year olds (i.e., typically aged students in grade 11) find this task engaging, because the problem setting <b>connects directly to their lived experiences</b>. These students are just beginning to drive cars and may ultimately have to deal with the financial consequences of speeding. In addition, the problem setting connects with teenagers’ developmental needs for independence and fairness. A less relevant task might simply present a table of numbers and require the students to plot the function of a line on a graph. This type of task does not create a “need to know” for students, because it does not make a connection to students’ lived experiences and interests.</p> <p>Tasks that are not connected to students’ lived experiences, interests or prior knowledge can be made relevant in the following ways:</p> <p>1) <b>Personalize the task scenario or context</b> to the student. Instead of creating a task scenario involving two characters named Mary and Jim, personalize the task context by placing the student in the scenario (e.g., “you and two of your friends are building a skateboard ramp” or “you are asked to help keep your community safe”). The personalization creates a meaningful context for the student and increases task relevance.</p> <p>2) <b>Build background knowledge</b> associated with the task context. For example, incorporating context-dependent information into a classroom interaction activity or the task setting itself will build students’ background knowledge. In a grade 11 ELA performance task called Nuclear Power, students’ prior knowledge of nuclear power is elicited through charts and photos and shared via a class discussion in order to contextualize students’ understanding that many societies use nuclear power to produce electricity and that its use is controversial. This background knowledge is then used to launch the central mission of this task, which is for students to research nuclear power and develop a reasoned argument (and subsequent report) for supporting or opposing the building of a nuclear power plant in the state. Without taking the time to build students’ background knowledge of nuclear power, students’ connection to the content would be more tenuous and the task would be less relevant for them.</p>	<p>Why would the task matter to the students?</p> <p>How is the task connected to students’ lived experiences, interests, or prior knowledge?</p> <p>What background knowledge is assumed in the task?</p> <p>How does the task activate students’ prior knowledge?</p>	<p>1) Gr 11, math, Speeding Tickets <a href="#">View PDF</a></p>

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Authenticity	<p>Authenticity refers to the extent to which the task requires students to solve real-world problems and has value beyond the school (Lombardi, 2007). Real-world problems reflect tasks that are encountered in real professions and everyday settings and are often complex and require sustained effort to solve. The criterion of value beyond school means that the creation of products and performances has personal, utilitarian, or social significance beyond documenting the competence of students.</p>	<p>Authenticity may be fostered by <b>emphasizing real-world connections</b>. This would require students to address a problem, issue, or concept that is similar to one they have encountered, or are likely to encounter, in life beyond the classroom. As an example, a grade 4 math performance task called Planting Tulips employs an authentic problem setting to engage students in the task – the students must help the principal create a garden for the school. This task emphasizes real-world connections by requiring students to problem solve the number of bulbs that will best fit in a defined area and design a planter box to fit in the designated space. In contrast, the same skills could be set in a less authentic math task by focusing on the procedural aspects of the task and having students simply compute mathematical equations.</p> <p>In addition, authenticity may be fostered by providing opportunities for students to demonstrate <b>original applications of knowledge and skills</b>. For example, a grade 11 math performance task, Speeding Tickets, asks students to apply their math skills of plotting points on a graph and creating functional linear equations from the data in order to make a reasoned judgment about which state’s system for assigning speeding fines is fairer to drivers. By requiring students to analyze data, create graphical representations of the data, and interpret the data in order to solve the problem of choosing a fair penalty system, students’ knowledge and skills are demonstrated in ways that reflect the ways knowledge is used in real life. That is, the task authentically represents a problem one would encounter in the real world.</p> <p>Finally, authenticity may also be fostered by ensuring that the completed task engenders meaning to students beyond the score earned on the task. That is, the completed task is something the learners value, because it requires the students to communicate their knowledge to <b>an audience beyond the teacher, classroom, and school</b>. In an assessment setting, providing an audience outside of the school can be accomplished <b>through simulations or creating a plausible scenario wherein the students assume the role of an actor</b> in a particular scenario. For example, a grade 11 ELA performance task on nuclear power asks students to take on the role of the chief of staff for a local congresswoman in the U.S. House of Representatives. As the chief of staff, the students must research the pros and cons about nuclear power and then make a reasoned recommendation for the position that the congresswoman should take about whether or not a nuclear power plant should be built in the state. Through this role of the chief of staff, the report that is written showcases the students’ knowledge of nuclear power and provides an audience for the constructed knowledge beyond the school. Consider a variety of audiences that may engage a diversity of learners – students of various socioeconomic, language, and cultural backgrounds.</p> <p>The key here is the <b>plausible scenario</b>. Care should be taken to make sure the scenario is age and developmentally appropriate for students. Requiring third grade students to assume the role of a chief of staff for a local congresswoman is not plausible scenario and therefore would not lend authenticity to the task. As another example, a grade 6 ELA performance task called Garden of Learning uses a plausible scenario to foster authenticity to the task. Students are told that they will research and then write an article for their school newsletter on whether or not the school should start a student gardening program. However, the audience for the article is stated to be the teachers and students in the school. This task’s authenticity could be improved by stating that the audience for the students’ articles will be parents, school board members, and community members in order to promote value beyond the school.</p>	<p>How does the task emphasize real-world connections?</p> <p>How is the task structured so that students demonstrate novel applications of knowledge and skills?</p> <p>In what ways does the task provide an audience for the final product beyond the classroom?</p>	<p>1) Gr 4, math, Planting Tulips <a href="#">View PDF</a></p> <p>2) Gr 11, math, Speeding Tickets <a href="#">View PDF</a></p>

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<p><b>Autonomy</b></p>	<p>Autonomy refers to the extent to which one is able to choose or self-initiate an action (Deci &amp; Ryan, 1987). Student autonomy may be supported by providing students with latitude and decision-making opportunities that include cognitive and procedural choices.</p>	<p>To foster student autonomy, provide students with <b>opportunities to make decisions or choices</b> that are consistent with their personal goals and interests. For example, a grade 11 ELA performance task on nuclear power encourages choice within the task by having students research the pros and cons of nuclear power and then allowing them to choose the side that resonates with their own personal views, to write a report that argues in favor of building or not building a nuclear power plant in their town.</p> <p>In addition, tasks that require students to <b>justify and explain their answers or compare and contrast competing ideas</b> promote autonomy. As an example, a grade 6 math performance task called Taking a Field Trip requires students to analyze a class's votes for a field trip destination and then make a judgment about where to go based on the students' choices and the cost per student. As part of the task, students must read and interpret a table containing the students' votes and make a recommendation for where to go. This task allows for multiple solutions since the students could make their recommendations based on total 1st place votes or combined 1st and 2nd place votes or a weighted total of votes. This freedom of action provides students with the autonomy to make cognitive choices among the factors from the data that they feel are important and then use that reasoning to justify their answers. In contrast, the same task would have diminished autonomy if the students had been instructed to determine the destination of the field trip based on the greatest amount of 1st place votes.</p> <p>As much as possible, structure opportunities that allow students to make <b>decisions or choices about handling and manipulating the instructional materials and ideas</b>. For example, in a grade 8 math performance task called Heartbeats, students are asked to evaluate two established equations for calculating maximum heart rates. The task provides autonomy by allowing students to choose whether to support their answers by creating a chart or a graph. As another example, a grade 4 ELA performance task called Animal Defenses asks students to explain in writing how the armadillo's and the hedgehog's defenses are similar or different. However, the task could provide more autonomy to students by giving them a choice between writing their explanations or creating a Venn diagram to depict the similarities and differences between the two animals' defenses.</p>	<p>How is the task structured to allow students to make choices consistent with their goals and interests?</p> <p>How is the task structured to provide a range of possible solutions?</p> <p>How does the task require students to justify and explain their answers?</p> <p>How are students afforded opportunities to handle and manipulate instructional materials and ideas in the task?</p>	<p>1) Gr 6, math, Taking a Field Trip <a href="#">View PDF</a></p>

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<p><b>Higher Order Thinking Skills</b></p>	<p>Higher order thinking skills require students to analyze, interpret, and/or manipulate information and to go beyond routine mental work, such as simple recall or retrieval of prior knowledge. For example, tasks that focus on higher order thinking skills require students to craft a persuasive essay about a current social issue (e.g., nuclear power usage, teen curfews, driving restrictions, etc.) by evaluating competing viewpoints and using evidence to support their argument (Darling-Hammond, Ancess, &amp; Falk., 1995).</p>	<p>Require students to <b>analyze and interpret information beyond simple recall</b>. (Note: Tasks requiring higher order thinking skills should still be challenging, grade appropriate, and accessible to all students, especially students who are English Language Learners.) For example, a 6th grade ELA performance task asks students to write an argumentative article for their school newsletter to advocate for or against creating a school garden. Students are provided three stimuli (not summaries or simplified synopses) with which they must grapple, considering the author and his/her perspective, intended audience, credibility, reliability, etc. to form an argument:</p> <ol style="list-style-type: none"> <li>1) Article, "Growing Our Own School Lunch," by Jeannine Pao from <i>Appleseeds Magazine</i></li> <li>2) Article, "Make Your Own Dirt," by Hallie Warshaw with Jake Miller from <i>Get Out! Outdoor Activities Kids Can Enjoy Anywhere (Except Indoors)</i></li> <li>3) Video, "Community Gardens: Typical Costs," by Kansas Healthy Yards and Communities</li> </ol> <p>The task engages students' higher order thinking skills by offering them the opportunity to interpret and analyze information in order to create a compelling argument. Students employ their <b>higher order thinking skills</b> to argue for or against a school garden, using the provided stimuli to support their argument. The stimuli formats are also varied as two are articles and one is a video. Varied stimuli – such as those presented to students in the grade 11 ELA task, Nuclear Power, which includes a Google search result page, data charts, and pictures – also offer challenging tasks to students.</p>	<p>To what degree does the task involve students in manipulating information and ideas to arrive at conclusions that solve an open-ended problem?</p> <p>How is the task structured to provide a range of acceptable right answers that can be analytically scored?</p>	

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<p><b>Collaboration</b></p>	<p>Collaboration refers to students working with each other in pairs or small groups to share ideas, ask questions, and build on each other's ideas. Collaborative group work can increase student engagement and motivation (Johnson &amp; Johnson, 1987; Slavin, 1990) and provides opportunities for student talk, which is found to improve student learning (Yackel, Cobb, &amp; Wood, 1991; Helmes &amp; Clarke, 2001). Student collaboration has also been found to increase student performance in testing settings (Skidmore &amp; Aagaard, 2004).</p>	<p>Include collaborative activities (in pairs or small groups) where students talk to each other to become familiar with the context of the problem, make sense of concepts, and ask questions during the classroom activity.</p> <p><b>Explicitly telling students to “talk with a neighbor”</b> about a question posed in a classroom activity is a very feasible means of incorporating collaboration in the task. For example, the classroom activity may instruct the teacher facilitator to say, “What do you think we mean by a ‘community garden’? Talk with your neighbor for two minutes.” The instruction to “talk with a neighbor” or in small groups should be explicit, rather than simply posing questions to the class and calling on students to respond. The classroom activity may alternate between whole class discussion and partner/small group discussion. Also consider providing language supports such as pictures, visuals, demonstrations, and/or realia to jumpstart partner or small group conversations.</p> <p>(Classroom activity should be facilitated by students’ regular classroom teacher, with the students’ regularly assigned class (not with a new group of students or in a large amphitheater setting) in order to increase familiarity with the context of the task, reduce anxiety, and enhance students’ sense of belonging.)</p> <p>Create <b>task scenarios</b> that situate students in a plot where they collaborate with another student, a family member, a coach, etc.</p> <p>Although most assessments do not currently use <b>online or technology-enhanced collaboration</b>, future assessments most likely will. For example, future versions of the PISA will employ an avatar for students to collaborate with online.</p>	<p>Are students explicitly instructed to engage with peers (e.g., “talk with a neighbor”) and ask questions of their teacher in the classroom activity?</p> <p>Does the classroom activity use these collaborative opportunities to make the task more interesting and familiar to students?</p>	<p>1) Gr 6, math, Taking a Field Trip <a href="#">View PDF</a></p>

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<p><b>Self-Assessment</b></p>	<p>Student self-assessment can enhance cognitive, emotional, and behavioral engagement, particularly for students from low socioeconomic backgrounds (Munns &amp; Woodward, 2006). Self-assessment refers to students reflecting on their own thinking, answers, and explanations.</p> <p>Self-assessment is considered feedback students give themselves. Feedback has been found to improve student achievement and should be specific about the qualities of the work, provide advice to improve the work, and avoid comparison with other students. Productive feedback assumes that the task expectations and ways to be successful in the task are clearly communicated to the student (Black &amp; Wiliam, 1998). Providing exemplars has also been shown to improve student engagement and achievement (Boud, Cohen, &amp; Sampson, 1999).</p>	<p>Students may benefit from self-assessment throughout exam administration. For example, self-assessments can offer <b>reflection questions</b> to students such as, “What did you find out about your problem-solving skills and strategies while doing this activity?”</p> <p>Additionally, computer-testing technology may have the capability to provide auto-feedback to students. For example, a <b>pop-up response</b> to may alert a student that the answer is not in the expected format, similar to online forms and surveys, where the form alerts the user, “This should be a numerical response,” or, “This should be a response in words.”</p> <p>Assessments may also provide <b>reminders to students to monitor their thinking</b> such as those used in the Fair Go project (Munns &amp; Woodward, 2006):</p> <ul style="list-style-type: none"> <li>• How could you broaden your thinking through and learn more about what you did today/during a task/lesson/unit?</li> <li>• Connect this knowledge to something you already know or can do.</li> </ul> <p>Where possible, assessments should provide auto-feedback (i.e. clues to the causes of difficulties as well as opportunities for attacking the task in a new, more informed way).</p> <p>Most importantly, tasks should <b>allow students to go back and revise their answers</b> as they progress through the collection of prompts. Doing so reinforces the notion that students are learning while doing and therefore should be allowed to correct their answers in response to what they are discovering through the task. These reminders should be clear and accessible to all students.</p>	<p>What guidelines, checkpoints, reminders, or pop-up responses are in the task that provide students opportunities to self assess <i>during</i> their work on the performance task?</p> <p>What other guidelines might help students check to see that they are “on the right track”?</p> <p>Are the expectations of the task clear?</p> <p>Are expectations for receiving “high marks” on a task clear?</p>	

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