

Developing an Evaluation Rubric for Selection of Mobile Apps
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What is the overall driving force when selecting an app?

What should be considered in the “big picture” regardless of the type of device or operating system?

In discussing and sharing our thoughts around this question ,we realized that we all felt the same way but chose to take a different approach. Instead of compiling one large intro and possibly losing the voice of the individual, we have decided to display all three.

Sonny Dhaliwal

As educators our first priority, aka the “big picture” is meeting the needs of our students. We have learning outcomes and student needs and somehow, somehow we build connections, as long as these connections are made does it really matter what process we take, app or not. Too often technology is looked to as the solution, it is only a tool. Before introducing new technology to our students whether it is a device, software or an app we need to ensure that it is based on good pedagogy and have a clear idea of how it will be used. If we do not go through this process we can end up using technology for the sake of technology. The cool factor always helps, but should not be the driving force. What we should be looking at is how effectively it can deliver the intended learning outcome. There are many parts necessary in order for an app to be effective, including but not limited to: engagement, feedback quality, curriculum correlation, skill level, cost. If the app passes through all of these filters then it can be used as an option for students to use. Remember to provide as many options as possible, an app is not necessarily everyone’s preferred medium.

Jean Kloppenburg

Common criteria for app use mostly concentrate on the technical aspects of reliability, stability, fast loads, consistency and absence of advertisements. Walker (2011) states: “When evaluating apps for educational use, technical criteria are only the bare minimum; practitioners need to take a more focused look at the educational benefits the app offers”. In [Langwitches Blog](#), a reader asked: “I want to use iPads in my Science class. What app is good for that?” The reply given sums up what should be the driving force when selecting an app:

“I am not comfortable with the level of disconnect between the teacher (who knows her/his students best) and the curriculum related skills and objectives and pedagogical relationship that needs to be in place for an app to be a match to use in a classroom or with an individual learner.” (Langwitches, 2012) As Langwitches Blog(2011) points out, teachers need to be equipped with the curiosity and knowledge

of:

- the value an app can bring to a learner (and being able to articulate the value)
- the connection from the app to curriculum content (and being able to demonstrate the depth of that connection)
- the possibilities the app can bring in order to amplify (exposing work to new literacies)
- the difference of using an app to automate and substitute a task versus inform and transform
- how to evaluate apps for their transformative potential.

The driving force behind choosing an app needs to be, first and foremost, related to the learning objectives. If my students need to understand and demonstrate their understanding of the exposure triangle in photography, they can create a narrated video using [Videolicious](#) or analyze the relationship with the use of [Popplet](#). The apps are available for students to enhance their learning and hopefully create a transformation and amplification to their learning along the way.

Justin Mark

My take on the overall driving force of app selection is that the app must meet the learning outcome that you are hoping to achieve. When I was selecting apps for an iPod project that I was working on 3 years ago, I started with the prescribed learning outcomes and I selected apps that supported learning outcomes. The problem I encountered was that most apps focused on ROTE memory task to memorize vocabulary, while I put some value on this, it only represents a small aspect of the curriculum. In addition at that time we were struggling with Wifi and cost was another limiting factor. I had a group of students help me evaluate the apps and help design lessons for each app. Some of the most enduring apps were the tools like a Collins Dictionary app and a verb conjugating app that we found for free. As I've moved more toward an inquiry model in my practice I find I am much less prescriptive with apps and I often have students choose apps that help them achieve the learning goals that they are trying to achieve. It must be noted that this approach may change based on grade level as I tend to give my senior students more freedom than my junior ones. In an 8-12 program, I spend more time with the junior students teaching them how to use certain tools, and apps. In the readings one of the problems I was encountering was that there seemed to be a higher value placed on top of the Blooms Taxonomy pyramid, and a devaluation of memorization. In the Cantwell presentation, "Evaluation of Apps", the question is posed, "is the app built on quality pedagogical principles?" (Cantwell) I would argue that this depends on your curriculum needs? In some cases there may be a need for lower skills like memorization on Blooms Taxonomy for example memorization of times tables, which I still believe is considered an essential skill even in 21st century learning models. I think this is a fundamental problem with many of the app

evaluating rubrics, as they work on the principle that a single app should meet multiple higher learning functions, when maybe it would be more valuable to evaluate a group of apps that are each specialized in focusing on specific learning outcomes. For instance in the Jeanette Van Houten article, (2011, January 01). *iEvaluate Apps for Special Needs*. I disagreed with her Rubric, specifically the criteria - "Under types of Skills Practiced" it characterized Flashcard drill as "Weak" I think this type of assessment is missing the point, while many like to value problem based and simulation based learning over memorization some apps might specifically target memorization as a skill, for example a math game that focused on memorization of times tables. I think the point is that, it is very difficult for one app to fit all learning tasks and that's the point. Teachers should seek to employ a variety of apps with different pedagogical purposes in order to meet the learning requirements of the curriculum and their students. Regardless any reflection of an App which evaluates its educational value is useful, but at the same time we may want to specifically evaluate each app based on the specific learning outcome we hope for it to achieve.

App Rubric

Category Evaluated	1	2	3	4
Curriculum Focus	Skills are not clearly connected to the targeted concept	Skills reinforced are prerequisite or foundation skills for the targeted concept	Skills reinforced are related to the targeted concept	Skills reinforced are strongly connected to the targeted skill or concept
Age and Grade Level	Not suitable for age or grade level. Directions are incomplete or inadequate	Level is often too easy or difficult for age or target grade level Directions are unclear	Level is appropriate but portions are too easy or difficult Most directions are clear	Level is appropriate for age and grade level Directions are clear and complete
User Friendly	App is difficult to operate and crashes often	Student needs instruction each time the app is used	Students need review of the app on more than one occasion	Students can launch and operate the app independently
Cost	Expensive: \$5.99 and up	Above average cost: \$2.99 - \$4.99	Average cost: \$1.99	Low cost Free to \$.99
Student Engagement	Student avoids the use of the app and might complain when its use is required	Student perceives app as "more schoolwork" and may be off-task when directed to use the app	Student uses the app as directed by the teacher	Student is highly motivated to use the app
Thinking Skills	App is limited in the lower order thinking skills of understanding and remembering	App mostly facilitates the lower order thinking skills such as understanding and remembering	App provides some opportunities to use higher order thinking skills	App encourages the use of higher order thinking skills to include creating, evaluating and analyzing
Differentiation	Setting cannot be altered in anyway	Limited flexibility (levels are basic , easy , medium and hard)	Flexibility in more than one aspect to adjust settings to match student need	Complete flexibility to adjust settings to match student need

Rubric Categories

Curriculum Focus

According to Harry Walker (2011), "Defining what makes an app "good" varies depending on the audience." Curriculum Focus is at the top of our importance list in our evaluation rubric because we are evaluating apps for educational use. The use of an app should support our student audience with strong connections to the skills and concepts being addressed. Walker points out that there are many quality apps for math and literacy, but locating higher thinking level apps for science and social studies are harder to find (2011). Putting an emphasis on the curriculum connection will enable rubric users to rate the app first based on the strength of the skills reinforced that match the intended concept.

Age and Grade Level

Many apps have age and grade levels attached to them and others have none at all. It is important to be aware of not only the age appropriateness of the app but also the clarity of the directions for use. An app may be too easy or too difficult for the intended age group. If instructions are confusing or unclear it can lead to frustration and disengagement from the learners. As an educator, I first choose an app that fits my learning outcomes and concepts then my next decision is making sure it is the proper age and grade level .

User Friendly

While this category may be somewhat subjective to the user and may depend on grade level we feel it is an important category to consider when evaluating apps. If apps are prone to crashing or instability this may be a limiting factor in employing them with students. While all apps may require some level of instruction to get started, some are much easier to use than others. In addition some apps are much more sophisticated and may have more functions and features to learn than others. Some apps may include built in tutorials, and help functions or may provide an intro tutorial to get students acclimated to the program. In conclusion while this can be a subjective rating, some programs are notoriously difficult for the user while others are presented in a way that makes it seem almost seamless for the user, and this needs to be taken into account when considering apps for students.

Cost

In a perfect world where school districts possessed unlimited budgets and resources, perhaps this category would be unnecessary. While this category doesn't address the learning outcomes we felt it was still necessary to include as it represents a pragmatic reality when choosing educational apps. We have organized our cost rubric from free to \$5.99 and up on the extreme. While free is usually

preferable given the economic realities of department budgets in most schools in BC, sometimes free means limited functions or embedded and annoying advertisement.

Student Engagement

We choose to incorporate *Student Engagement* in our rubric because we felt that the likelihood of an activity to be successful would greatly diminish without it. There could be an app that perfectly aligns with the intended learning outcomes but if there are [frustrations and distractions](#), these would be obstacles in the ability of a student comprehending the learning outcomes. Den Delimarsky does an excellent job of highlighting some of these which include Stability, Load times, Hangups, Ads and functionality. No matter what type of activity we are attempting we want students to “buy in”, be motivated which will help with taking ownership and all of this is intertwined with engagement.

Thinking Skills

We choose to incorporate *Thinking Skills* in our rubric because pedagogy should be driving all of our classroom activities. The time to complete an activity, the learning outcomes, HOTS skill level all need to be in alignment. The app needs to be able to meet or exceed the blooms taxonomy level needed or else the concept is only being superficially covered. Students need to be able to take the knowledge and understanding and apply it in critical and creative ways.

Differentiation

Differentiation is at the bottom of our list and I’m not sure it applies is necessary requirement for all apps, however it is still worth considering. In her blog post [7 Essential criteria for evaluating mobile educational applications](#). Mayra Villar, when considering differentiation or as she titles it personalization, writes:

The possibility of adjusting content and settings to meet specific needs of the learner does not only guarantee engagement throughout the learning process but also contributes to the acquisition of new knowledge and shows the learner how to apply it to real-life situations.

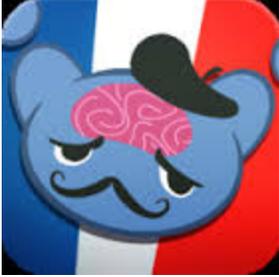
Differentiation as stated above is a key component of meeting the specific needs of the learner and allowing the learner to not outgrow the app as quickly. This should be considered when evaluated an app and may apply to using the app for multi grade levels.

App Evaluation

Name + link	 Gizmos https://itunes.apple.com/ca/app/gizmos/id692838319?mt=8
evaluated by	Sonny Dhaliwal
OS	
HOTS represented	Evaluating, Analyzing, Applying Gizmos offers interactive online simulations for Math and Science concepts. From the website you are able to see how the different activities are connected to BC curriculum learning outcomes. There is a great deal of flexibility built within the simulations where you can have students to do arrange of activities from simply applying concepts to performing virtual experiments.
Age Group	ages 8- 17 (grades 3 - 12)
Cost	Yearly subscription (need school licencing) The cost is dictated by the size of your school/program. This is not a cheap app/subscription to purchase but I believe it is worth the cost.
Rubric Score	Curriculum Focus - 4 Age and Grade level - 4 User Friendly - 3 Cost - 2 Student Engagement - 4 Thinking Skills - 4 Differentiation - 1 Total (out of 28) - 22

Name + link	 GeoGebra https://itunes.apple.com/us/app/geogebra/id687678494?mt=8 https://play.google.com/store/apps/details?id=org.geogebra http://apps.microsoft.com/windows/en-us/app/geogebra/f321a028-276b-44e8-b981-6e87f27caa62/m/ROW
evaluated by	Sonny Dhaliwal
OS	  
HOTS represented	Creating, Analyzing, Applying The best way to describe this app would probably be it is a calculator on steroids. Students have the ability to show the graph of any type of equation they want. Beyond simple graphing the program has the capabilities of inserting variable so student can visually see what the effect of the parameters are. All work can also be saved, exported and shared.
Age Group	Grade 8 - 12
Cost	Free Great tool, the iPad version does not have the same number of features as the desktop version which is also for free
Rubric Score	Curriculum Focus - 4 Age and Grade level - 3 User Friendly - 3 Cost - 4 Student Engagement - 3 Thinking Skills - 3 Differentiation - 1 Total (out of 28) - 21

Name + link	 duolingo https://itunes.apple.com/ca/app/duolingo-learn-languages-for/id57006012?mt=8 https://play.google.com/store/apps/details?id=com.duolingo
evaluated by	Justin Mark
OS	 
HOTS represented	Analyzing, Understanding and Remembering
Age Group	Grades 8-12
Cost	Free
Rubric Score	Curriculum Focus - 3 Age and Grade level - 4 User Friendly - 4 Cost - 4 Student Engagement - 4 Thinking Skills - 3 Differentiation - 3 Total (out of 28) - 25

Name + link	 <p>Learn French</p> <p>https://itunes.apple.com/ca/app/id409947305?mt=8 https://play.google.com/store/apps/details?id=com.bravolang.french</p>
evaluated by	Justin Mark
OS	
HOTS represented	Understanding and Representing
Age Group	Grades 3 - Adult
Cost	Free - for demo - upgrade \$4.99 for additional levels
Rubric Score	Curriculum Focus - 3 Age and Grade level - 4 User Friendly - 4 Cost - 2 Student Engagement - 4 Thinking Skills - 2 Differentiation - 3 Total (out of 28) - 22

Name + link	 Videolicious https://itunes.apple.com/ca/app/videolicious/id400853498?mt=8
evaluated by	Jean Kloppenburg
OS	
HOTS represented	Higher Order Thinking Skill: Creating Extremely simple to use with three basic steps to creating a video. Students can use this app for creating and documenting their creative process. Student voice for narrating photos and video clips makes for an impressive and powerful presentation.
Age Group	grades 8-12
Cost	FREE
Rubric Score	Curriculum Focus - 3 Age and Grade level - 2 User Friendly - 4 Cost - 4 Student Engagement - 4 Thinking Skills - 3 Differentiation - 1 Total out of 28: 21

Name + link	 <p>Popplet</p> <p>https://itunes.apple.com/us/app/popplet/id374151636?mt=8</p>
evaluated by	Jean Kloppenburg
OS	
HOTS represented	<p>Higher Order Thinking Skill: Analyzing</p> <p>Can be used as a brainstorming and mind mapping tool. Used in a photography course to demonstrate, analyze and make connections to learning outcomes. Offers real-time collaboration (ipad to ipad + ipad to web)</p>
Age Group	grades 8-12
Cost	Popplet Lite Free- do whatever you like on one Popplet board \$3.00 /mo. or yearly plan 30.00/year
Rubric Score	<p>Curriculum Focus - 3 Age and Grade level - 3 User Friendly - 4 Cost - 1 Student Engagement - 4 Thinking Skills - 4 Differentiation - 2 Total out of 28:21</p>

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