

# 3 Assessing Tools and Ways to Assess



In this chapter you will learn about:

- Assessment Strategies for Mobile Technologies
- Assessing Applications (apps) for Mobile Devices
  - Productivity and creativity apps
  - E-books
  - Subject Specific Apps
  - Games
- Assessing Mobile Devices

A wide variety of mobile devices are available in the consumer market, the purpose of this chapter is to help you navigate the many options available. We suggest that you start by considering how you are going to use your mobile device, then consider which device is most appropriate for you. Mobile devices can be used in many ways. Some instructors use just a few apps, as they may prefer using mobile devices for easy Internet access, the built-in camera, or for data storage to name a few uses. While other instructors prefer using a wide variety of apps that are beneficial for m-learning.

Given that the mobile app market is expansive and there are many apps available that serve the same purpose, we start the discussion by explaining methods for assessing apps that are available for mobile devices. Next we explain how apps differ, what unique criterion you should consider based upon your situation, and how you plan on using mobile devices in your classroom. We then suggest considerations for selecting the actual mobile devices.

### 3.1 Assessment Strategies for Mobile Technology

It is always best to first review what the experts in the field are saying about available apps. Online professional resources/journals such as Edutopia, School Library Media Journal, and THE Journal are excellent resources for beginning the process. Each resource has a *mobile resources* section.

- Edutopia Mobile Resources:  
<http://www.edutopia.org/mobile-learning-resources>
- School Library Journal – App Resources:  
<http://www.slj.com/category/technology/apps-tech/>
- School Library Media Journal – Mobile Resources:  
<http://www.slj.com/category/technology/mobile/>
- THE Journal Mobile Resources:  
<http://thejournal.com/pages/resource-centers/mobile.aspx>

Please note that these are only a few available online resources that provide quality reviews of educational apps. There are many more available resources. These are the resources that we recommend. Expert reviews are an excellent way to begin the process, but your evaluation should not start and end with expert reviews. It is important to conduct your own evaluation of available apps.

It is always a good idea to compare multiple apps that serve a given instructional purpose. We advise against simply selecting the first app or the most popular app as you, or your students, have specific needs and your app needs will be unique to your circumstances. Teams of teachers can review different apps and then work together to determine which apps would meet student needs. What follows is a discussion of criterion that you should consider for different types of apps that can be used for educational purposes.

### 3.2 Assessing Applications for Mobile Devices

There are different types of applications (apps) available for mobile devices that serve very different purposes; the categories that we will discuss are:

- productivity and creativity apps,
- e-book apps,
- subject specific apps, and
- games.

Additionally, each type of app has a rubric/table that can be printed out for use during the evaluation process. Better yet, you can load the rubric/table into a note-taking app so that you can electronically evaluate the app. The content of the tables and a discussion of what to look for when evaluating the different types of apps are discussed in detail below.

For each app there are key characteristics that need to be taken into account when making a selection.

They include the following:

- How much does it **cost**?
  - How much does it cost to maintain some of the popular apps for your school?
  - Is it a one-time purchase or are subscriptions involved?
  - Do you have to pay for additional storage on a cloud service?
- How much **space** does the app take up on the device?
  - Not only consider the space that the app requires on the device but also consider how much space the students' end products will require.
- Are there reported **bugs** with the app?
- Are there quality **help** features or support for the app?
- Is the app **compatible** with all of your students' devices?
- If the app requires student input, will there be an opportunity to **export** the information? If so, where does the information go, and how can you, as a teacher, access it?
- Will your students be able to use the app in a **collaborative** manner?
- How will you use the app in your classroom? Can it be used for **formal** instruction or **informal** instruction?



"I studied English for 16 years but...  
...I finally learned to speak it in just six lessons"  
Jane, Chinese architect

ENGLISH OUT THERE

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The bigger question is, “does the app meet your students’ needs?” Consider if your students really need the app to enhance their learning experience. For instance, do the associated apps offer opportunities to expand upon the curriculum, and allow you as an educator an opportunity to meet and exceed the standards appropriate for the subject(s) you teach? Will you be able to leverage the technology to promote learning of the curriculum to the appropriate standards that are defined by your school, district, and other governing bodies? Ultimately, if you are going to use mobile devices in your classroom, the device and its associated apps should be tied to the curriculum and the associated standards in order for the device and apps to be used to promote learning.

We will provide you with many criteria that you can use to evaluate different apps. However, you will have to decide which criteria are most important for you and your situation.

### 3.2.1 Productivity and Creativity Apps

Productivity and creativity apps are apps that allow students to construct end products. They include movie-making, podcasting, word processing, spreadsheet, and note taking applications to name a few. These apps tend to be scaled-down versions of software available for desktop computers. The purpose of these types of apps is to allow students to construct or build something.

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#### Productivity/Creativity Apps

Instructions/Support: Yes No  
 Type of app: productivity, creativity, other \_\_\_\_\_  
 Opportunities for collaboration: Yes No  
 Intended use: formal, informal, both

Name of App: \_\_\_\_\_  
 Reported Grade Level \_\_\_\_\_  
 Export Media \_\_\_\_\_  
 Developer: \_\_\_\_\_  
 Cost: \_\_\_\_\_  
 Operating System: \_\_\_\_\_

	Meets Needs	Slightly Meets Needs	Does Not Meet Needs	Criteria not relevant	Comments
Relevance	The purpose of the app is relevant to the student and the instructional situation.	Limited connection between the purpose of the app and relevance to student learning.	The purpose of the app does not connect to instruction and is not relevant to students.		
Engagement	Students will be intellectually invested when using this app.	Some students might be engaged with this app.	Students will quickly lose interest.		
Utility	The app includes all the utilities and features necessary to create the desired end product.	Limited utilities and features. Students can create a basic end product.	Utilities and features are lacking. The end product that students can make is not desired.		
Usability	Students can easily manipulate the application without too many special gestures.	Special gestures are required.	It is not clear how to use the app.		
Export End Product	Student product is saved on app and can be exported to the teacher in a manner that is acceptable to the institution.	Student product is saved on app but can NOT be exported.	Student product is NOT saved on app and can NOT be exported to the teacher in a manner that is acceptable to the school.		
Unlimited student products	No limits on the number of end products students are able to make.	Reasonable limit on the number of end products.	Major limits.		

Summary of app/recommended alternatives:

**Table 3.1:** Productivity and Creativity Evaluation Matrix.

See appendix for printable/exportable version of the above evaluation matrix for productivity and creativity apps.

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### 3.2.1.1 Criterion to consider

In addition to the main criterion discussed above in Section 3.2, the ability to collaborate, and export the student's end product, the number of products that a user can make, relevance, engagement, utility, and usability are important criterion to consider when it comes to productivity and creativity apps.

*Collaboration.* Will students be able to collaborate using the app? Will they be able to share the work with others so that others can add to the product, modify, and edit as necessary (Schrock, 2014b)?

*Relevance.* Consider the app and how you will be using it for instruction. Is the app appropriate for your students and will it work well for your classroom? There are a wide variety of productivity and creativity apps available to end-users so you need to consider which apps will be relevant to your students and your instructional situation.

*Engagement.* Consider the app and how the students will interact with it. Is the app engaging for your students? Will it hold your students' attention?

*Utility.* What features does the app have for producing and creating the desired end product? Are there enough features and utilities to create an end product that is meaningful for your students?

*Usability.* Is the app easy to use or will students need to learn special gestures to use different features within the app. Consider how much training you will have to provide your students to use the app and whether the amount of training warrants adopting the app.

*Export End Product.* The entire purpose of productivity and creativity apps are to enable the creation of some type of end product. Therefore, once students create a product, consider how others will be able to gain access to it (Schrock, 2014b). Will the content be exported to the teacher in a manner that is acceptable to the school? Will the student be able to share the content with others so that they can collaborate? Also, consider how large the end product will be and if you will have enough storage space on your mobile device in order for students to create their products. Movies are prime examples of end products that take up a lot of storage space. One minute of a movie can require 80+ megabytes.

*Unlimited Student Products.* Related to the ability to export the end product is the question on how many end products the student will be able to create. Some apps allow a specific quantity of end products before you have to buy a subscription. How many end products can be created and is there a cost associated with the creation of end products?

Productivity and Creativity apps are oftentimes scaled down versions of productivity and creativity programs for computers. There are many considerations that come into play when selecting a creativity and productivity app. These considerations include cost, usability, relevance, ability to export students' end products, and the number of end products that students are able to make based on the costs.

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### 3.2.2 E-books

E-books include electronic books such as electronic textbooks, storybooks, reference books, and general reading, among others. Electronic books are evolving. E-books are becoming much more user-friendly and have many more features available within them. These additional features may make the size of electronic books larger, which in turn requires more space on the mobile device. For instance, some electronic books include graphics and videos. Graphics and videos require more storage space on a mobile device than does an electronic book that is solely text-based. Some electronic publishers have found ways to avoid requiring large amounts of storage space on the device by streaming texts from websites to devices (Larson, 2012). While streaming texts save space on the mobile device, it does require that you have active Internet access in order to access the book. Therefore, consider how the electronic book publisher distributes the book to the user and consider if your students have enough storage space on their devices to download the book and/or whether your students have easy access to the Internet.



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In addition to criterion discussed above such as storage, access, usability, and cost, you will need to consider the following:

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**Electronic Books**

Reported Grade Level \_\_\_\_\_ Media \_\_\_\_\_ Name of Book: \_\_\_\_\_  
 Instructions/Support: Yes No Megabytes on device: \_\_\_\_\_  
 Type of book: general reading, reference, textbook, other \_\_\_\_\_ Developer: \_\_\_\_\_  
 Intended use: formal, informal, both Cost: \_\_\_\_\_  
 Operating System: \_\_\_\_\_

	Meets Needs	Slightly Meets Needs	Does Not Meet Needs	Criteria not relevant	Comments
Relevance/Standards	The purpose of the book is relevant to the student and the instructional situation.	Limited connection between the purpose of the book and relevance to student learning.	The purpose of the book does not connect to instruction and is not relevant to students.		
Engagement	Students will be intellectually invested when using this app.	Some students might be engaged with this app.	Students will quickly lose interest.		
Usability	Students can easily manipulate the controls for the book.	Special gestures are required.	It is not clear how to manipulate the book.		
Annotations	Students can input many different types of annotations, highlight, notes, on page comments, etc.	Limited annotations.	No annotations.		
Tags	Students are able to tag specific pages.	Limited ability to tag pages.	No tagging.		
Index/TOC	Index and table of contents available.	Limited index or table of contents.	No index or table of contents.		
Search	Search feature available.		No search.		
Unlimited purchase	No limits on how long students have access to the book.	Reasonable limit on access to book.	Major limits.		
Multimedia	Multimedia extends content and contributes to learning.	Multimedia tangentially contributes to content.	No multimedia.		
Dictionary	Extensive dictionary.	Limited dictionary.	Minimal dictionary.		

Summary of book/recommended alternatives:

**Table 3.2:** E-books Evaluation Matrix.

See appendix for printable/exportable version of the above evaluation matrix for productivity and creativity apps.

**3.2.2.1 Criterion to consider**

*Relevance/Standards.* Consider if the book is age appropriate and meets the appropriate standards for your class. Additionally, consider if the text is written at a level that is appropriate for your audience. While electronic books are becoming more and more popular the number of electronic books relative to paper books is still low, so it will be a little harder to find electronic books that are exactly what you are looking for. Therefore, it is important to consider how the e-book technology can best be used to support instruction within your instructional context (Larson, 2012).

Also, determine if the book is something that you can effectively use in a variety of educational settings, including whole-class instruction, guided reading, literature circles, individual reading experiences, and so on.

*Engagement.* Consider the book and how the students will be using it. Is the book engaging for your students and will it hold your students' attention?

*Usability.* Is the book easy to use or will students need to learn special gestures to use different features within the book?

*Annotations.* Consider if students are able to make annotations within the book. Different types of annotations include typing notes, highlighting passages, and the ability to make on-page comments. Determine if there are enough opportunities for students to interact with the book so that they can make the age-appropriate annotations in order to be able to fully utilize the book.

*Tags.* Related to the Index and the Table of Contents (discussed below) is the ability for students to be able to tag content within the text. Tagging allows students to be able to categorize content based on their own nomenclature. More advanced students may like the ability to tag passages within electronic text so that they can easily get back to specific content at a later point in time and so that they can have efficient access to other content that they tagged in the same manner.

*Index/Table of Contents.* Determine if the book provides an Index and a Table of Contents. These are important features for providing an overview of the book and they afford students the ability to put the chapters of the text into a context of the entire book. Additionally, these afford students the opportunity to easily navigate to areas of the book that are relevant to them at the point of need.

*Search.* Unlike using paper books, students are not able to flip through an electronic book and quickly scan to find information that they need quickly. Therefore a quality search feature within an electronic book can help students with quickly referencing information based on keywords. Search features are very beneficial for electronic books.

*Unlimited purchase.* Consider if there are limits placed on the purchase of the book. For example, these limits can include time, printing, and copying limits. Time limits refer to how long the user has access to the text. Printing limits refers to how many pages of the text the end-user is able to print. Then, copying limits refers to how many times a user can copy and paste passages from the book. These are all features that are built in to protect the author's work and are reasonable safeguards for protecting the work of the authors. However, you as a consumer will need to determine if these protections will end up limiting your ability to use the book.

*Multimedia.* Multimedia should contribute to the understanding of the content rather than distract (Dobler, 2013). Consider if the multimedia elements incorporated into the book aid in understanding the material.

*Dictionary.* Electronic books afford readers access to online dictionaries as they read (Serafini & Youngs, 2013). This can be an important feature depending on the age and competencies of the readers, as well as the content for the text.

Electronic texts are starting to become more popular; however not all electronic texts are equal. Careful considerations for how the book meets the course standards, how students can annotate within the book, use of a table of contents and index, ability to tag, quality search features, and limitations on what can be done with the book all need to be taken into consideration. Additionally, cost where the book resides (on your machine or on a server), and how much space the book takes on your device all play a role in deciding whether to utilize a specific electronic book for your class.

*Note on electronic books.* Larson (2012, p. 289) notes that it is “important to emphasize that electronic book reading should not aim to replace print books.” She further explains “e-book readers are likely to read more print literature than those who do not read e-books at all” (Larson, 2012; p. 289). Thus teachers will not have to worry about electronic books replacing traditional literacies; they simply add to and expand upon students’ literacies.

An advertisement for GaiTEYE. The background is a warm, orange-toned image of a person running on a path. In the top left, there is a logo consisting of a yellow square with a white leaf-like shape inside, followed by the word "gaiTEYE" in a white, sans-serif font. Below the logo is the tagline "Challenge the way we run" in a smaller, italicized font. In the center-left, the text "EXPERIENCE THE POWER OF FULL ENGAGEMENT..." is written in white, bold, uppercase letters. Below this text is a horizontal line of yellow dots. In the bottom-left corner, the text "RUN FASTER. RUN LONGER.. RUN EASIER..." is written in white, bold, uppercase letters. In the bottom-right corner, there is a yellow button with the text "READ MORE & PRE-ORDER TODAY" and "WWW.GAITEYE.COM" in black, uppercase letters. A white hand cursor icon is pointing at the button. There are also some white geometric lines and circles overlaid on the runner's feet.

### 3.2.3 Subject Specific Apps

Subject specific apps are apps that help students build content-related skills, or provide simulations for relevant content within a subject matter. These apps are typically used to supplement instruction and reinforce content knowledge.

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#### Subject Specific Apps

Instructions/Support: Yes No  
 Type of app: general content, skill builder, simulation, other \_\_\_\_\_  
 Username required: Yes No  
 Opportunities for collaboration: Yes No  
 Intended use: formal informal both

Name of App: \_\_\_\_\_  
 Reported Grade Level: \_\_\_\_\_  
 Megabytes on device: \_\_\_\_\_  
 Developer: \_\_\_\_\_  
 Cost: \_\_\_\_\_  
 Operating System: \_\_\_\_\_

	Meets Needs	Slightly Meets Needs	Does Not Meet Needs	Criteria Not Relevant	Comments
Alignment to standards	App aligns to standards.	App is loosely tied to standards.	Not aligned to standards.		
Engaging	Students will be intellectually invested when using this app.	Some students might be engaged with this app.	Students will quickly lose interest.		
Usability	Students can easily manipulate the controls for the app.	Special gestures are required.	It is not clear how to manipulate the app.		
Students needs	This app meets an educational need of my students.	The app might meet the needs of some of my students.	Doesn't meet my students educational needs.		
Performance summary	Student specific performance summary or student product is saved on app and can be exported to the teacher in a manner that is acceptable to the school.	Student specific performance summary or student product is saved on app however data is not exportable.	Specific performance summary or student product is NOT saved on app and can NOT be exported to the teacher.		
Feedback	Specific feedback is provided to the student.	Student is provided basic feedback.	Limited feedback.		
Differentiation	App will meet the needs of all classroom groups, with multiple difficulty levels and multiple presentation styles.	App has more than one level of difficulty and/or information is presented in only one manner.	App has one level of difficulty and is presented in only one manner.		
Group or Individual	Teams of students or an individual can use this app.	Mainly intended for individual but may be ok with a group.	Only an individual can use this app.		

Summary of app/recommended alternatives:

**Table 3.3:** Subject Specific Evaluation Matrix.

See appendix for printable/exportable version of the above evaluation matrix for productivity and creativity apps.

#### 3.2.3.1 Criterion to consider:

*Alignment to standards.* Consider if the app meets the standards for your subject matter. While outward appearances might indicate that the app meets the standards for your content, it is important to investigate further the depth and detail within the app to make sure that the relevant standards are met.

*Engaging.* As with the other types of apps, consider the app and how the students will be using it. Is the app engaging for your students and will it hold your students' attention?

*Usability.* Is the app easy to use and control? Or, will students need to learn special gestures to use different features within the app?

*Students Needs.* Your students most likely already have content specific information available to them. Consider if additional apps will meet the educational needs of your students or simply appear to be busywork for your students. Consider if the app will provide content that will aid in student learning. Does the app meet your students' educational needs? Additionally, consider if group, individual, or teams of students can use this app.

*Performance Summary.* Consider if the app provides a specific performance summary or student product that is saved at a location that is easily accessible to the teacher or peers if needed. Can the report or performance summary be exported to the teacher in a manner that is acceptable to the school (Schrock, 2014a)?

*Feedback.* One of the benefits of using an app is the ability to provide feedback to the user in order to be able to aid the student in learning the content. Consider if the app provides the feedback necessary for the content and the context of your instruction.

*Differentiation.* Consider if the app will meet the needs of **all** students. Are there multiple levels of difficulty? Does the app present content in multiple manners (video and text)?



*Groups or Individual.* Is that app something that groups of students can work together with or is it an app that only one student can use? For instance, some subject specific apps allow students to collaborate via Bluetooth, which allows for a rich learning experience.

Subject specific apps can be useful resources to supplement instruction. Careful evaluation of these types of apps include, alignment to standards, meeting students needs, presentation, the quality of the feedback, wide enough range of difficulty level that will afford the teachers opportunities for differentiated instruction, and the ability to report out how students did within the app, if necessary.

### 3.2.4 Educational Games

Educational Games are different from subject specific apps in that they typically include some type of “interactive play” feature coupled with storylines, rules, and so on. Educational games include skill builder, problem solving or strategy, simulation to name a few. Games should extend the curriculum and be used to aid learners in meeting the appropriate standards for the curriculum (Kebritchi, 2010).

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#### Educational Games Apps

Instructions/Support: Yes No  
 Type of game: skill builder, problem solving or strategy, simulation, other \_\_\_\_\_  
 Username required: Yes No  
 Opportunities for collaboration: Yes No  
 Intended use: formal informal both

Name of App: \_\_\_\_\_  
 Reported Grade Level \_\_\_\_\_  
 Megabytes on device: \_\_\_\_\_  
 Developer: \_\_\_\_\_  
 Cost: \_\_\_\_\_  
 Operating System: \_\_\_\_\_

	Meets Needs	Slightly Meets Needs	Does Not Meet Needs	Criteria not relevant	Comments
Relevance	The purpose of the game is relevant to the student and the instructional situation.	Limited connection between the purpose of the game and relevance to student learning.	The purpose of the game does not connect to instruction and is not relevant to students.		
Feedback	Specific feedback is provided to the student.	Student is provided some feedback.	Limited feedback.		
Engagement	Students will be intellectually invested when using this game.	Some students might be engaged with this game.	Students will quickly lose interest.		
Usability	Students can easily manipulate the controls for the game.	Special gestures are required.	It is not clear how to manipulate the game.		
Replay varies	Game varies with replay.	Game is predictable when replayed.	Same game when replayed.		
Reporting	Summary data is electronically available to teacher.	Student briefly has access to summary data.	Summary data not available.		
Levels of difficulty	Wide range of difficulty that will engage ALL students in the class for a long period of time.	Some range. The game will be useful for some for some time.	Minimal range of difficulty app will not be used long.		
Thinking skills	Game encourages the use of higher order thinking skills.	Mostly lower order thinking skills.	Limited to the lower order thinking skills	Yes No <input type="checkbox"/> <input type="checkbox"/>	
Storyline	Game has a complex storyline with characters users care about.	Has a basic storyline.	No storyline.	Yes No <input type="checkbox"/> <input type="checkbox"/>	
Replicates real-world	Game replicates the real-world.	Some what realistic.	Game not realistic.	Yes No <input type="checkbox"/> <input type="checkbox"/>	

Summary of app/recommended alternatives:

**Table 3.4:** Educational Games Evaluation Matrix.

See appendix for printable/exportable version of the above evaluation matrix for productivity and creativity apps.

### 3.2.4.1 Criterion to consider:

*Relevance.* Students love playing games. We as educators need to make sure that the games are in fact relevant to our instructional content. Does the game support the content you are teaching in your class? Are the skills required for the game beneficial for your students and your desired educational outcomes? Is it appropriate for the student age group?

*Feedback.* As the student interacts with the game, are they receiving constructive feedback to improve the skills that match your learning objectives? Consider the type of feedback the game provides, is the feedback instructional? Is it providing feedback to students moving forward in the game? Games that provide students with feedback on how to mediate the embedded learning topic effectively, rather than instructing the learner on how to interact with the gaming environment, effect better learning outcomes (Schrader & Bastiaens, 2012, p. 209; Sharma & Hannafin, 2007).

*Engagement.* As with the other types of apps, consider the game and how the students will be using it. Is the game engaging for your students and will it hold your students' attention?

*Usability.* As with the other types of apps, consider if the game is easy to use and control. Or, will students need to learn special gestures to use different features within the game? If the game requires training, do the educational benefits of the game outweigh the time needed to provide the training?

*Replay varies.* One of the benefits of using apps for instructional purposes is that students can use the app over and over again. However, it is important to determine if there is enough variety in replay options. Will students eventually figure out the patterns of the game and learn how to navigate it rather than learn the content? Thus, it is important to consider how many times the game varies with replay.

Good games provide students with feedback on their learning as they progress; often times students are unable to progress to the next level until they have illustrated that they have mastered the current skill set (Hommel, 2010). When games require students to replay a specific level, that level should be different enough to illustrate that the learner has in fact mastered the requisite skills rather than the specific level of the game.

*Reporting.* As students complete different phases of the game, does it generate a report that indicates what skills, competencies, or abilities the students have shown that they are capable of doing? Who has access to the report? Will teachers be able to see the outcomes and store the outcomes somewhere?

*Levels of Difficulty.* Classes have a wide range of students therefore the game needs to be able to provide a wide variety of difficulty levels for all students in the class to be able to progress through. Is the range of difficulty wide enough that the game will be useful for the entire class and for a reasonable period of time?

*Thinking Skills.* Games can encourage problem solving, critical thinking, and other higher order thinking skills (Hommel, 2010). Consider if the game does in fact foster higher order thinking skills.

*Storyline.* Storylines are an important part of the game. Consider what the storyline of the game is; will it encourage engagement with the students because they want to participate in the game? Does it have characters that the students care about, thus encouraging deeper game playing? Is the storyline appropriate for your students?

*Replicates Real-World.* Consider the quality of the graphics when evaluating game apps. Students currently have access to very high quality graphics and they can have negative reactions to games that appear to not be of high quality.

When evaluating games it is tempting to focus on the fun factor and, while that is important, there are many other important characteristics to consider. Relevance, variety of replay, the storyline, reporting out of results, ability to promote higher order thinking and quality of graphics all play an important role in deciding if you should utilize different games in your classroom situation. Curricular considerations and alignment to standards are very important when it comes to selecting educational games to be used in the classroom. While this was discussed in Section 3.1, it is important to further emphasize that when it comes to educational games, they need to be tied to the curriculum and should lead to meeting or exceeding standards if they are at all going to promote learning in your classroom (Brysch, Huynh, & Scholz, 2012).



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### 3.3 Assessing Mobile Devices

When selecting mobile devices, it is important to consider how the device is going to be used as discussed in Sections 3.1 and 3.2. Once you have a good sense of the apps that you would like to use in your classroom, consider which mobile devices will allow you to use the apps that will be beneficial for your educational situation. Consider the operating system for the mobile device and confirm that it will work appropriately with your institution's ICT infrastructure. As discussed earlier, you should consider the cost of the device and its available storage. Additionally, you should consider battery life and ease of updates. Each of these criteria is discussed in detail below.

#### 3.3.1 Criterion to Consider

*Operating System.* As mentioned earlier, consider if the operating system for the mobile device will work with the ICT infrastructure at your institution, such as network compatibility. Also, check the compatibility with other institutional computing applications such as the institutions' integrated learning systems, email, records and registration systems, and so on.

*Cost.* Costs of mobile devices and the associated apps/software are less than the traditional desktop computer and software. However, cost is something that needs to be carefully considered.

*Storage.* There are a plethora of apps available to download and the costs are relatively nominal compared to the cost of software for a desktop. Thus, there is the risk of simply downloading apps so that you can test them out without any consideration for the space that these "trial" apps might take on the device.

Additional considerations are how much space is available to store products that students make. Multimedia products take up more space than text documents. It has been the authors' experience that storage space is one of those criteria that surprisingly ended up being an important consideration that was not considered important at the onset. This is especially true in schools with shared mobile devices.

E-books tend to take up more space as compared to subject specific apps and games. This is due to the multimedia nature of many E-books.

*Battery Life.* Under normal conditions how long does the battery last? Will it last the entire workday? In regards to the apps, read reviews to see if the app tends to drain the battery faster. As a general rule of thumb, apps that download from the Internet frequently tend to drain the battery faster. This means, that E-books that require Internet access may end up draining the battery life faster. While E-books that are streamed from the Internet might not take up as much storage space, they will decrease battery life.

*Ease of Updates.* Updating apps is important not only because it can help prevent batteries from draining too quickly, but also most times the updates are fixes to problems in earlier versions. Therefore it is important to be able to update the operating system on the device and the apps so that you can keep your mobile device and the associated apps/software functioning as efficiently as possible. The easier it is to update devices the better.

Mobile devices can be used in many ways. You need to consider your situation and how your students will use the devices for learning. As mentioned earlier in the chapter, the device and its associated apps should be tied to the curriculum and the associated standards in order for the device and app to be used to promote learning.

### 3.4 Summary

In this chapter you have learned:

- There are a lot of mobile devices out there and selecting the most appropriate device for you is dependent on how you are going to use the device. Consider the many different uses of the device and how the different apps/software will interact with it.
- Productivity and creativity apps allow students to create end products. These are scaled down versions of similar software available for desktop/laptop computers. Special considerations are the ability to export the end product, the number of products that students can make, and relevance.
- E-books include books such as electronic textbooks, storybooks, reference books and general reading. Special considerations are cost, length of ownership, relevance/standards, ability to annotate, index/TOC, tagging, multimedia, search features, and dictionaries.
- Subject specific apps are apps that help students to build content-related skills, or a simulation for relevant content within a subject matter. Considerations for these types of apps include alignment to standards, meeting students' needs, scholastic presentation, feedback, differentiation, and reporting out of results.
- Educational games are different from subject specific apps in that they include skill builder, problem solving or strategy, simulation. Considerations for these types of apps include relevance, feedback, varied replay, reporting out of results, a variety of levels of difficulty, promotion of thinking skills, quality storyline, and replication of a real-world experience.

#### Key Terms

Productivity and creativity apps

E-books

Nomenclature

Educational Games

Subject Specific Apps

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**Reflection to Action**

1. Reflect on two apps that you currently use for instructional purposes. Use the appropriate evaluation sheet provided in the appendix and determine how your apps meet the different criteria. Did the evaluation turn out as expected? Were there surprises?
2. Evaluate apps that you have not used before in an instructional situation. Consider revising a lesson using one of the apps that ranked highest on the evaluations. What revisions to the lesson would you make? How does this new app improve the learning experience?
3. Create one new instructional activity using an app(s) of your choice. Identify the following:
  - a) How does the app meet curricular needs for your classroom?
  - b) Does the app provide feedback to your students?
  - c) Is the app engaging for the learners?
  - d) Are you, as the teacher, able to export data from the app that you will be able to use for assessment purposes?



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