Athletic Training Education: There's an App for That

Kim Keeley, PhD*; Kelly Potteiger, PhD†; Christopher D. Brown, PhD‡ *Exercise and Rehabilitative Sciences, Slippery Rock University, PA; †North Park University, Chicago, IL; ‡University of Southern Mississippi, Hattiesburg, MS

Context: Mobile applications (apps) are growing in popularity due to the increased use of smartphones. Many available apps are educational in nature and may provide both students and educators freedom for learning to occur outside of the typical classroom environment.

Objective: To provide a description of relevant apps along with a brief synopsis of the suggested use by both athletic training educators and students. Additional information that may affect a user's app selection, such as cost, size of the download, and consumer ratings, if available, is also included.

Background: Applications (apps) are computer programs written specifically for Internet connected mobile phones and tablets. These programs perform specific functions for the user, usually through a touchscreen interface.

Synthesis: Connected devices are especially popular among the Millennial and Generation Z students now enrolled in various pre-professional healthcare programs. These students were raised with technology inundating their lives; therefore, they tend to desire the use of technology more frequently than older adults.

Results: Many apps are available, however this article highlights selected apps in the categories of (1) injury evaluation and management, (2) anatomy, and (3) productivity.

Recommendation(s): Educators should become knowledgeable in mobile app technology in order to meet the needs of the new generation of students.

Conclusion(s): Incorporating apps into athletic training education can enhance the delivery and retention of student knowledge and provide unique educational opportunities.

Key Words: Mobile apps, technology, smartphone

Dr Keeley is currently an Assistant Professor of Athletic Training at Slippery Rock University. Please address all correspondence to Kim Keeley, PhD, Exercise and Rehabilitative Sciences, Slippery Rock University, 319 Patterson Hall, Slippery Rock, PA 16057. kimberly. keeley@sru.edu.

Full Citation:

Keeley K, Potteiger K, Brown CD. Athletic training education: there's an app for that. Athl Train Educ J. 2015;10(2):190–199.

Athletic Training Education: There's an App for That

Kim Keeley, PhD; Kelly Potteiger, PhD; Christopher D. Brown, PhD

This column provides an overview of mobile applications (apps) available for athletic training educators and students as of October 2014. The authors reviewed and selected apps based on online-reviews, recommendations by fellow athletic trainers and students, personal use, and overall app ratings. Forty-one athletic training educators and 112 students were asked to share their favorite and/or most useful apps. The goal of this article is to provide a description of relevant apps along with a brief synopsis of suggested use by both athletic training educators and students. Additional information that may affect a user's app selection, such as cost, size of the download, and consumer ratings, if available, is also included. All of the apps below can be found by searching the Web by name and publisher or by searching the Apple App Store/Android Marketplace. Since new apps are created daily, this article was not designed to serve as a cumulative list of all available apps. Rather, this is a way to help narrow the app search for athletic training educators and students.

WHAT IS AN APP?

Applications (apps) are computer programs written specifically for Internet-connected mobile phones and tablets. These programs perform specific functions for the user, usually through a touchscreen interface. Apps are increasing in popularity over the last decade, as cellphone ownership, especially smartphones, is more prevalent. Currently, there are around 10 billion connected devices on the market.¹ Therefore, it should not be surprising that around 50 billion apps were downloaded between the Apple App Store and the Android Marketplace in 2012 alone.² Between 2010 and 2011, 34.4% of total smartphone users reported using an app of some kind.³ Connected devices are especially popular among the Millennial and Generation Z students now enrolled in various preprofessional health care programs.⁴ These students were raised with technology inundating their lives; therefore, they tend to desire the use of technology more frequently than older adults.^{5,6} Apps provide students the freedom of mobile learning through handheld devices to learn at any time and any pace. Mobile learning applications, such as apps, can be used to supplement traditional lecture techniques.⁶ Therefore, it may be helpful for athletic training educators to familiarize themselves with apps available for their personal use along with those that could potentially enhance students' learning and knowledge retention.

EVALUATION AND MANAGEMENT APPS

MEDTube

Description of Function. MEDTube (MEDtube Medical Videos, New York, NY) is a medical library designed for health care professionals that includes a wide variety of multimedia such as over 11 000 videos, animations, interviews, presentations, case reports, podcasts, and academic lectures. Prior to uploading material, the MEDTube editorial staff, comprised of physicians, reviews all content for accuracy and

educational quality. This review process helps to ensure that only quality, accurate material is included in the medical library. An account is required to add content, rate videos, comment on videos, and share expertise. Table 1 provides specifications on the MEDTube app along with other apps which can be used to assist the clinician with evaluation and management.

Application in an Educational Setting. Instructors from a wide range of courses can supplement lectures with content from this application. Resources are organized by content ranging from general medicine (ie, ophthalmology, cardiology, dermatology) to orthopaedic conditions and include lectures, case studies, and overviews of surgical procedures. This app may also be ideal for clinical preceptors seeking to provide students with "just in time"⁷ resources as teachable moments arise in the clinical setting. Students may also choose to access the app to review concepts learned in the classroom, allowing them to select the pace of their learning and add onto information presented by the instructor. Furthermore, both the student and the instructor can feel comfortable knowing the content is reviewed by physicians.

Orthopedic Patient Education 2014

Description of Function. This Orthopedic Patient Education 2014 app (3D4Medical.com, San Diego, CA) provides a comprehensive repository of over 140 medical animations of musculoskeletal joints. Joint physiology and various diseases/disorders are included for: (1) foot and ankle, (2) knee, (3) hip, (4) shoulder, (5) elbow, (6) hand and wrist, and (7) spine. This app is designed for health care professionals to effectively communicate procedures and treatments with patients. Clinicians can also annotate within the app. This feature allows the clinician to circle, comment on, or highlight relevant content while providing patient education.

Application in an Educational Setting. This application may be ideal for instructors of orthopaedic examination, biomechanics, or kinesiology courses who are wishing to supplement lecture material. It could also be a helpful resource for clinical preceptors seeking to provide either students or patients with an illustration of an injury. As students matriculate within the athletic training curriculum, they can use this app to improve patient education as well as enhance their professional communication skills.

CORE: Clinical ORthopedic Exam

Description of Function. This app (from Clinically Relevant Technologies, Seattle, WA) is a database of over 400 clinical tests, with step-by-step descriptions on how to perform each, as well as video demonstrations, diagnostic properties (sensitivity, specificity, likelihood rations, etc), and hyperlinks to the supporting medical evidence. Free updates are provided as new information is available. This app also offers an additional in-app purchase (\$5.99) that lets the user

Table 1. Evaluation and Management Apps

			Cost	Rating ^a (No.	of Reviews)
Name	Availability	Apple	Android	Apple	Android
MEDTube	iPhone, iPad and iPod Touch	Free	NA	Not yet rated	NA
Orthopedic Patient Education	iPad	\$49.99	NA	4+ (27)	NA
CORE: Clinical ORthopedic Exam	iPhone, iPad, iPod Touch, Android	\$39.99	\$39.99	4+ (67)	4.2 (52)
Orthopedic Manipulative Therapy	Android, iPhone, iPad, iPod Touch	\$29.99 each	\$29.99 each	Lower extremity 4+ (19) Spine 4+ (30) Upper extremity 4+ (21)	Lower extremity 4.2 (5) Spine 4.1 (15) Upper extremity 4.8 (5)
Orthocare	iPhone, iPad, iPod	\$14.99	NA	Not yet rated	NA
Decide	iPhone, iPad, iPod Touch	Free	NA	Not yet rated	NA
Journal of Bone and Joint	iPad, iPhone, and iPod Touch	\$0.99	NA	No rating	NA
Surgery Image Quiz					
iOrtho+	iPad, iPhone, iPod Touch, and Android	Free lite version Free full version for educators	Free lite version	4+ (77)	3.3 (130)
Nerve Whiz	iPad, iPhone, iPod	Free	Free	4.5 (112)	4.3 (146)
iTriage	iPad, iPhone, iPod Touch, Android, and Web-based	Free	Free	4.5 (27 214)	4.5 (78 500)
PalpationMapp	iPad, iPhone, and iPod	\$9.99	NA	5 (1)	NA
The Heart Sound Challenge	iPad, iPhone, iPod Touch	\$2.99	NA	5 (1)	NA

Abbreviation: NA, not available.

^a Ratings were taken from the application provider website and are on a 0-5 scale. The number in parentheses indicates the number of ratings the app has received.

download all video content (including audio) to be stored on the device. This feature allows videos to play with or without a network connection. Volume pricing is available.

Application in an Educational Setting. This application could be ideal for instructors seeking to insert evidence-based

practice techniques into their orthopaedic examination or practical courses. It could also be a helpful resource for clinicians to find information to help guide their evidencebased practice or for students as they review orthopaedic techniques.

Table 1. Extended

	Size		
Apple	Android	Options	Connectivity
61 MB	NA	No additional in-app purchases are required	Yes
1.21 GB	NA	No additional in-app purchases are required	Yes
5.9 MB	4.6 MB	CORE exam videos available with an additional fee. This allows you to view the videos without internet connectivity	Internet connection is required to view content without additional in-app
Lower extremity	Lower extremity 230	No additional in-app purchases are required	Yes
Spine	Varies with device		
321 MB Upper extremity	Varies with device		
336 MB 95 MB	NA	No additional in-app purchases are required.	Yes
Dental 74.6 MB ENT 103 MB Foot 154 MB Hand 247 MB Heart 294 MB Knee 284 MB Shoulder 195 MB	NA	In-app subscription (\$20/mo) is needed to receive periodic updates as well as to use the annotation and e-mail features	Yes, to use in-app subscription features
1.4 MB	NA	No additional in-app purchases required	Yes
6.2 MB	2.9 MB	Free version allows the user to view 1 special test of the ankle and 1 mobilization of the knee A one-time In-app purchases (\$14.99) will	Yes
26.4 MB	22 MB	No additional in-app purchases required	No
44.4 MB	18 MB	You can choose to save personal health care information such as doctors, diseases, medications, insurance information within the app	Internet connectivity is required to access some features of this app
408 MB	NA	No additional in-app purchases required	Not specified
9.9 MB	NA	No additional in-app purchases required	No

Orthopedic Manipulative Therapy

Description of Function. This Orthopedic Manipulative Therapy app (Clinically Relevant Technologies) is a clinical reference and teaching tool for manual therapy techniques. It includes step-by-step written instructions, video demonstrations with audio, indications for use, and evidence to support each technique. Summaries of the most recent manual therapy clinical research including hyperlinks to abstracts on PubMed are also included. Video content includes the ability to pause, rewind, and fast forward. There are 3 separate apps available, each targeting a different skeletal region (spine, lower extremity, and upper extremity). Volume pricing is available.

Application in an Educational Setting. This application could be helpful for instructors of therapeutic intervention courses wishing to supplement lecture material or laboratory

activities. Educators may also recommend this app as a useful reference for students practicing their manual skills outside of the classroom or practical setting.

Orthocare

Description of Function. This is an orthopaedic surgical reference guide (Clinically Relevant Technologies) aimed to assist junior orthopaedic surgeons, nurses, physicians, and physician assistants providing perioperative care. Features include pictures and video of orthopaedic procedures, hardware, and related diagnostic imaging, as well as information regarding preoperative management and postoperative care. The app is written and edited by a physician. Volume pricing is available.

Application in an Educational Setting. This application could be useful to instructors of orthopaedic examination or therapeutic intervention courses wishing to supplement lecture material. It could also provide an opportunity for clinical preceptors to model behavior by consulting reference material while providing patient education. In addition, students may find this app helpful when reviewing practical skills.

Decide

Description of Function. This particular app is an umbrella name for a series of apps focusing on different body region (eg, Spine Decide, Shoulder Decide, Hand Decide, Foot Decide, Heart Decide, Eye Decide, and Dental Decide) that displays relevant anatomy, pathologies, and specialty information about each segment (ie, Plica). The anatomy section allows the user to add or remove anatomical layers as needed, to explore deep and superficial structures. Another unique feature is that it allows the user to create "digital handouts" for your patient that are distributed via e-mail and hosted on HIPAA-compliant servers by the app developer (ORCA Health, Sandy, UT).

Application in an Educational Setting. This application could be ideal for instructors of orthopaedic examination or general medical courses wishing to supplement lecture material. It could also be a helpful reference for clinical preceptors to assist in illustrating injuries to both students and patients.

Journal of Bone and Joint Surgery Image Quiz

Description of Function. This app allows the user to test their diagnostic skills with images from the *Journal of Bone and Joint Surgery* (Journal of Bone and Joint Surgery, Inc, Needham, MA). Each image is accompanied by a case scenario and questions related to the case for the user to answer. This app cross-references over 3000 cases from over 100 years of peer-reviewed published case reports.

Application in an Educational Setting. Students can use this app to improve diagnostic skills, which can directly relate to improved patient care. It could also be helpful for clinical preceptors to quiz students during downtime to increase the educational experience.

iOrtho+

Description of Function. Designed to serve as a comprehensive reference for orthopaedic special tests and joint mobilization techniques, this iOrtho+ app (Therapeutic Articulations, LLC, Spring City, PA) is based upon advanced, evidence-based knowledge and extensive clinical practice. It includes illustrations, videos, descriptions, techniques, and interpretations for each special test. Photos, indications, contacts, and technique are provided for each joint mobilization. The user may also access statistical information and, when available, the abstract or full-text version of the references to provide support for each test or technique.

Application in an Educational Setting. Special tests, joint mobilizations, and neurological assessment can often be difficult for students to learn. This app provides students a complete list of both special tests and joint mobilizations for each anatomical area for review and includes photos, videos, and support of the evidence. Each skill is organized by body part and is easily navigated by the user. Instructors and clinical preceptors can easily access orthopaedic information without reaching for a textbook. A free version for educators is available by contacting the app developers.

Nerve Whiz

Description of Function. Designed at the University of Michigan (Ann Arbor, MI), this app is for medical professionals interested in learning the complex anatomy of nerve roots, plexuses, and peripheral nerves. It includes nerve and muscle charts, nerve diagrams, as well as a sensory locator that allows you to reveal the sensory distributions just by touching the anatomy as displayed on the screen.

Application in an Educational Setting. Students will find this app helpful in tackling the difficult skill of neurological assessment. The app provides detailed information about peripheral nerves and nerve roots including photos, charts, and diagrams that can easily be navigated and referenced.

iTriage

Description of Function. The app (Healthagen, LLC, Denver, CO) provides information on thousands of symptoms, health conditions, and medical procedures. It also includes a nationwide directory of hospitals, urgent care centers, retail clinics, pharmacies, and physicians. This app is broken down into the following categories: (1) symptoms, (2) doctors, (3) facilities, (4) conditions, (5) medications, (6) procedures, (7) MyiTriage (ie, personal medical records), (8) hotlines (ie, suicide, domestic abuse), and (9) news (ie, recent general health topics). To further assist the user in gaining medical attention, turn-by-turn facility directions from Global Positioning System, Internet Protocol address, or zip code is available in addition to nurse advice lines and emergency room wait times for hospitals in select parts of the country.

Application in an Educational Setting. This app allows students to quickly pinpoint a patient's symptoms and search through possible causes to learn more. This infor-

mation can assist the student in the clinical decision making process by providing up-to-date medical information at their fingertips. This app also allows the user to search through an extensive list of medications to learn, among other information, the conditions the medication is used to treat, possible side effects, usage instructions, and overdose information.

PalpationMapp

Description of Function. This app (Books of Discovery, Boulder, CO) provides a detailed high-definition visual guide to identifying and palpating 79 essential muscles. It includes videos from the Trail Guide to the Body DVD.

Application in an Educational Setting. Students can practice their palpation skills by using this interactive app designed to locate muscles. Using the overlay images, students can understand the concept of superficial and deep muscles as it relates to palpation. Detailed boxes appear for each muscle, providing information to help the student identify and engage the muscle and identify key bony landmarks. Preceptors can use this app to provide interactive quizzes during downtime.

The Heart Sound Challenge

Description of Function. This app (from the University of Michigan) is designed to develop confidence in the student or health care professional regarding their ability to use a stethoscope to examine the patient's heart. The app provides the learner with an engaging, gamelike environment to develop the ability to hear and identify 8 basic heart cadences. Users can listen to heart sounds, compare sounds, and even be quizzed on the information.

Application for Students. With the growing number of general medical competencies required for an entry-level clinician, this app can assist students to learn to recognize and practice detecting various cardiac heart sounds and improve clinical skills. Therefore, educators can feel comfortable providing this resource to students to review various heart sounds that were previously difficult to simulate outside of the classroom environment. This app is ideal for students desiring practice to detect abnormal sounds or listening to sounds multiple times outside of class.

ANATOMY APPS

The Muscle System Pro III

Description of Function. This app (3D4Medical/Stanford University of Medicine, San Diego, CA) provides the user the ability to zoom in on specific muscles of the body or search by name to learn the origin, insertion, action, nerve innervation, and arterial supply while looking at the location of the muscle on the body in relation to other structures. Layers of tissue can be added or removed to observe both superficial and deep structures as desired. The user can create quizzes or rotate each body part 360° with the swipe of their finger. Finally, the pronunciation of the name of the structure is also provided.

Table 2 provides more details on this app, along with the other anatomy apps reviewed.

Application in an Educational Setting. This app is useful for students to gain the foundational knowledge of anatomy needed to build more advanced skills such as palpation, evaluation, and therapeutic rehabilitation techniques. The versatility of this app allows the student to move around the body with ease, as they use the "remove layer" function to reveal bony origin and insertions.

Anatomy Mapp

Description of Function. This app (Books of Discovery) accompanies *Trail Guide to the Body* by Andrew Biel; however, the app can be used without purchasing the text. It offers a wide array of features to help the user improve anatomy knowledge by including anatomy flashcards; pins to identify muscles, bones, and ligaments; navigation assistance; quizzes; and audio pronunciation for each muscle. Users can select a region of the body and then choose a subcategory of movements, bones, ligaments, muscle groups, or individual muscles to explore more detailed information.

Application in an Educational Setting. Used alone or in conjunction with *Trail Guide to the Body*, this app is user-friendly for students. It provides clear photos of muscles, bones, ligaments, and movements associated with each body part. Students can quiz themselves by clicking on pins used to identify structures to improve knowledge. This app could be helpful to students who need a more visual and "hands-on" approach to learning anatomy.

Visual Anatomy

Description of Function. This app (Education Mobile, United Kingdom) uses *Gray's Anatomy* images with add-on 3-dimensional (3D) rotational models to serve as an interactive anatomical reference. Included is a musclehighlighting tool and full description of each anatomical segment. Categories include: (1) organ 3D, (2) muscles overview, (3) facial muscle, (4) bones, (5) circulation, (6) respiratory, (7) digestive, (8) urinary, (9) nervous, (10) *Gray's Anatomy* images, (11) general anatomy quiz, (12) reproductive, (13) endocrine, (14) ear, (15) nasal, (16) eye, and (17) body regions.

Application in an Educational Setting. Students can access all *Gray's Anatomy* images for a quick reference as they build a foundation of anatomy knowledge to apply to both classroom and clinical aspects of athletic training.

Pocket Anatomy

Description of Function. Similar to other anatomy apps, Pocket Anatomy (Galway, Ireland) uses 3D navigation and the ability for users to quiz themselves on information. With the built-in self-quizzes, students can pace themselves as they learn or review anatomy. Taking notes with the personal notes component can allow the student to comment on structures or note questions to return to while studying.

Table 2. Anatoi	my Apps								
		C	st	Rating ^a (No.	of Reviews)	Siz	ze		
Name	Availability	Apple	Android	Apple	Android	Apple	Android	Options	Connectivity
The Muscle System Pro III	iPhone, iPad, iPod Touch	\$3.99 (iPhone) \$9.99 (iPad)	AN	4.5 (319)	AN	828 MB iPad 802 MB iPhone	N/A	No additional in-app purchases required	N
Anatomy Mapp	iPad, iPhone, and iPod Touch	Free lite version	Free lite version	3.5 (12) full version	3.8 (19) full version	70.4 MB	48 MB	The free lite version contains more than 25% of the material found in the complete version so the user may try the app before purchase	0 N
		\$19.99 full version	\$19.99 full version					In-app purchases can be made by body region for \$3.99 each or all 6 regions for \$19.99 (full version)	
Visual Anatomy	iPhone, iPod Touch, and Android Touch	Free lite version \$2.99 full version	Free lite version \$2.69 full version	4.5 (409) full	4.4 (1948) full	164 MB full 54.9 MB	94 MB full 11 MB lite	No additional in-app purchases required	No
Pocket Anatomy	iPad, iPhone, and iPod Touch	\$24.99	AN	4.5 (335)	NA	728 MB	NA	No additional in-app purchases required	No
Abbreviation: NA, n ^a Ratings were take	ot available. In from the applica	tion provider web	site and are or	ו a 0-5 scale. The	e number in par	entheses indica	tes the numbe	r of ratings the app has recei	/ed.

une app nas UI FAULUS Initiber Ð linucates in parenureses Katings were taken from the application provider website and are on a U-5 scale. The number

196

Application in an Educational Setting. This app allows students enrolled in applied anatomy or anatomy and physiology courses to study on the go by having interactive information at their fingertips.

PRODUCTIVITY APPS

Finish

Description of Function. This app (Basil Ltd, Boulder, CO) helps keep the user organized by structuring a to-do list that includes short-term, mid-term, and long-term goals. There is also a notification system that notifies the user when a task is coming due. Another useful feature is the built in "bother me" setting for users who require extra motivation to complete projects on time. Table 3 lists the specifications for the Finish app and the other productivity apps reviewed.

Application in an Educational Setting. This app could be helpful to both students and instructors who need help organizing or tracking multiple responsibilities. It could be just as helpful to the academician wishing to track progress toward research projects for managing assignments or working on group projects.

Remind 101

Description of Function. This app (remind101, San Francisco, CA) is designed to provide educators a safe and secure way to communicate with students, without making their cell phone number visible by the recipients of the messages. This is a 1-way communication tool to protect the user's privacy by never allowing the other party access to individual telephone numbers. This 1-way communication tool is not intended to replace 2-way communication, but to simply allow educators a secure, private way to communicate with students. Text message reminders can be sent in real time, or saved and sent later, thus allowing educators to increase productivity during the workday.

Application in an Educational Setting. This app could be helpful for athletic training program administers to communicate with students about programmatic activities. Also, it could be excellent for teachers, student groups, or clinical preceptors to use to communicate about assignments, clinical rotations, or other pertinent information.

Dropbox

Description of Function. This app (Dropbox, San Francisco, CA) allows the user to store their files in an online storage Cloud, therefore making files easily sharable among multiple devices and users. An account is required and users are provided 2 GB of free storage with initial registration.

Application in an Educational Setting. Students and educators can store class related documents in the Cloud for easy access among many devices (ie, work computer, smartphone, home computer). It is also a helpful way to allow groups (ie, athletic training program administrators, research colleagues, students) to share documents when

collaborating on projects. Folders can be shared which allow read/write capabilities. A link to file or folder can also be shared via e-mail to allow the recipient to review the file(s) in view-only mode.

iStudiez Pro

Description of Function. This app is a student planner that provides the user with the options to organize all of their academic and personal information including daily schedule, assignment, extracurricular activities, and grades. Users have the ability to color code and/or use icons within the interactive calendar. These options are useful for setting reminders for classes, assignments, and even prioritizing calendar events. There is even a grade point average calculator for current and past semesters which supports most grading scales (ie, letter grades, percents, points). Records can be saved to the Cloud Sync server for communication between devices. There is also a lite version of the app, but most of the features listed above are not included.

Application in an Educational Setting. The iStudiez Pro app helps students to manage all of their responsibilities in 1 place that can sync to other devices. Since many students are engaged in cocurricular activities in addition to coursework, clinical responsibilities, personal responsibilities, and possibly employment, this app will help the student be more organized and possibly add in the development of good time management skills. Students can easily organize their daily schedule and assignments to keep track of upcoming obligations and receive reminders when an assignment is nearing the due date. Although this app is not specifically designed for students in the health care field, it is popular among students and may help manage their time more effectively. iStudiez offers a 50% discount if 20 or more apps are ordered.

TIPS TO REMEMBER

Since the number of apps available is vast, consider the following questions to help you determine which app is best for your educational needs:

- What type of app best fits my needs?
- What is the price?
- Are there in-app purchases that may require additional expenses?
- What platform does the app need to run (ie, iOs, Android)?
- How much space will this take up on my device?
- Is there evidence to support the content of the app?
- When was the app last updated? Has new evidence been established since the last update?
- How does the app align with the National Athletic Trainers' Association position statements?

Answering these questions can help you to determine which app may be useful in your setting. It is also important to remember that apps may not be subject to a rigorous review process. For best practice, make sure you review the app's content with evidence in the literature as well as with your own clinical experiences. We strongly recommend educators review the app before endorsing it for student use. Some apps

Table 3. Pi	roductivity Apps								
		Cost		Rating ^a (No.	of Reviews)		Size		
Name	Availability	Apple	Android	Apple	Android	Apple	Android	Options	Connectivity
Finish	iPhone, iPad, iPod Touch	Full version \$1.99 Free lite version	AN	4.5 (643)	AN	11.4 MB	NA	In-app purchase (\$1.99) required to enter more than 10 tasks or to set due dates	No
Remind 101	Android, iPhone, iPad, iPod Touch	Free	Free	4.5 (3714)	4.3 (21 270)	15.6 MB	Varies with device	No additional in-app purchases required	Yes
Dropbox	Android, iPhone, iPad, iPod Touch	Free	Free	3.5 (44 150)	4.5 (881 745)	53.7 MB	Varies with device	2 GB of storage are free with account Additional storage can be earned by referring others to Dropbox In-app purchase options available for increased	Yes
iStudiez Pro	iPhone, iPad, iPod Touch	\$2.99 pro version	ΥN	4 (6870) full	AN	65.1 MB	AA	There is also a lite version of the app; however, the features are limited to 5 classes over 1 semester and 15 assignments	Yes, required to sync calendar
		Free lite version		3.5 (3119) lite				Backup and push notifications are not available for the lite version	
Abbreviation: ^a Ratings were	NA, not available. e taken from the appli	ication provider v	vebsite and	are on a 0-5 sca	le. The number in	parenthese	s indicates the	number of ratings the app has rece	eived.

Downloaded from https://prime-pdf-watermark.prime-prod.pubfactory.com/ at 2025-06-16 via free access

are free, while others are not; educators and students should consider the benefits as well as the cost of each app. Some apps offer group discounts (ie, 3D4medical and iStudiez), free versions for educators (ie, iOrtho+), or sales throughout the year.

It is important to keep apps current as new updates become available, as publishers are constantly making improvements to either content or usability. Be sure to check for current updates periodically in the app store associated with your device and platform. Some devices may also update automatically. Keep in mind, it may be necessary to purchase additional content for some apps (in-app purchases) to maximize content.

It is also important to synchronize calendar and scheduling apps across all devices to ensure the most up-to-date information is available. Finally, some apps offer free lite or trial versions with limited features to allow the user to see if the app fits their needs. Other apps may require the user to purchase in-app, or additional purchases, to use all featured content the app may provide.

Due to the popularity of smartphone use and the necessity to meet the needs of the new generation of students, it is helpful to be knowledgeable in this area of technology. There are a variety of apps available to enhance the delivery and retention of athletic training knowledge. This is not an exhaustive list; instead, it is a summary of apps that a select group of athletic training students and educators found helpful in either the classroom or clinical setting.

REFERENCES

- 1. Mobile future: let's talk connected devices. Mobile Future Web site. http://mobilefuture.org/resources/lets-talk-connected-devices-infographic/. Accessed November 2013.
- 2. 16th Mobile Competition Report. Federal Communications Commission Web site. http://www.fcc.gov/document/16thmobile-competition-report. Accessed November 2013.
- Donovan M. US mobile year in review. Score Inc Web site. http:// www.comscore.com/Insights/Press_Releases/2011/2/comScore_ Releases_Inaugural_Report_The_2010_Mobile_Year_in_Review. Accessed December 2013.
- 4. Payne K, Wharrad H, Watts K. Smartphone and medical related app use among medical students and junior doctors in the United Kingdom (UK): a regional survey. *BMC Med Inform Dec Mak*. 2012;12:1–11.
- 5. Monaco M, Martin M. The millennial student: a new generation of learners. *Athl Train Educ J.* 2007;2(2):42–46.
- 6. Davie E. Incorporating mobile learning into athletic training education. *Athl Train Educ J.* 2009;4(4):152–156.
- 7. Taylor JD, Dearnley CA, Laxton JC, et al. Developing a mobile learning solution for health and social care practice. *Distance Educ*. 2010;31(2):175–192.