

# Standardized Test Preparation with Mobile Flashcard Apps

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**Abstract**— A variety of Flashcard Apps (FCAs) for standardized tests such as the IELTS, TOEFL, TOEIC, GRE and SAT can be downloaded from the Google Play, and iPhone App Stores for free and used by the students to prepare for any of those tests. FCAs contain thousands of essential words and specialized vocabulary covering several categories such as biology, history, art, environment, social and human science. FCAs have customizable features. They have several learning modes: Study, Slide show, Matching, Memorize and Quiz. Students can listen and learn, without having to look at the screen. Multiple choice tests, Group choice test, Word choice test are provided as well. Words can be browsed alphabetically, sequentially, or randomly. They are a good tool for improving vocabulary and helping the students learn faster and remember more in a shorter time. Words that are important or difficult can be starred and revised on demand. This article gives examples of standardized test mobile flashcard apps (MFCAs), shows how FCAs can be located and gives some criteria for selecting relevant flashcards apps. Instruction with the MFCAs goes through three stages: pre-task, task, and post-task phases. The instructor serves as a facilitator. She can help the students find and download flashcards that meet their needs and purposes and match their proficiency level, gives pre-questions, and follows the students up to make sure they are making the best use of them. The article concludes with some recommendations.

**Keywords**— mobile flashcards, digital flashcards, flashcard apps, test preparation, test flashcards, standardized tests, test mobile apps, EFL students.

## I. INTRODUCTION

Nowadays, mobile applications have become an integral part of students' everyday life. Students of all ages use them for a variety of purposes, including second language learning. A variety of mobile apps exist for developing the listening, speaking, reading, writing, grammar, vocabulary skills, literature, dictionaries, and standardized tests preparation and others (Al-Jarf, 2021; Al-Jarf, 2021; Al-Jarf, 2020; Al-Jarf, 2016; Al-Jarf, 2015a; Al-Jarf, 2015b; Al-Jarf, 2014; Al-Jarf, 2013a; Al-Jarf, 2013b; Al-Jarf, 2012a; Al-Jarf, 2012b). In addition, students in different majors such as psychology, and engineering can use digital flashcards or FCAs on their mobiles.

Traditionally, flashcards are small cards for taking notes. They are used for reviewing, rehearsing, testing, and improving memory by retrieving practiced information. They typically have two sides, with the prompt written on one side and the information about the prompt written on the reverse side. They can be used for studying names, dates, vocabulary, procedures, and/or basic concepts. In general, a group of flashcards represent a category of information that the student is studying, trying to memorize and remember, and eventually master. With latest advancements in technology, there are several websites and software that can be used for creating flashcards. Those are called digital flashcards. Mobile apps such as Quizlet and StudyBlue that are available on smart mobile phones, can be used by students to access flashcards from

anywhere. A multitude of digital/mobile flashcards covering several categories such as: Math, biology, engineering, archeology, history, art, environment, social and human science, psychology, and languages such as Chinese, Korean, Japanese, Arabic, Spanish, English, and others can be downloaded from the Google Play and Apple App stores. There are children's as well as adult flashcards. FCAs contain thousands of essential words and specialized vocabulary as well.

Due to the importance of digital/mobile flashcards, a review of the literature has shown numerous studies that highlighted the benefits of using FCAs in vocabulary learning. For example, Ebadi, Saman & Bashiri, Saba (2018) investigated EFL learners' views on their vocabulary learning experiences from a language teaching channel on Telegram that required the students to use a mobile application called Vocabulary Flashcards 2016 for a whole month. Results of the study showed that the students had positive attitudes towards the application because it had a positive impact on their learning, and it provided them with form and meaning-focused instruction. However, the students were dissatisfied with the app's levels and authenticity. In another study, Hung (2015) examined whether and how digital flashcards can be incorporated into a university course to promote the vocabulary learning of English language learners. The findings

emphasized the value of learning vocabulary with digital flashcards as an alternative to conventional resources. They emphasized the advantages of integrating digital

flashcards in collaborative language learning in the EFL classroom.

In Taiwan, Chien (2013) explored freshmen students' views on and practices of creating vocabulary flashcards using Quizlet. The researcher found that the students' word selection was based on their area of specialty, not whether they know the meanings of the words or not. "Space Race" was considered as the most helpful activity in vocabulary learning. Choosing an appropriate definition of a word was the biggest challenge for the students when making "Quizlet" flashcards. At the South Westphalia University of Applied Sciences in Germany, undergraduate engineering students used Quizlet to learn English vocabulary. The students found mobile flashcards to be a very efficient, convenient, and enjoyable way to learn English vocabulary. Use of smartphones in language learning was found to be effective in motivating the students to learn (Davie, Neil & Hilber, Tobias, 2015). In another study, undergraduate engineering students used digital flashcards which were developed using an off-the-shelf software. The students showed an interest in using flashcards in their current course and a willingness to create new ones for future courses. However, they were unaware of the benefits of flashcard in the language learning process. In addition, they rarely used them in other courses (Murray, Phelps & Altabbakh, 2018).

Moreover, students enrolled in a Spanish language course for beginners used Anki (a spaced-repetition flashcard application) for a whole semester. A positive correlation was found between studying with Anki and Spanish language performance at the end of the course. However, the students were hesitant to use Anki and reported little enjoyment. They also mentioned having higher motivation for learning and a relationship between their effort and beliefs about learning at the end of the semester (Seibert Hanson & Brown, 2020). Similarly, ESL college students at a Midwestern University who were studying English to pass the TOEFL or IELTS used Anki in vocabulary learning. The vocabulary under study consisted of the Coxhead's (2000) Academic Word List and a dictionary with 210 academic words especially compiled for the study. The students used the Anki dictionary for ten minutes a day for three weeks. The results emphasized the benefits of integrating flashcard programs in language learning, as well as the perceptions of learners about the process (Altiner, 2019). Polish students learning English used the AnkiDroid app. The results revealed that students perceived foreign language definitions to be significantly less helpful compared to other flashcard

components. Polish translation was significantly more helpful in vocabulary learning than images, sound effects, pronunciation and FL definitions in that order (Kaplan-Rakowski & Loranc-Paszylk, 2017).

Another line of research compared mobile flashcards with traditional paper flashcards, tablets, software flashcard, word clouds (Wordle), and m-learning. The use of flashcards by college students enrolled in an Introductory Psychology course increased significantly when they were provided by the instructor. MFCAs were not used by many students even when recommended by their instructor (Burgess & Murray, 2014). English-speaking fifth graders learning Chinese as a foreign language who used e-flashcards outperformed their peers who used paper flashcards on an immediate post-test of Chinese listening and word reading, and on a delayed-listening test taken a week later. The children also had more positive learning attitudes toward Chinese vocabulary learning than their peers who used paper flashcards (Li & Tong, 2019).

At two Japanese universities, EFL students who used paper flashcards in conjunction with three vocabulary learning strategies: oral rehearsal, association and dropping, and those who used the digital flashcards tools Cram and Quizlet for 12 weeks made significant improvements in receptive and productive vocabulary. However, the difference between the gains in the two groups was not significant. This demonstrated the importance of vocabulary learning strategies. The students viewed digital flashcards more favourably than paper flashcards (Dizon & Tang, 2017).

Likewise, college students who learnt vocabulary from tablet, computer, or paper flashcards that were ready-made or self-created, learned better from paper and tablet flashcards but less from computer flashcards. The students were less satisfied with computer-based flashcards as they were not fully in control of them. Students also felt more satisfied with paper flashcards than with tablet and computer flashcards. They recalled more vocabulary and reported wasting more effort on ready-made flashcards than self-created ones (Sage, Krebs & Grove, 2019)

When compared with tablets by speech-language pathologists in clinical practice, tablets and flashcards were found to be equally effective in single-word speech sound intervention modalities when used by kindergarten students who made at least two similar speech sound errors. However, for three out of the four children, flashcards were more efficient than tablets (Werfel, Brooks & Fitton, 2020)

Regarding the utilization of software flashcard and word clouds (Wordle) by two groups of Iranian English learners, vocabulary learning in the word clouds group improved as a result of using word clouds as a tool for vocabulary learning and retention (Mansouri, 2015). Moreover, Azabdaftari & Mozaheb (2012) compared the use of flashcards and m-learning specifically the Spaced Repetition System, which is a vocabulary acquisition program, by 80 undergraduate students studying English Literature and Translation in a non-profit, non-governmental university in Iran. Use of mobile phones for vocabulary learning was found to be a better learning strategy than flashcards.

In Saudi Arabia, there is lack of studies on the utilization of any form of flashcards in learning in any field. Specifically, there is lack of studies that investigate the utilization of digital/mobile flashcards in vocabulary learning by students majoring in English, translation, linguistics, or literatures. In addition, many students majoring in English and translation in Saudi Arabia need to take a standardized test such as the IELTS, TOEFL, GRE, SAT, TOEIC GMAT, at one stage or another in their life. Since a multitude of FCAs for the IELTS, TOEFL, GRE and SAT tests can be downloaded from Google Play and iPhone App Stores for free and used by the students to prepare for any of those standardized tests, therefore the current study aims to: (i) introduce EFL instructors at Saudi colleges of languages and translation, English departments and language centers to standardized test MFCAs, their features, different learning modes, and how words can be browsed, learnt and revised; (ii) show the advantages of using FCAs in standardized test preparation; (iii) show instructors how to search for standardized test FCAs; (iv) give some criteria for selecting standardized test FCAs; (v) instructional stages with standardized test FCAs; and (vi) describe the instructor's role.

This study is significant because flashcards are a well-established aid for learning basic information. In many schools and colleges around the world, they are commonly used in school or college courses which contain basic information that must be mastered before learning more difficult concepts or applications. Many students struggle when they have to learn technical terms, facts, or fundamental concepts. In some situations, students are even unsure about what they should study (Murray, Phelps & Altabbakh, 2018). The students can use a multitude of standardized test FCAs at their own convenience for free, instead of joining expensive TOEFL, IELTS or GRE test preparation courses.

## II. WHY USE MOBILE FLASHCARDS

The students can enrich their vocabulary using standardized test MFCAs especially those that are useful for TOEFL, IELTS, TOEIC, GRE, SAT or GMAT test preparation. Some MFCAs contain 4300+ flash cards that help in improving the students' vocabulary for GRE, GMAT or SAT tests. They target different proficiency levels: beginner, intermediate and advanced. They are part of spaced practice and repetition that help the students figure out what information they can remember easily and what needs additional effort and practice. They allow students to take advantage of short amounts of free time available to them during planned study sessions, during the day or week. FCAs are a good tool for improving vocabulary. They provide vocabulary meaning with examples. They are a very effective self-testing learning technique. They help the students learn faster and remember more in a shorter time by showing flashcards before forgetting them. They simplify the task of preparing for the vocabulary section of any competitive exams. Words that are important or difficult can be starred and revised on demand. Students can use their mobile flashcards anywhere, anytime and as many times as they need. MFCAs have customizable features, and the students can even create their own using some software and use them online or offline. FCAs use several learning modes: Study, Slide show, Matching, Memorize and Quiz. With the "Play" mode, in addition to look and read, look, and listen, listen, and write, English Listen, read, and see! The students can listen and learn, without having to look at the screen. Different FCAs use different testing modes: Multiple choice tests, Group choice test and Word choice test. Words can be browsed alphabetically, sequentially, or randomly. The students can create and share flashcards on the go using GRE tutor, free.

## III. SEARCHING FOR STANDARDIZED TEST MOBILE FLASHCARDS

The instructor may search the Google Play and/or Apple App Stores for MFCAs targeting a specific standardized test by selecting specific search terms such as "IELTS flashcards"; "SAT flashcards"; "TOEFL flashcards"; "GRE flashcards", "TOEFL vocabulary"; "GRE wordlist"; "SAT vocabulary flashcards"; "SAT vocabulary 1000"; "Standardized test apps"; "TOEFL Essential Words", enclosing the search terms in quotation marks, and using Boolean operators (&, or, not). It is important to add the name of the standardized test and "flashcards" in order to get more accurate results and to avoid getting apps in other languages. Once a search term is entered in the search box, Google Play will suggest additional search terms. The students can also locate, select, and suggest standardized test

FCAs depending on which test they are planning or preparing to take.

Examples of standardized test MFCAs are: GRE Vocabulary with WIDGET, High Frequency Words, StudyDroid Flashcards 2.0-Free, SAT Word A Day prep & widget, English grammar, Spanish English, Italian-English, Japanese-English, French-English, English Flashcards Free, English in Pictures, Flashcard-Idioms & Phrases-IP001 (a Vocabulary Flashcard application with 4000+ difficult English words); A great tool for GRE, TOEFL, IELTS, SAT, GMAT, and others; Competitive Exams aspirant; Daily English Quiz to check your basic English knowledge; Generals of Language Flashcard (a program for memorizing and learning words in any language).

#### **IV. CRITERIA FOR SELECTING MOBILE FLASHCARDS**

The standardized test MFCAs selected should be related to the standardized test the students are planning to take or preparing for. They should focus on a single test. Download several MFCAs that target a particular standardized test to accommodate the students' different proficiency levels, interests, needs and learning styles. MFCAs chosen should contain enough material and exercises for practice. Take into consideration the material difficulty level, degree of familiarity of the content, flashcard app complexity and content details. Look at the flashcard star ratings. Read the users' reviews and comments. Try several FCAs targeting a particular standardized test before deciding which ones are useful. Select those that free and easy to use.

#### **V. INSTRUCTIONAL STAGES WITH FLASHCARD APPS**

Instruction with FCAs goes through 3 stages. In the Pre-Task Phase, the instructor tells the students which standardized test MFCA/MFCAs they need to locate, download, and use. She shows the students how to search Google Play or the Apple App Store for MFCAs targeting a specific standardized test. She gives the students an idea about the flashcard App/Apps to be used. She posts sample standardized test MFCAs on any Learning Management System (LMS) such as Blackboard, Zoom or Microsoft Teams, a blog, an online discussion forum, Telegram, Twitter, Facebook, WhatsApp, and others. She states the objective of using the standardized test MFCAs, i.e., tells the students what they are going to do, study or practice. She tells them how they are going to use the standardized test MFCAs (individually, in pairs or in small groups). She gives clear, specific, and detailed instructions on how to use a flashcard app and how a particular task should be performed. She tells the students what is expected of

them, how many MFCAs they need to complete and sets a time limit or deadline for completing the assigned MFCA/MFCAs.

In the Task Phase, the students work with the FCAs on their smart phones, tablet, or laptop at home or in class. They work on FCAs individually, in pairs or small groups. They post queries, comments, and evaluations of the FCAs used on an LMS or a social media network. The instructor answers students' questions, provides guidance, and helps with difficulties.

In the Post Task Phase, the instructor gives feedback and comments on the students' performance. She encourages the students to use MFCAs and gives credit for using them. The students correct their classmates and make comments on each other's performance. They keep a log of the MFCAs they have completed with their evaluation of and comments on each.

#### **VI. THE INSTRUCTOR'S ROLE**

The instructor serves as a facilitator. She helps the students in locating and downloading relevant standardized test MFCAs that meet their needs and purposes. She matches the students' proficiency level with flashcard app's difficulty level. She encourages the students to fully engage in the flashcard app activities. She follows the students up to make sure they are making the best use of the FCAs. She gives extra credit for using MFCAs depending on how many they have completed. Standardized test MFCAs material may be included on tests to motivate the students to take the FCAs activities seriously.

#### **VII. RECOMMENDATIONS**

Instructors should exploit latest advancements in mobile technology to help EFL/ESL students develop their proficiency level and their standardized test taking skills in English. MFCAs allow the students to use their visual and auditory senses to learn difficult TOEFL, IELTS, SAT or GRE vocabulary. Instructors should always remember that mobile apps do not teach by themselves, and their use does not guarantee skill improvement and the automatic learning and recall of the standardized test vocabulary.

The students should be required to engage in, respond to, and be actively involved in the flashcard app activities. They should be supervised and receive feedback, guidance, and encouragement. They may use standardized test MFCAs of their choice that target the test under study. Those who do not own a smart phone may use test preparation websites on Google or YouTube test preparation videos on their laptop or desktop computer.

To make the best use of standardized test preparation MFCA's, Chien (2013) gave the following suggestions: integrating different elements of word knowledge with online word activity designs; direct instruction on specific technical terms; and students' awareness of word selection. To make vocabulary and content word learning more effective, the students can create their own flashcards using websites such as Quizlet (Chien, 2013). Students' localized needs should be used as guidelines for customizing vocabulary FCAs created by the students themselves or by their instructor (Ebadi, Saman & Bashiri, Saba, 2018).

Students' satisfaction, perceived difficulty of FCAs and level of control over flashcards apps affect students' performance. Mobile technologies such as tablets and smart phones might be especially advantageous. Students may be inclined to use different flashcard types (digital, ready-made, self-created, tablet, m-learning) based on their perceptions of difficulty level, ease of use, content coverage and so on. Therefore, standardized test flashcards should be available in a variety of formats (Sage, Krebs & Grove, 2019). The utilization of different standardized test flashcard app formats by Saudi college students majoring in English, translation, linguistics, or literature together with their preference and views on their usefulness are still open for further investigation by researchers in the future.

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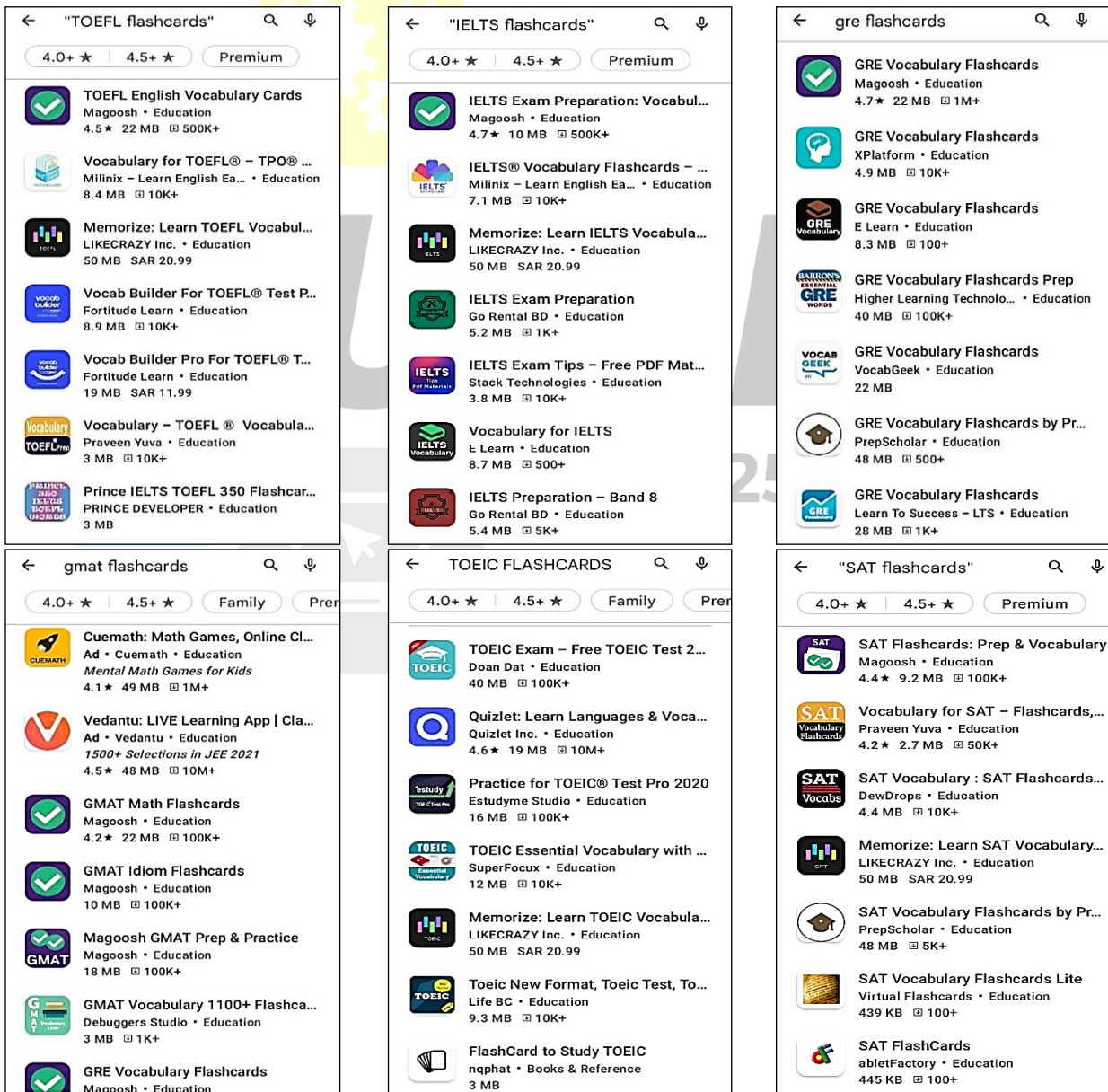
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APPENDIX



Images 1: Samples Flashcard Apps for the TOEFL, IELTS, GRE, GMAT, TOEIC and SAT Tests

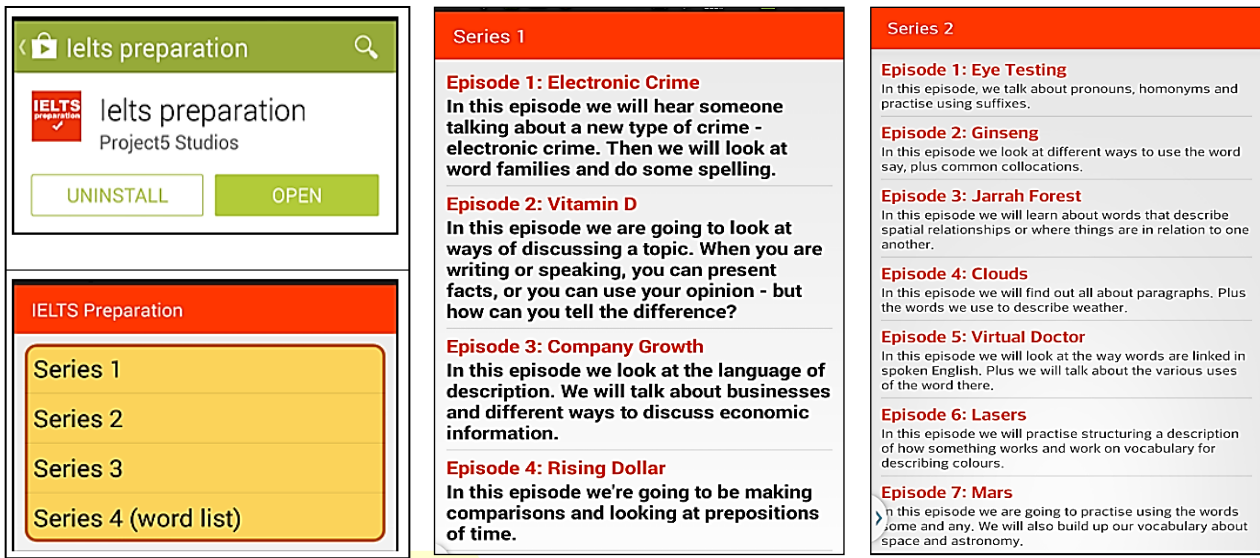


Image 2: Sample Vocabulary Flashcard App Content and Design for the IELTS Test

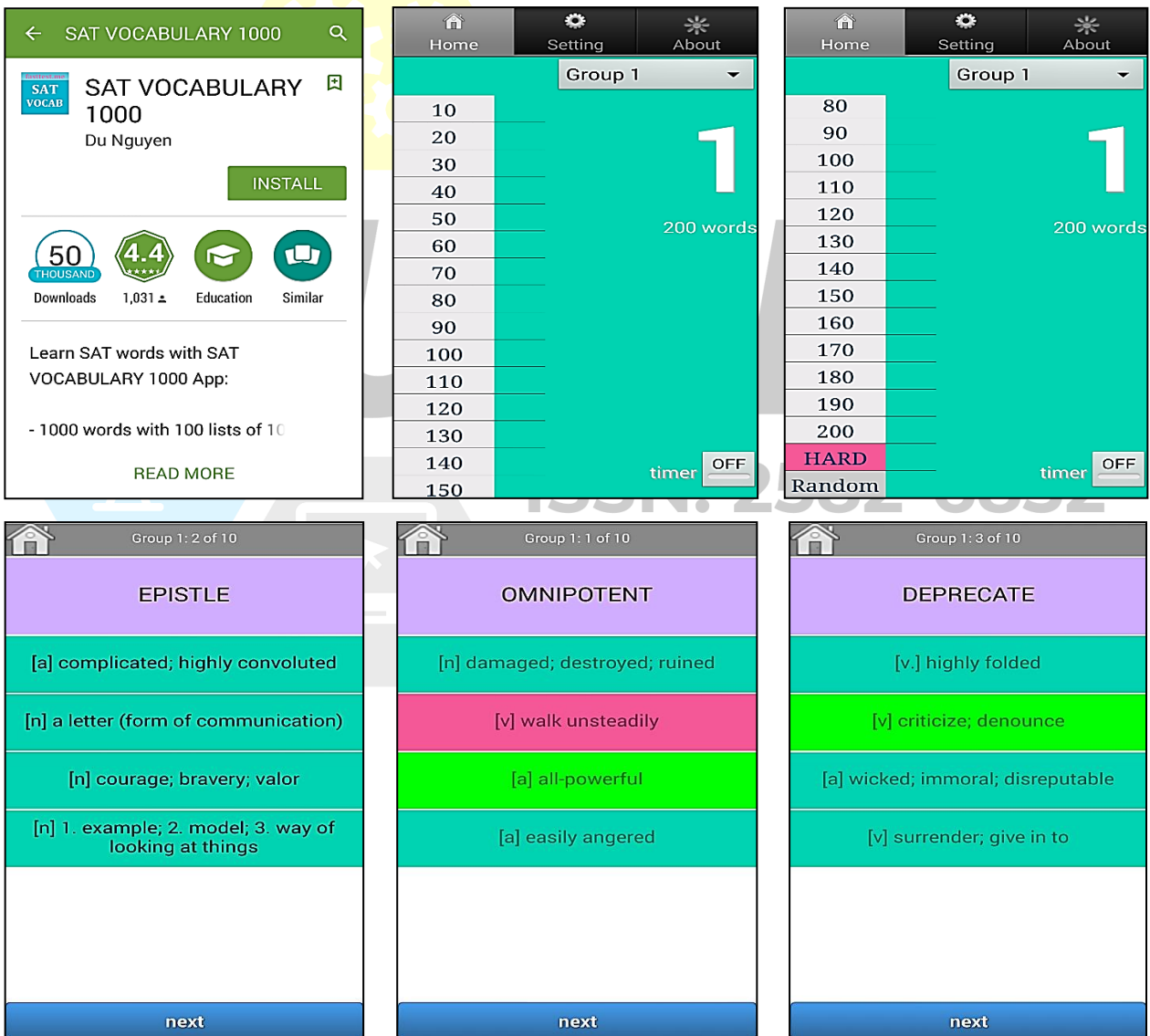


Image 3: Sample Vocabulary Flashcard App Content and Design for the SAT Test

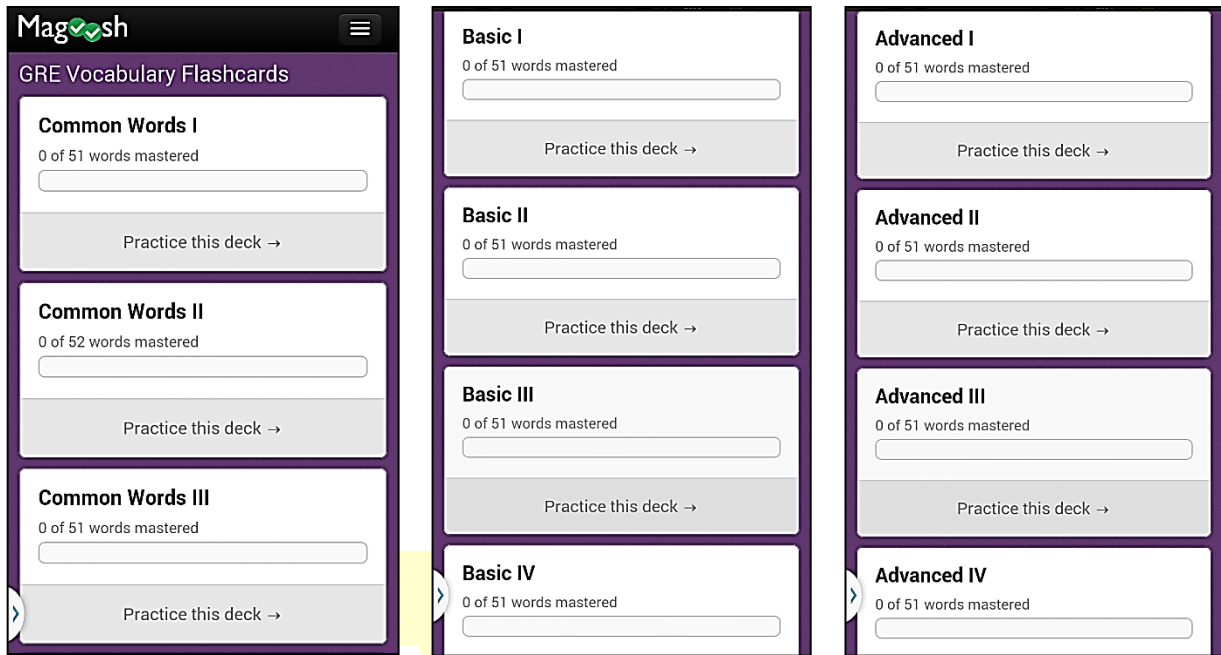


Image 4: Sample Vocabulary Flashcard App Content and Design for the GRE Test

