ROCKETBOOK'S INNOVATIVE INDEX CARDS

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Introduction/ Need for Innovation

Index cards have been used for the culmination and categorization of research since its inception in 1766 with the father of taxonomy and data organization, Carl Linnaeus. Since he started using one small slip of paper to organize a theme or idea, the world caught on and it is still a widely used practice today with research to back the index card's functionality to study, organize, and store information (Müller, 2009). While the index card is versatile one of its most common uses is for flashcards. Placing key terms on the front of the index card, with definitions written on the back of the index cards are a well-established educational aid for learning basic information. Kornell (2009) posits studying a large stack of flashcards is an effective study method because it chunks information into learnable sections. Index cards also provide an inexpensive alternative to computer organization and allow students the opportunity to manipulate information physically (Chardkoff, 1981). These cards are also valuable for reviewing previously learned material by writing down reflections and key concepts (Chardkoff, 1981). The versatility of index cards in the classroom for visual and kinesthetic learners makes them a tool widely used by students and teachers to increase testing scores (Golding, 2012; Sage, 2020). Moreover, utilizing flashcards as a learning technique encourages formative assessment, self-identification of misconception, and improves memory retention (Colbran et. Al., 2014).

Index cards are an old tool and only becoming more dated in the digital age. While some instructors and students prefer tactile tools like a traditional index card, teachers and students in this Covid era are driven by hybrid/online learning. Some, out of necessity, have made do with hybrid/online technologies while others have thrived with online learning because it allows more time to think and engage in written or blended written/typed content rather than just verbal comments (Daws, 2018). Rocketbook has decided to enhance the traditional index card to be managed digitally and be reusable. Rocketbook Cloud Cards are durable, erasable, and easy to store in digital packs in the Rocketbook app. The ability to reuse the same pack of 40 cards over multiple projects or years, ease of digital app storage, and can be shared with anyone via email through the app (Rocketbook, 2021).

How it Works

Rocketbook technology has made a durable pack of either 40 or 80 3" x 5" index cards, a microfiber cloth, and a Rocketbook pen. Utilizing the Rocketbook pen and microfiber cloth makes these reusable index cards erasable. Even though the pens are erasable, they dry quickly on the paper and rarely smear. One side of the cloud card is lined, and the other side is blank with the traditional Rocketbook grid lines. After using the Rocketbook pen on the cloud cards, the cards can be uploaded by students and teachers through the Rocketbook app. Users open the app, add a new scan, and are then able to upload as many cloud cards as they want by taking a picture of the front and back of the card. Card sets can then be shared via email or app login information. The Cloud Cards can then be erased with the microfiber cloth and stored in their box until the next time they are needed.

Results to Date/Implications

At the University of Kentucky Rocketbook cloud cards have been utilized as a formative assessment strategy in a teaching methods course. Students were each given a cloud card and a

Rocketbook pen. They were asked to rank a word bank of 10 strategies for effective teaching from most important to least. Students were able to quickly utilize the lined side of the cloud card to rank the strategies and turn them in to the teaching assistant. The teaching assistant was able to upload the cloud cards to the Rocketbook app where the professor will be able to access the responses throughout the semester, while the cards are erased and used for new projects. These responses were used to inform best teaching practices to highlight as the course continues. Students enjoyed using the familiar index card during class. They did not need to learn a new skill for this technology to be useful. Students also liked the ability to turn the cards into a digital set where information could be shared. The professor, teaching assistants, and students found this product easy to use and implement in the classroom and will be looking for other useful implementations in the future.

Future Plans/Advice to Other

Researchers advise buying a class set of Rocketbook pens to go with cloud cards. This would ensure each student can jot down ideas and concepts as they need to directly on the card. Researchers also noted that a picture within the cloud cards boarders can also be uploaded. If pens are not affordable as a class set, teachers could allow students to write on sticky notes to be placed on the index cards and uploaded to the Rocketbook app. Researchers felt the app set up and upload was at a medium difficulty level, only needing one instructional Youtube video for clarification. Other Rocketbook cloud card users have rated the cards on average 4.5/5 stars on Google, Amazon, and the Rocketbook site. The most common complaint is the need for decent handwriting for the app to read the writing and smudging or erasing from lefthanded scribes and scholars. However, even with messy handwriting the app can manage a transcription.

Advise for cloud cards use in agricultural education would be utilizing them in the high school classroom to prepare for various events and competitions within various FFA levels. Each student could write a flash card in class and by the end of class there would be a 25-35 card set, depending on the number of students in class, for any event or test a teacher asked students to write on the cards. These card sets could then be easily sent to student email accounts from the app. The same implementation could be used on key terms, tree/plant/animal identification, and key lecture notes. Teachers and students could also use these Cloud Cards as a digital introduction and reflection cards. Students could fill out a contact card with emergency numbers, allergies, and birthday information for easy digital access for the teacher. The teacher could easily find the card in the app, utilizing the written text search bar included in the app. Teachers could also reuse these cards at the end of every week to have students write out a reflection, upload their responses, and compare to the following weeks reflection in the app.

Cost/Resources Needed

These cards are sold in packs of 40 for $18 or 80 for $25. The pack of 40 includes the 40 black bordered index cards, a black pen, and a microfiber cloth. The set of 80 comes in as a set of 40 black bordered cards, 40 dark green bordered cards, a black pen, and a microfiber cloth. Additional pens and markers of various colors can also be purchased on the Rocketbook site. The application is free to download, use, and sign-up. 40 index cards and 28 additional pens will cost roughly $81. Cheaper alternatives to each student using their own pen include the sticky note strategy discussed in advise to others.

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