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## Use of Class Facebook Groups to Disseminate Evidence-Based Study Tips

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### Abstract

**Objective:** The purpose of this preliminary project was to determine the effectiveness of college administrators using Facebook® (FB) to disseminate information on study methods. **Innovation:** Eleven study tips in the format of riddles were posted in class FB groups as memes with links that lead to the riddle answers. Between 3.2-39.7% of students clicked on the links that accessed riddle answers. In a survey, 53.8% of respondents found the memes at least somewhat useful and 57.6% reported that they somewhat liked, liked, or liked them a lot. The average score on a study method knowledge assessment increased from 50% to 64%. **Critical Analysis:** The ratings of usefulness and likeability varied. However, students' knowledge about the topic increased. Administrators considering using FB to share academic advice should post sparingly, begin posting when groups are initially formed and post early during the academic term.

**Keywords:** Social media, Facebook, study skills, study techniques

**Disclosures:** None

### Introduction

As part of our professional development program, we assign students to a faculty advisor, who receives notification when advisees perform poorly in their courses. Many of our faculty noticed that students who experienced academic difficulty frequently reported relistening to lectures and rereading notes as a study method. We thought that our students might benefit from receiving tips on better study techniques and wondered if distributing them via the class Facebook® (FB) groups would help reach more students. At our College of Pharmacy, which offers a four-year program, the director of student affairs and admissions creates FB groups for each class and serves as a group's administrator. The students typically use their groups to post school-related announcements and ask questions about course-related activities. Facebook® has been shown to be an effective means for creating an informal learning environment to continue class discussions at several pharmacy schools.<sup>1-4</sup> However, there is little information in the literature about the effectiveness of FB for academic advising. One qualitative case study found that undergraduate students (N=6) had a positive attitude toward using social media for academic advisement and support resources.<sup>5</sup> Students in that study used FB for seeking academic help, academic advising and to get feedback on their academic feelings and activities. The purpose of this preliminary project was to evaluate the use of FB to distribute information about effective study techniques.

### The Innovation

#### Study Tips and Post Design

In an effort to be consistent with the style of a typical FB post, 12 study tips were formatted as riddles imbedded in a "meme" (Table 1), which contained a link to the answer. The answers to the riddles were posted on separate webpages to allow us to monitor the number of people who accessed the answers. Six study-related concepts were emphasized<sup>6</sup>:

1. Spacing out studying increases long-term retention
2. Interweaved practice is better than mass practice
3. Rereading text or notes (or relistening to lectures) causes a sense of familiarity that is confused with the ability to retrieve
4. Quizzing and testing identifies gaps in knowledge and improves retention
5. Summarizing content in your words improves retention (i.e. do not just highlight key passages)
6. Self-reflection improves retention and recall

Before posting memes, a group of physician assistant students reviewed the memes and provided feedback. The following suggestions were used to update the memes: use memes with cute babies and animals; posts depicting intrigue will make students want to click on the link for the answer; and create more male-oriented memes. The revised memes were posted to all four professional classes' FB pages.

#### Measured Effects

The number of FB *likes*, *shares*, and *comments* were monitored for each meme. The number of views was not monitored because this does not correlate with the number of people who read the meme. Google Analytics was used to monitor the

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number of users who accessed the links embedded in the FB posts. To determine the baseline knowledge of effective study methods, students (N=671) were emailed an online questionnaire via SurveyMonkey® (San Mateo, CA). After the posting all the memes, students completed another survey that collected data on the students' knowledge of effective study methods, use of class FB groups, and their opinions of the memes. Only those respondents who reported accessing the riddle answers completed the questions on study skills and their opinions (i.e. likability) of the FB memes. Students rated whether they found the information useful on the following scale: not at all, neutral, somewhat useful, useful, and very useful. They also rated the likeability of the memes on the following scale: not at all, neutral, somewhat, liked, and liked a lot. The University's Institutional Review Board approved this project.

#### *Data Analysis*

The primary outcome was the change in average knowledge assessment score. Demographic data were analyzed using descriptive statistical methods and comparisons made to determine baseline differences. Chi-square or likelihood ratio test were utilized for categorical data, and unpaired Student's T-test was used for comparing continuous data. Data analysis was conducted using IBM® Statistical Package for the Social Sciences (SPSS®) Version 22 (Armonk, New York).

#### *Findings*

Within the FB group, only one student "liked" one of the posts, and another student commented on a different post. Table 1 contains the riddle memes, answers, and percentage of the group who clicked on the link. Baseline survey respondents (N=83, 12.4%) were on average two years younger ( $P=0.03$ ) than those who responded to the second survey (N=53, 7.9%). Otherwise, there were no significant differences in race, class year, or gender. There was a significant change in respondents' knowledge of study skills from pre- to post-test (pre-test average of  $50 \pm 19\%$  compared to a post-test average of  $64 \pm 20\%$ ,  $p < 0.001$ ). After the posting period, significantly more respondents (64% vs 41%,  $P=0.01$ ) knew that relistening to lectures was not an effective study technique. For all other study techniques, there were no significant changes from baseline to post-intervention (Figure 1).

Approximately 77% (N=41) of the post-intervention respondents accessed their class FB group at least once per day. About 92% (N=49) reported seeing the study tip memes on the pages, and 49% (N=26) reported clicking on the links to the riddle answers. Only those students (26 of 671 total students, 3.9%) who reported clicking on the link to the riddles were allowed to answer questions about the study tips. "Not at all" was the most commonly (30.8%) reported response to the question of whether the study tips were useful. However, 53.8% of the respondents stated the study tips were useful in some way (somewhat useful, useful, or very useful). When

asked if they liked receiving study tips via FB, similar results were seen with 30.8% of respondents indicating "not at all", and 57.6% reporting they were somewhat liked, liked, or liked a lot. In addition, there were three positive comments and five negative comments. Three students stated that the posted looked like "spam" (i.e. advertisement) and two students suggested that this information would have been more helpful earlier in the curriculum.

#### **Critical Analysis**

Surprisingly, lack of knowledge about effective study techniques was detected. Student respondents have completed at least four years of college-level education, and several of the students' comments indicated that they felt they knew this information. However, the knowledge assessment results indicate that approximately 30-60% of the students did not know the concepts assessed. Similar to our findings, lack of knowledge about appropriate study techniques has been shown in other student populations.<sup>7</sup> Future work may need to examine methods for re-igniting student enthusiasm for learning more about studying. The perceived usefulness may be linked to the false assumption that they already know the information. Meaning the students may have felt the memes were not useful because they thought they already knew the information. However, the results of the assessment suggest otherwise.

The posts in class FB groups increased the study skill knowledge score by 14%. This change is despite the fact that less than 50% of the respondents reported accessing the links. Perhaps, the students discussed the content of the memes outside of the FB environment. Bowman and Akcaoglu found that students who were group members but did not post comments in a FB class group where course content was discussed benefitted as much as those students who posted comments.<sup>6</sup>

According to the results of the survey, students' opinions on the memes varied. About half of post-interventions respondents (46%) did not click on any of the links, and only one student choose to flag one of the memes with "like" within FB. Among students who clicked on the post, 53.8% found the memes at least somewhat useful and 57.6% reported that they somewhat liked, liked, or liked them a lot. Other researchers have also found that students will engage in social media for learning, especially if they think it will directly help them prepare for tests or other assessment activities.<sup>8</sup> Others may wish to use social media for didactic content, posting practice questions or course content.

#### **Next Steps**

Although we looked specifically at study skills, any type of use of FB for professional development or academic advising might encounter these issues. College advisors should post items sparingly especially if the groups were initially set up for

student use only. Further research should test posts that look more like an educational tool and less like “memes” to determine if a different response is elicited since students removed one post and three students commented that the posts looked like “spam.” Also, faculty should test the posting of academic advice in the first year of pharmacy school before group norms are established. Finally, advisors should post items at the beginning of the year and early in students’ matriculation to allow students the time to implement suggestions.

### Summary

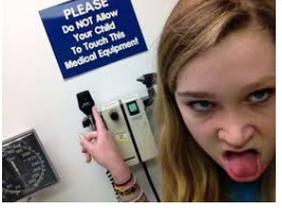
We analyzed the impact of posting memes about study techniques in a class FB group. The ratings of usefulness and likeability varied. However, students’ knowledge about the topic increased. Administrators considering using FB to share academic advice should post sparingly, begin posting when groups are initially formed and post early during the academic term.

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Table 1: Riddle Posts and Results

Picture Associated with the Riddle and Answer	Riddle	Riddle Answer	% of Group Accessing Answer
1. Study skill on <b>retrieval of information</b> . (Posted on Tuesday, March 17 <sup>th</sup> )			
	What does this have to do with pharmacy student learning?	The more you retrieve or attempt to retrieve information, the better it is stored in your long-term memory.	0%  This post was removed by students.
2. Study skill on <b>rereading test or notes</b> . (Posted on Monday, March 23 <sup>rd</sup> )			
	How is this like listening to lectures again and again to study	They are both a waste of time.  Listening to your lectures several times or rereading your notes is not the most efficient way to study. Instead, make flashcards and practice answering questions to assess learning. These methods practice recall, which improves future recall.	13.0%  One study posted the answer.
3. Study skill on <b>self-reflection</b> . (Posted on Wednesday, March 25 <sup>th</sup> )			
	Why should pharmacy students do this?	Reflecting on what you learned improves long-term retention.	16.1%  One study "liked this post."
4. Study skill on <b>re-reading text or notes</b> . (Posted on Tuesday, March 31 <sup>st</sup> )			
	How is this like studying by rereading again and again?	Both are a WASTE of your time.  Simply rereading your notes or textbook only increases your familiarity with the information. It doesn't do a very good job at helping you be able to recall information. Better to quiz, make flashcards, and assess recalling information.	7.4%
5. Study skill on <b>highlighting reading materials or notes</b> . (Posted on Monday, April 6 <sup>th</sup> )			
	Bad highlights and learning?	Highlighting is not as effective for learning.  Better to take notes in margins and summarize key points in your own words.	3.2%  Post was blocked by spam filter.

6. Study skill on <b>retrieval of information</b> . (Posted on Tuesday, April 14 <sup>th</sup> )			
	What does this have to do with learning?	Retrieve.  The more you retrieve or attempt to retrieve information the better it is stored in your long-term memory.	36.4%
7. Study skill on <b>quizzing and testing</b> . (Posted on Wednesday, April 15 <sup>th</sup> )			
	What does this out of control <i>tween</i> have to do with pharmacy student study skills?	She's testing her boundaries.  Testing yourself as you study helps identify knowledge gaps and increases long-term memory. Flash cards are effective. Make practice test questions or the lecture learning objectives.	17.1%
8. Study skill on <b>spacing out studying</b> . (Posted on Thursday, April 16 <sup>th</sup> )			
	How does this relate to studying?	Studying in different places, as long as they are relatively quiet, improves long-term retention.	14.5%
9. Study skill on <b>interweaved practice</b> . (Posted on Tuesday, April 21 <sup>st</sup> )			
	Why do this when studying many subjects for year-end exams?	Mix up your studying.  Alternate your studying of different subjects rather than studying one subject only once for a long period of time.	39.7%
10. Study skill on <b>quizzing and testing</b> . (Post on Wednesday, April 22 <sup>nd</sup> )			
	Why should your study habits have in common with this driver?	Testing boundaries.  Testing yourself when you study helps you identify what you don't know and also improves future recall.	15.2%
11. Study skill on <b>spacing out studying</b> . (Posted on Thursday, April 23 <sup>rd</sup> )			
	How does this related to better grades for pharmacy students?	Studies show that spreading out your studying improves long-term retention.  Study some each day between exam periods.	9.5%

**Figure 1: Knowledge of Evidence-Based Study Strategies**

