

THE MOST EFFECTIVE STUDY METHODS FOR HIGH-STAKES TESTS:

THE CPA EXAM

by

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A Senior Honors Project Presented to the

Honors College

East Carolina University

In Partial Fulfillment of the

Requirements for

Graduation with Honors

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December, 2019

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Abstract

The Certified Public Accountant (CPA) exam is a high-stakes certification test that many accountants take. According to American Institute of Certified Public Accountants, it has a pass rate of 50%, lower than many other professional exams. To combat this low pass rate, people need to know the most effective way to study, whether it is a directed study program, CPA review course, independent verses group study, practice problems, notes, or flashcards. I gave a survey to 60 CPA exam takers to determine which methods they used. I hypothesized that a directed study program would be the most effective method because it holds people accountable. However, based on preliminary data collected from 60 participant, the most effective methods were CPA review course and practice problems. Although this research focuses on the CPA exam, it can help all high-stakes test takers improve their scores.

Background

Tests have been used widely in America due to their ability to evaluate one's knowledge and skills effectively. Standardized tests have been used to decide college acceptances and job opportunities. Tests used in the lower education system are typically low-stakes tests since the results do not dramatically affect the future prospects of the test taker. (Sackett, Borneman, & Connelly, 2008). Wise and DeMars (2005) conducted a study showing that tests takers do not give their best when taking low-stakes tests which can lead to an inaccurate indicator of capability. The test results do not capture the students' true knowledge and skills. To remedy this issue, educators raised the stakes to provide an incentive. Steedle and Grochowalski (2017) performed a study comparing test scores of high- and low-stakes tests. Results showed that students do better on high-stakes tests than low-stakes tests. In some cases, pass rates for high-stakes tests was 30% greater than pass rates for low-stakes tests. High-stakes tests are better

indicators of their knowledge because there is an incentive to do their best. Stobart and Eggen (2012) define high-stakes tests as exams that can have occupational or educational consequences for the test taker. In other words, the tests have consequences for future prospects or lifestyles of the exam takers if they pass or fail. Some examples of high-stakes tests are driver's license test, college entrance exam, or professional license or certification. High-stakes tests create a standard for everyone to follow. They hold people accountable and protect the public from others who fail to meet that standard. For instance, only people who pass the United States Medical Licensing Exam can practice medicine. I will be focusing on professional exams, particularly the Certified Public Accountant (CPA) exam.

Passing the CPA exam is required of individuals wanting to become Certified Public Accountants. Eligibility for the exam varies based on the state, but test takers generally need at least a bachelor's degree and a total of 150 credits. The exam is offered quarterly for a two-month span. There are four parts to the CPA exam: Auditing and Attestation (AUD), Business Environment and Concepts (BEC), Financial Accounting and Reporting (FAR), and Regulation (REG). Each section takes about four hours to complete and can be taken on four different days. In order to pass the CPA exam, the test takers need at least a 75% on each of the four parts (AICPA, 2017a). Failing one of the sections means failing the exam. Because professional exams are critical in ensuring competency, these exams are often grueling and difficult to pass. The CPA exam has one of the lowest pass rates. According to the American Institute of Certified Public Accountants, the organization that administers and grades the CPA exam, approximately 48.89% passed the AUD section in 2017. The BEC pass rate was 52.44%, FAR pass rate was 45.15%, and REG pass rate was 47.66% (AICPA, 2017b). Overall, less than 50% of the people pass the CPA exam.

I am interested in finding out why the pass rate is so low and learning how to increase the pass rate. Others have been interested in the effects of test preparation on exam scores. Similar to the CPA exam, the Bar exam is a high-stakes test for aspiring lawyers. Kaufman et. all (2007) studied the effects of psychological variables such as worry, test anxiety, personality, and time management on Bar exam scores. They also studied education and demographic variables. They found a positive correlation between a passing score and higher LGPAs, class rank, and LSAT scores. Practice tests were also positively related to performance on the Bar exam. Additionally, Xie (2013) compared test preparation and scores on the College English Test Band 4 (CETB4). The results showed that test prep improved test scores, especially drilling and continual practice. A few studies researched different factors of the CPA exam pass rate. Rau, Nagle, and Menk (2019) studied the effects of faculty CPA licensure and how students satisfied the 150-hour requirement. They discovered that students who reached the extra 30 hours by finishing a graduate degree did significantly better on the CPA exam than those who took extra undergraduate electives. They also found a positive relationship between exam performance and the CPA credential of their accounting program faculty. Bunker and Harris (2014) conducted a study that compared CPA exam scores to type of schooling: online degree program, accredited business school, or non-accredited business school. They concluded that individuals who attended an accredited business program tend to do better on the CPA exam compared to individuals who took an online program. Additionally, Howell and Heshizer (2008) studied the effects of GPA, SAT scores, graduate degree, AACSB accreditation, and classroom or self-study CPA review program on CPA exam pass attempts. The results showed that student with higher GPA, SAT scores, and AACSB accreditation tended to pass the CPA exam on fewer attempts compared to people with lower scores and a non-accredited program. Students who only had

their bachelor's degree took more attempts to pass the exam compared to those who had a graduate degree. Finally, they concluded that a self-study review course was not as effective as a classroom review course. Kollar and Williams (2017) also saw the importance of classroom review courses. They designed a pilot program that integrated the Surgent CPA Review course into auditing class materials. The program included the use of a textbook, homework, classroom simulations, and CPA exam questions and simulations from Surgent CPA Review material. There was a 25% increase in CPA exam pass rate for the auditing section. This form of teaching is called "washback." Alderson and Wall (1993) define washback as the influence of a test on the way classes are taught and how the material is learned. Test preparation and study methods are overt forms of washback.

Purpose and Explanation of the Project

My research answers the question, "Which study method or combination of study methods is the most effective way to prepare for the CPA exam?" The types of study methods I focus on are individual or group study, CPA review course, flashcards, notes, practice problems, and a directed study program. A directed study program is any type of organized review course led by a professor or other professional. Messick (1982) calls it "coaching." There are two ways "coaching" or tutoring can help: improve the test taker's abilities and understanding of the test material or reduce their anxiety by familiarizing them with the test format and the types of questions. I hypothesized that people who participate in a directed study program will do better on the CPA exam compared to the other study methods. I studied this by having CPA exam takers fill out a survey about their study methods and exam results.¹ See Appendix A for the full survey. Answering these questions will help individuals as they prepare to take the CPA exam.

¹ Received IRB approval for study on 3/3/2019.

The results of this research are also helpful for people who are preparing for other high-stakes professional exams.

Results

We received 60 survey responses so far. Preliminary data shows some interesting findings. Our sample includes people who went to 25 different colleges and took the exam in North Carolina, South Carolina, Virginia, Maryland, Pennsylvania, Mississippi, or California. 55% of the participants were male and 45% were female. The average number of hours spent studying for AUD, BEC, FAR, and REG was 399, 108, 383, and 462 hours respectively. The average GPA was a 3.54.

Exhibit 1 shows descriptive statistics regarding the number of days participants studied for each section of the exam. It shows the average, minimum, maximum, and median number of days spent studying for each section. One day is equivalent to 8 hours. FAR has the highest average with approximately 46 days followed by REG with 41 days. This may indicate that FAR and REG are harder sections.

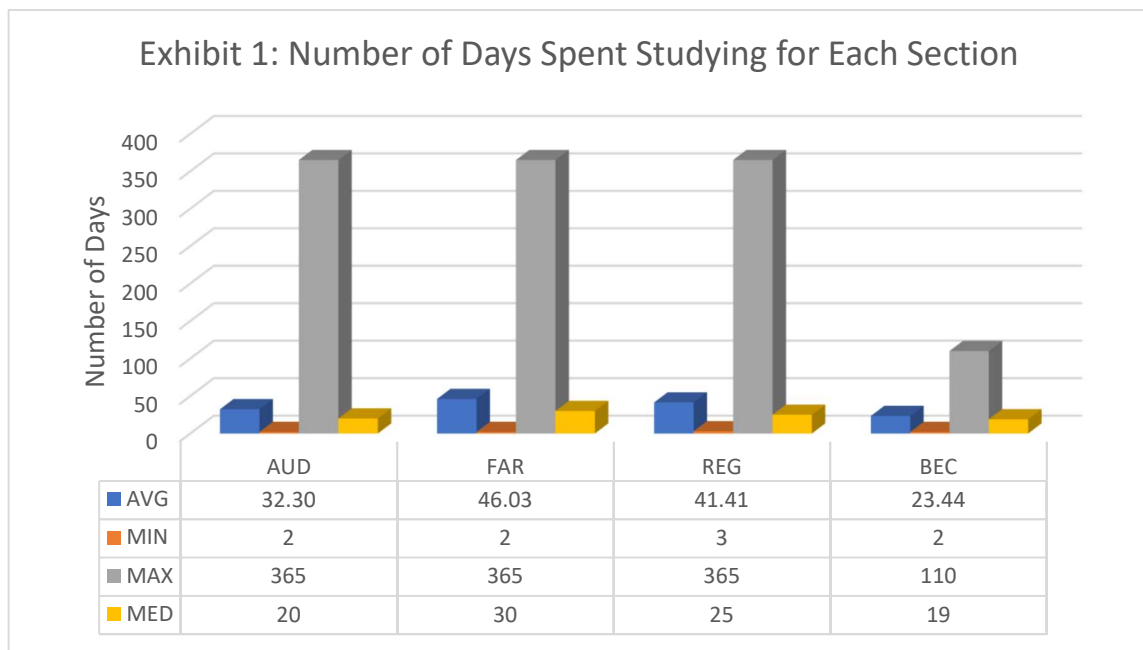


Exhibit 2 shows the percent of people who used each study method. All 60 participants used a CPA review course and practice problems. Only 27% of the participants used a directed study program. This was not too surprising because directed study programs have high costs. Participants ranked which method they thought was the most effective. On average, the participants found a CPA review course and practice problems as the most effective study methods. I was surprised that even the participants who used a directed study program did not find it as helpful as a self-guided review course. One participant commented that the online software review course was more effective because it allowed the participant to replay the lectures and have continual access to all the information.

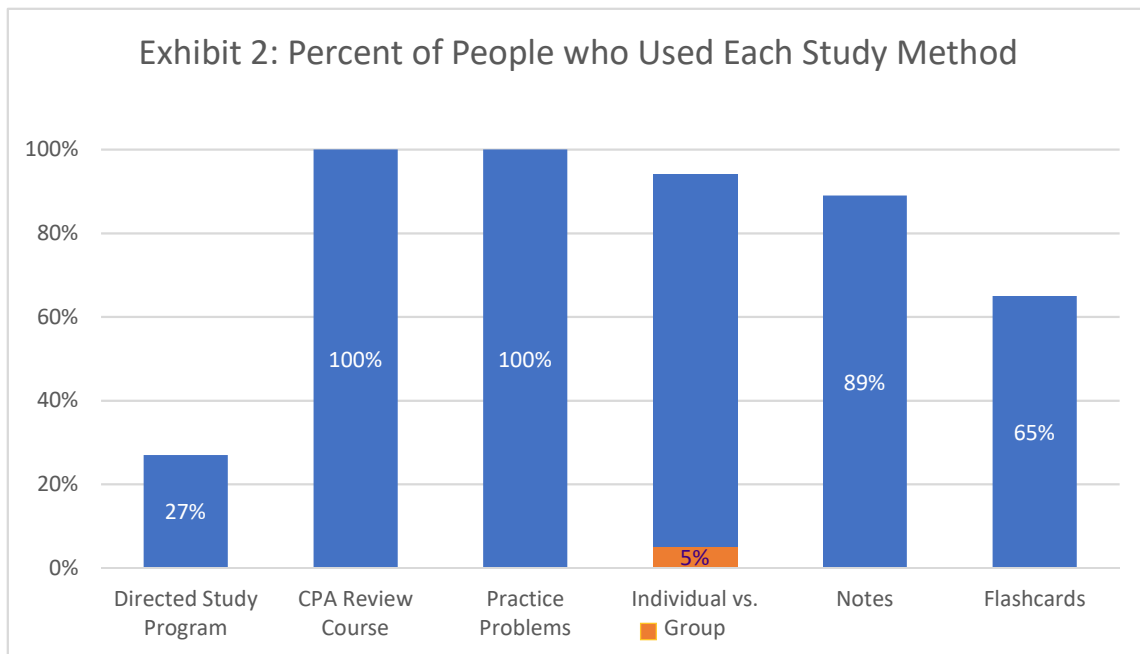
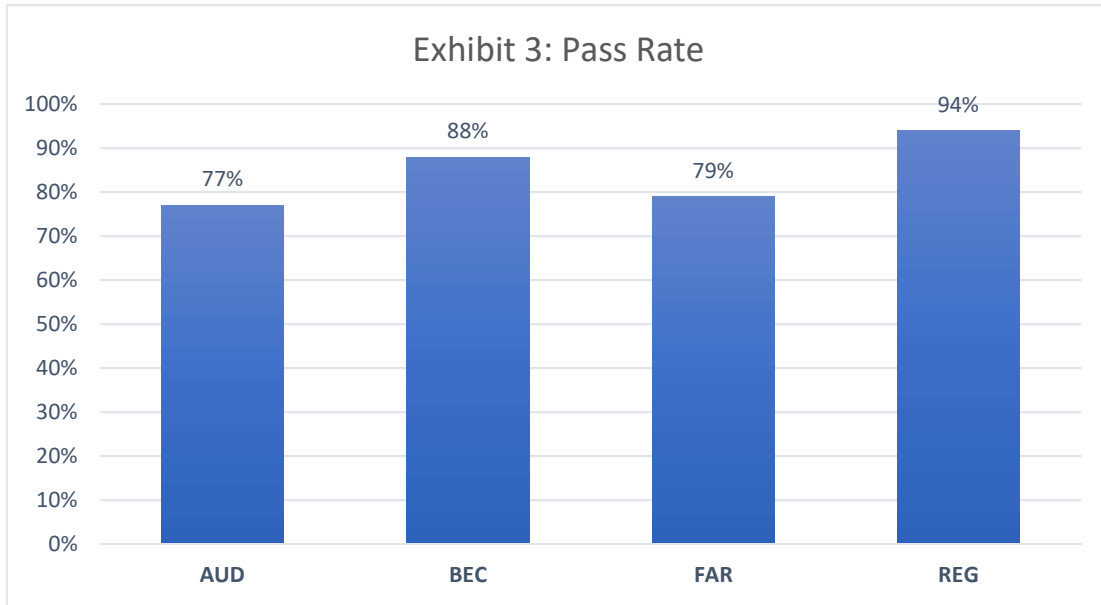


Exhibit 3 shows the pass rate for each section. Only 58% of the participants shared their score. FAR has the lowest pass rate of 79%. The overall CPA exam pass rate was 84%, a rate higher than the national average. This could be due to a response bias because people who pass the exam are more likely to complete a survey. However, this also provides insightful information about what worked for those who were successful.



We will continue to collect additional information and expand these results.

Conclusion

This research is meaningful to people all over America who are planning to take the CPA exam. Results from this study will show the best way to prepare for the exam and hopefully increase the CPA exam pass rate. Although this research is specific to the CPA exam, it can also be used for other high-stakes tests, such as the BAR exam, MCAT, and GRE. The survey could be easily modified to conduct another study about any of the high-stakes tests. It would be interesting to research if some study methods are better for certain professional exams compared to other study methods.

Research about the CPA exam could also help students and teachers all over the world. Since this study is about finding the best way people learn and retain information based on the quantitative CPA score number, teachers can use this research to help them prepare review sessions or encourage students to study a certain way. This research could help people with any written test or problem solving, including elementary and high school students.

Appendix A: Survey Instrument

CPA Survey

Dear Participant,

The purpose of this survey is to help other students find the best way to prepare for the CPA exam, and potentially for other high-states professional tests.

You are being invited to take part in this research because as someone that has recently taken the CPA Exam you are uniquely positioned to answer these questions. The decision to take part in this research is yours to make. If you volunteer to take part in this research, you will be one of about 400 individuals to do so.

Who are the Principal Investigators?

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Are there reasons I should not take part in this research?

You should not volunteer for this research if you are under 18 years of age.

Where is the research going to take place and how long will it last?

The research will be completed on-line by individuals who agree to participate in the study. Completing the on-line questions is expected to take 20-35 minutes.

What will I be asked to do?

You will be asked to respond to several questions that concern: (a) your background, (b) your experience studying for the CPA exam, and (c) any concluding comments. You should reflect on your experience preparing for the CPA Exam when responding to the questions.

What risks do I incur if I take part in the research?

We don't know of any risks (the chance of harm) or personal benefits that will accrue to you

from participating in this research.

Will I be paid for taking part in this research?

No. At the end of the study, you will have the opportunity to provide your email address to enter a raffle to win one of four \$25 Amazon gift cards.

Will it cost me to take part in this research?

It will not cost you any money to be part of the research.

Who will know that I took part in this research and learn personal information about me?

Although the responses of participants in the study will be aggregated and individual responses will not be attributed to any individual. We will not know the names of individuals that participate in the study unless you choose to enter the raffle. If you provide your email address, it will not be associated with your responses to the survey or disclosed.

How will you keep the information you collect about me secure? How long will you keep it?

Your responses to the questions will be retained electronically on a secure laptop computer. Personal identifying information will not be associated with your responses. Responses will be retained for approximately seven years.

What if I decide I don't want to continue in this research?

You may choose not to answer any or all questions, and you may stop at any time. There is no penalty for not taking part in this research study.

Who should I contact if I have questions?

We are available to answer any questions concerning this research now or in the future. Our contact information is included at the top of this consent form.

If you have questions about your rights as someone taking part in research, you may contact the ECU Office of Research Integrity & Compliance (ORIC) at phone number 252-744-2914 (days, 8:00 am-5:00 pm).

I have decided I want to take part in this research. What should I do now?

By advancing to the survey questions, you are agreeing:

- I have read the above information.
- I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.

Sincerely,

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Under the guidance of:

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If you have taken the Auditing Section (AUD) of the CPA Exam, what was the approximate number of days you spent preparing? For this purpose, you should consider a day to be the equivalent of 8 hours.

If you have taken the Financial Accounting and Reporting Section (FAR) of the CPA Exam, what was the approximate number of days you spent preparing? For this purpose, you should consider a day to be the equivalent of 8 hours.

If you have taken the Regulation Section (REG) of the CPA Exam, what was the approximate number of days you spent preparing? For this purpose, you should consider a day to be the equivalent of 8 hours.

If you have taken the Business Environment and Concepts Section (BEC) of the CPA Exam, what was the approximate number of days you spent preparing? For this purpose, you should consider a day to be the equivalent of 8 hours.

Which part of the CPA exam did you take most recently?

- AUD
 - BEC
 - FAR
 - REG
-

Please complete the remainder of the survey thinking only about the section of the CPA exam you selected in the previous question.

When did you take this part of the CPA exam?

- Less than 6 months ago
 - 6-12 months ago
 - 1-2 years ago
 - More than 2 years ago
-

State where you took the exam:

Page Break

A directed study program is any type of organized review course, including tutoring, that is led by a professor or other professional. This does not include CPA exam review courses such as Becker, Gleim, etc. Please rate how often you used a directed study program.

1	<input type="radio"/> Never	<input type="radio"/> Rarely	<input type="radio"/> Sometimes	<input type="radio"/> Often	<input type="radio"/> Always
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What topics did you study in the directed study program? (For example: Non-profit accounting; corporate governance frameworks; cost accounting; etc.) This could include general topics and/or specific lecture topics.

How did you pay for the directed study program?

Free

Self paid

Firm paid

Other _____



How many weeks did you attend the directed study program?



Please enter what percent (out of 100) of the time you spent studying individually or in a group.

Individual : _____

Group : _____

Total : _____



Approximately how many hours did you study individually?



Approximately how many hours did you study in a group?

Which method of studying did you find most effective?

- Individual
 - Group
 - Both equally effective
-

Please rate how often you used a CPA review course.

1	<input type="radio"/> Never	<input type="radio"/> Rarely	<input type="radio"/> Sometimes	<input type="radio"/> Often	<input type="radio"/> Always
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Which CPA review course did you use?

- Becker
 - ExamMatrix
 - Gleim
 - Roger
 - Wiley
 - Yaeger
 - Other (please specify)
-
- N/A - didn't use CPA review course

How did you pay for the CPA review course?

- Free
- Self paid
- Firm paid
- Other _____
- N/A - did not use a CPA review course



Approximately how many hours did you study using the CPA review course?

Page Break _____

Please rate how often you used flashcards

1	<input type="radio"/> Never	<input type="radio"/> Rarely	<input type="radio"/> Sometimes	<input type="radio"/> Often	<input type="radio"/> Always
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How did you pay for the flashcards?

- Self-made
- Self paid
- Firm paid
- Other _____
- N/A - did not use flashcards



Approximately how many hours did you study using flashcards?

Please rate how often you studied using notes.

1	<input type="radio"/> Never	<input type="radio"/> Rarely	<input type="radio"/> Sometimes	<input type="radio"/> Often	<input type="radio"/> Always
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What kind of notes did you use?

- Personal
 - College course
 - Other (please specify)
-

N/A - did not use notes



Approximately how many hours did you study from notes?

Page Break

Please rate how often you studied by practicing problems.

1	<input type="radio"/> Never	<input type="radio"/> Rarely	<input type="radio"/> Sometimes	<input type="radio"/> Often	<input type="radio"/> Always
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Approximately how many hours did you study by practicing problems?

Where did you get your practice problems from? (e.g. - CPA review course, textbook, online)

Are there any other study methods you used to prepare for the exam (e.g. - phone app)? If yes, please specify. If no, write N/A.

Please rate how often you used other study methods listed above.

1	<input type="radio"/> Never	<input type="radio"/> Rarely	<input type="radio"/> Sometimes	<input type="radio"/> Often	<input type="radio"/> Always
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Please rank how effective you thought these study methods were in preparing for the exam with the first choice as most effective.

- _____ Flashcards
- _____ Directed Study Program
- _____ CPA Review Course
- _____ Practice Problems
- _____ Notes
- _____ Other Study methods



What is the total number of hours you spent studying for this section of the exam?

Page Break

What is your college bachelor's GPA (out of 4.0)?

What is the highest level of education you have completed?

- Bachelors
- Masters
- PhD

If you are currently enrolled in a university, what degree are you pursuing?

- Bachelors
- Masters
- PhD
- N/A - not currently enrolled

What institution(s) did you get your degree(s)?

Do you have any accounting work experience, including internships? If so, where did you work and what were your responsibilities?

Do you have a job offer?

- Yes - Big Four
 - Yes - non Big Four international accounting firm
 - Yes - national accounting firm
 - Yes - regional accounting firm
 - Yes - local accounting firm
 - No job offer
 - No - currently working
-



How many times have you taken each part of the exam?

- AUD _____
 - BEC _____
 - FAR _____
 - REG _____
-

Gender:

- Male
 - Female
-



Age:

Do you have any additional comments regarding your CPA exam studying and preparation methods that you would like to share with us?

End of Block: Default Question Block

Start of Block: Block 1

If you received your score on this part of the exam and are willing to share that information, please enter your score below.

If you have not received your score, please rate on a scale of 1-5 how confident you are that you passed with 1 being least confident and 5 being most confident that you passed.

1 2 3 3 4 5

If you have taken more than one part of the exam, are you willing to answer additional questions related to another part of the exam?

- Yes
 - No
 - N/A - I have only taken one part of the exam
-

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