# Retrieval Quizzes and Exam Performance - Expanded Presentation Script

1. **Title / Opening**
   Good afternoon, everyone. Today I will present a study about the use of retrieval quizzes and how this strategy can influence exam performance in university students. This topic is important because many teachers want simple classroom method which can improve learning without making very big burden for students or instructors.

In this presentation, I will explain the background of retrieval practice, the research purpose, the method of the study, and the main results. Then I will talk about what these findings maybe mean for actual teaching and also some limitations of the study.

1. **Background of the Study**
   In many classrooms, students usually review by re-reading textbook, highlighting, or watching the material again. But these methods can feel effective more than they are actually effective. Students sometimes think they know the content, but later on the exam they cannot really remember it well.

Retrieval practice is different because students must actively bring back the information from memory. Because of this effortful remembering, the memory can become more strong and more easy to access later. So this study is focusing on whether retrieval quizzes can support this process in real class setting.

1. **Literature Review**
   Previous studies already talked about the testing effect. This effect means that testing is not only for measuring learning, but it can also create learning by itself. When students try to retrieve knowledge, they can strengthen memory and find gap in understanding.

However, many earlier studies were done in laboratory style setting or with limited task. Because of that, some teachers may question if the same effect will happen in normal university course with regular students, regular pressure, and regular exam schedule.

1. **Research Question and Hypothesis**
   The main research question of this study was simple: do students who take retrieval quizzes perform better on unit exam than students who do standard review activity? Also, the study wanted to see if this effect is different for students with lower previous achievement.

The hypothesis was that retrieval-practice group would show higher exam score, lower failure rate, and maybe higher confidence. The researcher also expected that lower-achievement students may receive bigger benefit, because they often need more structured support for remembering the course contents.

1. **Participants and Context**
   This study was conducted with students in an introductory Biology course. In total, there were 214 students, and the intervention lasted for 8 weeks. This is meaningful because the study was not extremely short, so the results are based on repeated classroom activity, not just one-time event.

The students were assigned to two conditions. One condition was retrieval practice, and the other condition was standard review. Both groups were in the same general course context, but the review method during the unit was different.

1. **Procedure**
   Students in the retrieval-practice condition completed quizzes which asked them to recall key course information. These quizzes were used as learning activity, not only as grading tool. Students had to bring information from memory, and this was expected to make learning deeper.

In the standard review condition, students reviewed the same or similar material in more passive way. For example, they could look back at information and study it again, but they were not pushed as much to actively produce the answer from memory.

1. **Measures**
   The main outcome was the unit exam score. This was the most direct way to see if retrieval quizzes had influence on academic performance. The study also checked failure rate, because this can show more practical impact in course success.

Another measure was confidence score from an end-of-unit survey, using a 5-point scale. In addition, the researcher separately analyzed the low-GPA subgroup, which was defined as students who were below the cohort median prior GPA.

1. **Main Result: Exam Score**
   Now I will move to the main result. Students in the retrieval-practice condition showed better performance on the unit exam than students in the standard review condition. The mean score for retrieval practice was 78.4, while the mean score for standard review was 71.2.

This means there was a difference of 7.2 points, and the p-value was 0.004. So, this difference was statistically significant. In simple words, retrieval quizzes were associated with clearly better exam performance in this study.

1. **Additional Result: Failure Rate and Confidence**
   The retrieval-practice group also showed lower course failure rate. In that group, the failure rate was 9 percent, while in the standard review group it was 18 percent. This is quite notable because it means the number of students not passing the course was reduced by around half.

Confidence score also was slightly higher in the retrieval-practice group. The score was 3.9, compared with 3.5 in the standard review group. This result is not very huge, but it suggests students maybe also felt more ready and more secure about their learning.

1. **Subgroup Result**
   One of the more interesting findings was from the below-median GPA subgroup. In this group, students in retrieval-practice condition scored 74.1 on the exam, while students in standard review scored 64.3. So the difference was 9.8 points.

This was the strongest effect reported in the study, and the p-value was 0.002. Because of this, the study suggests that retrieval quizzes may be especially helpful for students who are already at risk of lower academic performance.

1. **Discussion and Interpretation**
   These findings support the idea that retrieval practice is not only theory from psychology, but also useful teaching strategy in real classroom. When students repeatedly practice remembering, they may store the material more strongly and prepare better for examination.

Also, the reduction in failure rate is important because teachers usually care not only about average score, but also about helping more students succeed. The subgroup result is especially meaningful because it suggests retrieval quizzes can support students who may struggle more than others.

1. **Limitations and Conclusion**
   At the same time, this study has some limitations. It was done in one subject area, which was introductory Biology, and in one course context. Because of that, we should be careful to generalize too much to all subjects or all student populations. Also, confidence was self-reported, so it is somewhat subjective measure.

In conclusion, this study shows that retrieval quizzes improved unit exam score, reduced failure rate, and slightly increased confidence. The strongest gain was seen in students with below-median GPA. So, retrieval quizzes look like a practical and effective classroom tool, and future research can test this strategy in other courses and over longer period. Thank you for listening.