

# The Pros and Cons of Oral Examinations in Undergraduate Education

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**Abstract:** This paper explores the value of oral examinations in undergraduate education to promote active learning. A review of contemporary literature on the subject suggests that oral exams come in many formats but have a positive benefit for students who take oral exams in conjunction with other means of evaluation. The benefits of oral exams include better retention of concepts, better academic performance, and immediate feedback from the instructor. In short, researchers find that there are significant benefits to oral exams at the undergraduate level. However, oral exams are not without difficulty. Significant time is required by instructors to design and administer the test. In addition, it is very difficult to ensure objectivity of all students during an oral exam. An instructor must deliberately plan the format, questions, and design of the course with an oral exam to achieve maximum benefit. The paper concludes that instructors should make use of oral examinations at the United States Military Academy in capstone courses and in courses with high applicability to the military.

## Introduction

Benjamin Bloom produced a taxonomy that guides faculty members in developing educational tools to increase student understanding. Bloom suggests that teachers should create exams that achieve six levels of student understanding. These levels of understanding are knowledge, comprehension, application, analysis, synthesis, and evaluation.<sup>1</sup> Many researchers argue that the oral exam, combined with additional tools of evaluations, is ideal in achieving higher levels student understanding. The oral exam is an evaluation where the student provides a spoken response to a question from one or more examiners. The oral exam is one of the oldest forms of evaluation and is commonly used in assessing PhD and for medical clinical

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<sup>1</sup> Benjamin S. Bloom, *Taxonomy of Educational Objectives; the Classification of Educational Goals*, 1st ed. (New York,: Longmans, Green, 1956).

certifications. However, is there value to oral certifications at the undergraduate level? If so, what is the benefit and costs associated with oral exams? This paper seeks to answer those questions and concludes with an observation on how oral exam should be included at the United States Military Academy.

### **Types and Formats of Oral Examinations**

Oral exams are given to individual and groups and exams can vary based on design. Gordon Joughin offers six dimensions of oral assessments: primary content type, interaction, authenticity, structure, examiners, and orality.<sup>2</sup> Table 1 outlines the dimensions and their range of practices that vary from continuums to discrete categories.

TABLE 1: Dimensions of oral assessment<sup>3</sup>

Dimension	Range
1. Primary Content Type	Knowledge & understanding; applied problem solving ability; intrapersonal competence; personal qualities
2. Interaction	Presentation vs. Dialogue
3. Authenticity	Contextualized vs Decontextualized
4. Structure	Close Structure vs. Open Structure
5. Examiners	Self-assessment; peer assessment; authority based assessment
6. Orality	Purely oral vs. Orality as secondary

For the primary content type dimension, knowledge and understanding are exams that test the recall of facts, methods, procedure, pattern, or structures. Applied problem solving ability or the ability to “think on one’s feet” tests cognitive processes to diagnose problems or apply knowledge. Intrapersonal qualities are utilized to evaluate a student’s suitability to enter a profession and these exams may seek to understand a student’s response to stress, appearance, confidence, and self-awareness.<sup>4</sup> Some group oral exam can test several dimensions of the primary content type. A reviewed collective oral exam involved randomly selecting groups of five students a day before the exam to prevent group members from rehearsing responses to questions.<sup>5</sup> However, the grouping allowed students to use a collective approach to answer questions and decreased anxiety among the students. This exam tested both the applied problem solving ability and intrapersonal competence of the group of students.

The interaction dimension consists of dialogue, where the evaluator presents a problem, the student’s answers, and then the evaluator probes the student’s understanding with additional questions. The other end of the continuum is presentation, where the evaluator presents a problem then evaluate the student’s answer without additional probing. “Authenticity” is the

<sup>2</sup> Gordon Joughin, "Dimensions of Oral Assessment," *Assessment and Evaluation in Higher Education* 23, no. 4 (1998), <http://dx.doi.org/10.1080/0260293980230404>.

<sup>3</sup> Ibid., 368.

<sup>4</sup> Ibid., 370.

<sup>5</sup> Justin Thomas, Monique Raynor, and Merryn McKinnon, "Academic Integrity and Oral Examination: An Arabian Gulf Perspective," *Innovation in Education & Teaching International* 51, no. 5.

degree that the exam replicates professional practice.<sup>6</sup> The contextualized versus decontextualized continuum is the degree of authenticity in the exam. An example of a highly contextualized oral exam is commonly found in the military where students are tested on skills that they will be expected to replicate once they graduate. Structure refers to the degree the exam is based on pre-determined list of questions or events.<sup>7</sup> Formats for structured oral exams are based on stand-alone questions where the instructor asks questions emphasizing conceptual thinking or knowledge recall.<sup>8</sup> The structured question format often includes the instructor providing a pre-exam list of questions that contain the potential test questions or sample questions that allow the students to target their preparation.

The open structure end of the continuum is an oral exam based on a loosely structured agenda where the student has latitude in how they present their answers. An example of an open structure format is a mini-project, where a model or complicated problem is distributed to students, and the students present their findings for evaluation. Similar to this format is the case study oral exam that originated at the Harvard Business School. In the case-study format, students are presented a problem or case from the field. Students must analyze the problem and consider alternative solutions. The case-study method allows for intellectual pluralism as there are multiple answers that could provide a solution to the problem. Arriving at the solution encourages higher order thinking.<sup>9</sup> The open structure also could allow students to pick from a list of questions during the exam.<sup>10</sup>

The “examiners” dimension refers to who evaluates the student’s performance during the exam. The range includes peer evaluations, self-assessments, or an authority based assessment. This dimension could be a hybrid. One example of a hybrid “examiner” format is Crannell’s “Collaborative Oral Take-Home Exam.” In this exam, the instructor assigns the problem to groups of two to three students, allows the students to take the problems home, and present their solutions to the instructor for evaluation the next day.<sup>11</sup> The students also provide peer assessment to the instructor before instructor feedback. The “orality” dimension is a continuum that describes the number of mediums utilized during the exam with one end being a completely oral examination and the continuum increasing by the number of mediums used with oral examinations being secondary.<sup>12</sup> Some instructors choose to combine written component of the exams with oral portions. One example involves a scenario where the student selects a written question and delivers an oral answer.<sup>13</sup> Other formats ask students to summarize a previously

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<sup>6</sup> Joughin, "Dimensions of Oral Assessment."

<sup>7</sup> Ibid., 373.

<sup>8</sup> Ralph Boedigheimer et al., "Individual Oral Exams in Mathematics Courses: 10 Years of Experience at the Air Force Academy," *Primus* 25, no. 2, <http://dx.doi.org/10.1080/10511970.2014.906008>.

<sup>9</sup> Sheri Bridges, "Oral Case Exams in Marketing: Enhancing and Evaluating Communication and Problem-Solving Skills," *Marketing Education Review* 9, no. 3 (1999), <http://dx.doi.org/10.1080/10528008.1999.11488681>.

<sup>10</sup> Nancy A. Armstrong, "'Tell Me More About That...'," *Legal Reference Services Quarterly* 25, no. 2-3 (2006), [http://dx.doi.org/10.1300/J113v25n02\\_05](http://dx.doi.org/10.1300/J113v25n02_05).

<sup>11</sup> A Crannell, "Collaborative Oral Take-Home Exams," in *Assessment Practices in Undergraduate Mathematics*, *Maa Notes Number 49*, ed. B. Gold, S. Keith, and W. Marion (Washington D.C.: The Mathematical Association of America, 1999), 102.

<sup>12</sup> Joughin, "Dimensions of Oral Assessment."

<sup>13</sup> Armstrong, "'Tell Me More About That...'"

written argument. This framework outlined above is a useful for tool for analysis. This review encountered many types of oral exams based on different discipline of study. However, all of the exams could be effectively analyzed using Joughin's framework.

### **Evaluating Oral Examinations**

It is important to note that a basic distinction of what can be evaluated during an oral exam. First, an oral exam can evaluate the student's grasp of the oral medium, presentation style, or language skills. An oral exam can also evaluate the student's understanding of the material as demonstrated through spoken word.<sup>14</sup> This section of the analysis will focus on the latter category of analysis. Standardized rubrics are essential for oral exams that are given by multiple instructors from the same course to prevent subjectivity from unfairly influencing student grades. Two major types of rubrics are used. The first is a holistic approach, while the second type assigns points to problems.<sup>15</sup> The points to problem rubric is helpful in maintaining consistency in a course with multiple instructors. It is also important that the final rubric is agreed upon by all instructors administering the oral exam.<sup>16</sup> Using the rubric, the instructor can provide the student feedback after the test, citing misconceptions, and then providing an opportunity to discuss the exam with the student.

The types and variety of questions are also important considering what the instructor wants to assess. Elder and Paul describe a variety of questions that could be asked to evaluate critical thinking skills. Examples of different types of questions that cause students to focus on clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness.<sup>17</sup> Possible categories for inclusion on a grading rubric or metric based on the degree of critical thinking include clarity, accuracy, precision, relevance, depth, and breadth.<sup>18</sup> Depending on the type of question, it could allow students evaluate relationships among various concepts or an opportunity to consider material in a different way.<sup>19</sup>

The order of questions may help in evaluating the ability of the student. For example, Westhoff and Hagemester advocate an ordering of questions that begins with the simplest and progresses based on difficulty.<sup>20</sup> This allows instructors to ensure that students have an appropriate base of knowledge before progressing to a more complicated problem set. Also, a difficult question at the beginning of the exam could put additional stress on the student and lead to a mental block that degrades performance in the oral exam.<sup>21</sup> The bottom line is that oral exams offer more of an ability for instructors to craft questions that address multiple cognitive levels of understanding among students. With a progressive order of questions based on

<sup>14</sup> Joughin, "Dimensions of Oral Assessment."

<sup>15</sup> Boedigheimer et al., "Individual Oral Exams in Mathematics Courses: 10 Years of Experience at the Air Force Academy.;" Crannell, "Collaborative Oral Take-Home Exams."

<sup>16</sup> Boedigheimer et al., "Individual Oral Exams in Mathematics Courses: 10 Years of Experience at the Air Force Academy."

<sup>17</sup> Richard Paul and Linda Elder, "Critical Thinking: Concepts and Tools," (2006),

[https://www.criticalthinking.org/files/Concepts\\_Tools.pdf](https://www.criticalthinking.org/files/Concepts_Tools.pdf).

<sup>18</sup> Bridges, "Oral Case Exams in Marketing: Enhancing and Evaluating Communication and Problem-Solving Skills."

<sup>19</sup> Melissa J. Buehler and Laura U. Schneider, "Speak Up! Oral Examinations and Political Science," *Journal of Political Science Education* 5, no. 4 (2009).

<sup>20</sup> Karl Westhoff and Carmen Hagemester, "Competence-Oriented Oral Examinations: Objective and Valid," *Psychological and Assessment Modeling* 56, no. 4 (2014).

<sup>21</sup> *Ibid.*, 322.

difficulty, the evaluator can assign questions to different levels based on the skill required of the student to successfully answer the question. Each level can have points assigned with a higher level earning a higher grade. Evaluators can then progress the exam based on student ability. A progressive format also allows students to choose to begin the exam at a higher level if time constraints during the exam prevents students from proceeding through all difficulty levels of the exam.

### **The Value of Oral Examinations**

Combining oral exams with other graded events provides an opportunity to reach levels of understanding that maybe difficult to reach with only multiple-choice questions and written exams. Evidence of this observation includes observations from instructors that state some students whose performance is average in traditional graded events, excel at oral exams (and vice versa).<sup>22</sup> Furthermore, it may be difficult for faculty members to generate written questions that require students to critically think or achieve higher levels of understanding.<sup>23</sup>

Oral exams also help validate the originality of student's work.<sup>24</sup> One way to combat academic dishonesty is through the use of honor codes that promote personal responsibility and academic integrity. However, multiple factors can effect a student's willingness to cheat. These factors include collective attitudes, severity of punishment, the willingness of the instructor to punish, and the perceived likelihood of being reported for a violation.<sup>25</sup> Oral exams can decrease the ability for a student to engage in academic dishonesty. While this is difficult to do with a standard ordered format consisting of the same questions asked to every student, randomly presented questions can decrease the value of a student sharing their experience after the exam. The student knows that the earlier exam could be different than a subsequent exam and that offering the questions to another student could actually hurt their performance during the exam.<sup>26</sup>

Some educators and researchers suggest that an oral examination, when compared to written examinations, where both ask the same questions, leads to students performing better on oral exam.<sup>27</sup> Rawls, Wilsker, and Rawls supported this observation with a sample of students enrolled in management and economics courses. Their study found that students enrolled in management that took an oral exam performed 1.1. points higher on their oral exam than their written exams.<sup>28</sup> The authors also evaluated students who took an oral exam on their subsequent written exams against similar students in control groups that did not take an oral exam. The study found that students who took the oral exam scored an average of 4.5 points higher than their control group counterparts.<sup>29</sup> Additionally, students admitted more nervousness before the oral exam, however, many students found the oral exam more useful than the written exam due to the

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<sup>22</sup> Boedigheimer et al., "Individual Oral Exams in Mathematics Courses: 10 Years of Experience at the Air Force Academy."

<sup>23</sup> Buehler and Schneider, "Speak Up! Oral Examinations and Political Science."

<sup>24</sup> Thomas, Raynor, and McKinnon, "Academic Integrity and Oral Examination: An Arabian Gulf Perspective."

<sup>25</sup> Ibid., 534.

<sup>26</sup> Armstrong, ""Tell Me More About That..."."

<sup>27</sup> Mark Huxam, Fiona Campbell, and Jenny Westwood, "Oral Versus Written Assessment: A Test of Student Performance and Attitudes," *Assessment & Evaluation in Higher Education* 37, no. 1 (1 FEB 2012).

<sup>28</sup> Janita Rawls, Amanda Wilsker, and Richard S. Rawls, "Are You Talking to Me? On the Use of Oral Examinations in Undergraduate Business Courses," *Journal of the Academy of Business Education* (Spring 2015).

<sup>29</sup> Ibid., 28.

perceived professionalism of the oral exam.<sup>30</sup> Other benefits of oral exams include the development of oral communication skills, greater authenticity, and is more inclusive for students with learning disabilities.<sup>31</sup> Oral examinations require students to “think on their feet.”<sup>32</sup> Oral examinations are extremely valuable in gauging student understanding of a topic and encouraging critical thinking.<sup>33</sup>

Ralph Boedigheimer, suggests that there are additional benefits to oral examinations. First, he points out an increase in the level of study and preparation by students. He posits that students desire to avoid embarrassment and as result, seek to understand the concepts in lieu of rote memorization of problems.<sup>34</sup> The author goes on to suggest that oral examinations are a real-time indicator that provide the instructor with an opportunity to quickly ascertain the students’ level of understanding.<sup>35</sup> This is possible because oral exams are often one-on-one engagement between instructor and students. Instructors also have the opportunity to intervene with weaker students who are struggling with concepts during the exam. After the exam, instructors can look at macro trends of the strengths and weaknesses among the students and adjust the course to account for this data. Students can receive responsive feedback immediately after the exam, which is extremely helpful for students who believe they understand the concept, but in actuality, do not.<sup>36</sup> Oral exams also allow students to take ownership of their learning, gain confidence, and self-esteem.<sup>37</sup> In addition, memory research has shown that traditional written examinations do little to maximize long-term retention of material and concepts.<sup>38</sup> Oral exams can be utilized to increase long term retention of academic concepts.<sup>39</sup> One way of doing this is to provide students with a case or problem for examination over several days and they using the oral exam to offer questions based on students ability to apply concepts to analyze the problem or case. Other ways of increasing memory retention during an exam involve the use of rehearsals, repetition, and relevance to the students’ personal experiences.<sup>40</sup>

Oral exams are designed to improve communication among students and effective communication has long term benefits. Empirical research has shown that oral communication is essential in finding a job and progressing in a career.<sup>41</sup> Several empirical studies of recent business graduates indicated that the most challenging shortcomings of many students upon graduation was the ability to disseminate instructions orally.<sup>42</sup> Oral exams target areas that are essential in the professional world for advancement and performance.

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<sup>30</sup> Huxam, Campbell, and Westwood, "Oral Versus Written Assessment: A Test of Student Performance and Attitudes."

<sup>31</sup> Ibid.

<sup>32</sup> Bridges, "Oral Case Exams in Marketing: Enhancing and Evaluating Communication and Problem-Solving Skills."

<sup>33</sup> Huxam, Campbell, and Westwood, "Oral Versus Written Assessment: A Test of Student Performance and Attitudes."

<sup>34</sup> Boedigheimer et al., "Individual Oral Exams in Mathematics Courses: 10 Years of Experience at the Air Force Academy."

<sup>35</sup> Ibid., 100.

<sup>36</sup> Ibid.

<sup>37</sup> Ibid., 109.

<sup>38</sup> Kristin E. Guest and Diane S. Murphy, "In Support of Memory Retention: A Cooperative Oral Final Exam," *Education* 121, no. 2 (2000).

<sup>39</sup> Ibid.

<sup>40</sup> Ibid., 351.

<sup>41</sup> Anthony T. Krzystofik and Richard Fein, "'Does Your Firm Use the Right Approach in Hiring Campus Recruits?'," *Journal of Accountancy* 166, no. November (1988): 83.

<sup>42</sup> Bridges, "Oral Case Exams in Marketing: Enhancing and Evaluating Communication and Problem-Solving Skills."

## **The Obstacles of Oral Examinations**

Oral Exams in large courses are unfeasible due to the time restraints placed on students and instructors.<sup>43</sup> A standard practice in universities is to cancel classes to provide time for oral exams. If class cancellations are utilized, instructors may miss anywhere from one to six scheduled class times due to the time-intensive nature of oral examinations.<sup>44</sup> Class cancellations are compounded for oral examination formats that include more than one instructor, leading to one exam potentially cancelling more than one class. An individual instructor with more than thirty-five students will have difficulty finding time to evaluate all students. One way to ensure that no more time is used than necessary is to use a timer during the exam.<sup>45</sup> The intensive analysis that is required of instructors during oral exams also leads to fatigue, requiring exams to be spread out over several days. Another consideration is that grading oral exams is potentially much quicker than it would take to grade several papers. Perhaps, the time made up grading outweighs the time spend administering.

Students unfamiliar with oral exams maybe experience extreme stress which decreases their performance. However, with classroom practice of presenting solutions to problems orally, this stress can be mitigated.<sup>46</sup> In addition, instructor should take the time to communicate performance expectations as well as what to expect during the exam to mitigate anxiety.<sup>47</sup> Students should be aware of the type of question that they will be asked during the oral exam to allow for adequate preparation. Dialogue between the evaluator and student in an oral exam could lead to a distortion of communication that effects the student's performance or perception of the examiner. Abramson refers to this as "bias that is introduced in the interaction."<sup>48</sup> A helpful tool to mitigate the effect of this bias is to tape oral exams for further evaluation. A major criticism of contextualized oral exams is the low degree of objectivity among evaluators.<sup>49</sup>

Needless to say, grading an oral exam has the potential to be much more difficult than a fill-in-the bubble answer sheet. Another obstacle for the implementation of oral exams is that students and instructor prefer what they know. Traditionally, the preponderance of tests at the undergraduate level does not rely on oral exams.<sup>50</sup> This is due to the many formats of oral exams and the perception that they are more difficult to employ and evaluate.

## **Oral Examinations and Course Design**

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<sup>43</sup> Boedigheimer et al., "Individual Oral Exams in Mathematics Courses: 10 Years of Experience at the Air Force Academy."

<sup>44</sup> Ibid., 112.

<sup>45</sup> Bridges, "Oral Case Exams in Marketing: Enhancing and Evaluating Communication and Problem-Solving Skills."

<sup>46</sup> Boedigheimer et al., "Individual Oral Exams in Mathematics Courses: 10 Years of Experience at the Air Force Academy."

<sup>47</sup> Bridges, "Oral Case Exams in Marketing: Enhancing and Evaluating Communication and Problem-Solving Skills."

<sup>48</sup> Samuel Abrahamson, "The Oral Assessment: The Case for and the Case Against," in *Evaluating the Skills of Medical Specialists*, ed. J.S. Loyd and D.G. Langsley (Chicago: American Board of Medical Specialists, 1983), 322.

<sup>49</sup> Westhoff and Hagemester, "Competence-Oriented Oral Examinations: Objective and Valid."

<sup>50</sup> Buehler and Schneider, "Speak Up! Oral Examinations and Political Science."

Oral Exams have long been used in graduate studies. However, the use of oral exams at the undergraduate level is a recent phenomenon. The type of courses that oral exams are commonly used in at the undergraduate level include ones that require conceptually driven mental processes. Examples of these types of courses include mathematics, engineering, science, business, political science, and pre-law. Most courses that include oral examinations are relatively small, involving less than thirty students. Oral exams are also easier to implement with a single instructor. Multiple instructors administering an oral exam need standardized grading rubric. In addition, a different instructor evaluating the student could lead to undue stress for the student. However, a familiar instructor maybe more greatly affected by pre-determined judgments of the student based on their past performance in class.

Early decision involving oral exams and course design is time required for exam administration. Time early in the semester should be included for the instructor to take the exam to ensure that the exam can be performed in the required time available. Based on a review of the literature, most oral exams are scheduled over several days during the course and last between five and thirty minutes. Another consideration is the number of oral exams administered during the course. Boedigheimer noted noticed improvement in student performance after they had taken one oral exam.<sup>51</sup> Another consideration is the length of time a student needs exposure to the material to demonstrate the type of cognition to orally apply a concept to a new situation. Buehler and Schneider suggest that oral exams are best utilized towards to end of the semester to allow for the student to learn the material.<sup>52</sup>

### **The Value and Implementation of Oral Examinations at USMA**

Ralph Boedigheimer, Michelle Ghrist, and Dale Peterson point out that service academies are charged “not only with educating students, but also with preparing them for careers as military officers.”<sup>53</sup> Continuing, the authors posit that military officers are required to clearly articulate ideas via the spoken word. Scenarios that require the clear provision of information orally include operation orders, briefs to superior officers, discussions with soldiers, and communicating highly technical information. The United States Military Academy teaches subjects to future practitioners of national security where many courses have large overlaps with knowledge that must be conveyed in the military. Westhoff and Hagemester argue that the greater degree contextual application, the greater the need for differing emphasis in teaching.<sup>54</sup> Multiple subjects at USMA could benefit from oral exams in the course. Examples include capstone courses, seminars, PL300, and MX400 classes. The many different types of oral exams provide an opportunity for individual course directors to tailor the oral exam based on course objectives and concepts. It is essential, that USMA does not assume that cadets will acquire the ability to translate complicated solutions via the spoken work effectively on their own. USMA should take the opportunity to holistically develop future national leaders in effectively communicating. Oral

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<sup>51</sup> Boedigheimer et al., "Individual Oral Exams in Mathematics Courses: 10 Years of Experience at the Air Force Academy."

<sup>52</sup> Buehler and Schneider, "Speak Up! Oral Examinations and Political Science."

<sup>53</sup> Boedigheimer et al., "Individual Oral Exams in Mathematics Courses: 10 Years of Experience at the Air Force Academy."

<sup>54</sup> Westhoff and Hagemester, "Competence-Oriented Oral Examinations: Objective and Valid."

exams are wonderful mechanisms to increase student confidence in the communication abilities and to generate critical thinking. In addition, oral exams will help long-term retention of complicated material and increase the academic performance of cadets in the class.

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