

Failing to Learn from Failure: The Facade of Online Credit Recovery Assessments

Jennifer Darling-Aduana  
Assistant Professor of Learning Technologies  
Georgia State University  
30 Pryor St. SW #234, Atlanta, GA 30303  
[jdarlingaduana@gsu.edu](mailto:jdarlingaduana@gsu.edu)

Carolyn J. Heinrich  
Patricia and Rodes Hart Professor of Public Policy Education and Economics  
Vanderbilt University  
124 Magnolia Circle #101, Nashville, TN 37212  
[carolyn.j.heinrich@vanderbilt.edu](mailto:carolyn.j.heinrich@vanderbilt.edu)

Jeremy Noonan  
St. Mary's Academy, Fayetteville, GA  
[jknoonan2000@yahoo.com](mailto:jknoonan2000@yahoo.com)

Jialing Wu  
Master's Student in International Education Policy and Management  
Vanderbilt University  
124 Magnolia Circle, Nashville, TN 37212  
[jialing.wu@vanderbilt.edu](mailto:jialing.wu@vanderbilt.edu)

Kathryn Enriquez  
Ph.D. Student in Leadership, Policy, and Organizations  
Vanderbilt University  
124 Magnolia Circle, Nashville, TN 37212  
[kathryn.enriquez@vanderbilt.edu](mailto:kathryn.enriquez@vanderbilt.edu)

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## **Abstract**

Online credit recovery (OCR) courses are the most common means through which students retake courses required for high school graduation. Yet a growing body of research has raised concerns regarding student learning in these courses, with low quality assessments posited as one contributing factor. To address this concern, we reviewed every assessment item from a widely used OCR Algebra 1 course. We also examined pathways for passing the course mastery tests without learning content. In addition, we identified if and how states regulate OCR. We found OCR assessments as executed lacked rigor and validity. We offer recommendations to improve rigor, close pathways that call into question the validity of results, strengthen implementation procedures, and increase state-level oversight of providers.

Keywords: credit recovery, online learning, educational assessment, K-12 education policy

## **Failing to Learn from Failure: The Facade of Online Credit Recovery Assessments**

Credit recovery courses provide students the opportunity to recover courses required for high school graduation by repeating the course. Prior to the pandemic, 71 percent of credit recovery courses nationally were delivered online (U.S. Department of Education, 2018). Although existing data on high school student participation in credit recovery is sparse—suggesting that around 90 percent of high schools offer credit recovery and 15 percent of high school students participate in those courses (U.S. Department of Education, 2018)—there is other evidence of steadily increasing participation rates since that time (Viano, 2021). High rates of course failure and chronic absenteeism have contributed to a recent surge in online credit recovery (OCR) adoption in schools that is expected to continue well into the future (Barshay, 2022; Reeves, 2022). Moreover, research has identified OCR as a major contributor to rising graduation rates (Powell et al., 2015; Tyner & Munyan-Penney, 2018, Heinrich & Darling-Aduana, 2021), making OCR an attractive “quick fix” with more students at risk of dropping out since the pandemic (Shen-Berro, 2023).

Although some empirical analyses confirm positive associations between OCR, credits earned, and high school graduation rates, the research also finds insignificant or negative relationships between OCR and student achievement, as well as longer-term outcomes such as postsecondary graduation and post-high school earnings (Heinrich & Cheng, 2022; Heinrich & Darling-Aduana, 2021; Heinrich et al., 2019; Heppen et al., 2017; Rickles et al., 2018, 2023; Viano & Henry, 2024). Moreover, research on OCR implementation describes a lack of meaningful student engagement in instruction and assessments (including online searching for test answers), and a lack of supervision and instructional supports for students (Darling-Aduana, 2021; Darling-Aduana et al., 2019; Heinrich et al., 2019; Hess, 2019). These emerging findings

indicate the need for increased regulation surrounding accreditation of OCR providers, as well as guidance on best practices for local implementation to ensure students are truly learning the skills they need to be successful later in life (Glass & Welner, 2011).

While this problem extends beyond credit recovery courses, the issue is more urgent in a system that encourages students to recover high school credits for graduation as "quickly and cheaply as possible—regardless of what they have learned" (Horn, 2017, p. 2). We contribute to this body of research by documenting OCR assessments, focusing on a commonly taken (and typically required) course, Algebra I, developed by one of the largest online course vendors in the United States. Courses sold by this vendor are used by over 5 million students across all fifty states. We also chose to focus on Algebra 1 due to the importance of the course as a gatekeeper to more advanced mathematics coursework and strong relationship with subsequent academic and career outcomes (Heppen et al., 2017; Stein et al., 2011). More specifically, we examine the following research questions: (1) To what extent do questions in the Algebra 1 OCR test bank require students to engage in higher-order tasks overall and across assessment type? (2) What opportunities for (and safeguards against) passing the mastery test without learning content are available to ensure the validity of student assessment results? And (3) in what ways are states involved in policy and regulatory oversight of OCR? Through this research, we aim to extend understanding of OCR assessments from the item level to the policy level.

To answer these research questions, we evaluated all test questions from pre-tests, mastery tests, post-tests, and other course exams across the six units of the Algebra 1 course. We assessed the level of cognitive processing required of students to answer test questions using Bloom's Taxonomy for classifying educational learning objectives by their levels of complexity and specificity (Bloom et al., 1956; Krathwohl, 2002). We also documented the repetition of test

questions on re-take assessments and the availability and accuracy of the test answers online. Lastly, we compiled and analyzed data on the extent to which states regulate OCR (as well as online learning and credit recovery in general).

Our research identified critical problems with OCR assessments and their implementation, as well as limited state regulation of OCR, which questions the reliability and usefulness of these assessments as a gauge for student learning. Although we focus our analysis specifically on OCR, many of the assessment strategies are observed across online instructional tools and platforms. We point to concrete policy actions that could be taken and regulations that could be adopted to make the online course assessments more meaningful and increase student opportunities to learn in the courses and through the assessments.

### **Educational Assessment in Online Credit Recovery Courses**

At its most basic level, educational assessment is “the systematic collection and analysis of information to improve student learning.” (Stassen et al., 2001, p. 5). Assessment is used not only to evaluate student mastery but also to support student learning by providing feedback to improve performance, assist with goal setting, and identify students who may require additional learning support (Ashford-Rowe et al., 2014; Stassen et al., 2001). A recent review (Johnson et al., 2020) of the literature on online K-12 education argues for frequent use of assessments in online K–12 schooling, not only for assessing student mastery, but also to encourage students’ thinking and provide opportunities for connections and interactive discussions through formative assessment.

To accomplish these aims, assessment must be valid and rigorous (Ashford-Rowe et al., 2014; Bloom et al., 1956; Krathwohl, 2002; Stassen et al., 2001). For instance, the National Standards for Quality Online Learning (iNACOL, 2011) call for ongoing, varied assessments

that assess mastery, which requires providing opportunities for assessing higher-order thinking. Validity is achieved by: (1) content validity – the assessment items measure the appropriate content, (2) criterion validity – the assessment has predictive and diagnostic utility, and (3) construct validity – assessment results are consistent with their supposed meaning. Validity is important because it gives one confidence that a student who scored highly on an assessment had mastered the required content for that lesson or unit. Rigor speaks to the complexity of assessment tasks students are asked to complete and is accomplished by requiring students to analyze, evaluate, and/or synthesize information learned (Ashford-Rowe et al., 2014; Bloom et al., 1956; Krathwohl, 2002). Rigor is important for assessment items because it measures students' abilities to use the information learned versus solely remember and recite content (Ashford-Rowe et al., 2014).

Experts have raised several concerns regarding the validity and rigor of assessments used within OCR courses. An examination of ten of the most frequently enrolled in asynchronous online courses developed by a large online course vendor (different than the one examined in this study) found that while 94 and 93 percent of lessons required students to remember and demonstrate (respectively), relatively few lessons required higher order thinking; only 21, 23, and 6 percent of lessons required students to evaluate, synthesize, and create, respectively (Darling-Aduana, 2021). While these statistics capture opportunities across the entire lesson, not just the assessment portion, the predominate reliance on single-choice and multiple-choice assessment items was cited as a likely contributor to the low cognitive load observed in the course taking (Darling-Aduana, 2021; see also Heinrich et al., 2019). These findings are not limited to asynchronous online settings. A study examining 42 synchronous online lessons in a virtual charter school associated with another large online course vendor established that two-

thirds of lessons required only procedural (versus intellectual) participation from students (Darling-Aduana et al., 2022).

Beyond concerns that the widespread lack of rigor in online course developed by large, for-profit online course vendors may not be supporting students in developing the skills and knowledge they need to succeed in subsequent life pursuits (Heinrich & Cheng, 2022), low rigor in online assessments also raises several validity concerns. Because state standards require students to master higher cognitive content and tasks, not assessing students using these strategies means that the assessment is not fully measuring all appropriate content (i.e., content validity). This limits the value of assessment results when attempting to identify students who may require additional assistance, or conversely, more challenging work (i.e., criterion validity).

Another large threat to the validity and rigor of online assessments is the prevalence of cheating (Noorbehbahani et al., 2022). A mixed method study examining the multi-year implementation of OCR in a large Midwestern district observed students searching for answers online by copying and pasting the question into the search bar across more than half of the 156 classroom observations conducted (Darling-Aduana et al., 2019). Within the district studied, retaking the same test was also enabled, allowing students to use process of elimination to determine the correct answer (Heinrich et al., 2019). Students also cheated within online courses by collaborating with peers or getting help from a teacher (Darling-Aduana et al., 2019; Heinrich et al., 2019; Noorbehbahani et al., 2022). The use of these strategies reduces construct validity, since answering a question correctly is no longer accurately identifying underlying student knowledge of the content being assessed. The prevalence of these strategies also appears to reduce the predictive and diagnostic ability of resulting scores (i.e., criterion validity). One quasi-experimental study observed substantial decreases in test scores across several online courses

once proctoring was introduced, with much stronger associations observed between GPA and test performance (Dendir & Maxwell, 2020). Proctoring exams – ideally in-person – or requiring continuous authentication are both common strategies for minimizing cheating during online assessments (Noorbehbahani et al., 2022).

Improving the validity and rigor of online assessments requires both increased regulation of online course vendors and additional guidance for school districts on how to support student learning in online courses. Recommendations for systematic accreditation of vendors and maintenance of state curriculum standards within credit recovery and online coursework have been advanced by the National Education Policy Center (NEPC) and other experts (Glass & Welner, 2011; Kirsch & Smiley, 2017; Watson & Gemin, 2008). At the local level, despite credit recovery being almost ubiquitous, few school districts have any visible credit recovery policies (Tyner & Munyan-Penney, 2018; Malkus, 2019). Thus, in addition to examining in-depth the online assessments and practices around its implementation in one district, we document the larger policy context by describing online learning and credit recovery policies across the 50 states. We conclude in the discussion section with policy and practice recommendations to improve the validity and rigor of online assessments.

## **Methods**

### *Study Setting and Sample*

The OCR program we study has been widely used in high schools across the 50 states. All Algebra 1 OCR assessment documents analyzed were collected during the time of their use (in the Spring of 2023) in a school district in a major metropolitan region in the South. More than half of the district’s 10,000 high school students are students of color and approximately 40 percent are economically disadvantaged.



The online course platform was used primarily for credit recovery in the district, although in some instances, it was also used for credit accrual, where students take an online course in place of an identical, traditional course. Students enrolled in OCR completed coursework in varied ways, including on school campuses, through the district's virtual academy, or entirely at home without supervision (including when completing assessments). The implementation of the assessments differed between the on-campus and at-home settings in several important ways. On campus, students had to ask the instructor to unlock mastery tests, unit tests, and cumulative exams, and the instructor proctored assessments by supervising student computer screens. At home, student tests were set to automatically unlock after the student completed the lesson and/or practice assignment. A remote instructor unlocked tests and exams upon receiving an electronic request from the student at home, but the instructor did not have the capacity to monitor the students or their screens during assessments. The on-campus instructor in the online Algebra I course made copies of assessments within several of the most frequently enrolled online courses, including all assessments used in the six-unit Algebra 1 course, which included 45 distinct course lessons that were analyzed in this study.

#### *Data Sources*

The copies of the Algebra I course assessments (totaling more than 500 pages and including all assessment instructions and questions) were scanned for coding and data extraction. A Qualtrics survey was developed to systematically code the following elements of the course assessments: identifying information, assessment type (i.e., pre-test, mastery test), question type (i.e., multiple choice, write-in response), and level of cognitive processing required to answer test questions using Bloom's Taxonomy (see Table 1). Bloom's taxonomy was designed for developing and analyzing lessons, standards, and assessments in education systems, where

students would ideally be assessed across the taxonomy. That is, in addition to remembering and understanding content, course assessments should require students to apply content and demonstrate understanding by answering problems and should compel higher-order thinking in analyzing, evaluating, and creating content in answering the test questions. Because of this taxonomy's generally stated content categories, it has been widely applied in diverse educational settings, including in the analysis of OCR courses (Darling-Aduana, 2021), and it has been found to be more effective in unambiguously interpreting standards and assessments than alternative models (Näsström, 2009).

[Insert Table 1]

In addition, the exact question text for each assessment item (including multiple choice options) was pasted into specific websites to assess the accessibility of the answers on different platforms, including Google, websites with a paywall (e.g., Brainly), and an artificial intelligence platform, ChatGPT. A subscription was purchased to evaluate the assessment items on Brainly, a commonly used platform that also makes available some answers free to students. The information coded using the Qualtrics survey in this data collection process included:

- The website the first publicly available answer was posted on
- The answer's availability on Google, ChatGPT and other websites
- Whether the answer was first encountered on a website with a paywall
- The year was the first publicly available answer was posted
- Whether the first answer provided was correct
- The ChatGPT response, whether it was correct or whether additional work was needed to get the correct answer, and if ChatGPT refused to answer or gave another response.

The above information was collected for every assessment item on every assessment in the

Algebra 1 course, yielding 1,408 unique observations (question items assessed by the above dimensions). No student information is linked to any of these data, as the focus of the analysis is on the course assessments and the unit of analysis is the assessment item.

In addition, we collected data in the fall of 2023 from state educational association (SEA) websites in all 50 states and the District of Columbia (DC) on state and district-level OCR regulation and policies. Each website was scoured for key words including credit recovery, alternative education, distance learning, grade forgiveness, digital learning, credit flexibility, and remote learning. Additionally, we searched for policies and reports to inform the extent to which states regulated OCR, online learning, and credit recovery in general. We also reviewed state virtual schools for schools that allow students to have the opportunity to engage with online learning and OCR while enrolled in state-funded institutions. Within the identified policies, any available dates of policy adoption or uptake were recorded. These data were compiled in a database with 51 total observations (for the 50 states and DC).

### *Analytic Strategy*

To address the first research question, we analyze the data collected from the course assessments descriptively, primarily using simple tabulations or cross-tabulations with chi-square tests. The core objective of our analysis is to describe the types and nature of assessments used in OCR courses, and specifically in the Algebra 1 course of a widely utilized online course-taking program. Of particular interest in this regard is the level of cognitive processing required of students to answer the test questions, which we analyzed using Bloom's Taxonomy as described above. We also describe through tabulations or cross-tabulations where the answers to the assessments were found online, the ease of accessing them, and the extent to which the answers were correct (by web platform).

To address the second research question about how to ensure the validity of student assessment results, we draw on observational data from the instructor who supervised online course-taking in our study setting to describe the implementation of the online course assessments and school and district policies on online course-taking practices. The instructor documented the environment in which students completed the online course assessments, the online course settings (including passing cutoffs), and other security protocols inside and outside the classroom that affected testing procedures. In addition, for a random subset of 200 OCR course assessments, the instructor tracked in a database test performance across the different types of assessments and how often assessment questions repeated in test re-takes and across types of assessments. This information is important to understanding the extent to which student performance on OCR assessments might accurately reflect student learning.

Lastly, to address our third research question on state-level OCR regulation and policies, we descriptively analyze the data compiled in the fall of 2023 on which states have and maintain policies and practices on OCR (and more generally on online learning and credit recovery) to summarize the type, prevalence, and timing of state OCR policies.

## **Findings**

### *Types and Content of OCR Assessments*

Our descriptive analysis of the 1,408 assessment items in the OCR Algebra I course and the higher-order tasks they entail highlights the limited nature of the OCR assessments. First, the large majority (83%) of the 1,408 assessment items are multiple choice questions (primarily single response questions), and this did not vary significantly by type of assessment (pre-test, mastery test, post-test, or course exam file). The mastery tests that follow each lesson consist of five questions, providing a narrow (and insufficient in most cases) assessment of the wide range

of knowledge and skills covered in a given lesson. Importantly, less than 10 percent of the questions require students to engage in higher order tasks, that is, to either analyze, evaluate, or create content in answering the question. Although rare, questions requiring students to apply their knowledge of equations' characteristics to draw a graph or create and solve equations based on real-life scenarios were most likely to foster these higher-order tasks. All questions items (100%) require students to recognize or recall content, and about three-fourths of the questions ask students to apply content (e.g., solve or simplify an equation). However, only 5 percent of the OCR Algebra I questions require students to analyze content, and just 4 percent of the assessment questions require the students to create content; none of the assessment items involved evaluating content.

Moreover, the question items are not only lacking in their assessment of cognitive processing skills, but the answers to the questions are readily available on multiple websites or platforms. In fact, 90.5 percent of the answers to the questions (1,274) could be found in a Google search, and 82 percent of the answers found were correct (did not require further searching to get the correct answer). The first web platform in which the answers appeared was Brainly, in more than 95 percent of the searches. The answers to the questions were encountered on 20 different websites, and some had been published online as early as 2015, with more than 70 percent in 2020 or earlier. This implies that most answers to the OCR Algebra I questions were available as schools shifted more students to online learning during the pandemic. When the assessment items were pasted into ChatGPT, correct answers were generated in about one-third of the responses, whereas some additional interaction with the tool was required to get the correct answer for another 22 percent of the question items.

### *OCR Implementation and Implications for Assessment Validity*

The OCR classroom instructor found that most of the on-campus students failed the mastery tests on the first attempt (with a modal score of 40), requiring a re-take. The instructor explained that he would have the students correct the wrong answers and would provide instructional support with the math concepts and problems before their re-take of the test. Analysis of the 200 assessments collected by the OCR classroom instructor revealed that on test re-takes, 2 to 3 of the 5 question items were typically the same questions as in the first assessment (for nearly two-thirds of the assessments analyzed), including questions that the student had already correctly answered. In fact, 4 of 5 questions were repeated on re-takes in more than 8 percent of the 200 mastery tests. In less than 6 percent of the assessments, there were no questions repeated, and in 22 percent of the assessments, just one question repeated on the re-take. The OCR mastery tests are created from test banks that include either 10 or 20 questions, i.e., enough for two or four entirely new tests. Yet by design, the online course-taking system generates repeat questions, which makes it easier for students to pass the test on the second attempt. In addition, the system setting allows students up to three re-takes on a mastery test (that is unlocked automatically upon completion of the lesson), so that students working on them at home can do the tests without supervision. In contrast, post-tests and final exams are repeated entirely on retakes. However, for post-test retakes, the only option available in the online course-taking system (as implemented) is for the instructor to reset the test, which erases the original score and allows the student to start again with the same tests questions in the same order *after* the student has viewed the right and wrong answers on the initial test take.

As indicated earlier, students also take pre-tests that, depending on their scores, may allow them to move faster through the online course. The course-taking system gives the students a

pre-test for every unit of the course they are required to take, and instructors can also exempt students (manually) from specific lessons. In practice, if students get at least 80 percent of the questions correct for a given lesson on a unit pre-test, they can “test out” of that lesson (do not need to complete the mastery test). However, the students will still be tested on the lesson material in a summative post-test. The OCR instructor’s analysis of the sampled assessment data showed that pre-test performance was not a good predictor of performance on the course material in a summative post-test. In only 38 percent of cases did a “mastery” level score (80 or higher) on a pre-test correspond to a passing score (75 or higher) for a given topic on the summative post-test, raising concerns about the extent to which pre-test outcomes reflect students’ mastery of a topic and are a useful tool for determining course lesson exemptions.

#### *Online Credit Recovery Policies and Regulation*

Our descriptive findings on assessments of student learning in OCR courses suggest that states and school districts might benefit students by developing policies and regulations to support more accurate, fair, and meaningful assessments in the course-taking systems. As of the fall of 2023, we found that while about 59 percent of states had some policy or regulation in place on online learning and 27 percent addressed credit recovery, less than 30 percent of states had any policy specific to OCR; 35 percent of states had no policies addressing online learning, credit recovery or OCR (see Figure 1). Of the approximately 30 states with policies or directives that explicitly mention online learning, the policy content is highly varied. Some include provisions addressing providers and their accreditation (about 50%) or pertain to curricula (about 40%), with just over a quarter of these states addressing both providers and curricula. Some of the policies circumscribe virtual schooling, distance learning, and remote learning, and some are directed toward creating new online schooling opportunities (through the state), including virtual

schools and virtual school networks. In addition, some policies establish state boards to oversee district implementation of online learning programs and to accredit outside providers. The earliest timing of policy implementation we observed was 2006 (in Tennessee), with updating of policies in many states over time.

[Insert Figure 1]

Of the 14 states that established general guidelines for credit recovery, credit recovery was often described as a form of alternative learning that could assist students with differential needs and abilities to complete their coursework. About half of these states' policies included a provision that explicitly required alignment between the credit recovery curriculum and the overall state curriculum; however, few states specified any provision to ensure that credit recovery providers were properly accredited. Among the 15 states with policies explicitly addressing OCR, there was only one state that included provisions for both the type of curriculum and the type of provider offering OCR (New York). New York, for example, has policies with specific language regarding the quality of OCR courses, including that they should involve "regular and substantive" interactions between students and teachers. However, this was an exception; most policies were concerned with ensuring OCR was available to students without any provisions directed towards the course content or provider.

## **Discussion**

A central objective of educational assessment is to improve student learning by evaluating students' mastery of educational content and understanding their individual needs for instructional supports to develop the requisite knowledge and skills through their coursework. One of the expressed concerns about OCR is that it is focused on helping students recover course credits as quickly as possible—using pre-testing to bypass curriculum components (lessons),



allowing students to drive the instruction and access to assessments in the classroom and/or at home, utilizing brief assessments, and allowing numerous test retakes—regardless of whether learning is taking place.

Our study investigated the assessments in a widely utilized course (Algebra I) offered through an OCR program used in all 50 states to understand their nature (details) and validity, as well as how they are implemented and those implications for their validity. Our study findings show that most of the assessments included in the Algebra I course (greater than 80 percent) were multiple choice, single response questions, with high re-use of the same questions on the frequent test retakes. Moreover, the test questions were limited in their assessment of students' higher cognitive skills: less than 10 percent of the questions required students to analyze, evaluate, or create content. In addition, the students could avoid applying *any* skills in completing the assessments by taking advantage of the wide availability of test answers on multiple online platforms. More than 90 percent of the answers to test questions could be found using Google, and we encountered 20 different websites or platforms where the answers could be located. A large majority of the answers had been posted online for many years. The OCR system settings (frequent repetition of questions, multiple test retakes), lack of state or district policy or regulation safeguards, and minimal monitoring of student interactions with the course (and their use of external websites or platforms) further diminish the value or utility of the OCR course assessments.

Although this research is limited in its study of a particular mathematics course as implemented in a single school district, prior research has documented that this Algebra I OCR course is used in high schools throughout the country and that its implementation as observed in this setting is typical of how OCR courses are widely used (Heinrich et al., 2019; Heppen et al.,

2017; Rickles et al., 2018; Rickles et al., 2023; Viano, 2021; Viano & Henry, 2024). This makes the lack of explicit policies and regulation on the accreditation of OCR providers and their course content and assessments and limited oversight of local implementation of considerable concern. We therefore focus our conclusions on implications and recommendations for policy and practice improvements.

### *Implications for Policy and Practice*

Our findings suggest several areas for improvement in the design and implementation of OCR assessments, many of which may be applicable to online assessments more broadly, particularly those developed by large, for-profit online course vendors. First, to achieve content validity, assessments should include items that test understanding at a range of cognitive levels, including items that require students to analyze, evaluate, and create. This may require the inclusion of more open-ended and project-based assignments by vendors or as supplemental activities designed and implemented by school-based educators (Darling-Aduana, 2021). Second, to ensure content and criterion validity, efforts should be made to eliminate opportunities to answer items correctly without understanding underlying content. District testing procedures worth considering include (ideally in-person) proctoring, reducing testing policy loopholes (i.e., opportunities to retake the exact same exam after viewing answers after the initial attempt), and limiting access to outside resources during testing (Dendir & Maxwell, 2020; Noorbehbahani et al., 2022).

Given the limitations of OCR assessment in evaluating true learning, additional rigor and regulation regarding OCR provider accreditation and course alignment with state curriculum standards appears merited (Glass & Welner, 2011; Kirsch & Smiley, 2017; Watson & Gemin, 2008). At a minimum, states should strive to have policies or regulations in place that ensure

minimum standards for both online learning and credit recovery, if not OCR specific policies.

Items to address include mandating the regular updating of course materials, including assessment items, and instituting procedures to ensure the use of various test versions, similar to the practices large-scale assessment companies use to minimize cheating.

In the meantime, school districts can fill some of these policy gaps by developing their own processes for evaluating the rigor and usefulness of OCR courses, including OCR assessments (Tyner & Munyan-Penney, 2018 Malkus, 2019), which may include the use of existing tools such as the Quality Matters Online Course Design Rubric to evaluate online courses (see also Darling-Aduana, 2021) and incorporating online course adoption into existing curriculum review processes. Taken together, the implementation of the proposed policies and practices can support the development and administration of rigorous, valid OCR assessments that achieve their aim of providing valuable tools to accurately evaluate and support student learning.

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Table 1: Rubric to Categorize Course Assessment Items Using Bloom's Taxonomy

	No	Yes
Does answering the question require students to remember content (i.e., recognize or recall)?		
Does answering the question require students to understand content (i.e., classify, summarize, compare, or explain)?		
Does answering the question require students to apply content (i.e., execute or implement a plan, solve an equation, transform between numeric and graphical forms, transpose or simplify an equation)?		
Does answering the question require students to analyze content (i.e., differentiate, organize, do something with the data they classified or summarized, or attribute)?		
Does answering the question require students to evaluate content (i.e., check or critique)?		
Does answering the question require students to create content (i.e., generate, plan, or produce; such as by using drawing or graphing tools)?		



Figure 1. Online and Credit Recovery Related Policies by State (as of Fall 2023)

