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The Promise of Labor-based Grading Contracts for the Teaching of Psychology and Neuroscience

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Abstract

Introduction: Instructors assign grades to communicate to students how well they are learning the course content. However, students and instructors are often displeased with the process and outcome of grading.

Statement of the Problem: We contend that conventional grading inadvertently detracts from student learning and simultaneously replicates systems of oppression in academia. We discuss Labor Based Grading Contracts (LBGC) as an alternative to conventional grading.

Literature Review: We review the conceptual and empirical literature on LBGCs as an alternative method of assessing student work and extend its application to psychology and neuroscience courses.

Teaching Implications: We present recommendations for implementing LBGCs and address common concerns instructors have about this approach. We also make a call for more research on LBGCs in psychology and neuroscience teaching and learning.

Conclusion: LBGCs represent a promising shift in the purpose and approach to assessing student work and learning by centering laboring to learn and developing skills. LBGCs also create a more equitable grading structure for all students.

Key words: labor-based grading contracts, grading, assessment, equity, pedagogy

The Promise of Labor-based Grading Contracts for the Teaching of Psychology and Neuroscience

The practice of grading creates significant challenges for instructors and students. Students worry about their grades and spend considerable time strategizing how they will obtain the grade they desire (Dompnier et al., 2009). Instructors also grapple with unrewarding situations involving sorting and labeling their students' work by letter grades using a variety of approaches (Lipnevich et al., 2020). Grades are a means of communication between instructors and students about learning progress and may increase students' motivation to change behaviors resulting in higher quality work. However, students may shift their focus from learning to achieving grades, resulting in a reduction of agency and curiosity and even disincentivizing meaningful learning (Pulfrey et al., 2011).

Grades are not always a reflection of learning and mastery (Harackiewicz et al., 2002). Students' strategies to achieve a high grade sometimes involve meaningful learning, but not always (e.g., academic dishonesty; Stiles et al., 2018). For example, some learning strategies (e.g., cramming) may result in high grades on assessments, but they are associated poorly with retention, thus it is inaccurate to assume that high grades always signify learning (Landrum & Gurung, 2013). Sometimes grades reflect a student's ability to discern what the instructor wanted rather than learning, which raises questions about the link between the quality of student work (as a reflection of learning) and grades. Perhaps most problematically, conventional (i.e., standards-, quality-, and mastery-based) grading replicates systems of privilege and marginalization. Often grades reflect the skills and capacities associated with enrichment opportunities facilitated by higher socioeconomic status (Assari, 2019). Labor-based grading

contracts (LBGCs) can alleviate some of the challenges with conventional grading by reducing ambiguity about grade outcomes and reinforcing effort and engagement over standards.

What are Labor-Based Grading Contracts?

LBGCs prize labor (i.e., effort) over quality for every letter grade (Inoue, 2019). Grades are separated from feedback; that is, students are graded on completion of assignments based on objective criteria (e.g., timeliness, number of words written, problems answered, quizzes completed) and they receive ungraded feedback about correctness and quality. LBGCs emphasize process and effort over mastery. Inoue (2015) describes the LBGC approach as a method that places significant emphasis on noncognitive factors such as attitudes, behaviors, and practices, because they support "laboring to learn" instead of "laboring to earn a grade" (p. 193).

Successful LBGCs involve careful construction of assignments that engage students in labor that results in meaningful learning. In constructing the labor for a course, an instructor considers the behaviors that are needed for a student to thoroughly understand a topic or learn a skill, then designs assignments that engage students in those processes. An instructor may determine that students who thoroughly respond to critical thinking questions, apply concepts to a novel scenario, engage in active discussion using relevant concepts, complete practice problems, and/or take notes that reflect careful reading will likely learn content. Instructors give credit for completion (labor) and provide ungraded feedback on work quality. LBGCs encourage students to focus on growth and the learning process, and to value open constructive feedback. LBGCs accomplish some of the essential tasks associated with conventional grading (feedback and progress monitoring) and build on the limitations.

The Promise of Labor Based Grading Contracts

LBGCs reduce the power dynamics commonly associated with White middle-class values in education that have systematically excluded people from marginalized groups from educational opportunities (Dumas, 2016). LBGCs are fairer, in part, because every student has access to each letter grade regardless of privilege and marginalization (Inoue, 2019). Additionally, although instructors may attempt to assign grades objectively implicit and explicit teacher biases contribute to achievement gaps (Chin et al., 2020). Thus, grading on objective effortful completion of assignments over a single standard, quality, or mastery may help to mitigate the negative effects of an exclusionary educational system and empower all students to learn.

Prizing labor over quality empowers students to focus on the time and effort they devote to their studies, which is one aspect of learning over which they have substantial control. Because students know the exact effort required to earn the grade they desire, students are empowered to take ownership over their learning. Rigor and substance matter, but as a function of the decisions students make to achieve their best work, not as a function of the instructor's power to determine a single standard. Although not tied to their grade, frequent feedback about correctness and skill level allows students to assess their progress.

Learning without penalty, students are free to engage in the labor of learning without fear of 'getting it wrong,' fostering curiosity and risk-taking (Kapur, 2015), and alleviating excessive stress and anxiety in the classroom. In fact, the most recent American College Health Association report (2021) indicated that more students reported stress and anxiety as factors affecting their academic performance than any other factor. LBGCs offer students the opportunity to engage in the labor of learning free from anxiety about getting a poor grade or

pressure to do perfect work (Ward, 2021b). Future research should assess the impact of LBGCs on students' mental health, as well as risk-taking in the classroom.

Despite all the apparent advantages, it is important to note that applying any approach rigidly could result in swapping one problematic system for another. Notably, some students may struggle to find the time to engage in the labor for the course due to external demands (e.g., work schedules) and neurodivergence (Kryger & Zimmerman, 2020). While structural and societal factors that limit educational access are also present in the conventional grading paradigm, they are usually less noticeable. More research is needed to understand the implications of LBGCs on diverse student subpopulations.

We have observed that students thrive when encouraged to follow their curiosity and take risks without the threat of an undesirable grade. With LBGCs, students ask themselves what they understand and how they learned rather than what they 'should' know. Further, there is no disincentive to letting the instructor know that they do not understand something. LBGCs encourage all students to grow; even students who have mastered a topic find new challenges to explore to reach their personal best. Since all students are expected to engage with the labor of the course, it is conceivable that every student can earn an 'A' in the course, and, in doing so, will grow and learn regardless of the starting point.

Effortful engagement with learning is associated with cognitive and non-cognitive goals related to psychological and neuroscience literacy and global citizenship (Cranney & Dunn, 2011; Hulme & Cranney, 2020). For example, students benefit from developing facility with course concepts, formulating logical questions, critically evaluating information, making new connections, and relating to other learners in a culturally responsive manner (Sparkman et al.,

2012). These goals are especially important because we usually do not know our students' career trajectories; however, by cultivating these skills they can adapt to novel situations.

Effectiveness of Labor-Based Grading Contracts in English Courses

Using a case study method, Inoue (2019) has found that the amount of student labor is commensurate with final course grades. As a means of examining equity, he tracked student engagement ratings which were the same across White students and students of color. Inoue also tracked the content of formal and informal reflections to gauge student awareness of factors that support mindful engagement in learning, such as minimizing distractions, and modifications that help them learn effectively. Inoue found that LBGCs do not lower work quality compared to conventional grading and yields benefits for students and instructors.

Other research has shown the benefits of LBGCs in supporting learning. Ward (2021a and b) conducted two studies with high school students in writing classes (10th and 12th grade). Both studies used mixed methods and found that LBGCs had a favorable effect on student stress and anxiety and increased student sense of control and confidence because of the clarity of the contract (10th graders; 2021a). Ward also found that, in addition to anxiety reduction, the standard of achievement rose (12th graders; 2021b). However, most research on LBGCs has been conducted in English courses and more research in psychology and neuroscience courses is needed. Future research should examine instructor and student experiences and satisfaction with LBGCs, impact on learning, skill development, and wellbeing. Future research could help to discern the most effective assignments and activities as well as the impact of using LBGCs for part of the grade compared to the full course grade.

Recommendations for Implementing Labor-Based Grading Contracts

The first step to converting a course is to decide what types of labor will lead to learning the content and developing the skills associated with the course learning goals. Then, assignments and assessments should be designed or tailored to engage students in that labor. Supplementary teaching resources, including Table S1 which contains frequently used assignment types and syllabi for courses that use LBGCs, are available on the Open Science Framework (see Mena & Stevenson, 2021).

Structure and Clarity

We use points[1] for assignments that are based on learning practices supported by prior research (i.e., distributed practice, retrieval practice, discussion activities, generating personal examples, and making connections across topics; Gurung & McCann, 2012; see Table S1). A typical sequence of assignments includes completion of short answer comprehension questions based on provided readings and videos (this can be augmented by requiring students to submit their reading notes that reflect the thoroughness of their reading and understanding); presence in class for discussion, demonstrations, practice with, and applications of material; a self-test; a written report on correct and incorrect answers; and a reflection on course material and their labor and learning for that course topic/section/module. This sequence may be repeated to give students several cycles to master these habits of laboring to learn. It is unlikely that a student can complete this sequence of labor without substantial learning. While LBGCs were originally developed for writing courses, we have found that this sequence of assignments is an effective

[1] Unlike Inoue (2019), we elected to use points because we find it useful to weight assignment types. For example, a self-reflection on learning requires less labor to complete than a synthesis paper, thus the latter is worth more points. According to Kryger & Zimmerman (2020) differing weights allow neurodivergent students to make informed decisions about assignment completion relative to their labor resources.

way to apply the labor-based grading approach to content-heavy courses in both psychology and neuroscience, as reflected in the sample syllabi.

For large classes, a sequence with this many assignments may not be feasible. Strategies that can reduce the instructor workload include deploying quizzes through a classroom management system for the self-tests and reports, reviewing reading notes, and class prep assignments quickly judging overall effort from each individual and noting common misunderstandings, but using class time to provide group feedback. When possible, a teaching assistant can review assignments and provide a report on topics that are unclear to students. Instructors can also use in-class presentations, assign either reading notes or class prep assignments (not both), or use self-tests that require mastery (i.e., students can continue answering new quiz questions until their answers reflect mastery) instead of requiring self-test reports. In very large courses, a structure in which just a portion of the assignments are graded based on labor, while less effective for transforming the classroom environment, can still improve learning experiences.

Clarity about the required work is key to LBGCs, because most students are unfamiliar with it, which may pose a special disadvantage to neurodivergent students who are accustomed to conventional grading (Kryger & Zimmerman, 2020). Instructors need to clearly explain in the syllabus, how student learning will be evaluated, and how students can earn points. Additionally, providing enough detail will allow students to determine their grade at any given point in the course (Kryger & Zimmerman, 2020). Since we use points and the points are ‘all or nothing’ for each assignment, students can compare the points they have earned to the possible points to date to calculate the percent of points they have earned. It is also essential to provide clear and complete assignment details. Students will benefit from knowing the purpose of the assignment,

steps involved, amount of time needed, number of words or culminating project, and when and how the assignment should be submitted (Eddy & Hogan, 2014). We recommend discussing the contract with students periodically and adjusting it, if needed.

We start orienting students to LBGCs by sending them an email a week before the start of classes that includes the syllabus and our teaching and grading philosophy. This ensures that students will have a basic understanding of the approach and can engage in a productive discussion on the first day of classes about the labor that will help them to learn in the course. By sharing our philosophy in advance, we give students a chance to reflect on, identify concerns, and adjust to what it means to be successful in the course. Success is no longer defined as obtaining an 'A,' it is defined by student willingness to engage in concerted labor to learn.

Feedback on Assignments

Initially, students may think that because the points and the feedback are separate processes that they will complete work but not know if they did it correctly. It is important that they understand that they will receive feedback on each assignment and will know if they answered something correctly/incorrectly when such knowledge is available. Most assignments require individual feedback on student performance, as is typical in conventional grading. For some assignments, such as class prep assignments and reports on self-test, a single response/feedback letter (or dedicated class time for feedback) is a useful method. When implementing this approach, the instructor synthesizes the feedback for the entire class (Bean, 2011; Hughes, 2020). The instructor tells the class, without disclosing names, what most people seem to understand and what areas seem to be most challenging, followed by specific clarification and guidance for future work. Student self-reflection on their learning is essential to fully benefit from synthesized group feedback.

Intensive Critical Reflection

We create opportunities for students to reflect on their own learning practices because we have observed that critical reflection increases internal motivation to learn and grow (see Table S1). Critical reflection involves the focused awareness of how one's thoughts, feelings, and experiences fit with new learning. Practicing reflection ensures that students learn to evaluate the attitudes and behaviors that add/detract from laboring to learn. Students complete a reflection on work and learning at regular intervals where they discuss their approach to the work, strategies used, and perceived results, as well as what they would like to change in the next segment of the course.

Student Agency

Liberatory pedagogy involves assessing and mitigating potentially harmful power dynamics (Freire, 2005; hooks, 2014). Although students are learners of our course topics, they have valuable lived experiences that may be incorporated into the course through discussions, project ideas, extensions of the topic to their communities, and more. Empowering students to become active participants in their learning by giving them the freedom to select course topics and make contributions to the learning community increases sense of belonging and academic success, especially for historically marginalized students (Freeman et al., 2014; Mena et al., in press; Theobald et al., 2020).

Cooperation and Community

Feelings of social connectedness improve one's physical and mental health and cognition (Cacioppo & Hawkley, 2009); thus, cooperation and a sense of community are essential to the learning process (Surr et al., 2018). This departs from the value for individualism underlying many of the practices associated with teaching, learning, and grading in much of higher

education (DiAngelo, 2020). Instead, we emphasize the responsibility we have to each other in the classroom and cultivate this value through opportunities to contribute something to the entire class (e.g., group discussions, peer-feedback). Whereas conventional grading can enhance competition in the classroom, LGBC emphasizes process over outcome and fosters opportunities for cooperation. In the process of building community, students learn about mindfulness and compassion because they are essential for meaningful relationships and for cultivating caring and courageous learning communities (Inoue, 2019).

LBGC Implementation Challenges and Concerns

Various challenges and concerns about LBGCs have emerged in our discussions with colleagues who have also implemented this approach. One concern involves the extent of modifications required to adapt one's course. We were able to adapt our courses after a fresh look at the course learning goals and their alignment with the activities and assessments. Although the content of our courses mostly remained the same, we did restructure some assignments so that students could not complete them without engaging meaningfully with the course learning materials. In our experience, the workload for instructors using LBGCs is similar to conventional grading; however, we find that it is more enjoyable and less stressful. That is, once we complete the recording portion of grading, which is easy because it is all or nothing, we move on to giving feedback that is constructive without fussing over 'B' or 'B+' type of decisions. The workload may even be lighter, though no less rigorous, if we choose to offer synthesized feedback that we discuss with students in class. We foster a community-oriented course design wherein students also give each other feedback allowing us to focus our attention to issues of comprehension and application.

Careful assignment planning ensures that students will have to put in worthwhile labor to complete the assignment and evidence of subpar effort is addressed right away. If a student submits work that shows lack of care or effort, we discuss this with the student and may (once or twice) ask the student to resubmit the assignment to earn credit. Feedback that encourages engaged labor and evidence of deep thinking, sharing high quality examples of student work (with permission), and devoting class time to review how assignments are going are all ways to set the tone for high quality work.

We have adapted LBGCs to content-heavy courses in psychology and neuroscience that include testing which helps students improve retrieval (Karpicke & Roediger, 2008). However, the usefulness of exams/quizzes depends on the implementation. We prefer frequent quizzes over long exams as this is associated with improved learning and we provide options to retake quizzes (DeLozier & Rhodes, 2017). The benefit of testing is enhanced by follow up assignments that include reviewing the answers from the test. Students complete the required quiz or exam (no points) then submit a response that explains why each answer is correct/incorrect (then they get points). Since these are implemented as self-tests that follow reading-based assignments and class time dedicated to the topic of the quiz, students can discern how well they are learning.

Ambivalence about using LBGCs can be addressed in various ways. For students, we revisit the principles behind LBGCs throughout the semester if students are experiencing them for the first time. They may initially resist engaging in behaviors that support learning (distributed practice) and abandon poor habits (cramming). Yet, once students have taken an LBGC course, they tend to seek out more; we now have many students in our courses with LBGC experience. Instructors may worry that their colleagues and administrators may be skeptical of LBGCs. In our own department, we have found our colleagues supportive of new

pedagogies when there is a strong rationale and when instructors reflect on and evaluate how new approaches have worked. We hope this publication, and the works cited, provides the rationale and justification to make the switch to LBGCs to colleagues. However, further research and training workshops will be instrumental in bringing LBGCs into the mainstream of teaching in psychology, neuroscience, and other fields.

Conclusion

LBGCs reflect a shift in the purpose and approach to assessing student work and learning. LGBCs increase equity, foster student agency as learners, prize repeated and concerted effort, encourage cooperation over competition, and build mindful attention to learning and compassion as classroom norms. In essence, LGBCs provide students with the scaffolding to develop the skills for a lifetime of learning. Further research on the use of LBGCs in psychology and neuroscience courses is needed to gain a more complete understanding of the benefits for learning, retention, and more equitable classrooms.

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