

Giving Students Choice: Does the Use of a Flexible Assessment Weighting Scheme Result in Better Student Grades?

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Pedagogical approaches in higher education are evolving. Instructors are tasked with meeting the needs and preferences of the modern student and their desire for increased input in higher education courses. As such, this study sought to provide a manageable example of how flexible weighting schemes can be incorporated into assessments for undergraduate courses, in addition to examining whether doing so increased student grades. This study also examined students' motives for selecting a given assessment weighting scheme and if students would have selected an alternative weighting scheme upon completion of the course. Final grades and selected assessment weighting schemes from 159 students across two courses were collected. Written feedback from students in one course was also collected and subjected to content analysis. Results suggest that the majority of students did not choose the weighting scheme that would have given them the highest grade. Additionally, content analysis of written responses highlighted six motives behind students' choices (e.g., self-assessed strength in type of assessment). Lastly, of those students that did complete the optional written feedback, the majority indicated they would have chosen a different weighting scheme and that their self-perceived strengths regarding assessments did not help them choose the most appropriate weighting scheme. In conclusion, this study provides valuable insight into the implementation and outcomes of using flexible assessment in undergraduate courses.

Pedagogical approaches in higher education are evolving. The contemporary learner is no longer satisfied by traditional lectures and assessment formats (Bain De Los Santos et al., 2016). As a result, instructors are tasked with finding new ways to deliver course content and to assess learning using means that suit the needs and preferences of the diverse, modern student body (Strawser, 2018). Particularly, there has been a shift from teacher-centered to learner-centered learning environments, where students have more choice in regard to their education (Hoidn & Klemenčič, 2020; Wright, 2011).

Although providing choice in higher education courses has been noted to empower students and potentially encourage greater learning (Biggs, 1996; Jackson, 1997), it was not until more recently that instructors began adopting flexible pedagogies (McLinden, 2013). Gordon (2014) states that flexible pedagogy refers to "ways of considering approaches to teaching and learning that enable [...] student choice" (p. 4) and that flexible learning enables learners to determine the "pace, place, and mode" (p. 4) of their learning.

A common way that instructors have begun to incorporate flexible pedagogy and flexible learning into their course is through the use of flexible delivery of course material. Popular examples of such methods in higher education include blended learning (i.e., combination of online and face-to-face instruction; Graham, 2006) and flipped classrooms (i.e., course material is provided and read prior to class, enabling class time to be used for discussion or to complete an activity related to the material; Pierce & Fox, 2012). However, despite the potential beneficial outcomes (e.g., increased student engagement; McLaughlin et al., 2013)

of utilizing such flexible methods to deliver course material, there is research to suggest that the workload associated with doing so can become unmanageable for the instructor and/or the students (Khanova et al. 2015; Moffett 2015).

As such, a potentially more manageable means of incorporating flexibility into higher education courses has emerged: flexible assessment. By incorporating the use of flexible assessment, instructors are utilizing a flexible pedagogical approach by providing students with some element of choice in the type, time, and/or weighting of assessments (Irwin & Hepplestone, 2012; Varsavsky & Rayner, 2012; Wood & Smith, 1999). Reported benefits of flexible assessment for students may include feelings of empowerment (Francis, 2008), personalized learning experience (Rideout, 2018), increased involvement in the course (Cook, 2001), improvements in motivation and more positive attitudes towards assessments (Pacharn et al., 2013), and reduced stress (Pretorius et al., 2017). Flexibility in assessments can be incorporated into a course in a variety of ways. However, Wanner and Palmer (2015) report that even though students welcome the chance to have more choice and control over their assessments, they still desire guidelines and frameworks to work within.

Cook (2001) provides a great example of offering structured flexibility in assessment. In Cook's (2001) study, students were presented with four weighting schemes for assessments but were not asked to choose their preferred option. Rather, final grades for each student were calculated based on whichever scheme produced the highest grade for each student. Although students were encouraged to complete all assessments, weighting schemes ranged from only having to complete the final exam (option 1) to completing two exams and

five online quizzes (option 4), giving students options regarding the number of assessments they wished to complete. As such, if students only chose to complete the final exam, only one weighting scheme remained available to them. Results revealed that this flexible approach to assessment was well-received by students and that they felt more in control of their own learning (Cook, 2001). Results also indicated that students who completed all assessments were typically rewarded with higher grades than those who only sat for the final exam. Conversely, in a study by Wanner and Palmer (2015), where the number of assessments was fixed, students were given the opportunity to choose the type and timing of assessments, as well as the type of feedback they received. Results of Wanner and Palmer's (2015) study suggest that students welcomed such types of flexible assessments but highlighted the importance of not overwhelming students with too much choice.

As evidenced by the above studies, there are a variety of means by which instructors can incorporate flexibility into assessments. In addition to providing flexibility in the type, timing, or number of assessments students can complete, many instructors have begun offering flexibility in assessment through the use of weighting schemes (Cook, 2001; Francis, 2008; Irwin & Hepplestone, 2012; Pacharn et al., 2013; Rideout, 2018; Wanner & Palmer, 2015; Wood & Smith, 1999). For example, Rideout (2018) allowed students from twelve undergraduate courses the opportunity to select, from a range, the weighting of some class assessments (others had fixed weightings), while also permitting students to forgo the completion of non-mandatory quizzes should they choose to do so. Findings demonstrated that most students made some change to the original instructor-provided weighting scheme but that many also still opted for the default scheme. Additionally, while students were given the option of opting out of a number of assessments, the majority chose not to but instead shifted the weight of assessments based on their perceived strengths. However, despite a few recent examples, such as that by Rideout (2018), research outlining the implementation of student-selected weighting schemes in higher education and how such schemes relate to student grades is still somewhat limited and warrants further exploration.

Research Questions (RQs)

RQ#1: Does providing student choice in course assessment weighting lead to better grades?

RQ#2: What are the students' motives for selecting a given assessment weighting scheme selections?

RQ#3: Upon completion of the course, do students wish they had selected a different assessment weighting scheme and, if so, why?

Methods

Participants

Data were collected from 159 students from two separate, single-semester, upper-year undergraduate Kinesiology courses at a mid-sized Canadian university, taught by the same instructor. Both courses were not mandatory for degree completion, resulting in students self-selecting to enroll and complete each course. A total of 99 students completed Course 1 and 60 students completed Course 2.

Assessments and Weighting Options

Course 1

Four different course weighting schemes were presented to students on the first day of class (in the course syllabus; see Table 1 for details). The schemes were discussed, and the instructor answered any student questions. The schemes were developed based on formats, with higher weightings towards examinations (A and B), group work (D), or individual assignments (C and D). In past offerings of the courses, the course weighting option C was used.

Course 2

Four different course weighting schemes were presented to students on the first day of class (in the course syllabus; see Table 2 for details). The schemes were discussed, and the instructor answered any student questions. The schemes were developed based on formats, with higher weightings towards examinations (A and B), group work (C and D), or individual assignments (D). In past offerings of the courses, the course weighting option C was used.

Design

Course 1

On the first day of class, the instructor introduced and explained all course assessments and informed the students that they would have a choice in the weighting of such assessments. As described above, students in both courses were presented with four potential weighting schemes (i.e., A, B, C, and D, respectively for each course). After explaining each assessment weighting scheme, students were notified that they would have until 4 pm on a specified day (approximately 2 weeks before the first assessment was due) to select their preferred weighting scheme. To submit their selections, students were asked to complete an online form via the course's learning management system

Table 1
Assessment Weighting Scheme for Course 1

Grading Scheme	Lab Report ^a (Group work)	Assignment ^b (Individual)	Midterm ^c (Individual)	Final ^d (Individual)	Class Grades ^e M (SD)	Correctly chose highest grading scheme % (n)	Did not chose highest grading scheme % (n)
A (<i>n</i> = 2)	10%	10%	40%	40%	53.3% (0.10)	50% (1)	50% (1)
B (<i>n</i> = 12)	15%	15%	35%	35%	77.2% (0.07)	0% (0)	100% (12)
C (<i>n</i> = 35)	15%	25%	25%	35%	76.0% (0.10)	60% (21)	40% (14)
D (<i>n</i> = 50)	20%	20%	30%	30%	73.6% (0.07)	42% (21)	58% (29)

^aLab report consisted of data collection, data reporting, and short answer data analysis questions

^bAssignment was a two-page reflection-based paper

^cMidterm consisted of multiple choice, true or false, and short answer questions covering material from the first half of the semester

^dFinal Exam consisted of multiple choice, true or false, and short answer questions covering material from the second half of the semester

^eClass grades were calculated based on the grading scheme chosen by the student

(i.e., Blackboard). If students did not select a weighting scheme prior to the above-mentioned deadline, they were notified that they would be automatically assigned weighting option C, as this was the weighting scheme used in previous years (i.e., when students were not given a choice).

Course 2

In similar fashion to Course 1, students were given the option to select their preferred assessment weighting scheme for Course 2. Moreover, in addition

to the university's mandated *Student Evaluation of Teaching* forms completed within the final two weeks of the class, students were given the opportunity to provide voluntary and anonymous feedback on the course. Particularly, students were asked the following two questions: "Why did you choose the weighting option you did at the start of the class?" (open-ended) and "Would you chose the same grade weighting option now as you did at the start of the class?" (yes or no response with a prompt to explain if "no" was chosen).

Table 2
Assessment Weighting Schemes for Course 2

Grading Scheme	Lab Report ^a (Group work)	Assignment ^b (Individual)	Midterm ^c (Individual)	Final ^d (Individual)	Class Grades ^e M (SD)	Correctly chose highest grading scheme % (n)	Did not chose highest grading scheme % (n)
A (<i>n</i> = 2)	10%	10%	40%	40%	53.3% (0.10)	50% (1)	50% (1)
B (<i>n</i> = 12)	15%	15%	35%	35%	77.2% (0.07)	0% (0)	100% (12)
C (<i>n</i> = 35)	15%	25%	25%	35%	76.0% (0.10)	60% (21)	40% (14)
D (<i>n</i> = 50)	20%	20%	30%	30%	73.6% (0.07)	42% (21)	58% (29)

^aAssignment was a one-page paper where students applied course concepts to a specific real-world situation

^bTerm Project was a group-based tasks, where students conducted fieldwork and then wrote four-page paper and provided a twenty-minute presentation on a selected course topic

^cMidterm consisted of multiple choice, true or false, and short answer questions covering material from the first half of the semester

^dFinal Exam consisted of multiple choice, true or false, and short answer questions covering material from the second half of the semester

^eClass grades were calculated based on the grading scheme chosen by the student

Data analysis

Course 1

Upon completion of the course, descriptive statistics (i.e., means and standard deviations) of class grades, stratified by assessment weighting scheme were calculated. Additionally, for each assessment weighting scheme, frequency counts and percentages were calculated to determine the number of students who correctly (or incorrectly) selected the weighting scheme that would have resulted in their highest grade. The difference between the highest grade and their chosen weighting scheme was calculated. It should be noted that prior to data analysis, all identifying information was removed from the data to ensure student anonymity and all methods were cleared by the University of Windsor Research Ethics Board.

Course 2

Quantitative analyses, including descriptive statistics (i.e., means and standard deviations), for Course 2 were conducted in identical fashion to Course 1. Again, all identifying information was removed from the data to ensure student anonymity and all methods were cleared by the University of Windsor Research Ethics Board.

The additional open-ended question (i.e., “Why did you choose the weighting option you did at the start of the class?”) was examined by means of an inductive content analysis (i.e., a systematic and verifiable means of analyzing qualitative data; Cohen et al., 2018). First, both authors engaged in a familiarization period (i.e., reading and re-reading the responses to become familiar with the data) and noted any interesting patterns in the data. Then, the authors met, discussed their notes, and inductively (i.e., from the data) came up with a series of mutually agreed upon themes to code for. Once themes were established, a codebook (which included the name, description, details, and examples for each theme) was created to guide the analysis. Then, each author, using the codebook, independently coded all student responses. Each student response could be coded into more than one theme. Once both authors completed their coding, a meeting was organized to discuss any and all discrepancies in coding (similar to Santarossa et al., 2019). Specifically, for every instance where codes did not match, each author shared their perspective and reasonings for coding a response in a particular way. Once both authors presented their rationales, a final decision as to how the response would be coded was made collectively (Santarossa et al., 2016; Tiggemann & Zaccardo, 2018).

Lastly, frequency counts and percentages were calculated based on student responses to the yes-no

question “Would you choose the same grade weighting option now as you did at the start of the class?”. Unfortunately, due to the confidentiality of the course feedback, student responses to both additional feedback questions could not be matched to individual students’ grades.

Results

Course 1

Among 99 participants, the class average (based on their self-selected weighting schemes) was 74.5% (± 0.09). Weighting scheme B (i.e., favoured towards midterm/final examinations) proved to have the highest overall average (see Table 1). In total, 43 students (43%) chose the weighting scheme that resulted in their highest potential grade, whereas 56 students (57%) did not. Table 1 indicates the percentage of participants who correctly/incorrectly chose the highest grading scheme. Among those who did not choose their highest potential weighting scheme, the average grade difference between what they chose and the option that would have resulted in their highest grade was -1.05% (ranging from -0.01% to -8.54%). Although option D was the most popular weighting scheme chosen (i.e., weighting scheme with highest group work grade and the lowest final exam weighting), it did have the lowest proportion of participants who correctly chose their highest weighting scheme. Interestingly, weighting scheme B resulted in the highest final grade average, yet had zero students correctly chose it.

Course 2

Among 60 participants, the class average (based on their self-selected weighting schemes) was 78.0% (± 0.09). Weighting scheme A (i.e., favoured towards midterm/final examinations) proved to have the highest overall grade average (see Table 2); however, only 1 student chose this option.

In total, 12 students (20%) correctly chose the weighting scheme that resulted in their highest potential grade; conversely, 48 students (80%) did not (see Table 2). Among those that did not choose the weighting scheme that would have resulted in their highest potential grade, the average difference between what they chose and the highest option was -0.79% (ranging from -0.03% to 4.45%). Although weighting scheme C had the highest overall average and was the most popular grading scheme chosen (also highest level of group work), it did have the lowest proportion of participants who correctly chose the weighting scheme that would have resulted in their highest potential grade (besides B with 0%).

A total of 37 students completed the additional

additional course feedback. Content analysis revealed six themes from the qualitative responses to the question “Why did you choose the weighting option you did at the start of the class?” (see Table 3 for breakdown).

Table 3
Student Rationales for Selecting their Preferred Weighting Scheme

Theme	Responses % (n)
Self-Assessed Strength in Type of Assessment	62.0% (23)
Self-Assessed Strength in Group-Based Work	27.0% (37)
Balance	21.6% (8)
Stress Reduction	5.4% (2)
Starting with Lower Stakes	5.4% (2)
Scheduling	2.7% (1)

Self-Assessed Strength in Type of Assessment

Just over 62% of students ($n = 23$) chose a weighting scheme, at least in part, based on their self-perceived strength for examinations or assignments. For example, a student who selected weighting scheme D did so because they perceived themselves to be “way better at assignments than [they are] on exams.” Conversely, another student chose weighting scheme A as they believed they “test[ed] well on midterms and finals.”

Self-Assessed Strength in Group-Based Work

Ten students (27%) mentioned selecting a specific weighting scheme, at least in part, based on their preference for individual or group work. For example, one student chose weight scheme C because they perceived themselves to “do better on group projects because [they] work better on a team than as an individual,” whereas another student chose weighting scheme B as a result of being uncertain “if [they] would do well with [their] group” and “if [their group] would properly do their part” and preferred when their “midterm and final mark was on [them].”

Balance

Eight students (21.6%) mentioned selecting the weighting scheme they felt was most equally distributed between all assessments. For example, two students respectively said, “I chose C, seemed pretty fair and even” and “C. things were more evenly weighted.”

Stress Reduction

Two students (5.4%) stated they choose weighting schemes to reduce their stress. For example, one of the students chose weighting scheme D to have “less stress during midterm and finals season.”

Starting with Lower Stakes

Two students (5.4%) displayed preferences for having the first examination (i.e., the midterm) weighted less. As a result, these students choose weighting scheme C so they could assess the “style of testing and make appropriate adjustments” for the final exam, which would be worth more under their selected weighting scheme.

Scheduling

One (2.7%) student chose a weighting scheme for scheduling reasons. Specifically, they chose option C “because [they] had a lot of stuff going on around the midterm so [they] made it low.”

Additionally, of the 37 students that completed the additional feedback at the end of the course, 64% ($n = 23$) indicated that they would change their assessment weighting scheme, whereas 36% ($n = 13$) said that they would not change their previously selected course assessment weighting scheme. Of the 23 students that indicated they would change the assessment weighting scheme chosen, eleven provided an explanation, with all citing that they did better on one or multiple assessments than they had originally anticipated. For example, one student who originally picked weighting scheme C, where the midterm was worth the least amount, said they would have chosen a different weighting option “because [they] received a much higher mark on [their] individual assignment than [they] originally thought.”

Discussion

The purpose of this study was to implement a flexible assessment format in two undergraduate courses taught by the same instructor. More specifically, this study sought to examine whether providing students with choice in course assessment weighting would result in better grades and to identify motives behind students’ choices of assessment weighting scheme options. Lastly, the authors also sought to determine if students would choose a different assessment weighting scheme after completing the class compared to the scheme they chose at the start of class and their motives for doing so.

Contrary to results of a study by Bontis et al. (2008), where students were able to obtain higher grades by selecting their own assessment weighting scheme, the

majority of students in both courses examined in the current study did not select weighting schemes that resulted in their highest potential grade. Conversely, this research is congruent with previous studies by Dowling et al. (2003), Jones and McLean (2012), Pacharn et al. (2013), and Sharples et al. (2016) that suggest there is limited evidence that the use of flexible pedagogy in the delivery of course material and/or assessments leads to better grades for students, despite its ability to increase student engagement and create positive learning experiences (Wanner & Palmer, 2015). However, it should be noted that although the majority of students in both classes of the current study chose wrong, the average grade difference using the weighting scheme the students actually chose and the option that would have given them the highest grade was minimal (i.e., -1.05% and -0.79% respectively). Thus, more research examining students' abilities to maximize their grades by correctly identifying their strengths and selecting the most appropriate assessment weighting scheme, when given the option to do so, is needed.

For both courses, the most popular assessment weighting scheme chosen was that with the highest percentage allocated to group work (i.e., option D for Course 1 and option C for Course 2). Such results were not surprising as students often have positive opinions of group-based assessments in higher education (Ballantine & Mccourt Larres, 2006; Bartle et al., 2011; Gottschall & Garcia Bayonas, 2008; Orr, 2010). However, students appeared to somewhat inaccurately self-assess their strengths (i.e., as option D in Course 1 and option C in course 2 had the lowest proportions of students who correctly chose the grading scheme that would have resulted in the highest final grade). This potentially reinforces previous research by Wanner and Palmer (2015) and Rideout (2018) who emphasized the importance of providing structure and limiting the number of assessment weighting options students can choose from. By doing so, instructors (i.e., the most informed individual about the inner workings of the course) can avoid overwhelming students with too many options, which could potentially disadvantage students' learning and academic performance (i.e., lower grades) if students are not always able to correctly discern their strengths.

Six themes were discovered based on students' responses regarding their motivations for selecting a particular assessment weighting scheme. The most popular reason for selecting a particular weighting scheme revolved around students' self-perceived strengths for examinations or assignments, a theme echoed by Vander Schee (2011) and Rideout (2018). Additionally, almost a third of students also weighed their preferences for individual and group work when selecting a weighting scheme. As previously mentioned, more students selected assessment weighting schemes

skewing higher in group work, which is in accordance with previous research (Ballantine & Mccourt Larres, 2006; Bartl et al., 2001; Gottschall & Garcia Bayonas, 2008; Orr, 2010). Yet, the results of the current study's qualitative analysis do add to previous research by Ballantine and Mccourt Larres (2006), who noted that there are some students who prefer to work individually and express feelings of anxiety about group work.

The third most popular theme that emerged was the desire to select a balanced weighting scheme, where marks were most evenly distributed across all assessments. Many of the students who made such remarks noted that they were not sure where their strengths lied and preferred not to risk too much by overweighting any one assignment. Additionally, a smaller number of students chose weighting schemes that started off with lower value assessments and built towards higher value assessments as the semester continued in hopes of having a better idea of what to expect for assignments and examinations later in the term, when they were worth more marks. Such findings are supported by Francis (2008) who suggest that students enjoy the opportunity to have choice but that making such choices are not always accompanied by full confidence. Lastly, a small number of students expressed selecting weighting schemes in order to reduce stress for specific types of assessments or during times when their schedules were busy.

The majority of students (64%) who completed the additional feedback for Course 2 said they would have chosen a different assessment weighting scheme by the end of the course. These findings are similar those of Pacharn et al. (2013) who noted that students, when given the opportunity to modify their initial assessment weighting mid-course, frequently chose to do so. Additionally, in the current study, all students who provided an explanation as to why they would have selected a different assessment weighting scheme referenced doing better (or worse) than they anticipated doing on one or more assessments. Thus, such findings, in addition to those of Pacharn et al. (2013), suggest that students may struggle to accurately perceive their own strengths and weaknesses in regard to assessments and provides further support for Wanner and Palmer (2015) who advocated for the use of parameters when providing students with choice.

However, perhaps the most important findings of this study lie in the fact that even though students' grades did not improve by providing assessment weighting scheme flexibility, they did not really decrease either. Thus, based on the current study's qualitative findings and previous research suggesting that assessment flexibility can have other benefits (e.g., feelings of empowerment, Francis, 2008; personalization of the learning experience, Rideout, 2018; reduced stress, Pretorius et al., 2017), giving students flexibility in the

weighting of assessments may have resulted in a better overall learning experience, with only negligible sacrifices to student grades.

Limitations and Future Research

A few key limitations should be kept in mind when considering the findings of the current study. First, only two undergraduate classes at one mid-sized university were included in the study. As such, the findings, although insightful, are not generalizable to all undergraduate courses. Future research involving a greater number of courses, potentially from a variety of different academic fields, is warranted. Second, to maintain confidentiality, the additional student feedback provided from students in Course 2 could not be linked to student grades, limiting other potential analyses.

Conclusion

This paper has presented a feasible way for incorporating flexible assessment into moderately-sized undergraduate courses. Additionally, this study highlights that the use of flexible assessment weighting schemes does not necessarily result in grade inflation, but it can satisfy the desires of the contemporary student who wants more input into their learning environment and to create a more meaningful learning experience. Moreover, this study provides insight into students' motives for selecting specific weighting schemes. Lastly, this study suggests that even though students may not always accurately perceive their strengths and weaknesses regarding assessments, the consequences of making an incorrect weighting scheme selection may result in negligible differences between actual and potential grades.

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