Journal of the Scholarship of Teaching and Learning, Vol. 23, No. 1, April 2023, pp.46-58.
doi: 10.14434/josotl.v23i1.31471

Students' Perceptions of Choice-based Assessment: A Case Study

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Abstract: The traditional teacher-centered approach to assessment places teachers in total control of what, how, and when students' learning is assessed. Alternatively, choice-based assessment is a learner-centered approach to assessment that allows students to choose, to some extent, what, how, and/or when their learning is assessed. A case study was designed to expose undergraduate students to a choice-based assessment strategy and subsequently measure the extent to which they agreed, or disagreed, that the strategy influenced their level of engagement and satisfaction with their learning. Students voluntarily shared their perceptions over two survey cycles (n=22 in spring 2017 and n=36 in fall 2017) with an overall response rate of 84 percent. Results clearly demonstrate that most students expressed strong support for this choice-based assessment strategy; it enabled them focus on their strengths and interests, it influenced their level of engagement, it made them feel more responsible for their learning, and it made them feel empowered. However, choice was not motivating for all students; a few students expressed concerns over the potential for procrastination, a lack of experience with choice, and/or too many choices, which were more likely symptoms of the strategy's design rather than choice-based assessment. Overall, this case study clearly demonstrated that students were highly receptive to having a choice in what, how, and when their learning is assessed, which provides further evidence of the untapped potential for choice-based assessment strategies to foster student engagement, improve student satisfaction, and empower students to actively participate in their learning.

Keywords: assessment; choice; student voice; student engagement; learner-centered

Introduction

> There is, I think, no point in the philosophy of progressive education which is sounder than its emphasis upon the importance of the participation of the learner in the formation of the purposes which direct his [sic] activities in the learning process, just as there is no defect in traditional education greater than its failure to secure the active cooperation of the pupil in construction of the purposes involved in his [sic] studying (Dewey 2003, 43).

Democracy is central to education; the primary purpose of our educational system is to provide students with the knowledge, skills, and values necessary to actively participate in society (Dewey, 2003; Giroux and McLaren, 1986). According to Freire (1978) a democracy necessitates discourse, engagement, accountability, and social responsibility. Unfortunately, however, students' voices are too often overlooked in pedagogical decisions (Ford, 2013). Despite a recent transition toward a more learner-centered approach to education, student voice remains chronically overlooked in assessment decisions. Under the traditional teacher-centered approach, professors have traditionally exercised total control over what, how, and when students' learning is assessed, and what criteria are used to determine the extent to which students meet the learning objectives (Francis, 2008; Hodgson, 1997;

Leach, Neutze, and Zepke, 2001; Rowland, 2003). As students are increasingly being perceived as customers of the educational system, instead of beneficiaries (e.g., Browne et al., 1998), a teacher-centered approach to assessment in higher education has recently fallen under increased scrutiny in terms of fairness and validity (see Irwin and Hepplestone, 2012; Schwartz, and Arena, 2013). Fairness concerns stem, in part, from concerns over assessment bias, which occurs when any part of an assessment (e.g., language or format) is unfair due to the student's personal characteristics, such as sex, cultural beliefs, or socio-economic status (Cole and Zieky, 2001; Kruse, 2016). The consequences of assessment bias can be harmful to students' academic and personal success (Freire, 1972; Kauffman and Landrum, 2018). More than a decade ago, Francis (2008, 547) argued that students are … "far more likely now than at any time previously to challenge methods of assessment and to expect greater input into the assessment process on their part".

Numerous benefits are associated with the adoption of a learner-centered approach (e.g., Weimer, 2002; Doyle, 2011), including its application to assessment practice, because it better responds to the diverse needs that exist in today's classrooms (Tomlinson, Moon, and Imbeau, 2015). A learner-centered, or shared governance, approach … "allows students to take some real control … and encourages them to make important choices about what and how they will learn" (Doyle, 2008, p. xv). Such a shift, however, would require educators to rethink existing power structures in the classroom and relinquish some of their decision-making authority to their students (Leach, Neutze, and Zepke, 2001; Portelli and McMahon, 2004; Schwartz, and Arena, 2013; Zepke, 2014). Furthermore, in the context of assessment, Thomas and Velthouse (1990) argue that students also require capability, relevant subject material, as well as choice. The concept of choice-based assessment, also known as 'assessment empowerment' (see Francis, 2008), has been operationalized and defined herein as a learner-centered assessment strategy that provides students with choices in what, how, and/or when their learning is assessed.

Research suggests that providing students with choices, or flexibility, in what, how, and when their learning is assessed can enhance students' engagement and satisfaction with their learning experience. A theoretical foundation for choice-based assessment lies in self-determination theory (SDT), which refers to the conditions that support an individual's motivations to act as a function of their perceived experience of competence, connection, and autonomy (Deci, 1971; Deci and Ryan, 1985; Deci, Koestner, and Ryan, 2001; Ryan and Deci 2008). Because choice-based assessment provides students with the autonomy to make choices about their own learning (Dobrow, Smith, and Posner, 2011; Duncan and Buskirk-Cohen, 2011; Francis, 2008; Fulton and Schweitzer, 2011; Irwin and Hepplestone, 2012; Lau, 2016; Leach, Neutze, and Zepke, 2001; Owusu-Ansah, 2016; Schwartz, and Arena, 2013; Stefanou et al., 2004), it should have the potential to enhance student engagement and satisfaction (Patall, Cooper, and Wynn, 2010; Dobrow, Smith, and Posner, 2011; Francis, 2008; Irwin and Hepplestone, 2012; Owusu-Ansah, 2016), motivate students to put more effort into their studies (Owusu-Ansah, 2016; Patall, Cooper, and Wynn, 2010; Weimer, 2011), and, not coincidentally, receive higher grades (Flowerday and Schraw, 2000; Irwin and Hepplestone, 2012; Owusu-Ansah, 2016). Another purported benefit of choice-based assessment is that it allows students to focus on their personal strengths and interests (Duncan and Buskirk-Cohen, 2011).

Despite the purported benefits, however, there is a well-recognized deficiency of empirical research on the impacts of choice-based assessment (Dobrow, Smith, and Posner, 2011; Flowerday and Schraw, 2000; Francis, 2008; Patall, Cooper, and Robinson, 2008; Varsavsky and Raynor, 2013; Weimer, 2011, 2012, 2014), particularly at a post-secondary level. Three notable exceptions exist in the literature. First, Francis (2008) reported on undergraduate students' conjectural receptiveness to the concept of choice-based assessment, but students did not experience any choices in how their learning was assessed. Second, Fulton and Schweitzer (2011), reported on computer science students' motivation for choice of a final assignment, worth 10 percent of their final grade, and the perceived

impact that choice had on both their assignment grade and their overall performance in the course. Third, Thibodeaux, Harapnuik, and Cummings (2019), analyzed graduate students' perceptions of the influence of choice, ownership, and voice, which they experienced throughout the program, on several domains of both their learning experience and their learning environment.

To build upon previous contributions to the literature, this case study collected empirical evidence to further explore the purported benefits of choice-based assessment. Toward that end, this case study was designed to expose undergraduate students to a choice-based assessment strategy. Then, at the end of the semester (i.e., the end of students' experience with the choice-based assessment strategy) a questionnaire instrument was used to quantitatively and qualitatively measure students' perceived experiences with the choice-based assessment strategy, especially insofar as its ability to influence their level of engagement and satisfaction with their learning experience. The results from this case study have the potential to inform evidenced-based decisions on learner-centered assessment and contribute to the emerging discourse on best practices for implementing choice-based assessment strategies.

Methods

This case study was designed to expose undergraduate students to a semester-long experience with a choice-based assessment strategy and then measure the extent to which they agreed, or disagreed, that the choice-based assessment strategy influenced several domains of engagement and satisfaction with their learning experience. To summarize, the choice-based assessment strategy reported upon herein allowed each student to choose from several different assessment items (e.g., tests, quizzes, position papers, regional profiles, and Google Earth assignments) that collectively summed to more than 200 percentage points. Students were allowed to choose (i) any combination of the assessment items and (ii) as many assessment items as they wanted to earn up to a maximum of 90 percentage points toward their final grade. The remaining 10 percentage points were allocated to participation (e.g., in-class assignments, small-group discussions, and clicker questions); meaning it was not possible to earn an A in the course without participating in class activities. See Spinney (2018) for a more detailed description of the choice-based assessment strategy, including details on the means and modes for expression and the associated percentage points for each.

This case study received Institutional Review Board approval (IRB-1611032-EXM) from South Dakota State University. The target population (N=69) was students enrolled in a 200-level World Regional Geography course during the spring 2017 (N=27) and fall 2017 (N=42) semesters (i.e., survey cycles). The undergraduate students were asked to read and sign a consent form and they were incentivized with two extra-credit percentage points. The questionnaire was designed as a pencil-and-paper instrument that was administered to all students who attended the last day of classes during the spring 2017 and fall 2017 semesters. The response rate for the spring 2017 semester was 81 percent and for the fall 2017 semester it was 86 percent.

The questionnaire asked each student to answer a series of closed-response questions that included their year of study (i.e., freshman, sophomore, junior, senior), prior experience with choice-based assessment, and their level of agreement (i.e., 5=strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree) with 12 statements that were designed to measure the extent to which the choice-based assessment strategy influenced several domains of engagement and satisfaction with their learning experience. The 12 statements (i.e., domains) were based on (i) the potential benefits of choice-based assessment espoused by the literature, (ii) an attempt to measure the emotional, cognitive, and behavioral domains of student engagement (see Cooper, 2014; Fredricks et al., 2004), and (iii) semi-structured interviews with a dozen students who experienced a pilot study of this choice-based assessment strategy during the fall 2016 semester. In addition to closed-response questions, the

questionnaire also asked each student to describe, in open-response format, what they liked 'most' and what they liked 'least' about their experience with the choice-based assessment strategy, and in both cases why. A copy of the questionnaire instrument is available upon request.

Completed survey instruments were collected and transcribed by the co-author into digital format[1] for processing and analysis. Verbatim responses to what students liked 'most' and 'least' about the choice-based assessment strategy were coded with three key goals; (i) maintain maximum breadth of information, (ii) create mutually exclusive codes, and (iii) recognize that some responses may be assigned more than one code. Consequently, the number of codes exceeds the number of respondents, albeit slightly. Based on guidance from Saldana (2013), the two-stage coding process began with eclectic (i.e., attribute and descriptive in this study) line-by-line[2] coding to develop the initial coding system, which was performed independently by the co-authors. Comparison of the independent coding systems revealed remarkable similarities, but a few discrepancies required deliberation and resulted in four labels being changed for clarity and five codes were combined for parsimony. Lichtman (2010) suggests educational studies tend to generate about five to seven major themes. The revised and mutually agreed upon second-stage coding system in this case study resulted in 11 codes for what students liked 'most' and 9 codes for what students liked 'least' about their experience with the choice-based assessment strategy. SPSS v. 26 was used to generate summary statistics and perform significance testing.

Results

The purpose of this case study was to better understand the potential benefits of a choice-based, learner-centered, assessment strategy by quantifying students' perceptions about the extent to which this choice-based assessment strategy influenced their level of engagement and satisfaction with their learning experience. This case study collected students' responses to a dozen closed-response questions that measured level of agreement, or disagreement, with the purported benefits of choice-based assessment. This case study also collected students' open-responses to what they liked 'most' and 'least' about their experience with this choice-based assessment strategy. To ensure consistency and enable comparison across the two survey cycles, both the course and survey designs remained static throughout the data collection period. Frequency distributions of the respondents' sex, year of study, and previous experience with choice are illustrated, by survey cycle, in Table 1. Difference of proportions z-tests were used to highlight any significant differences between the survey cycles.

Table 1. Frequency distributions of respondents for spring and fall survey cycles.

	Spring 2017		Fall 2017	
	n	%	*n*	%
Overall	22.0	--	36.0	--
Sex				
Male	10.0	45.5	15.0	41.7
Female	12.0	54.5	21.0	58.3

[1] The Likert-scale information was entered using a no-empty-cell protocol; zeroes represent 'no response' and were set as missing values, so they did not influence mathematical calculations.

[2] Charmaz (2008, 94) advises line-by-line coding promotes a more trustworthy analysis and … "reduces the likelihood of imputing your motives, fears, or unresolved personal issues to your respondents" ….

Year of Study				
Freshman	11.0*	50.0*	4.0	11.1
Sophomore	7.0	31.8	3.0	8.3
Junior	2.0	9.1	14.0*	38.9*
Senior	2.0	9.1	15.0*	41.7*
Experience with choice				
Never	10.0	45.5	14.0	38.9
Rarely	10.0	45.5	11.0	30.6
Sometimes	2.0	9.1	8.0	22.2
Often	0.0	0.0	3.0	8.3
Always	0.0	0.0	0.0	0.0

*Two-sided results are significant at 0.05.

While the sample sizes were inconsistent over the spring and fall survey cycles, there was a relatively proportional distribution by both sex and experience with choice. There were, however, statistically significant differences in the distributions of respondents by year of study; there were significantly higher proportions of freshmen during the spring 2017 semester and higher proportions of juniors and seniors during the fall 2017 semester. Despite these differences in year of study, few students reported having much experience with choice. For example, 90 percent of the students in the spring semester reported they had either 'rarely' (45%), which means fewer than 2 experiences over the student's academic career, or 'never' (45%) had any choice in how their learning was assessed. Notably, that proportion drops to almost 70 percent in the fall semester. Also, a small number of students, comprising 8.3 percent of the sample from the fall semester, indicated they 'often' had choices, which means they had at least one experience per year. However, chi-square analysis revealed no significant differences in experience with choice by year of study.

Figure 1 illustrates the summarized results for students' level of agreement with each of the 12 closed-response statements that were used to measure the purported benefits of choice-based assessment and the domains of student engagement. In general, the results suggest that students expressed strong 'support' (i.e., agree and strongly agree) for the choice-based assessment strategy across all 12 closed-response statements. A small proportion of responding students expressed feelings of 'indifference' (i.e., neutral). On the other end of the spectrum was a small group of students who expressed 'push-back' (i.e., disagree and strongly disagree) against their experience with the choice-based assessment strategy. For illustration purposes, the results in Figure 1 are sorted by the mean number of respondents who supported each statement.

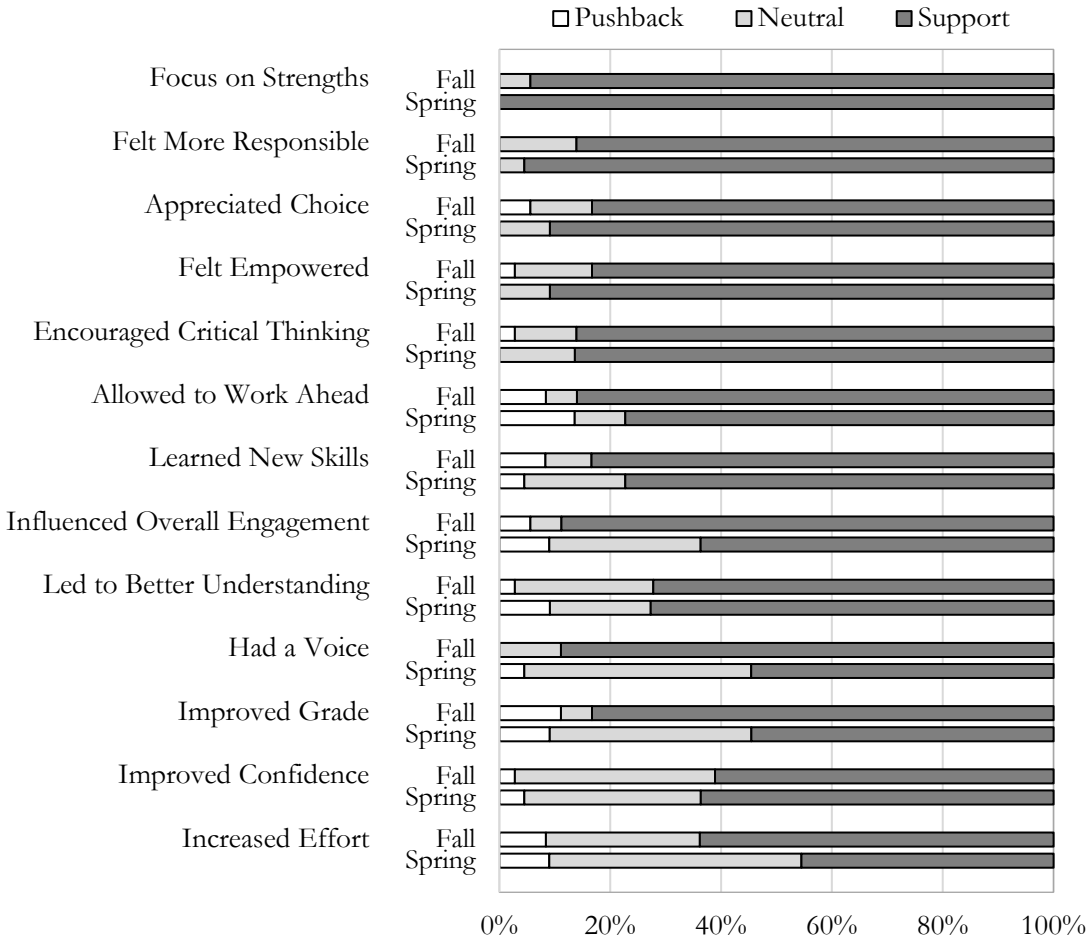

Figure 1. Frequency of students' level of agreement that choice-based assessment influenced domains of student engagement by spring and fall survey cycles.

Overall, results indicate that students were highly receptive to their experience with the choice-based assessment strategy and results are generally consistent across the spring and fall survey cycles. Most students either agreed or strongly agreed (i.e., support) that they 'appreciate having a personal choice of assignments', which was the third most supported of the 12 statements. Among the other most supported statements, and the only two that did not receive any pushback, related to students' ability to 'focus on their personal strengths' and how the autonomy of the strategy made them 'feel more responsible for their own learning'. Students expressed the most indifference toward statements that asserted choice increased their 'confidence' and their 'effort and participation'. The two statements that received the most pushback, which rarely exceeded 10 percent of respondents, suggested that the choice-based assessment strategy 'increased their grades' and it 'allowed them to complete assignments early in the term' (i.e., work ahead).

Many similar sentiments were echoed both within and between the two survey cycles insofar as the open-ended responses to what students liked 'most' and 'least' about their experience with the choice-based assessment strategy. Students' verbatim responses used almost one-third more words and two-thirds more sentiments (*viz.* codes) to describe what they liked 'most' compared to what they liked 'least'. More specifically, students used 2,884 words to represent 127 codes for what they liked 'most', which is more than one-third more words and more codes that were used to describe what

they liked 'least'. Organized by spring and fall survey cycles, Table 2 lists the ranked frequency distribution of codes regarding what students liked 'most' about their experience with the choice-based assessment strategy and Table 3 lists the ranked frequency distribution of codes for what students liked 'least' about their experience.

Table 2. Frequency distribution of codes for what students liked 'most' about the choice-based assessment strategy by spring and fall survey cycles.

Codes: What Students Liked 'Most'	**Spring 2017** (n=46)		**Fall 2017** (n=81)	
	Rank	**Percent**	**Rank**	**Percent**
Focus on strengths/ interests	1	39.1	1	38.3
Control of own learning	2	15.2	2	14.8
Works with schedule	3	13	5	8.6
Variety of assignments	4	10.9	3	12.3
Ability to finish early	5	4.3	8	2.5
More enjoyable/ fun	6	4.3	6	3.7
No point limit	7	4.3	12	1.2
Motivating/ Engaging	8	2.2	4	11.1
Reduced anxiety	9	2.2	7	3.7
Other	10	4.4	10	3.7

Table 3. Frequency distribution of codes for what students liked 'least' about the choice-based assessment strategy by spring and fall survey cycles.

Codes: What Students Liked 'Least'	**Spring 2017** (n=33)		**Fall 2017** (n=46)	
	Rank	**Percent**	**Rank**	**Percent**
Encouraged procrastination	1	42.4	1	39.1
No firm deadlines	2	18.2	6	4.3
Nothing	3	6.1	2	17.4
Requires personal responsibility	4	6.1	3	8.7
Too many firm due dates	5	6.1	4	8.7
Value of some assignments	6	6.1	5	6.5
Did not force me to learn new skills	7	3	9	2.2
Lack of experience with choice	8	3	--	--
Other	9	9	8	13.2

Similarly, across the two survey cycles, the two most frequently reported codes (i.e., rank 1 and 2) collectively include over half (about 55%) of all sentiments regarding what students liked 'most' and what they liked 'least' about their experience with the choice-based assessment strategy. For example, the modal response for what students liked 'most' was that it 'allowed them to focus on their strengths and/or interests', which was reported by almost 40 percent of respondents in both spring and fall survey cycles. The second most frequently reported code about what the students liked 'most'

was having 'control over their own learning', which was reported by almost 15 percent of respondents in both survey cycles.

Regarding what students liked 'least', more than half of the respondents, and around 40 percent of all the 'least' codes, referred to the potential for this choice-based assessment strategy to 'encourage procrastination'. Notably, however, 'nothing' was the second most frequently reported response to what students liked 'least' in the fall survey cycle and the third most frequently reported response in the spring. While a small number of students felt there was an insufficient number of deadlines (mostly in the spring), others felt there were too many. Also, and perhaps somewhat telling, a small number of students reported that 'personal responsibility' was something that they liked 'least'.

Discussion

Students, like all people, are individuals; each with their own strengths, interests, and readiness levels. Therefore, to mitigate concerns about the validity and fairness of assessment outcomes, it is important to provide choices, or at least alternatives, in what, how, and/or when students express what they have learned. Concerns about the validity and fairness of assessment are compounded by wider questions about the inherent biases of those who are in control of what, how, and/or when students' learning is assessed. These concerns raise questions about the prevailing teacher-centered approach to assessment, while also raising questions about the potential benefits of a learner-centered approach. The purpose of this case study was to expose undergraduate students to a choice-based assessment strategy for a semester and then measure their perceptions on the extent to which they agree that the strategy influenced their engagement and satisfaction with their learning experience.

This case study lends support to previous findings that purported choice-based assessment has the potential to increase student engagement. Certainly, this sentiment was supported (i.e., agree or strongly agree) by most students in this case study and across all 12 domains of student engagement, which include the amount of effort students put in their studies (e.g., Patall et al. 2010). Given that SDT emphasizes a direct relationship between student autonomy and student engagement (Deci, 1971; Deci, Koestner, and Ryan, 2001; VanRyzin, Gravely, and Roseth, 2009), it is noteworthy that the most fervently supported statements suggested that the strategy made students 'feel more responsible' (86% in the spring and 95% in the fall), 'feel empowered' (83% in the spring and 91% in the fall), and it 'influenced their overall engagement in this course' (89% in the spring and 64% in the fall). While Deci, Nezlek, and Sheinman (1981) suggest autonomy and choice will also lead to better academic outcomes, Patall et al. (2010) did not find a significant association between choice and higher grades among high-school students. Unfortunately, the design of this case study did not allow for direct testing of the causal link with higher grades. However, previously reported results (Spinney, 2018) indicate that final grades were well above average in this course, which is likely because this choice-based assessment strategy allowed students to complete as many assignments as they wanted (to a maximum of 90 percentage points). Contrary to the traditional practice of using grades as an extrinsic motivation tool, which tends to reduce a student's intrinsic motivation (Deci et al., 2001; Dobrow et al., 2011), results from this case study suggest that grades may also be used as an intrinsic motivation tool if there is also voice, relevant subject material, capability, and choice.

The results from this case study have highlighted the need for better-informed design and implementation of choice-based assessment strategies to ensure they capitalize on the potential benefits while also mitigating the potential obstacles. Doyle's (2008) work on learner-centered teaching suggests there are eight potential reasons that students may exhibit some resistance to a choice-based assessment, and several of those same reasons were echoed by students in this case study. For example, Doyle (2008) argued that students tend to follow the path of least resistance, they lack the required experience, and it is difficult to adapt to new experiences. Similarly, several students reported the

potential for this strategy to encourage procrastination. Also, a small sample of students and perhaps a related group of students, expressed pushback to the assertion that choice increased their grades. Perhaps, too, some students that were unmotivated by choice may have either been paralyzed by too much choice, lacked experience with choice, or were unaware of their strengths, which may also help to explain their opposition to the choice-based assessment strategy.

While research suggests that learner-centered teaching can be effective in enhancing students' learning experience (Weimer, 2002) and these alternative assessment strategies can help engage and empower learners (Peshek, 2012; Tan, 2012), it can be especially challenging for educators to provide a range of choices in what, how, and when students' learning is assessed. More specifically, it is time-consuming to develop multi-modal assessments (Spinney, 2018; Peshek, 2012). Furthermore, providing assessment choices requires additional planning, creativity, and flexibility on the part of the educator, because of the different choices and evaluation rubrics required (Libman, 2010). See Bishop et al. (2014) for guidance on creating successful learner-centered classrooms, and Dobrow et al. (2011) and Irwin and Hepplestone (2012) for guidance on designing effective choice-based assessment strategies.

Within the context of effective choice-based assessment strategies, it is noteworthy that the strategy used in this case study was not intended to represent an example of best-practice for choice-based assessment. Despite efforts to anticipate potential issues, it became clear early on that this choice-based assessment strategy was not motivating for, or embraced by, all students who experienced it. It was also clear that the strategy enabled some students to earn 90 percent of their final grade within the first few weeks of the course, but it also enabled some students to choose assignments that were due during the final few weeks of the course. It is ultimately true that all students have a choice of when and whether, or not, they submit an assignment or write a test (e.g., on-time, late, or never). However, this strategy allowed students to choose the *form* of assessment (e.g., tests, assignments, etc.), *how many* assessment items, and to some extent *when* their learning was assessed, provided it was before the item's due date. Perhaps the choice-based assessment strategy employed in this case study provided students with too many choices. Patall, Cooper, and Robinson (2008) provide some guidance on this issue; they found that too many choices can make it difficult for students to decide and they suggest that fewer choices tend to be more motivating. Notably, immediately following the data collection period for this case study, the author adapted the choice-based assessment strategy to provide 'smaller' (e.g., topic of research paper, answer 3 of 5 questions, best 4 of 6 assignments or quizzes) and 'fewer' choices for students within a common set of assessment items.

In addition to the shortcomings in the design of the choice-based assessment strategy, this case study has other limitations. The most notable of which stems from the repeated cross-sectional nature of the data that were collected from two relatively small and voluntary samples of undergraduate students enrolled in a geography course at a regional university. As with any cross-sectional study, exposure and outcome are simultaneously assessed, which means there is generally no evidence of a relationship between the two. Furthermore, it is unclear whether the volunteer participants are representative of the wider undergraduate population in the region, the country, or beyond. Also, owing to the design of this case study, the co-authors were fully aware of the research conditions, which raises the potential for expectancy biases resulting from the observer-expectancy, or Hawthorne, effect (see Roethlisberger and Dickson, 1939). Furthermore, and despite deploying the questionnaire on the last day of class to mitigate the potential for social desirability bias, the respondents had a personal relationship with the professor, which may have influenced their responses. Additionally, the survey instruments were developed based on guidance from the literature and then pilot tested to improve their validity. However, the instruments were not subjected to validity-triangulation (see Creswell, 2014). Despite these limitations, the results reported herein tend

to agree with theoretical expectations and they tend to echo previous studies. Therefore, the results from this case study should be generally applicable to a broad audience.

This case study showed that students' perceived experiences with a choice-based assessment strategy were overwhelmingly positive, which further supports the assertion that choice-based assessment has the potential to help foster student engagement and improve students' satisfaction with their learning experience. Unfortunately, however, choice-based assessment is based on the presumption that educational institutions, and their classrooms, are learner-centered democracies, which runs contrary to the prevailing teacher-centered structures embedded throughout higher education. Hopefully, this research will help inform and support evidence-based decisions that allow educators to exploit the untapped potential for choice-based assessment to enhance student engagement, improve student satisfaction, and empower students to actively participate in their learning. Toward that end, the results of this case study lend another voice to the growing chorus of calls for democratization of assessment in higher education.

Acknowledgments

The authors gratefully acknowledge funding support from South Dakota State University's Scholarly Excellence Funds. We are also grateful to the students who participated in this case study and the reviewers for their insightful comments.

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