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Incentives and barriers to OER adoption: A qualitative analysis of faculty perceptions

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Abstract

In this paper, 218 U.S faculty responses regarding Open Educational Resources (OER) were qualitatively analyzed. Ten categories emerged in the coding process. The top three categories that indicated barriers to the adoption of OER were *need more information* (faculty wanted more information before they would be willing to adopt OER), *lack of discoverability* (faculty wanted to be able to easily find repositories of OER), and *confusing OER with digital resources* (faculty were unaware of the difference between digital resources and OER). The top incentives identified in this analysis to overcome these barriers include student cost benefits (saving students money), student pedagogical benefits (faculty being able to make changes to OER to improve course content and instruction), and institutional support for the adoption of OER (whether in the form of course load reduction, curricular research assistance, or library support for finding and adopting OER). Future research is needed to better understand how to address and overcome these barriers to OER adoption.

Keywords: Open Educational Resources; OER; Perceptions; Traditional resources; Motivations; Barriers

The desire to improve learning and the resources that facilitate learning is a priority for educational institutions and their faculty members. Instructors adopt a variety of learning materials to improve student success, and one of the most heavily adopted learning resources is the textbook. While there are countless textbooks available from a variety of distributors and for a wide range of costs, there are also a significant number of learning materials, including textbooks, that have been made publically available at no cost under open licenses. These are known as open educational resources (OER). The rise of OER was a result of an initiative out of the Massachusetts Institute of Technology (MIT) in an effort to place learning materials on the Internet at no cost (Goldberg, 2001). The OER movement gained global awareness in 2001 and has reached a heightened popularity since this time (Guttenplan, 2010). A majority of educators, however, continue to be unaware of OER as a potential resource, and some have negative perceptions regarding OER (Allen & Seaman, 2014).

The United States Bureau of Labor statistics reported in 2009 that higher education costs have risen over 538% since 1985. Although there are many ways to cut costs in education, a feasible way to cut costs for students is through the adoption of OER. Allen and Seaman (2014) reported that there were existing faculty suspicions of quality of these resources thus impeding adoption, but the adoption of open textbooks has most often shown to result in slightly better or no significant difference in student performance (Bowen, Chingos, Lack & Nygren, 2012; Lovett, Meyer & Thille, 2008; Robinson, Fischer, Wiley & Hilton, 2014; Wiley, Hilton, Ellington & Hall, 2012). Although several additional empirical studies have demonstrated the efficacy of OER (Hilton, 2016), some faculty members are still wary of the quality of OER—despite cost and potential pedagogical benefits.

The future of OER will likely depend on how it is perceived by individual faculty members. The aim of this study is to understand awareness of and attitudes towards OER through free response analysis of faculty members in the United States. The responses will be analyzed to inform both barriers and motivators to OER adoption in the US. Understanding the attitudes collected in this

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study will help inform the adoption and sustainability barriers of OER as well as provide some possible incentives to help increase OER adoption.

Literature review

Although OER are gaining popularity, there is a lack of empirical research regarding the perceptions of these resources (Bliss, Hilton, Wiley & Thanos, 2013). In our review, we have divided the perception studies into two groups: (1) those that sample a group of faculty and students after OER had been used and (2) those that sample a group of faculty without knowing whether or not they have a background knowledge of OER.

Perceptions of quality after OER use

Bliss, Hilton et al. (2013) conducted a study regarding perceptions of OER in a community college setting. The faculty and student perceptions of the OER were primarily positive, with only 3% of those surveyed stating that the OER were worse than traditional textbooks; 56% of faculty stating they were the same quality; and 41% stating they were better than comparable resources. In an extension of the study, an additional 58 teachers and 490 students were surveyed regarding their experience using OER in their courses (Bliss, Robinson, Hilton & Wiley, 2013). Similar results in both instructor and student perceptions were discovered. Approximately half of students surveyed stated that the resources used were of the same quality as traditional resources, and 40% perceived the OER as better than traditional resources. Faculty responded similarly, with 55% stating that the resources were the same quality, and 35% felt that the OER were better quality.

Other perceptions studies were administered after courses had adopted OER in the place of traditional resources. Lindshield and Adhikari (2013) studied the perceptions of a group of students in a human nutrition class that had adopted a digital open textbook. “Students favorably rated their level of satisfaction, liking the idea of the [digital OER], ease of [digital OER] use, not having to buy a textbook, and preferring the [digital OER] versus buying a textbook for the course” (Linshield & Adhikari, 2013, p. 28). Students who had used OER perceived them positively and stated that they would not be in favor of replacing their open textbook with a traditional course textbook. Lindshield and Adkhikari (2013) also administered a survey to a group of faculty and students who replaced their statistics textbook with an open textbook. Their perceptions were quite positive, especially relating to the cost difference savings. A majority of the students surveyed (65%) stated that they preferred using an open textbook and they attributed this preference to cost and ease of use.

General Perception Studies

General perception studies have been conducted on groups of faculty that have had various levels of interaction with OER. In 2014, Allen and Seaman conducted the Babson Study where a nationally representative group of 2,144 faculty from institutions across the United States were questioned regarding their opinions of OER. Of the faculty surveyed, 61.5% stated that they perceived OER to be of the same quality of a traditional resource, and approximately 12% expressed that they believed OER were better quality. This study is unique in its comparatively large percentage of faculty (26.3%) stating that traditional resources were superior in *trusted quality*. Faculty responses regarding *proven efficacy* (one of the categories identified in the Babson Study) yielded similar results, although in this category only 15.3% faculty believed that traditional resources were of a higher proven efficacy. Nearly two thirds of faculty self-reported as being unaware of OER and one half of faculty stated that they had never used an OER. Of those who had reported using OER, there were many

who did not display a full knowledge of what differentiates OER from free online resources. Lack of understanding of what OER encompasses and lack of experience with using OER could have affected some of these responses, including respondents stating that they prefer a traditional resource.

A similar study at a single institution conducted in 2012 revealed that only 18% of faculty had heard the term OER despite an open initiative that had been launched at the university (Rolfe, 2012). Surveys were conducted on attitudes towards and adoption of OER. Approximately 50% of instructors were comfortable seeking out and utilizing resources from the Internet, but only 12% of the same group of faculty made their personal resources globally available. Although instructors were often comfortable seeking online resources and using them, many were unaware of OER.

Other studies have been conducted internationally and have yielded similar results of lack of awareness, and generally positive perceptions from the majority of faculty towards OER (Venkaiah & Ambedkar 2012). Some of these studies outline specific adoption barriers of OER. Abeywardena, Gajaraj, and Chan (2012) highlighted barriers of discoverability of resources, as well as time available to evaluate resources as barriers. No other barriers were discussed in this paper. Additional barriers such as Internet accessibility and reliability were outlined by Mtebe and Raisamo (2014) but were specific to their region of study (Africa). Although perceptions towards OER are generally positive, and some literature exists on barriers, the context of these studies is primarily international. In addition, the relationship between motivators and barriers has been left out of all existing literature.

Of these OER perception studies, the bulk of respondents state cost to be the primary benefit of adopting an open resource. Many studies have shown significant savings on textbook costs in courses that adopted OER (Wiley et al., 2012; Hilton, Gaudet, Clark, Robinson & Wiley, 2013; Hilton, Robinson, Wiley & Ackerman, 2014). Although cost savings are an important benefit of adopting OER, there are perceived and actual benefits beyond cost savings. “Creative use of OER” (e.g., combining excerpts of various OER or leaving room for student adaptation of the materials) can also result in benefits such as student achievement and increased retention rates (Pawlyshyn, Braddlee, Casper & Miller, 2013, para. 1). These benefits inform the discussion on motivations for OER adoption.

While these studies have provided a foundation for OER perceptions research, additional empirical studies are needed to more fully understand faculty perceptions of and attitudes towards OER. Previously published studies, while addressing likes and dislikes of OER, do not deeply address motivations and barriers for adoption, as well as their relationship to one another. The majority of these studies have used self-report Likert scale survey data to investigate faculty perceptions of OER. However, significant detail is lost when you constrain responses to a 7-point quantitative scale. Additional information can be discovered through coding of open responses. The aim of this study is to further investigate faculty perceptions of OER by examining qualitative faculty responses regarding perceptions of OER to understand motivations and barriers for adoption.

Methodology

This study is the analysis of 218 faculty respondents who provided free response comments at the conclusion of a general perceptions study of OER. The responses are drawn from a larger survey that resulted in the aforementioned Babson Study Report (Allen & Seaman 2014). Faculty were vetted through a multi-stage selection process that was intended to create a nationally representative sample of those teaching in higher education in the U.S. Data was obtained through Market Data Retrieval, randomly selected, checked against opt-out lists, and reviewed for working e-mail addresses.

A total of 2,144 faculty responded to the survey, and of these, 361 chose to provide additional information at the end of the survey regarding their perceptions of OER. From that group, 218 faculty provided permission for future use and quotation of these comments. These responses were analyzed in this study. Faculty respondents of the full survey were representative of a complete range of faculty and higher education institutions. Respondents were employed at two-year, four-year, private, private nonprofit, and public institutions. Nearly 25% of faculty teach online courses. Respondents were from an exhaustive list of disciplines, were both full- and part-time and were at various stages of their careers (some tenured). Faculty were evenly split between genders. Although the entire survey population was equally represented by gender, full or part-time status, and discipline, not all faculty chose to leave an open response at the end of the survey, so the sample for this study may not be representative of the entire survey population.

Data Analysis

Exploratory, categorical and comparative coding were used to analyze the responses of the participants. The responses were first coded for meaningful statements that relate to cost, outcomes, use, and most prominently perceptions of OER (Bliss, Robinson et al., 2013). The qualitative data analysis tool Dedoose (dedoose.com) was used to code and categorize responses to this survey. Statements that did not address OER or traditional resources were coded as not relevant to the study and excluded from analysis. Each statement within a faculty response was coded into a specific perception category. Because many faculty comments contained multiple statements regarding OER perceptions, a single comment could receive multiple codes. For example, the following comment of, *"many educators are enthusiastic and interested in new technologies but do not have the time to develop them themselves; we need to know where to go for high-quality resources that will fit with our course goals and that can be easily adopted by us and our students"* received both the codes *lack of time as a barrier*, and *lack of discoverability*. Although a comment could receive multiple descriptive codes, no response received any particular code twice. For instance, a single faculty member comment that mentioned *quality of OER* twice would only receive that code once. 322 codes were generated from 218 respondents. Cross comparative analysis was done and then conclusions were compared back to the original statements to ensure reliability across findings.

For our final analysis, we grouped responses based on whether they came from full-time or part-time faculty. Then, we compared the two groups to see if OER perceptions changed between part-time and full-time faculty. We also grouped faculty responses by discipline (e.g., science, business, social science, etc.) to see if perceptions towards OER changed between disciplines.

Results

Table 1 illustrates the frequency with which each of the 10 categories were used as codes across the 218 comments in the OER faculty perceptions data set. The *Percent of Total* column does not total 100% because many comments received multiple codes. Comments totaling 1% or less of the respondents were excluded from the table due to lack of representation across faculty members. Themes in faculty responses will be discussed in order of topic frequency and within the context of their respective incentive and barrier categories. Coding category descriptions are listed in Table 2.

Table 1: Number of comments coded by category from faculty responses

Category Name	N	Percent of Total
Need more information	80	36.7
Lack of discoverability	36	16.5
Confusing OER with digital resources	28	12.8
General positive perceptions	25	11.5
Not applicable for faculty	24	11
Lack of time to evaluate resources	23	10.6
Cost benefit	23	10.6
Equal to traditional resources	23	10.6
Pedagogical benefits	20	9.2
Lack of OER quality	20	9.2

Need More Information

The majority of faculty surveyed (n = 161) had varying statements that expressed a need for further understanding of OER. These spanned from a complete lack of awareness of OER (*need more information*) to a need to be directed towards specific repositories (*lack of discoverability*). The highest percentage of these statements fall under the code *need more information*.

The need more information code was reserved specifically for respondents who made general requests for information about OER and the nature of OER, rather than specifications of OER adoption or where to find these resources. This code represented 36.7% of faculty and was by far the most common response. Desire for more information ranged from faculty who simply stated that they are *"not sure what OER is"* or *"my awareness of OER is in its early stages"* to questions of specific pedagogical benefits or access to empirical studies that validate the effectiveness of OER. Generally, faculty who did not have a full understanding of OER were still receptive to positive information on OER. It is for this reason that the need for more information is neither a barrier nor an incentive because although faculty could not adopt OER without the information, their responses that requested more information were generally quite positive and welcoming to OER adoption. Many stated that the survey had piqued their interest and they were planning to further investigate OER.

Table 2: Code Category Definitions

Category Name	Description of Category
Need more information	Requests for additional information about OER
Lack of discoverability	Unsure of where to find resources and requests for repositories
Confusing OER with digital resources	Highlighting positive and negative features of digital resources that are not inherently related to OER
General positive perceptions	Positive statements about OER that were not supported with reasoning
Not applicable for faculty	Lack of ability to use OER in their subject or classroom

Category Name	Description of Category
Lack of time to evaluate resources	Do not have time to evaluate or do not prioritize exploring new resources over other priorities
Cost benefit	Positive perceptions regarding cost savings for students
Equal to traditional resources Pedagogical benefit	Do not separate perceptions of OER from other educational resources Improved teaching practices
Lack of OER quality	OER inferior to traditional resources

Lack of Discoverability (Barrier)

A significant barrier that OER are facing in reaching positive perceptions and adoption is the lack of discoverability of these resources. Participants expressed serious concern in their inability to find OER. Thirty-six faculty members expressed frustration with the lack of aggregated and discoverable resources. Many respondents stated that a peer-reviewed repository of these materials needs to be created or marketed. A full-time mathematics faculty member observed that *"material that is free and available needs to be marketed and collated in a database properly since many of the well-intentioned professors don't know about some of these materials."* A full-time business administration faculty member explicitly noted that this was a barrier by stating that *"the main impediment to [their] using OER is really just lack of knowledge about what is even available."* Again, faculty expressed that if this barrier could be overcome, their perceptions towards and adoption of OER would be more favorable.

Confusing OER with Digital Resources (Barrier)

The most common negative perceptions of OER were founded in a lack of understanding of what OER specifically entail. Although this may be an interpretation flaw on the part of faculty regarding the definition of OER provided to them, many of these misconceptions were founded in a deep-seated frustration with new technologies. Twenty-eight faculty members were concerned with the digital nature of OER. Lacking the knowledge that OER have the capacity to be printed or purchased and are not inherently digital, these participants expressed concern with bringing digital resources into the classroom. Faculty were explicitly stating that OER and technology in learning should not replace face to face interactions and upheave the traditional classroom structure. A full time humanities professor stated that *"the use of technology in the classroom is important but it should not replace traditional modes of teaching and learning."* A full-time social science professor shared a similar sentiment and stated, *"technology should not replace interactive learning with live peers and faculty"* and *"that for our cognitive, social, and probably physical and civic welfare, we all need to spend less time with content on screens, and more time with live human beings."* Participants also expressed concern of digital readability, as well as overwhelming their students with the capabilities needed to navigate digital resources.

General Positive Perceptions (Incentive)

There were 25 respondents who expressed generally positive perceptions, without explicitly stating the reasons for their favorable views of OER. Faculty stated that OER are *"welcome addition[s] to their classroom"*, *"the way of the future"* and that they *"would like to see more open teaching material, as well as more education for faculty"* in the usage of these materials.

A few faculty members were already using OER or seeking out ways to release their materials under open licenses. Of these faculty, many of them felt strongly about openly licensing their materials. A few of these faculty discussed the importance of equity and open access, e.g., *"I feel quite strongly about open access to all of my scholarly work. All of my lectures are [creative commons] licensed, as is all of my research."* Some of these instructors employ curriculum research assistants; others are creating open source textbooks for interdisciplinary courses. Some stated they were glad to share what they develop, and need information on open licensure and how to release OER to fully take advantage of the affordances of OER. Although work needs to be done to adopt these OER, there are many faculty, experienced and inexperienced with OER, that welcomed the idea of exploring new OER in their classroom.

Not Applicable for Faculty (Barrier)

Participants also responded stating that there are no appropriate OER for their area of study (N = 24). Some of these participants sought out a resource and were unable to find one; others did not express having searched for OER in their domain. Lack of open resources can be a reality for highly specialized fields along with faculty that teach in experimental ways. In these situations, this lack of applicability can be considered a barrier. It is also the case that some courses do not require educational resources. A part-time natural science faculty shared: *"Sometimes the solutions to quality education are low tech. For example, I teach a course in climate science and change."* The faculty member then explained the key aspect of the class was a field trip.

> *We use no Internet, no electronic media. Aided by binoculars, the field journal is the primary instrument. Students read hard copies of peer review[ed] science and we travel with a course library for reference. This is one of the most powerful learning experiences there is, don't you think? Electronic media too often gets in the way and serves as a barrier between the learner and that which they want to understand. As the great poet Basho said, if you want to know the pine, go to the pine.*

While some faculty are unaware of OER or do not think there are available OER related to their domain, it is likely that it exists—faculty just struggle to find it. Further research should be conducted on how to help faculty members identify suitable OER for classroom use.

Lack of Time to Evaluate Resources (Barrier)

Another barrier to OER adoption is the amount of time that it takes to evaluate these new resources, some of which have not yet been through a review process. Although faculty stated that they would be open to using OER in their courses, they expressed that it was not attainable for them to spend the necessary time evaluating and adapting these resources. A full-time engineering faculty stated that they intend to spend the time seeking out, evaluating, and adopting some of these resources once they obtained tenure. Another faculty member who has begun the adoption of OER in their courses hired a "curriculum research assistant" for the sole purpose of evaluating these types of materials. Unfortunately, as expressed in the statements of other faculty, excess time and research assistance for curriculum evaluation are not resources that all faculty have. Twenty-three different faculty members expressed this to be a barrier that, unless overcome through institutional support, will hinder adoption of OER.

Cost Benefit (Incentive)

Cost was the most frequently mentioned specific benefit of OER. Motivations for faculty to cut costs included student convenience and equity. A full-time humanities faculty stated that they are *"driven by the inequality [they] see and the many students who can't afford course materials to choose*

OER for [their] courses." This was the case for 23 faculty members who attributed the cost savings as an important benefit of adopting OER in their courses. Faculty expressed that the potential savings for students alone can be a motivator to invest the time in discovering, adopting, and adapting open resources.

Equal to Traditional Resources (Incentive)

A number of faculty (N = 23) judged OER quality as the equivalent to the quality of copyrighted materials. These respondents understood that OER vary in quality much like traditional resources. A faculty member shared, *"OER is a mixed bag, some materials very much better than the commercial domain, some very much worse."* These faculty believed that the materials should be evaluated on a singular basis as opposed to grouping all open resources together. Time investment is also necessary in selecting any resource, open or copyrighted. A full-time mathematics faculty member attributed time as a barrier to all resource selection, who stated that *"textbooks have exactly the same problems and it is still the time that it takes that is a deterrent."* These respondents were clear in sharing their concerns with OER while acknowledging that these are problems that are not exclusive to any educational resource. This can be considered an incentive to adoption because faculty members who equated the resources expressed understanding of the added cost benefit that OER allows while providing resources of equal quality.

Pedagogical Benefit (Incentive)

Along with cost benefits, pedagogical benefits were highly cited as a perceived positive outcome of using OER in a course. There were 20 respondents (9%) who stated that flexibility of adapting materials to their teaching needs was a benefit of OER. A full-time linguistics/language faculty stated: *"I particularly like to be able to adapt materials to my course or to the styles of teaching compatible with my own."* This faculty credited OER with the flexibility to make these adjustments. Another expressed pedagogical benefit was breadth of knowledge and encouragement to work with students and faculty worldwide by providing an experience that is inclusive of broader materials than those available at individual institutions. Faculty shared that the pedagogical benefits were motivators for them to take time to evaluate open resources.

Lack of Quality (Barrier)

There were 20 respondents who felt that OER lacked the quality that a traditional resource would have. These faculty had either interacted with poor quality OER in the past, or are simply skeptical of free resources. For example, one full-time humanities faculty member stated that they are simply *"suspicious of some 'open' approaches"* such as MOOCs. These suspicions are prevalent among faculty who see free and open for their weaknesses, which include lack of publisher accountability and peer review. Although this is not the case for all OER, it is true that open resources, as well as traditional resources, are of varying quality and some will not be appropriate in the classroom setting. With the combination of varying quality of resources and a lack of time to evaluate these resources, many instructors will never attempt to evaluate or utilize these resources without outside aggregation support in the form of resource directories and training on how to use open resources.

Group Comparisons

We first compared full-time faculty perceptions of OER to part-time faculty perceptions of OER. We found differences between the two groups of faculty on three different codes: need more information, lack of time to evaluate resources, and lack of discoverability. Almost half of part-time faculty (48%)

indicated they would like more information about OER in order to facilitate the adoption of OER; however, only 34% of full-time faculty indicated the same. Part-time faculty also were less concerned with a lack of time to evaluate resources (4%) when compared with full-time faculty (13%). Finally, part-time faculty indicated they were less concerned with finding resources, with only 10% indicating a need for discoverable repositories while 19% of full-time faculty indicated the same.

Our next group comparison analysis examined faculty responses across discipline. Disciplines were grouped into the following categories: science, social science, humanities, business, engineering, and other. We found a few small differences between disciplines; however, due to the small sample sizes within disciplines (Business N = 12, Engineering N = 32), we conclude that responses were reasonably consistent across disciplines. This is beneficial in determining there are not differences in perception of OER across faculty in different disciplines.

Discussion and Future Research

The most prominent response from faculty was that they need more information on OER. Faculty would like to know what OER entail, how to release their materials under open licenses, and where to find reliable OER. In addition, faculty would like reports on the quality and outcomes of OER. In a time when awareness of OER is spreading, it can be easy to assume that knowledge of OER is prevalent among educators. However, 73.9% (N = 161) of faculty expressed statements across multiple codes lacking understanding, which is indicative that awareness and understanding of OER are still important issues that should continue to be addressed. This study provides an overwhelming call for a more widespread dissemination of information regarding OER. This is based on high percentages (73.9%) of a nationally representative group of faculty that indicated through inquisitive statements that they would be open to information informing potential OER adoption.

Another implication that arose from the responses was the need for institutional support for OER evaluation and adoption. Faculty do not have the time to evaluate new resources. Furthermore, this is not a priority for faculty members who are working towards tenure, mentoring students, or teaching many courses. Institution may need to provide support for the time spent evaluating these resources. This support could come in the form of curricular research assistance, department policy allotting specific time for evaluating new resources, or library support in choosing high caliber OER materials.

Some faculty shared the need for central repositories of open resources that ideally have been previously vetted for quality. Ironically, there are several databases that house OER and provide reviews of these resources. There are existing repositories such as the Open Textbook Library, OER Commons, and Cool4Ed. However, faculty often are not able to find materials that fall into their area of study because of lack of awareness. If faculty were aware of centralized repositories with quality evaluation, they expressed they would be much less hesitant to consider using these cost saving resources. The existence of these repositories themselves is not enough; it must be coupled with an increased awareness of where to find these OER along with how to easily implement them into a course. If we can provide this group of faculty with an increased knowledge of OER repositories and their evaluation protocols, they would all likely adopt OER. More research should be conducted to determine how to best spread awareness of OER repositories.

Perhaps the most impactful finding in this study was the importance that faculty placed on cost and pedagogical benefits for their students. The two benefits were nearly equal in priority for educators. In fact, these student benefits were a major motivating factor for faculty to explore OER despite existing adoption barriers. Faculty expressed they were willing to spend time to seek out and evaluate open resources even though these tasks were major barriers of OER adoption. More research should be conducted to determine how to motivate faculty to adopt OER using student cost and pedagogical benefits as motivators.

Our final analysis showed differences between part-time and full-time faculty. Part-time faculty, when compared with full-time faculty, responded more frequently with requests for more information on OER, indicating they were less concerned about the time needed to evaluate or adopt OER, and stated they were less concerned with their ability to find existing repositories of OER. More research should be conducted to determine what these differences mean in helping faculty overcome the barriers of adopting OER.

This study is significant in its investigation of motivations and barriers as stated by faculty. Data collected on free responses provides insight not obtainable by previously conducted quantitative studies. The study also uniquely discusses the relationship between the motivations and the ability they provide for faculty to overcome barriers to adoption. The connection between incentives and their ability to motivate faculty to overcome barriers has not previously been drawn. Although this correlation has been hypothesized, the connection drawn by the faculty members themselves has not previously been outlined in literature. Understanding barriers in the context of our ability to overcome these barriers

Models for overcoming barriers of time, discoverability, and lack of understanding of OER must be explored. It is valuable to understand faculty perceptions in exploring potential use of OER, but understanding these opinions does not inherently address barriers to potential adoption. In order to create prescriptions and actionable plans for faculty support of resource selection, successful models for overcoming these individual barriers need to be identified and explored.

Limitations

There are limitations to some of the conclusions drawn in this study due to uncontrollable variables within a research study. Instructors need a better understanding of OER before they can accurately speak to benefits and drawbacks of these resources. Faculty opinions may be uninformed and inaccurate due to lack of experience with these resources. Another limitation is the survey responses were collected based on personal willingness to participate. This can create a self-selection of individuals who may not be as nationally representative of faculty as demographics would suggest. Self-selection to participate in this survey can cause respondents on polarizing ends of a spectrum of opinions and can preclude some who feel they do not have a radical opinion regarding OER or who have not had extensive experience with open resources. Interpretation of statements in any qualitative analysis is always subjective to a degree, so codes were reviewed by two researchers in order to ensure consistency and accuracy across coding. The results of the survey are reflections of direct faculty statements and inform directions for future research needs.

Conclusion

We conducted a qualitative analysis of 218 open-ended faculty responses regarding OER perceptions. Previous studies on OER faculty perceptions have used predominantly self-report Likert scale surveys. However, this study provided a more nuanced picture on faculty perceptions of OER than these quantitative studies because of the detailed nature of open-ended faculty text responses. Our qualitative analysis yielded ten distinct categories of responses and together these categories compile 73.9% of a nationally representative group of faculty that have questions pertaining OER including what OER entail, how to overcome time barriers of OER, and where to discover quality OER. The most common category, 37% of faculty, was *need more information*; this indicated that faculty were interested in adopting OER but needed more information before they would feel comfortable doing so. Another top category, *need for central repositories*, included 16% of faculty who indicated a need for central repositories of OER that are easily discoverable. The

main barrier for adoption of OER identified in this study is that they do not know where to find the time to evaluate OER. As a possibility to overcome this challenge, 11% of faculty indicated that institutional support for the evaluation and adoption of OER would increase their likelihood to adopt OER. This could be in the form of course load reduction, curricular research assistance, or monetary compensation for the evaluation and adoption of OER. A unique aspect of this study is faculty expression of student cost and pedagogical benefits to overcome perceived barriers. These student benefits resulting from faculty adoption of OER proved to be the most motivating for faculty. A number of faculty (20%) indicated that cost and pedagogical benefits for students provided the motivation needed to take the time to evaluate and consider adoption of OER.

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