Abstract

In higher education, many barriers exist to efficient outcomes assessment, one of which is the culture that exists within institutions and the perceptions of the faculty who are at the forefront of assessing student learning. It is often viewed as a "culture war" (Baas, Rhoads, & Thomas, 2016) as faculty remain unconvinced that what the assessment movement sets out to achieve is actually attainable. For this to gain traction and achieve its intended outcomes, the process directives and tasks must be amenable to the individuals who provide most of the data, the faculty. Since metrics are of utmost importance in the assessment world, appraisal of the process at a small medical college most appropriately utilized Q methodology, which provides the basis for the scientific study of subjectivity. Thirty-four statements were derived through interviews with the faculty and the Q-sorts were completed by 14 faculty and 4 staff from the same body. Two well-defined factors emerged. One group of participants believed in the movement, along with the benefits of assessment. The other group, surprisingly, was not the antithesis, but rather expressed concerns about the lack of time and resources dedicated to the data gathering as well as the possible punitive uses of the results. The factors that emerged could play a vital role in the adjustment and improvement of the process.

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Appraisal of the Curricular Assessment Process

Accreditation agencies in higher education have been increasingly emphasizing curricular assessment since the acceleration of the assessment movement in 1985 (Banta, 2002). Institutions can no longer make decisions based on hunches, intuition, and informal data. For approval by the agencies, institutions need to have concrete data to support the assessment of student learning. Accrediting agencies as well as prospective and current stakeholders have a vested interest in ensuring that colleges are accountable for not only delivering on the student learning outcomes promised, but also for monitoring assessment closely enough to make small or large changes when outcomes are not favorable (Anderson, 2004). This brings to light the discrepancy and difference in utility between internal and external purposes of assessment. The internal purpose of assessment is curricular improvement whereas the external purpose is accountability. The challenge lies in providing enough evidence to external accrediting bodies without neglecting the internal purpose of quality improvement. However, despite all of the complications and nuances, student learning remains the central purpose of the assessment process.

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Assessment has been the topic of many heated discussions since it began. There have always been the advocates of outcomes assessment who feel it is essential to measure the effectiveness of all outcomes in higher education. However, equally as vocal are the higher education professionals who are the so-called "skeptics." According to the literature, the range of concerns for such professionals encompasses the political nature of assessment, the lack of meaningful faculty input and contribution, and the validity of the measure of outcomes commonly employed (Baas et al., 2016). In addition to assessment being described as a culture war among faculty, they are often hesitant to move beyond their typical frames of reference to assess higher-order learning outcomes, and the procedures can seem complex and unrelated to their work (Anderson, 2004).

A podiatric medical college recently proposed a curricular revision that was met with resistance from the accreditation agency until a full curricular assessment plan was established. The resistance was due to the lack of specific data that pointed directly to the impetus for the change. As a response, a curricular assessment plan was established and rolled out to the faculty in 2017. The process involved mapping course objectives to course goals and then to program objectives. The course objectives reflect what the students learn during each encounter; for example, "The student will be able to describe ageism and some of the associated myths." Each course objective should relate to a course goal such as "Appreciate the health care concerns associated with the aging population." Program objectives are the overall competencies that the college has created that each student should possess before graduation. The program objective that fits with the example stated here is "Recognize the important determinants of changing health that contribute to the development and/or continuation of illnesses." To accomplish learning assessment at the most basic level (objectives), faculty were expected to examine their individual course exams or observational assessments and demonstrate how each of the proposed course objectives were measured. The proposed hierarchy of tagging exam items is shown in Figure 1.

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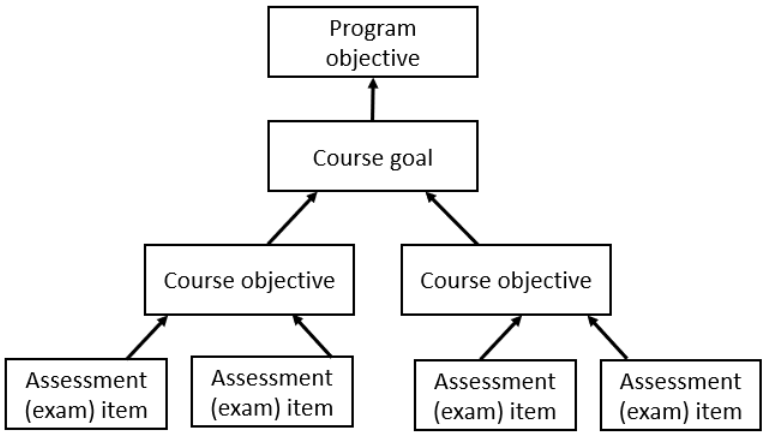

Figure 1. Hierarchy of tagging assessment (exam) items

For the most part, the didactic lecture courses were the least complex to assess, as faculty were simply required to tag their exam items (primarily multiple choice questions) to their course objectives, course goals and the college's program objectives using a secure assessment software product (Examsoft, n.d.). Administrative staff mapped the items to institutional goals (such as those stated by the university). The process was an initial time investment for each faculty member, as each question needed to be closely examined to identify the appropriate tags. Care was taken to train faculty on the basic directions, and during follow up meetings it was explained that, if this process were done efficiently, it would require minimal maintenance. Complete tagging will only need to occur if entirely new questions were added on subsequent exams. Once all exam item data (tags) had been gathered and entered into the assessment software, reports were run that aggregated student achievement by category (college program objective, course goal, and course objective). From these reports, an adequate assessment of the strengths and challenges of the curriculum could be made.

Through informal conversations, both positive and negative opinions were expressed throughout the college about this new endeavor. Without full faculty buy-in, however, the assessment process would not be sustainable. To achieve the intended outcome of implementing the assessment process, empirical data on faculty perception had to be obtained. This was accomplished through research utilizing Q methodology. This method was appropriate for revealing the subjective perspectives of the faculty and staff who provide the data that is relied upon for accurate curricular assessment. Q methodology contains elements of both qualitative and quantitative research, which will provide administrators of the program with adequate insight into what changes are needed in the program to make it sustainable. The intent of this research was to identify the real concerns of faculty about the assessment process, and then to use the data

for improvement to ensure the program's ongoing utility. Q methodology allows the researcher to understand individual subjectivity (or groupings of opinions) without aggregating the data and thus diluting the opinions. The opinions of relevant staff members were also solicited based on how they perceived the faculty felt about the process. Relevant staff members are defined as the staff who work closely with the faculty responsible for tagging exam items, and thus their perspective was valuable.

Development of Concourse and Q Sample

All studies that involve Q methodology have data rooted in communication concourse (Stephenson, 1978), which has been characterized by McKeown and Thomas (2013) as "often ambiguous, utterly subjective, semantically imprecise, yet wholly natural condition of much of human communication" (p. 17). Concourse data can be derived from anywhere subjective communication resides such as internet discussion boards, formal and informal interviews, open-ended survey responses, and polls. In this study, the concourse data collection took the form of semi-structured interviews among the faculty and relevant staff members of a podiatric medical college in northeast Ohio. Prior to participant recruitment and interviews, the study was reviewed and approved by the college's institutional review board. All participants were required to sign a consent form prior to being interviewed. Donner (2001) suggests asking "umbrella questions that allow multiple possible answers" (p. 26) so as to generate a depth and breadth of responses. Examples of questions that were asked of the faculty and staff were as follows:

1. What are your thoughts about the current curricular assessment process?
2. Do you have any suggestions for improvement?
3. What is your reaction to comments that the assessment process can be used for punitive purposes? The perception that it is busy work, etc.? Please elaborate.

The subjective data derived from the interviews were reduced to 34 individual statements that were randomly numbered and printed on individual pieces of paper. Care was taken to include approximately equal numbers of positive and negative statements as well as to maintain the representativeness of the concourse. The entire set of statements is shown in the Appendix.

Sorting of the Q Sample

Q methodology contains elements of both qualitative and quantitative research, which will provide administrators of the program with adequate insight into what changes are needed in the program to make it sustainable

Participation in the Q-sort was voluntary. Additionally, the completed Q-sort grids were anonymous to the primary investigator (unless the participant revealed his or her identity) to ensure complete honesty, as the primary investigator was the lead staff person for curricular assessment purposes. Fourteen faculty members and four staff members chose to participate in the Q-sort. Gender or division information (such as preclinical science faculty, podiatric medicine faculty, or surgery faculty) were not recorded due to the small size of the participant pool and the likelihood of identities being revealed with such information. Participants were provided with detailed instructions about how to do the Q-sort via a PowerPoint presentation as well as a printed instruction sheet during a faculty meeting. Each participant received an envelope with the 34 statement cards, the scoring sheet, and a consent form if they had not participated in the interview phase of the study (participation in the Q-sort was not dependent on prior participation in the interview phase). Faculty were asked to sort the 34 statements under the following condition of instruction: "Please use the cards to describe your experience with and opinion of the assessment process by ranking the appended statements from 'most agree' (+4) to 'most disagree' (-4)." Similarly, key staff were provided the following condition of instruction using the same Q-sort statements and scoring grid: "Please use the cards to describe how you feel the faculty, in general, feel about their experience (based on your interactions with them) and opinion of the assessment process by ranking the appended statement for 'most agree' (+4) to 'most disagree' (-4)." The Q-sort grid is usually a quasi-normal distribution scale with equally weighted positive and negative sides, as shown in Figure 2.

Most faculty completed their Q-sorts within 20 minutes and returned their score sheet, whereas other participants submitted the score sheet later that week. The primary investigator (VJ) left the room while the participants sorted the cards. The coinvestigator (AG), who also

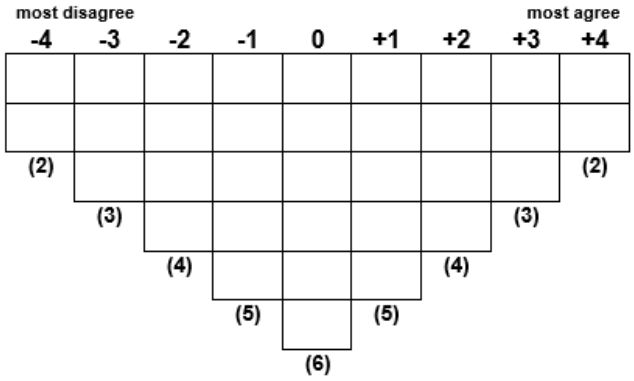

Figure 2. Sorting grid for this study

The analysis resulted in two factors, or schools of thought, among the participants who are actively involved in the assessment process

conducted the interviews, remained in the room to observe participant interaction with the statements and was available to answer any questions. Participants were encouraged to comment on the Q-sort process on the flip side of their score sheets, answering the question, "Please feel free to comment on anything (the Q-sort process itself, any other comments/feelings about the assessment process in addition to, or that wasn't covered by the statements, etc.)." Other qualitative information was recorded by the coinvestigator while observing and interacting with the participants as they were conducting the Q-sort, such as inquiries about possible hesitations, changes of mind, and frustrations.

Analysis

A total of 18 participants provided their opinions by sorting the 34 statements from the Q-sample. Four of the participants were staff who worked closely with the faculty on the assessment process. The faculty participants (14) represented 67% of the total full-time faculty body. The staff participants represented 57% of all staff who work closely with faculty and their exams (excluding the primary investigator).

Using the PQMethod program (Schmolck, 2014), the 18 Q-sorts resulted in an 18 x 18 correlation matrix, which was then factor analyzed using the principal components method. The factors were then rotated by varimax. The analysis resulted in two factors, or schools of thought, among the participants who are actively involved in the assessment process. Factor scores (from +4 to –4) were then estimated for each of the 34 statements within each of the factors (see Appendix). Each sort loaded on one or the other factor. There were no sorts that loaded on both factors (meaning that their views possess elements of both), and there were no sorts that were not defined by a factor (see table 1). The correlation between the factors was -0.1708, indicating two distinct points of view.

Table 1. Factor matrix with an X indicating a defining sort

QSORT	1	2	QSORT	1	2
1	0.6535X	0.2859	10	0.7592X	-0.276
2	0.7448X	-0.3884	11	0.3112	0.7758X
3	0.7108X	-0.1772	12	0.0084	0.6362X
4	0.7267X	-0.4107	13	0.4364X	0.4101
5	0.6138X	0.2201	14	0.8427X	-0.2323
6	0.6397X	0.2054	15	-0.0735	0.5557X
7	-0.0045	0.7453X	16	-0.1437	0.7493X
8	0.3617	0.4831X	17	-0.0092	0.4101X
9	0.6551X	0.2754	18	-0.4819	0.7604X

Results

Factor 1: We think assessment is helpful!

Overall, participants that loaded on factor 1 had a positive opinion about the assessment process. Considering that the factor consisted primarily of faculty members (9 of the 10 defining Q-sorts), the results suggest that faculty sentiment is mainly in line with factor 1. However, this would have to be confirmed using a more comprehensive survey. The positive perspective of factor 1, especially when contrasted with factor 2, was seen in the following statements (scores to the right for factors 1 and 2, respectively):

12. Assessment data is important in order to reflect properly upon that data and make improvements.	4	0
29. Everyone should view assessment as part of their course as opposed to something external.	4	0
1. Assessing our course is the only way we're going to know where we've been and where we're going.	3	1
31. Assessment makes you more efficient as a faculty member and saves you time in the long run.	3	-2
8. I think this is a genuine attempt to address complaints and critiques on assessments.	3	-2

The two highest-ranked statements (#12 and #29) highlighted the importance of assessment to factor 1 and the use of data in supporting evidence of student learning. The three statements that ranked second highest supported this by underscoring the use of assessment in making a faculty member more efficient (#31), knowledgeable about learners (#1), and attuned to the students' experience (#8).

Examination of those statements with which factor 1 "most disagree" helped to clarify the perspective that this group of participants espoused:

2. This is all bullsh*t.	-4	-1
26. In some cases, the reflection forms infringe on our academic freedom.	-4	0
25. The Curriculum Assessment Committee needs to be eliminated.	-3	-1

The two highest-ranked statements (#12 and #29) highlighted the importance of assessment to factor 1 and the use of data in supporting evidence of student learning

Not surprisingly, factor 1 rejected the most evocative statement (#2) that suggested that the assessment program is nonsense and disagreed strongly that the program infringed on their academic freedom (#26). In disagreeing with statement 25, factor 1 felt that the Curriculum Assessment committee has its place in the school and need not be eliminated. Participants that loaded on factor 1 were comfortable meeting with their division head to discuss their reflection forms and did not view the completion of this form and the reflection meeting as intended for punitive purposes.

Five of the 10 score sheets for factor 1 participants included handwritten comments, one in particular highlighting the heart of factor 1 and attesting to the operantcy of the factor scores as well as to the utility of the Q-sorting process itself: "I think the general trend, using a more innovative and well thought-out assessment process, is long overdue (including [the] Q-sort process). Assessment processes are never perfect, but improvement in functionality is long overdue." Another written comment also reaffirmed the Q factor by indicating that the negative statements were perplexing given that the participant appreciated that assessment is a "useful and meaningful way" to alert faculty as to how well the students are learning the content.

Factor 2: We need more time for assessment and assurance of nonpunitive use!

At first glance, the highest-ranking statements for factor 2 did not emerge as a complete antithesis of factor 1 but rather expressed a separate concern––namely, with the expenditure of time and effort (scores to the right for factors 1 and 2, respectively):

6. If our exam questions need to be tagged on ExamSoft, someone needs to give us more time to do it. We do not have time.	0	4
9. It is a challenge to get all the tagging done because of how time consuming the assessment process is.	-1	4
4. The reflection forms can be used for punitive purposes.	-3	3
24. I think the assessment methods require a lot of effort, but I am not sold on the data we receive from them. I don't know if the information we receive from tagging is valuable yet.	0	3

The two factors emerged as orthogonal (hence, uncorrelated with one another overall), but they differed with one another on specific statements while agreeing with one another on other statements. If they were truly antithetical, there would be only one bipolar factor. The most highly ranked statements (#6 and #9) as well as one of the next-highest ranked statements (#24) expressed concerns about tagging being a time-consuming process. The score for statement 4 introduced an important political consideration––that the reflection forms might be used for punitive purposes––and this was echoed in other statements (e.g., #33, see Appendix). As these scores indicate, factors 1 and 2 are divided about whether the administration can be trusted, and this issue is apparently critical when it comes to supporting or opposing the assessment process.

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The statements with which factor 2 disagreed reinforced much of what has already been noted:

30. I wish this assessment process was something we did years ago.	0	-4
32. There are people who have plenty of time to tag questions, but just don't want to.	-1	-4
14. Great strides are being made in the assessment process. We are constantly improving and evolving.	1	-3
23. I believe my division head protects me from the reflection forms being used as punitive purposes.	1	-3

Limited time again emerged as a concern for the factor (#32), as did the potential for punitiveness (#23). Factor 2 questioned the very legitimacy of the assessment process and therefore did not consider that great strides had been made in it (#14), nor did these individuals wish that it was done years ago (#30).

One surprising point is that factor 2 consisted of only 62.5% of the faculty participants (5 of 8), the remainder being staff members who had submitted Q-sorts of their perceptions of the faculty. That is, many of the nonfaculty participants identified factor 2 rather than factor 1 as the viewpoint of the faculty as a whole, a misperception that could either be due to the staff having been disproportionately targeted for expressions of discontent from faculty associated with factor 2, and/or due to some of the more disgruntled faculty disguising their sentiment behind a more positive expression of support for the assessment process.

Despite demonstrable differences between the two groups, there were a few statements that achieved a degree of consensus between factors 1 and 2. In many instances, however, the points of agreement appeared close to the zero point of neutrality for both of the factors (e.g., statements 10 and 22 in the Appendix). One statement achieved a mild level of cross-factor agreement, however, and another acquired a relatively high level of negative saliency:

15. The statement that assessments are just busy work is partially true. Sometimes the methods we use to accommodate the accrediting bodies is looked at as simply a check-off box. I fear whether we are ever really achieving our set goal of making a class better.	1	2

18. I think that each faculty member should have to meet with a dean to discuss their course and student evaluation rather than a division head. want to.	-3	-3

The mildly agreeable concern that the assessment process is just busy work and of doubtful utility (statement 15) seemed to be a popular viewpoint among faculty. This has also been observed in other assessment research where faculty are unconvinced that the aspirations of the assessment movement are achievable (Baas et al., 2016). Opposition to the view that faculty members should meet with the dean rather than division head (#18) may be less a matter of congruence than a function of differences in perspective––factor 1 believing assessment to be more effective when determined locally, and factor 2 being more concerned about assessment discussions between parties of unequal authority.

Conclusions and Recommendations

The views of the faculty regarding the assessment process are promising, realistic, thought provoking, and helpful for the administrators involved in coordinating the assessment plans and directives. Overall, the program shows promise, with a few concerns for time investment and fear of punitive consequences. The staff seemed to reflect more of the concerns the faculty had rather than the aspects with which they were satisfied. This is expected as faculty may project their frustrations more than their satisfactions about the assessment process to their staff, but it does not mean they were not satisfied with the program or found it beneficial. The results of this study will be used to inform changes in the assessment program as well as improvements to encourage more faculty involvement. It is evident from the data that the greatest concern is time, and it would be a good idea to incorporate release time within the academic year in the form of semiannual retreats to allow for faculty to tag their questions and reflect on their course assessment data. The other concern to be aware of is that the process may be a waste of time if the course data retrieved from the assessment process is not actually used to drive and inform changes in the curriculum, both for internal and external purposes. Factor 2's disagreement with statement #14 indicates the perception that the assessment program is not improving. This viewpoint is valuable and provides avenues for further research once the necessary alterations have been made to the assessment program.

It is important to understand that the participants in a Q study do not represent a population, nor should the results be generalized to the population

It is important to understand that the participants in a Q study do not represent a population, nor should the results be generalized to the population. The aim of Q methodology is not quantitative generalizability, but rather to determine how subjectivity is clustered among participants (Shemmings & Ellingsen, 2012). However, a clear advantage of the Q technique is the ability to provide the researcher with a better understanding of groupings that exist in a population so to fuel further probing if necessary (Brown, 2002). In future Q-sorts it would be optimal for the primary researcher to be present during the participants' Q-sort in order to have more of an understanding of the sorters' thought processes while deliberating with the statements. In this particular study it was advised that the primary investigator not be present as this individual is the creator of the newly implemented assessment program, and their presence may have created an environment in which faculty were not comfortable being completely honest if they disagreed or disliked the program. However, as the assessment process is further refined considering the results of this research study, trust in the investigator and willingness on the part of the faculty to talk directly with the investigator may both increase in subsequent studies.

The study did include several shortcomings, especially since not all faculty participated. Widening the application of the Q-sort may have revealed yet another factor that was not exposed in this study. Future research includes using a similar Q-sort with some statements that are unique to the school's structure eliminated and a greater sample size of faculty and staff who share a similar role in the use of the assessment software. This will provide ideas on which parts of the assessment process faculty are satisfied with and those they would like to be improved upon. It should be noted that the expletive used in statement #2 was an actual quote derived from the interviews and was retained for the Q-statement cards to determine if other faculty felt just as strongly about the assessment process.

Appendix.
Factor Scores for All Statements

	Statement	Factor 1 Array	Factor 2 Array
1.	Assessing our course is the only way we're going to know where we've been and where we're going.	3	1
2.	This is all bullsh*t.	-4	-1
3.	Tagging questions on ExamSoft is just busy work.	-2	1
4.	The reflection forms can be used for punitive purposes.	-3	3
5.	Depending on your division head, the reflection form could be a really good tool.	1	2
6.	If our exam questions need to be tagged on ExamSoft, someone needs to give us more time to do it. We do not have time.	0	4
7.	CPME doesn't want more data collection. They don't want to look at our individual questions, so I don't know why we need to tag questions.	-2	1
8.	I think this is a genuine attempt to address complaints and critiques on assessments.	3	-2
9.	It is a challenge to get all the tagging done because of how time consuming the assessment process is.	-1	4
10.	I think there are attempts to educate faculty on the assessment process, but I think it needs to be continued and reinforced so that we don't find it as intimidating.	1	0
11.	I completely disagree with the statement that assessments are just busy work and have no effect on instruction. I find that statement frustrating.	0	-2
12.	Assessment data is important in order to reflect properly upon that data and make improvements.	4	0
13.	Reflection forms should be done more honestly. Reflection should be more open-minded.	2	0
14.	Great strides are being made in the assessment process. We are constantly improving and evolving.	1	-3
15.	The statement that assessments are just busy work is partially true. Sometimes the methods we use to accommodate the accrediting bodies is looked at as simply a check off box. I fear whether we are ever really achieving our set goal of making a class better.	1	2
16.	It is a real issue when a faculty member must meet with a division head to reflect on a course the division head knows nothing about.	-1	3
17.	We need to go back to the old reflection forms.	-2	-1
18.	I think that each faculty member should have to meet with a Dean to discuss their course and student evaluation rather than a division head.	-3	-3
19.	We need to put the emphasis on the major goals and program objectives rather than laser thin subcategories.	0	2
20.	I receive most of my information from the student evaluations rather than the reflection forms.	0	1

21.	I am concerned about how the reflection forms are written. The way they are set up, it doesn't encourage us to answer honestly.	-1	1
22.	The assessment process is not perfect, but it is fine the way it is.	-1	-1
23.	I believe my division head protects me from the reflection forms being used as punitive purposes.	1	-3
24.	I think the assessment methods require a lot of effort, but I am not sold on the data we receive from them. I don't know if the information we receive from tagging is valuable yet.	0	3
25.	The Curriculum Assessment Committee needs eliminated.	-3	-1
26.	In some cases, the reflection forms infringe on our academic freedom.	-4	0
27.	We need to invest in curriculum mapping software and have our entire curriculum mapped before we start doing deeper overall curricular assessment.	2	-2
28.	Our goal is to improve the educational process. We do that through assessment.	2	0
29.	Everyone should view assessment as part of their course as opposed to something external.	4	0
30.	I wish this assessment process was something we did years ago	0	-4
31.	Assessment makes you more efficient as a faculty member and saves you time in the long run.	3	-2
32.	There are people who have plenty of time to tag questions, but just don't want to.	-1	-4
33.	Assessment is not done for students, but for administrators. Not for faculty, but to faculty. Not for program improvement, but for compliance monitoring.	-2	2
34.	I like assessment because it encourages faculty members to think more carefully about what they do, how we do it, and why we do it that way.	2	-1

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