10 USING ENGAGEMENT DATA FOR CHANGE AND EMPOWERMENT AT COURSE LEVEL

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He who is wise endeavours to learn how to understand the truth not less than that – African proverb

INTRODUCTION

The teaching and learning relationship is crucial to high-quality student learning, personal development and success during and after university. Creating optimal classroom environments to support good teaching practices is therefore pivotal and requires that lecturers adopt a student-centred pedagogical methodology (Ouimet 2011). However, even though a significant body of knowledge exists related to teaching and learning, what happens in classrooms between lecturers and students is not often captured using data except for student evaluation of instruction forms, which is often required as part of institutional quality assurance but seldom intentionally used to further improvement.

This chapter illustrates how course/module level student engagement data from the Classroom Survey of Student Engagement (CLASSE) can be used to create effective teaching and learning environments and promote evidence-based improvement in pedagogical practices. The chapter shows how the data can give students a voice (agency) in how they are taught, how the data can be used to empower academics to be better teachers, and how evidence can help to facilitate more collaborative relationships between students and their teachers. The chapter further explores areas where students and staff tend to 'miss' each other the most; as well as the implication of the use of this measure for an evidence-based approach to academic staff development.

WHY FOCUS ON THE COURSE/ MODULE LEVEL?

Chapter 1 of this book highlighted a range of institutional level and course/ module level student engagement surveys. Institutional level surveys, in the South African context, include the South African Survey of Student Engagement (SASSE), the Beginning University Survey of Student Engagement (BUSSE), and the Lecturer Survey of Student Engagement (LSSE), which have been explored in different chapters of this book. The institutional level measures provide powerful data of an aggregated whole, which can be used for management level decision-making about the allocation of resources to different student groupings within the institution. However, disaggregating these large datasets to inform decisions on a micro-level in departments and modules runs the risk that sample sizes become too small or even non-existent, and secondly, staff and lecturers may protest against negative institutional level measure results with a defensive refrain: "these are not *my* students".

The CLASSE was developed by Judith Ouimet and Bob Smallwood (2005). The measure aims to collect data on levels of student engagement in a single module/ course based on the premise that classroom-level insights about the quality of student engagement can aid institutional efforts to enhance the adoption of engaging educational practices as well as guide the professional development of academic staff. CLASSE consists of a pair of survey instruments administered among students ($CLASSE_{Student}$) and the lecturer(s) ($CLASSE_{Lecturer}$) of a specific module. $CLASSE_{Student}$ data offer quantitative information on the time spent and frequency of engagement on educationally purposeful activities. $CLASSE_{Lecturer}$ data allow lecturers the opportunity to reflect on how important they consider these effective educational practices to be in their module in order for the students to be successful in that class. Therefore, CLASSE data can be used to improve teaching and learning practices, with the goal of improving student success rates.

The most powerful way to analyse and present the CLASSE data is by comparing the responses of students and lecturers to identify the importance of an educational practice as well as the frequency with which students are participating in the relevant practice. Of importance are the educational practices that lecturers perceive as important but that students do not engage in to the satisfaction of their lecturers. Additionally, the data allow staff to encourage students to participate in certain educational practices and by doing so, positively impact engagement. Staff may be able to evaluate and reflect on their teaching styles and adjust them accordingly to expose students to activities that can improve their learning efficiency (Ouimet & Smallwood 2005). CLASSE results can also help identify effective educational practices, shape teaching and learning experiences, and inform departmental and

institutional development initiatives. The combined use of institutional level measures, such as the SASSE and the LSSE, with a course/module level measure (CLASSE) can provide data that can help the promotion of student engagement on multiple levels of the institution. SASSE and LSSE comparisons enable student and staff perspectives to be contrasted at the institutional level, while CLASSE enables reflection on the differences between lecturers and the students at the module level.

EXPLORING THE CLASSE INSTRUMENTS

In the South African context, the CLASSE surveys are designed and administered through online survey-software and are often used as a diagnostic measure in modules/courses with high failure rates. The surveys are completed within four to six weeks after the start of the module class-sessions. It is important to allow enough time for students to become accustomed to the module and its presentation to form an accurate opinion before the survey is administered. CLASSE is complimentary to any other survey or institutional data and can be used in conjunction with the data received from module evaluations, as CLASSE does not at all ask any questions related to the lecturer as an individual, neither does it evaluate the competence of the lecturer(s). Table 10.1 provides an overview of the CLASSE surveys.

TABLE 10.1 CLASSE subscales and number of items

Part	Sections	No. of items
Part I	Engagement Activities	21
Part II	Cognitive Skills	5
Part III	Other Educational Practices	10
Part IV	Class Atmosphere	4
Part V	Supplementary Learning Activities	5
Part VI	Demographics	9

As shown in the table, the CLASSE surveys are each made up of 54 items divided into six sections. Since CLASSE is adapted from SASSE, items foreground engagement practices, particularly based on the work by Chickering and Gamson (1987) and Krathwohl (2002).

Items measuring Engagement Activities include matters such as class participation, and collaborative learning. Cognitive Skills include synthesis, analysis and practical application of theoretical knowledge, while Other Educational Practices and Class Atmosphere focus on behaviours and classroom environments respectively that have been proven to be conducive to learning. The five items grouped under

Supplementary Learning Activities ask about experiential learning, service learning, fieldwork, laboratory work and clinical teaching.

In addition to the standard 54 items, CLASSE also provides the lecturer of any given module the opportunity to add up to eight items. Because each module is different and includes unique facets, modes of administration and additional support services, the eight additional items allow for greater accuracy as a diagnostic tool.

CLASSE RESULTS

The CLASSE results are provided to lecturers in three sections, namely:

- Student respondent characteristics;
- Frequency distribution for student and lecturer responses; and
- Quadrant analysis.

The respondent characteristics report provides details of the demographic profile of the CLASSE student sample. Reflecting on student demographics provides an opportunity for lecturers to consider the varying contexts of all students in their class. Except for the visible demographics, such as race and gender, lecturers are provided with information on their students' home language, age, repeater status and whether any visible or invisible disabilities are present in the student cohort. The frequency distribution for the CLASSE report is based on the responses of the students on all the student engagement items in a specific module. The number of students, and the corresponding percentage of the sample, is given for each item. The frequency of participation in various educational practices reported by the students can be compared to lecturer(s) ratings to determine whether students participate satisfactorily in educational practices that the lecturer considers to be important.

The quadrant analysis provides a comparison of the importance rating provided by lecturers and the frequency rating provided by students in order to establish discrepancies or areas of agreement between lecturers and students. A comparison of the answers from students and staff points out educational practices that staff perceive as important but are being not being performed by students as often as desired. Staff can then have grounds on which to encourage students and positively affect engagement.

The most powerful section of the CLASSE report is the quadrant analysis, shown in Figure 10.1. The CLASSE data displayed in the quadrant analysis can be used to facilitate a conversation about where students and staff miss each other. The vertical axis displays the lecturer(s) responses regarding the importance of certain effective educational practices and behaviours, while the horizontal axis shows the

aggregated frequency at which students experience and engage in these practices and behaviours.

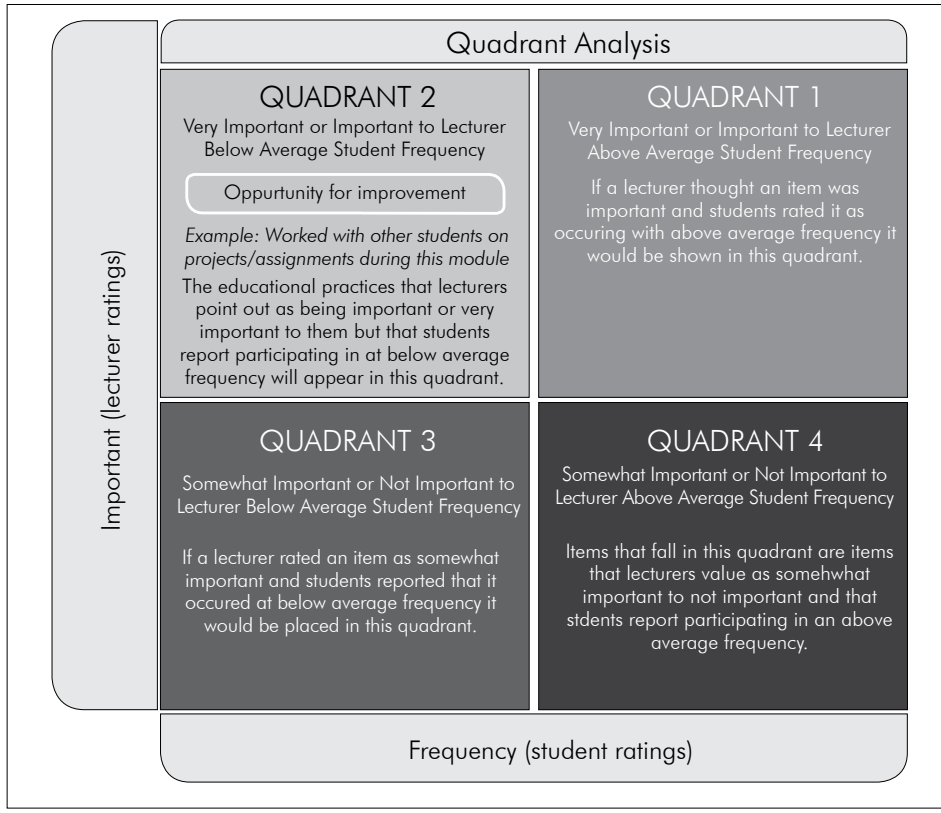

FIGURE 10.1 Quadrant analysis

The two upper quadrants represent items that lecturers value as either "Important" or "Very important", and the two bottom quadrants represent items that lecturers rate as "Somewhat important" or "Not important at all". The two left-hand quadrants represent items that students participate in at below average frequency. The two right-hand quadrants represent items that students participate in at above average frequency. If a lecturer deems an item as important or very important and students rate it as occurring frequently, it would be shown in the upper right quadrant, Quadrant 1. On the other hand, if a lecturer rates an item as somewhat important or not important and students report that it happens with low frequency, it would be placed in the lower left quadrant, Quadrant 3. If the importance rating of staff and the frequency reported by students are aligned, all the CLASSE items would fall into Quadrant 1 and Quadrant 3.

One of the most valuable ways in which the data can be used is to identify the items where students and lecturers are not aligned. Items that occur in Quadrant 4 are the ones that lecturers view as being "Unimportant" or "Moderately important" for student success, yet the students are reporting that they are participating in these behaviours quite often. Therefore, these items could potentially be taking crucial time away from more important activities and behaviours. Quadrant 2 shows items that are a result of student behaviours that occur with below-average frequency, but that the lecturer considers to be important for academic success, and is also considered the space of opportunities for improvement. These are the areas where the lecturer and his or her students miss each other. By identifying these gaps, the data can be used to improve teaching and learning practices in the context of their classroom and assist to improving student success rates.

IN-DEPTH ANALYSIS OF COURSE-LEVEL STUDENT ENGAGEMENT

To illustrate how CLASSE data can be used to impact the development of effective teaching and learning environments, we provide an aggregated case study of four universities' participation in CLASSE.

CLASSE was piloted in 2013 with a selected group of lecturers across ten courses/modules. In 2014, CLASSE was administered at the University of the Free State (UFS) across 15 courses/modules. In 2015, another South African university also used the instrument across 18 courses/modules, together with the UFS, bringing the total to 48 courses/modules in 2015. During 2016, three South African universities participated in the CLASSE, with a total of nine modules. For the purposes of this chapter where we aim to reflect on what we have learnt thus far about teaching and learning spaces through CLASSE administration, we therefore use data collected between 2014 and 2016 (since 2013 was a pilot year). The quadrant analysis presented in Table 10.2 is an example of how such analyses are presented to participating lecturers. The data presented show an aggregated picture of the 60 courses/modules represented through 4 089 students and 92 lecturers to allow us to determine tendencies. Seven faculties are represented through the 60 modules: Economic and Management (31); Education (1); Humanities (11); Engineering (6); Law (1); Health Sciences (1); and Natural and Agricultural Sciences (9). The items are presented with the count of modules where an item occurred most in brackets.

As CLASSE is a survey for individual modules, data are not usually combined and analysed as a combined data set. Instead, the analysed data, in the form of the quadrant analyses of each of the 60 modules, were analysed through frequency counts. That is, determining how many times a single questionnaire item appeared

in a quadrant. Table 10.3 shows a conditional formatting visualisation to highlight most-frequently to least-frequently used techniques. Darker grey areas indicate the largest portion of the sample for each activity, and lighter grey areas indicate the smallest portion of the sample. Through this approach, the integrity of individualised CLASSE data is not compromised. It is also possible to determine which items most frequently fall in a specific quadrant.

TABLE 10.2 Aggregated quadrant analysis for 60 modules

Importance (Lecturer rating)	QUADRANT 2	QUADRANT 1
	Asked questions in class [46] Participated in class discussions [42] Worked with classmates on projects during class [26] Combined ideas from different modules/subjects [24] Emailed lecturer [35] Discussed grades/assignments with the lecturer [42] Discussed ideas with the lecturer outside class [35] Received prompt/informative feedback [34] Assignments requiring more than one hour to complete [26] Spent more than 3 hours preparing for classes [24] Reviewed class notes before class [33] Studied with classmates [22] Easy to follow lectures [34]	Project requires using various sources [27] Attended class prepared [48] Worked with classmates on assignments outside of class [30] Tutored/taught other students [22] Used email to discuss assignments with classmates [29] Discussed ideas from class with others [34] Perceived the need to work hard [44] Received detailed information about learning outcomes [54] Received motivating interaction from the lecturer [51] Work required memorising [31] Work required analysing [57] Work required synthesising [56] Work required making judgements [43] Work required applying theories and concepts [58] Challenging assessment tasks [58] Attended class [54] Took notes in class [54] Attended a review session [29] Interested in learning course content [60] Comfortable talking to the lecturer [51] Enjoyed group work [27] Challenging course content [48]

Importance (Lecturer rating)	QUADRANT 3	QUADRANT 4
	Prepared 2 or more drafts of a paper/assignment [26] Included diverse perspectives in making points [38] Gave a presentation [39] Participated in a community-based project [49] Wrote papers longer than 5 pages [37] Participated in experiential learning [42] Participated in service learning [53] Participated in fieldwork [45] Participated in laboratory work [53] Participated in clinical teaching [59]	
	Frequency (student rating)	

After combining the analysed data, we can clearly see which items fall in to which of the four quadrants most often. First, the two quadrants where students and lecturers exhibit a degree of similarity (Quadrants 1 and 3), will be explored. The majority of the CLASSE items fall in Quadrant 1, where lecturers feel an item is important or very important, and students report a high frequency for the item. This indicates agreement among lecturers and students about the importance of these behaviours. Probably most significant is the high frequency in which lecturers and students agree on the importance of interest in learning course content (all 60 modules agree). Also showing particularly high frequency in Quadrant 1 are certain behaviours lecturers are responsible for, namely, sharing detailed information on learning outcomes; providing motivating interaction with students in classrooms; making sure content and assessments are challenging; and incorporating analysis, synthesis, application of theory, and making judgements into course content. Items showing particularly high frequency in Quadrant 1 for which students are primarily responsible include attending class and being prepared for class; realising the need to work hard; taking notes in class; and feeling comfortable to approach lecturers. The other items in Quadrant 1 are not as clear-cut. For example, Quadrant 1 shows that lecturers value, and students agree that they enjoy group work (27), however, when looking at the conditional formatting visualisation in Table 10.3 and considering where frequencies are distributed throughout the other quadrants, 24 modules placed this item in Quadrant 2, thereby indicating disagreement between lecturers' and students' responses. Similarly, while most lecturers place importance on – and most students admit to often practicing work requiring memorisation in Quadrant 1 (31) – a large amount of students representing 21 modules state that they practice this behaviour

even though lecturers do not deem memorisation important (Quadrant 4). Even though most lecturers and students agree on the importance of tutoring other students (22 modules), a large proportion of responses to this item falls in Quadrant 2 (19), as well as seven in Quadrant 3, and 11 in Quadrant 4. This implies that lecturers from 18 modules do not regard it important for their students to tutor or teach others, even though students from 11 modules engage in such behaviour.

Quadrant 3 shows items regarded as less or unimportant by lecturers as well as less frequent student behaviours. The five items forming part of the Supplementary Learning Activities subgroup are all present here. These items include participation in service learning, experiential learning, fieldwork, laboratory work, and clinical teaching. Since most participating modules do not engage in fieldwork, clinical teaching, or laboratory work, it is understandable that these items are not valued or practiced by lecturers or students. However, high frequencies in Quadrant 3 for participation in community-based projects, service learning, preparing more than one draft of an assignment, writing papers longer than five pages, and giving presentations might be cause for concern. Teaching others, as well as participating in service learning are considered high impact practices (see Chapter 5) for the potential of these practices to support the development of valued learning outcomes.

Quadrants 2 and 4 show where lecturers and students are 'missing' each other. Quadrant 2 shows several items that lecturers deem important or very important. Students report less engagement with these behaviours. This quadrant is therefore an important starting point when considering which changes could be made to align student behaviours with engagement activities. Some of the items in Quadrant 2 relate to interactions between students and lecturers. For example, even though most students indicated that they are comfortable talking to their lecturers and the lecturers deem this as important (Quadrant 1), lecturers would like students to engage more in emailing them, and discussing grades and ideas with them. Lecturers would also like to see students spend more time preparing for class and would like to see more active participation from students in class through having them ask questions, participate in discussions, and be able to follow the lectures with ease. Lecturers would further like to see more collaborative learning within and outside of classes, as well as more synthesis of interdisciplinary thoughts. The low participation of students and high value placed by lecturers on receiving/giving prompt feedback and doing/giving assignments requiring more than an hour to complete act as important prompts for reflection on how lecturers could adapt their assessment practices. Quadrant 4, indicating items which are less important or unimportant for lecturers, but for which students indicate high participation, do

not show any items with the highest frequency. However, students from 20 modules indicate that they participate often in work requiring memorisation, even when their lecturers do not agree on its importance.

TABLE 10.3 Conditional formatting visualisation of item-quadrant frequency

Item no.	Item	Q 1	Q 2	Q 3	Q 4
2	Asked questions in class	9	46	4	1
3	Participated in class discussions	14	42	2	2
4	Prepared 2 or more drafts of a paper/assignment	11	17	26	6
5	Project requires using various sources	27	15	12	6
6	Included diverse perspectives in making points	6	16	38	
7	Attended class prepared	48	10	1	1
8	Worked with classmates on projects during class	14	26	15	5
9	Worked with classmates on assignments outside of class	31	15	7	7
10	Combined ideas from different modules/subjects	21	24	9	6
11	Tutored/taught other students	23	19	7	11
12	Used email to discuss assignments with classmates	30	7	9	14
13	Emailed lecturer	2	35	23	
14	Discussed grades/assignments with the lecturer	6	43	11	
15	Discussed ideas from class with others	34	5	4	17
16	Gave a presentation	1	20	39	
17	Participated in a community-based project		11	49	
18	Discussed ideas with the lecturer outside class	1	36	22	1
19	Received prompt/informative feedback	18	34	8	
20	Perceived the need to work hard	44	10	1	5
21	Received detailed information about learning outcomes	54	3		3
22	Received motivating interaction from the lecturer	51	8		1
23	Work required memorising	31	1	7	21
24	Work required analysing	58	1		1
25	Work required synthesising	56	2		2
26	Work required making judgements	44	8	3	5
27	Work required applying theories and concepts	58	2		
28	Wrote papers longer than 5 pages	8	12	37	3
29	Challenging assessment tasks	60			
30	Assignments requiring more than one hour to complete	20	26	9	5
31	Spent more than 3 hours preparing for classes	23	24	7	6

Item no.	Item	Q 1	Q 2	Q 3	Q 4
32	Attended class	54	6		
33	Took notes in class	54	3	1	2
34	Reviewed class notes before class	19	33	4	4
35	Studied with classmates	20	22	10	8
36	Attended a review session	29	19	10	2
37	Interested in learning course content	60			
38	Comfortable talking to the lecturer	51	7		2
39	Enjoyed group work	27	24	5	4
40	Challenging course content	48	6	2	4
41	Easy to follow lectures	24	34	2	
42	Participated in experiential learning	1	16	43	
43	Participated in service learning		7	53	
44	Participated in fieldwork		14	45	1
45	Participated in laboratory work	2	4	53	1
46	Participated in clinical teaching	1		59	

USING CLASSE RESULTS FOR EVIDENCE-BASED EMPOWERMENT

Once the lecturers receive their module CLASSE reports, they have the benefit of empirical evidence of what is happening, or not happening, in their classrooms. Based on the results, and especially those presented in Quadrant 2, one can then determine what specific improvements will be needed based on what is seen at the class level. Staff may be able to evaluate and reflect on their teaching styles and adjust them accordingly in order to expose students to activities that can improve their learning efficiency (Ouimet & Smallwood 2005). It is also a tool for staff to see where they have been successful in the motivation, inspiration and influence of student learning. Lecturers can also use the information obtained from CLASSE to start discussions and debates concerning teaching and learning amongst themselves. In essence, students give feedback through the CLASSE that could help staff understand their learning processes and influence the practices of teachers.

Turning back to our quadrant analysis of 60 modules as an example, we share some practical next steps.

Online resources to facilitate evidence-based empowerment

To facilitate the effective reflection for the lecturer on their CLASSE results or to facilitate an academic staff development conversation the SASSE team has development an

interactive website. The website links 50 Student Engagement Techniques (SETs) developed by Elizabeth Barkley (2010) to the items in the CLASSE. The lecturer can click on "Using your Quadrant analysis" on the website https://www.ufs.ac.za/sasse. The website connects all relevant SETs to each individual item in the survey. Lecturers can select the item that they wish to improve upon, and inspect the relevant SETs relating to the item. Once a SET is selected, a summary of the SET is provided, with a reference to the full text. In the full reference, the lecturer is provided with step-by-step instructions of how to contextualise the technique and how to implement it in their classroom.

It is critical to emphasise that the aim is not to create a mechanistic, decontextualised development approach. Rather the website has been developed to create a resource that lecturers and academic staff developers can use to have deeper conversations on what kind of strategy would work best in the context of their specific classroom with their specific students.

Quadrant 2 in our 60-module example provides several items where Barkley's SETs might provide innovative ways of increasing student behaviours in areas of engagement valued by lecturers. For example, if a lecturer wishes to promote student participation in class, Barkley proposes eight different exercises ranging from introducing visual or physical artefacts as conversation starting point, to having split-room debates, where topics are discussed from different viewpoints.

Towards an evidence-based approach to academic staff development

Besides focusing on Quadrant 2 to identify techniques to improve engagement techniques in classrooms, the CLASSE, by itself or in conjunction with other data sources, provide data as starting point for academic staff development conversations. For example, from our quadrant analysis example of 60 modules we can identify three avenues of conversation. First, using Quadrant 1 to reflect on the quality of teaching, learning and assessment happening in class. Similar to the CLASSE findings, data from the LSSE and SASSE point to a misalignment between lecturers' low emphasis on memorisation and students thinking it is expected of them (see Chapter 4). Conversations about integrating Bloom's taxonomy, on which these items along with memorisation are based, into teaching, learning and assessments could impact the quality of students' learning.

Second, the items listed in Quadrant 3 serve as reflection about whether lecturers' sense of important engagement activities are consistent with what we know from research (e.g. Umbach & Wawrzynski 2005). Our 60-module example shows that many lecturers do not consider it important for students to teach others or to present

work to others; to write longer papers; to include diverse perspectives when making points; or to participate in community and/or service learning. While disciplinary differences could to some extent explain why these activities are not considered important, the developmental impact of these activities need to be considered before dismissing them as unimportant, because in doing so, students also tend to dismiss them.

Finally, items from the quadrant analysis could guide reflection on what is in whose power to change. For example, if lecturers want students to participate more in class, they have the prerogative to introduce innovative activities to promote this behaviour. Similarly, if lecturers want students to engage more with them through email, or discussions about grades or other ideas, they could extend their consultation hours, explicitly invite students to meet with them, or maybe initiate an email invitation.

Having reflected on an in-depth analysis of the typical areas in which lecturers and student tend to miss each other, we also wanted to reflect on the importance of considering the implications of the use of evidence in an academic staff development conversation. The reflection is structured using the following guidelines (NSSE 2015):

1. **Make sure lecturers and staff understand and endorse the concept of student engagement**
   Staff who are less familiar with assessment in general and the concept of student engagement should be convinced of the value of CLASSE results for improving teaching and learning.

2. **Understand what CLASSE data represent and use the results wisely**
   Understand that CLASSE measures student engagement in a specific class and at a specific time. The results cannot be generalised to all the classes which the lecturer teaches, but should rather be viewed as an opportunity to encourage reflection within a specific context.

3. **Report CLASSE data in a responsible way and make sure staff see the numbers in context**
   Use CLASSE data to encourage staff to make improvements. Encourage the staff members to use the website or other teaching and learning resources to find solutions for their specific context.

4. **Link CLASSE results to other institutional and evaluation data relating to the student learning experience**
   Student engagement data are most valuable when combined with other evidence. These can take the form of module evaluation data or qualitative evaluation data of the student learning experience in the module.

5. **Don't go at it alone**

   Encourage staff to share CLASSE results with each other and to form or join conversations of faculty groups or communities focusing on improving teaching and learning. The positive impact of CLASSE results will be multiplied if the data can be used by groups of staff who are working on improvement efforts around campus.

CONCLUSION

The chapter introduced the CLASSE and how it can be used at a course/module level to promote student engagement and evidence-based improvement in teaching and learning. The CLASSE promotes student agency by giving students an opportunity to have a say in the quality of their own teaching and learning at the course/module level. It allows academics as well as heads of department to monitor the extent to which students are experiencing effective educational practices that have been implemented in specific courses/ modules. It creates an opportunity for careful diagnosis of the climate in the classroom and creates an opportunity to build the pedagogical relationship between lecturers and students.

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