
THE PLACE OF STUDENT FEEDBACK IN TEACHING EVALUATION

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Quality of Teaching vs. Student Feedback Scores

Student Feedback (SF) scores occupy a central place in the evaluation of the quality of teaching in many institutions of higher education. For instance, the procedure for selecting nominees for teaching awards often begins by ranking teachers by their SF scores, and selecting from the top range of the ranking. Implicit in such a procedure is the following assumption:

A. *The higher the SF scores, the better the quality of teaching.*

Under this assumption, a faculty member who receives a mean score of 4.35 is a better teacher than a faculty member who receives a score of 4.25. Willie Tan's study of SF scores in the article, "[Determinants of Student Feedback Scores](#)" shows that this assumption is flawed. There are many other numerically quantifiable variables, such as class size, perceived difficulty level, expected grades, and so on, which influence the SF scores. And there may be other factors that have not been taken into consideration but may influence the scores, many of which may not lend themselves to numerical coding for statistical investigation. These considerations lead us to question the validity of the operationalization of teaching quality as SF scores: the concrete property we measure may not truly reflect the abstract quality we want to evaluate.

Given these remarks, we might think of revising assumption A as follows:

B. *All else being equal, the higher the SF scores, the better the quality of teaching.*

Under assumption B, a faculty member who receives a mean score of 4.35 is a better teacher than a faculty member who receives a score of 4.25, if they (i) teach modules with the same class size, perceived difficulty level, expected grades, module type (elective vs. compulsory), (ii) are in the same Faculty/Department, (iii) teach topics which are equally popular with students, (iv) accomplish the same learning outcomes with the same emphasis, (v) generate the same level of anxiety through the types of assessment tasks they use, and so on.

There are two problems with B. First, is the hypothesis correct? Second, even if we were to assume it is correct, can it be used as the basis for a reliable ranking procedure?

Let me address the second question first. Many of the factors that can affect SF scores – such as emphases on learning outcomes different from the run of the mill ones, and anxiety about assessment – have no numerical coding in SF, and are extremely difficult if not impossible to measure. Controlling for all the factors to make the “all else” equal, such that the ranking in terms of SF scores reflects ranking in terms of teaching quality, is simply not feasible, even if we are looking for a reasonable approximation.

Even if we were to overcome the practical problem, the question about the correctness of assumption B remains. Granted that in some aspects of teaching such as that of clear and effective communication, higher quality results in higher scores, is this the case in every aspect of teaching? For instance, could it be the case that in matters of independent learning and open-

ended assessment tasks, higher quality results in lower scores? All else being equal, won't a teacher who refuses to spoon-feed get lower SF scores than one who spoon-feeds? In other words, couldn't hypothesis C be closer to truth?

C. All else being equal, higher quality results in higher SF scores for some ingredients of education and pedagogy, but lower scores for others.

Under assumption C, it might be the case given two teachers who aim at the learning outcomes of knowledge and mechanical application in modules that are equally challenging, the teacher who receives a higher score is a superior teacher (with all the caveats about "all else being equal"), but if one of them aims at knowledge and mechanical application while the other goes beyond these to aim at independent learning, critical thinking and inquiry, the latter may receive poorer SF scores even though the quality of learning is superior.

Given these considerations, it seems to me that the following conclusions are inescapable:

Any administrative procedure that uses SF scores in isolation to rank the teaching quality of Faculty members/modules (based on A) is methodologically unsound.

Even if the procedure uses SF scores in the context of other information (based on B), the procedure might turn out to be unsound.

Towards a Pedagogical Theory of Student Feedback

The statement that ranking of teachers and modules by SF scores is a flawed procedure does not imply that SF scores have no place in teaching evaluation. SF scores do provide information relevant for teaching evaluation, provided we know what kinds of inferences we can make on the basis of these scores.

What we need to bear in mind, however, is that any interpretation of the SF information presupposes an implicit or explicit theory that connects the information (numbers and qualitative comments) to the concepts associated with the information (teaching quality, popularity, student anxiety, and so on) to legitimize the interpretation. The legitimacy of the interpretation depends upon the legitimacy of the theory within which it is embedded.

As far as I know, no such pedagogical theory of SF exists. I will therefore articulate a set of hypotheses that I regard as reasonable on the basis of my years of experience as a teaching evaluator. Needless to say, these hypotheses need to be refined and modified on the basis of rigorous investigation, and some of them even rejected, as is often the case in theory construction.

A tentative skeletal theory of SF and Teaching Quality

1. *Quality of a teacher/module*

The quality of a module/teacher depends upon the *quality of learning* it brings about in the learners (learning outcomes), as well as the *efficiency and effectiveness* of the means through which the learning is brought about (methodology), the value of the methodology depending upon the value of the learning outcomes.

2. *The information in SF*

The information elicited by SF questions represents

- a. student perceptions on the quality of a teacher/module, combined with
- b. positive/negative feelings towards the teacher, module, or subject.

[i.e., the information does not directly reflect the quality of the teacher/module.]

3. Student perceptions

- a. Student perceptions on the quality of a teacher/module depend upon the value system of education that students subscribe to, and their notions of efficiency and effectiveness of the methodologies.
- b. The value system of education that students subscribe to, and their notions of effective and efficient methodologies may not necessarily coincide with the value system and methodological effectiveness-efficiency relevant for (1)).

4. Positive/negative feelings

- a. The positive/negative feelings of students towards a teacher depends upon qualities such as personal charisma, communicative ability, perceived (not necessarily actual) expertise in the subject, humour, and approachability, as well as the positive/ negative feelings towards the module and the subject. These factors can enhance or take away from perceived teaching quality, but are not constitutive of teaching quality by themselves.
- b. The positive/negative feelings of students towards a module are influenced by the class size, perceived difficulty level of the module, expected grades, students' prior interest in the subject, students' perception of the market value of the subject, and so on.
- c. Students react positively to teacher qualities such as personal charisma, perceived expertise, communicative ability, humour, well-delivered lectures, and perceived commitment. But a significant section of students react negatively to modules that require independent learning, more hard work than is involved in comparable modules, effort invested in higher order thinking, and assessment tasks that go beyond their comfort zone.

5. Overall score

- a. The overall SF score for a teacher/module is a measure of the students' satisfaction with the teacher/module.
- b. The students' overall satisfaction with a teacher/module depends upon student perceptions on teaching quality (2a) and popularity factors (2b).

The most controversial assumption in the above is perhaps the statement that *at least some factors that improve the quality of teaching can lead to a lowering of SF scores* (4c). This is consistent with the statement in C. The idea that

- what we as educators value most in student learning does not coincide with what students are used to and are comfortable with, and
- if the two are in conflict, it would result in negative reactions on the part of a significant number of students, resulting in a lowering of SF scores.

seems intuitively highly plausible. We find suggestive evidence in the mismatch between the profiles of teachers and modules emerging from the *repeatedly found* qualitative comments, and their corresponding SF scores. Take a look at the repeated SF comments in the SF of two professors whom I will refer to as teacher A and teacher B:

Teacher A. Number of respondents: 111. Mean overall score: 4.12

<i>Repeated comments</i>	<i>number of times the comment is repeated</i>
Good lecturing	15
Clear presentations and explanation:	10
Enthusiastic/passion for subject/energetic	9
Interesting/enjoyable	9
Committed/dedicated	5
Friendly/approachable	4
Organized/systematic	3
Knowledgeable	3

Teacher B: Number of respondents: 390. Mean overall score: 4.00

<i>Repeated comments</i>	<i>number of times the comment is repeated</i>
Encourages students to think	39
Clear presentation and explanation	22
Does not spoon-feed	16
Knowledgeable	16
Encourages independent learning	15
Asks probing questions	8
Committed/dedicated	8

Let us define a *robust comment* as one that is expressed by at least five students in the feedback for a given module. By that definition, the comment “interesting/enjoyable” for teacher A is robust, but not the comment “organized/systematic”. Let us also define the *salience* of a robust comment as the number of students who express that comment, divided by the number of students in the module (yielding the percentage of nominations when multiplied by 100.) The salience of the comment “good lecturing” for teacher A is 0.13 (13%), while the salience of the comment “encourages students to think” for teacher B is 0.1 (10%).

Suppose we go by the principle that the quality of teaching depends upon the value of the learning outcomes it brings about, and the efficiency and effectiveness of the means through which they are accomplished (Principle (1)). If we further assume that student perception of learning (indicated by the numbers) is a reasonable indicator of the actual learning, then in the above example, teacher B is superior to teacher A. In terms of the SF scores, however, teacher A ranks higher. Given (4c), we make take this to be an indication of the lower degree of the positive feelings triggered by teacher B.

A few years ago, I looked at the pattern of repeated comments in the SF of the teachers receiving the highest SF scores in NUS. The qualitative feedback of the top ten scorers indicated qualities like effective and organized presentation, teacher’s knowledge, interestingness, and commitment, but hardly contained any references to qualities such as intellectual challenge, refusal to spoon-feed, critical thinking, and discussion of the evidence that bears upon textbook knowledge. Taking the repeated qualitative comments in SF as a reliable indicator, the SF scores of those who aimed at such higher order learning outcomes hardly reached the top scores. This mismatch between overall scores and qualitative comments is yet another piece of evidence that supports (4c). [I am not suggesting that the repeated qualitative comments are indicators of actual reality. For instance, students’ perception of the relative scholarships of two teachers need not necessarily match their actual scholarships, but their perceptions of what they have learnt are probably more reliable.]

Further support for (4c) can be seen in case studies of SF reports of the kind illustrated by the SF of a colleague, given in the appendix. The overall SF score for this colleague is 3.538, which is below the Department Average (4.11) and the Faculty Average (3.937). Interestingly, the standard deviation is 0.928, which suggests an unusual spread in the positive-negative feelings of students. Though the overall score is below average, the comments on the teacher and the module (which I have highlighted in bold face) indicate the accomplishment of highly valued and somewhat uncommon learning outcomes. As can be gathered from the comments themselves, precisely these learning outcomes are the reason for lower overall score, for reasons that will become clear in the next section.

Sub-cultures within the student population

An interesting phenomenon that the mismatch illustrates is that of the opposition between two sub-cultures in the student community, which I refer to as the sub-cultures of adventurers and non-adventurers, with the average students falling between the two. The adventurers share our value system of education, and are willing to learn to think for themselves and to take risks in their grades. The non-adventurers are not interested in learning: they attend educational institutions primarily for the sake of grades and degrees, are unwilling to go beyond their comfort zone, and would rather be spoon-fed. Like the non-adventurers, the average university students do not share our value system of education (having been brought up on in a culture that focuses largely on the recall of knowledge and mechanical application). However, unlike the non-adventurers, average students can be invited and nudged to share it, provided we make a collective effort.

Teachers and modules that are exciting for the adventurers would displease the non-adventurers. For reasons articulated in the next section, making it exciting for the adventurers may not raise the overall scores, but displeasing the non-adventurers will pull down the scores. Given this situation, it would be natural for risk averse teachers to play it safe and avoid displeasing the non-adventurers

In sum, the mismatch between the overall scores and the qualitative comments points to a serious danger of undue reliance on overall SF scores for the purposes of P&T and teaching awards. It discourages risk averse teachers from incorporating in their teaching the higher order learning outcomes set out in the NUS guidelines on teaching evaluation for promotion and tenure, reappointment and teaching awards (HR 094/02). It is therefore indirectly detrimental to our pursuit of quality education.

Interpreting the Statistical Findings

As stated earlier, Willie Tan's findings clearly demonstrate the point I have made above, that hypothesis A is false. SF scores are not a direct measure of the quality of teaching. It is not the case that a teacher who systematically receives a higher score than another is necessarily a better teacher.

In a certain sense, this conclusion should be obvious to any teaching evaluator who has scrutinized and reflected on a number of SF reports. So this comes to us as no surprise. The contribution of Willie Tan's study to our understanding of the nature of SF lies in shedding light on the specific factors other than teaching quality that influence SF scores, and providing empirical confirmation to some of the confounding factors that we have intuitively suspected:

- | | |
|---|--|
| (i) <i>Class size:</i> | the larger the class, the lower the scores. |
| (ii) <i>Expected grades:</i> | the higher the expected grades, the higher the scores. |
| (iii) <i>Difficulty level:</i> | the higher the difficulty level, the lower the scores. |
| (iv) <i>Lecture vs. sectional teaching:</i> | lecture classes receive higher scores. |
| (v) <i>Age of the teacher:</i> | the older the teacher, the lower the scores. |

Given (4b) in the context of (2) and (5) in our theory of SF, these findings are precisely what we expect. In contrast, they are inconsistent with the naïve assumption A.

Notice, incidentally, that if we equate SF scores with quality of teaching, the correlation in (v) yields the strange conclusion that the quality of teaching declines as faculty members gain teaching experience.

Turning to assumption B, let us note that Tan’s findings report the absence of a strong correlation between the overall SF scores and the percentage of student nominations for teaching awards. There are at least two plausible reasons for this non-coincidence, namely:

Hypothesis I: The percentage of student nominations applies only to a small subset of the population, namely, teachers that students regard as excellent. In contrast, the overall SF score applies to the entire population of teachers. Hence the mismatch.

Hypothesis II: The percentage of student nominations and the overall SF score represent related but distinct kinds of information on the way students react to the teaching.

The two hypotheses are not mutually exclusive. My own hunch is that hypothesis II is correct, independently of hypothesis I. Consider an outstanding teacher who refuses to spoon-feed and pushes students to a higher degree of effort in the exercise of higher order thinking abilities and/or resorts to assessment strategies that generate insecurity among students. Some students might react strongly in a negative way towards the teacher, some may react equally strongly in a positive way, and yet others in between. The result would be a greater spread of positive-negative feelings towards the module or teacher, when compared to a reasonably good teacher whose teaching takes a safer path:

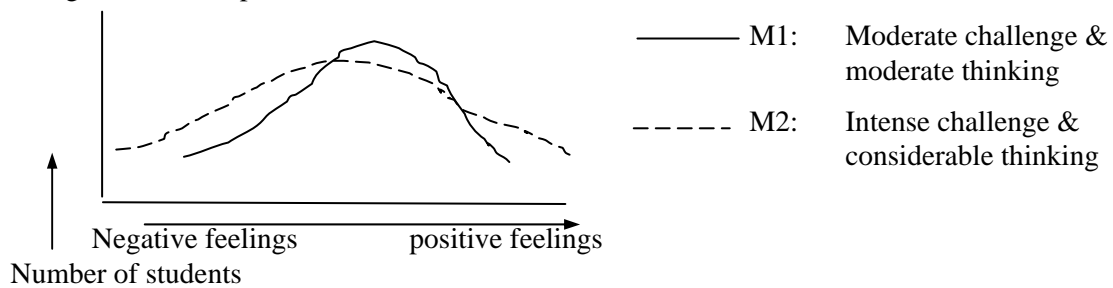


Figure 1

Consider a related point. During the last few years at NUS, the mean overall scores in SF at the university level have been converging on 4. This suggests that we should interpret the overall SF scores in the region of 4 as indicating that students regard the module/teacher as “okay”, and those in the region of 2 as indicating that they regard it as extremely poor. As a result of this overall pattern, students who think that a teacher/module is outstanding, excellent or very good might assign the same score, namely, 5.

Given the collapsing of “very good”, “excellent” and “outstanding” to a score of 5, the situation in figure 1 would result in the distribution in figure 2, such that the mean score for a teacher/module M2 is lower than that of the teacher/module M1, simply because the spread of reactions is greater for M2:

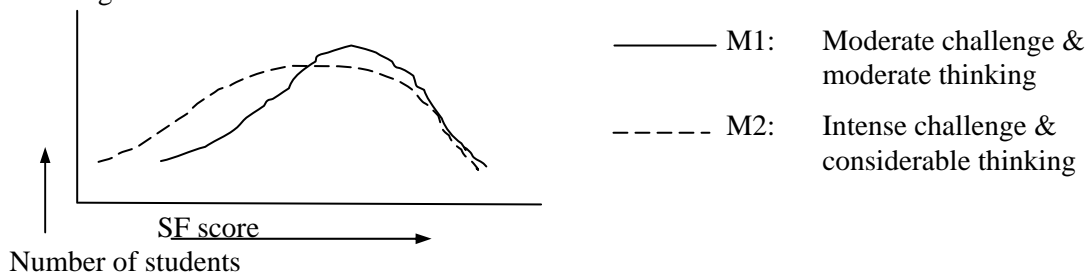


Figure 2

It might be the case that the total number of students who assign 5 to M1 and M2 is the same, but if a larger number of these students regard M2 as outstanding while only a smaller number think M1 is outstanding, M2 will have a higher percentage of nominations, but a lower mean score. This would explain the mismatch between the two sets of numbers.

In pointing to the possibility of higher quality of teaching resulting in lower scores for risk taking teachers (figure 1), I am not suggesting that a teacher can afford to focus on the top twenty or thirty percent of the students who respond favorably (and hence would nominate him/her for teaching awards), ignoring the remaining students. If the students are not convinced of the importance of what they need to learn in a module in terms of their own value system, chances are that they won't learn much, and even if they do learn something to meet the assessment tasks in the module, that learning will not remain stable once the module is over.

Two cautionary notes. First, I am not saying that students are incapable of judging teaching quality. Rather, what I am saying is that the value system employed by the student population as a whole need not coincide with ours, and as a result our judgments and those of the students need not converge. I am also saying that there is considerable diversity within the student population, and that even though those that I have called adventurers share our value system, the non-adventurers do not, and that the downward pull of the non-adventurers cannot compensate for the upward pull of the adventurers.

Second, the statement that success in the inculcation of higher order learning outcomes among one section of students can trigger negative reactions among another section resulting in lower SF scores should not be interpreted as a blanket legitimization of poor SF scores. The lower of SF scores can be caused not only by the displeasure of non-adventurers, but also by inadequate teaching strategies or skills. It can also be caused to the failure to help students understand and appreciate the expected learning outcomes in terms of their value systems, or effect a transformation in their value systems itself.

In our attempts to change the students' mindset, however, we cannot hope to win over the entire cohort of students. Figure 1 represents a situation in which the top 20 or 30 percent of the students regard the teacher as the best they have ever come across, the bottom 20 or 30 percent regard him/her as unnecessarily posing a threat to their success in the university, and the remaining students regard him/her with mixed feelings of appreciation of what is being learnt and anxiety about assessment with varying degrees. We can't afford to please everyone when aiming at challenging and worthwhile outcomes.

Meaningful and Cautious Use of Student Feedback in Teaching Evaluation

Scores, percentage of nominations, and qualitative comments

The considerations discussed in the previous sections point to the following proposals on the content of SF reports and the use of these reports.

First, it would be useful for the percentage of nominations for teaching awards to be included in the SF reports along with the mean of the overall score, and both be compared with their respective means at the Faculty (and University) levels.

Second, the percentage of student nominations is a more reliable indicator of teaching excellence in the context of teaching awards than overall SF scores, even though the nominations themselves are dependent on positive/negative feelings, and therefore, and are not a direct reflection of teaching quality.

Third, the pattern of repeated comments in the qualitative part of SF, especially those in the nominations for teaching awards, can provide a more informative profile of the teacher/module, more reliable than both SF scores and number of nominations.

I must add that in saying that the patterns of repeated comments in the qualitative part of SF are more informative and reliable than the quantitative scores and percentages of nominations, I am not suggesting that these comments can be taken at their face value without a careful interpretation. For instance, when the students say “encourages critical thinking”, we do not know whether they mean “the teacher keeps telling us that we should think critically”, “we have learnt how to be critical of others” or “we have learnt how to critically evaluate the merit of ideas, practices and products.” Hence, such a comment by itself does not necessarily lead to the conclusion that the teacher facilitates the development of critical thinking among students. Nor am I suggesting that some comments are inherently more privileged than others. For instance, I am not suggesting that a comment such as “does not spoon-feed” carries greater inherent merit than a comment such as “interesting/enjoyable”.

Adjusted scores and percentage of nominations

The confounding variables that influence the both the SF scores and the percentage of nominations point to a difficult problem. Granted that factors such as class size and perceived difficulty level do influence these numbers, it might be useful to adjust the raw scores and percentages such that the effects of these factors are eliminated. However, designing a reliable procedure to make these adjustments is not an easy task.

For instance, consider the correlation between SF scores and the perceived difficulty level of the module: the higher the perceived difficulty level, the lower the scores. But does the perceived difficulty level indicate the inherent complexity or technical nature of the subject being taught, or the difficulty created by the teacher’s lack of expositional abilities? We do not know. Similar observations apply to the expected grades: the higher the expected grades, the higher the SF score. But is the expectation of the grade an indication of the student’s inherent confidence (independently of the module or the teacher) or a perception of the teacher’s liberal/stringent manner of grading? We do not know. Finally, if the mean score of a given Faculty/School is lower than that of another, does that indicate that students in the former Faculty/School view the teaching of that Faculty/School less positively, or that they are using a lower range in the assignment of scores (i.e., using a lower number to express the same judgment.)? We do not know.

Another kind of difficulty is introduced by the mean overall score being located in the region of 4 at the university level. Imagine two teachers, both with a mean score of 4.9, but one teaching a class size of 20 and the other a class size of 200. Given that SF scores tend to go up as the class size goes down, should we “adjust” scores such that the resultant scores of the teacher who teaches 20 students is lower than that of the one teaching 200?

Such adjustment can result in unfairness, given that the average of the SF scores in the university tends to be around 4. On a 5-point scale, one would expect the average to be around 2.5, so that a score of 5 would be way above average and a score of 1 would be way below average. When the average score shifts to 4, the distinction between way above average and above average conflates into the same number, because numbers above 5 are not available to express the distinctions among, say, very good, excellent and outstanding.

The teacher of 20 students may actually be an outstanding teacher, and that of 200 may be just a very good teacher. Alternatively, they may both be very good or both outstanding. We do not know which of these two interpretations we should adopt in any given case. Hence the potential unfairness in adjusted scores. Adjustments to the percentage of student nominations for teaching awards does not involve this problem.

The place of overall scores in teaching evaluation

I have already explained why overall scores in SF is far less informative and reliable in teaching evaluation than qualitative comments and percentage of nominations for teaching awards. This leads to the question whether there is any place for the overall SF scores in teaching evaluation.

Given Tan's findings, there is still one way in which the scores can be used in the context of teaching evaluation for P&T and for teaching awards, namely, to compare the SF score of a teacher for a given module with the mean score of the comparable cohort, to see whether the former is average, below average, or above average. "Comparable" would refer to teacher-module combinations that are the same with respect to the variables that influence the SF scores. Thus, the Faculty, same class size, same difficulty level, etc. or candidate/module being evaluated will be compared with the mean of the other teachers/modules in the same Faculty, with the same class size, and same difficulty level.

I have already indicated my reasons against ranking teachers on a scale, whether on the basis of overall scores or percentage of nominations, is undesirable, even if we make the unrealistic assumption that the system of adjustment is flawless. Ranked lists create the false impression that a teacher who is ranked higher is necessarily a better teacher than one who is ranked lower, even when the difference between the two scores is not substantial. Hence, it might be best to do away with the procedure of ranking, whether at the Departmental, Faculty or University level, and restrict the comparison of the SF scores to two broad categories:

unsatisfactory	=	very poor scores, way below average
satisfactory	=	somewhat below average and above

Poor SF scores clearly point to a problem: if the students' response towards a teacher/module is strongly negative, chances of their learning something valuable are slim, however good the teaching might otherwise be, and even if the negative reaction is based on superficial aspects such as lack of familiarity with the teacher's accent. If the score is high, it shows that the students are positive. A teacher who is higher in student perception has a greater chance of facilitating high quality learning, but being higher in student perception by itself is not an indication of higher teaching quality.

High SF scores point to the students' positive reactions to a teacher/module. If there is independent evidence to demonstrate that the quality of teaching is very high, positive reactions point to the success in accomplishing the desired learning outcomes. For instance, if the teacher can get high scores in spite of making them learn things on their own and in spite of setting anxiety inducing assessment tasks that test thinking abilities, it is indeed an accomplishment. However, if the positive feelings are the result of popularity at the cost of quality, the same high scores should be viewed as a danger signal, not an accomplishment. In other words, high scores cannot be used to make inferences on the quality of teaching unless combined with other sources of evidence that point to quality, not just popularity.

The use of SF scores as one of the factors in teaching evaluation is legitimate when there is no conflict between popularity and quality of teaching. However, when there is a conflict between the two, the scores become a measure of popularity, not quality. As a result, the perceived importance of SF scores in the teaching community acts as an impediment to the genuine attempts to improve the quality of teaching. I believe that the proposals I have outlined above would remove this impediment, and send the right signals to the student community such that in the long term, it would change the student culture as well.

The starting point for the selection of teaching awards

Committee members designing selection procedures for teaching awards are unaware that student feedback scores are not a measure of the quality of teaching. Yet, they

continue to use either the ranking or a cut of point based on SF scores for the short-listing of the first round of candidates, simply because it is impractical to scrutinize all the relevant sources of information for the entire teaching population in a Department/Faculty. I myself have supported this procedure on the grounds of practical convenience.

The danger of this policy is that it leaves out candidates who might be excellent or outstanding teachers who may receive an average (or even below average) SF scores for the reasons I have outlined above. What kind of procedure can we design that is simultaneously fair to the adventurous teachers and is feasible for implementation?

I would like to suggest that the committee that short-lists candidates for the first round (at the Departmental level) select those who meet any ONE of the following criteria:

- High student feedback scores, adjusted for the confounding variables
- High percentage of student feedback nominations, adjusted as above.
- Repeated comments in SF that point to the accomplishment of higher order learning outcomes.
- Subjective perceptions of teaching excellence in colleagues
- Peer nominations
- Self nominations

This procedure minimizes the probability of leaving out excellent teachers in the first round. Candidates who are in this set but are not excellent teachers can be weeded out on the basis of a careful scrutiny of the other sources of information at a subsequent stage.

Appendix: A sample SF report

(Note: Teacher's name changed to x.)

Overall score: 3.538

Standard Deviation: 0.928

Response size: 132

Q9 What are the teacher's strengths?

- **Adamant in encouraging learning and critical questioning.** However, x's strengths are a little **impeded by the way students tend to expect quick answers** in NUS. I.e. they could have been more effective otherwise.
- x asks questions to **provoke thinking**, and takes all questions seriously, so that there's no real worry that any question is too trivial to be asked.
- Willing to improve x's teaching methods; **forces students to think.**
- x has very idealistic goals and aims for the students, which is nice. and might one day come to be realised.
- Daring to try **unorthodox techniques. Unafraid to incur discomfort in students** to achieve results.
- Extremely dedicated and committed! One of the best teachers around. Puts learning and students' interests before anything, even to the extent of doing extra work and spending extra time.
- advanced coach specialising in **designing tough test papers.** hands-off approach, **wanting students to find out the answers themselves.**
- The lecturer's strengths include x's clear and concise style of delivery of complex concepts making them accessible to new Y majors. I appreciate x's work to tailor the content of the module to the needs of the course, ensuring that **the material is challenging without overloading the students.** In particular, I have been impressed by the effort put in by the teacher to compile and respond to individual queries and concerns voiced by different affinity groups in ..., and I have found the Consolidated ... to be a good learning tool.
- x is extremely open to questions and answers almost all questions quickly, which is good because this module **requires us to question in order to learn.**
- Ability to **instill in students the inquisitiveness to question.**
- x **doesn't give us the answer immediately but makes us think about the issues first.**
- x forces us to do ... which **forces us to do research on our work and ask questions.**

STUDENTS' COMMENTS ON MODULE

- strengths: **-mode of inquiry as central theme of lectures** -unique ways of lecturing the class... and interesting concepts and more in depth, rather than the usual rote learning environment. weakness: - complicated concepts which are not easy to explain/conceptualize -heavy workloads without specific weightage on CA
- Module is **challenging and seeks to enhance the analytical skills of the students. Not one of those usual modules which feed too much information.**
- I think that this course is **very demanding**. Partly due to how it was being taught. It was such a huge jump from m1xxx to m2xxx.
- There is a great leap from the exposure module to this module. More readings and practices can ensure some sense of security as we go along in this difficult module.
- what is good about this module is that it **forces students to really think and analyse** the given data. this is good as it runs in line with one of the aims of education which is to make us be independent thinkers. **HOWEVER, this module is just too tough!**
- **Very stimulating, and teaches a student to "fish" rather than just give them the "fish" directly.**
- The particular strength of this module is that it **demands and fosters true critical and independent thinking** by the student. I believe that this ability to think critically for oneself is highly invaluable and crucial as a necessary foundation for any higher level learning. Hence overall I am very satisfied with the student-centred method of pedagogy and I strongly believe it will stand me in good stead with the skills required to major in Y.

STUDENTS' NOMINATIONS FOR BEST TEACHING

- **the only lecturer in my opinion that has truly succeeded in encouraging critical thinking and creativity.** only module that you can't "memorise" answers or methods but will truly need to learn how to think and analyse puzzles
- x is an extremely dedicated lecturer who puts in a lot of effort to help x's students. x is one of the few lecturers who encourages x's students to experiment with data and to truly understand the material in this way. x is one of the best lecturers i have had in my 3 years in NUS.
- I see x's effort in guiding us into indepth learning and not rote learning... lectures are not dry, motivated for.. and it's really not a dread to attend this 8am lecture! x really shows x's capability as a lecturer who is creative, organised and student-oriented... attending to our questions.. and taking the extra effort to force us to do ... which in fact results in x's having to do more work.. => well, x teaches us research skills... inquiry skills which is applicable not only to this module...A Rare gem available in NUS!
- Very responsible lecturer who will **want the best for x's students, even if that will make her look evil.**
- Extremely dedicated and committed in teaching, wanting students to learn and get the most out of the module. This is **even so at the expense of getting x's reputation tainted** (cos x gives us far too much work). One of the best teachers in NUS!
- I don't think 3000 words are enough for this. And I doubt I'll ever write 3000 words anyway... Well, x is caring, dedicated, delightful, charming, interesting, and always too **eager to torture us with more problems every week!**
- I felt that x tried very hard to ensure that we had the clearest understanding of the concepts that were introduced. I really appreciated x's efforts in preparing all the reviews and answers to our questions. However **much that some of the students could not get used to x's way of teaching and x's expectations, I think x deserves a form of encouragement and praise in the way x puts in so much work for us (even when x received negative remarks about x's teaching methods).**
- **Encourages individual thinking like no other**, and is highly efficient, making it a point to get back to the students even when ...
- x is very patient and tolerant towards students, and is exceedingly organized in the way x teaches the course... It is highly commendable. x is also very open to suggestions by students and is always very willing to listen and accept reasonable feedback, and acts upon these feedback too. Overall, i am very impressed by x's effort and dedication to teaching this course.