ASSESSING THE EFFECTS OF FEEDBACK: MULTI-METHODS AND MULTI-DIRECTIONS IN MULTI-PEDAGOGICAL COURSES

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ABSTRACT

Instructors have frequently been encouraged to provide feedback to students in a timely and meaningful manner. Providing meaningful and useful feedback can be complicated by courses that utilize a variety of pedagogical approaches simultaneously. Students may be doing well in one part of the course and less well in another. In addition, students may become confused about their actual level of achievement and tend to ignore or misinterpret feedback provided by the instructor. This paper describes the results of using an instrument designed to not only provide feedback about student performance, but to also elicit student perceptions about the meaning of the feedback.

GENERAL

The importance of feedback to students on their performance is well documented (Erez, 1977; Hillman, Schwandt & Bertz, 1990; Vecchio, 1995). Keys (1977, 1989) suggested an experiential learning model, The Management of Learning Grid. He proposed that effective instruction requires a three step process. First, the dissemination of new ideas, principles and concepts. Second, the opportunity by the student to apply the concept in an experiential environment. Third, feedback as to the result of actions taken. This of course is iterative, with feedback about results at each chronological step in the exercise. Many experiential exercises focus on an ending discussion to highlight learning (Albertson, 1995). Others have emphasized the importance of a debriefing at the end of an experiential exercise not just for feedback but to ensure participants learned something.

There is a wide array of possible pedagogical techniques available (Burns, 1992). Business policy courses typically use multiple pedagogical methodologies, including cases, simulations, lectures, and experiential exercises (Trapp, Koontz, Peel & Ward, 1995). Teach and Govahi (1993) found simulations to be the most effective as judged by respondents, but also found that the effectiveness of the techniques varied across skill sets. Each technique could be the most effective, depending on the skill set selected. End of exercise debriefs are likely effective for case studies which are episodic in nature. When multiple pedagogical techniques are used together, as in a business policy course, effective feedback must be continuous and multi-faceted.

LEARNING AND FEEDBACK

Concern about the actual degree of learning derived from various pedagogical techniques has been frequent and consistent. Gosen & Washbush have been pursuing a technique-learning link using multiple approaches (e.g., 1998, 1993), and Wolfe has been assessing the validity of simulation learning for decades (1993, 1976, 1975). These studies have included a wide variety of variables in their attempts to isolate the antecedents of learning. Earlier studies either included feedback as a specific variable, or used a variable that can be considered a proxy for feedback. In a review of 60 fairly rigorous studies on simulations, Keys & Wolfe (1990) found that second to the quality of the game itself, the administration of the game is probably the most important factor in the game's success. The variable "game administration" included as one of its dimensions feedback. Wolfe (1975) found that feedback in the form of

instructor guidance was necessary for learning. Others also found that feedback must be provided during crucial stages of a simulation (Certo, 1976; Keys, 1977; McKenney, 1967). DiBattista (1986) found learning was greatest with weekly structured feedback.

The benefit of weekly structured feedback underlines the importance of repetitive, continuous feedback, but also the nature and content of feedback is important. Bowen (1987) contended learning has a greater impact when it is accompanied by emotion, occurs in a safe environment with adequate processing time, and is accompanied by a clear summary providing a cognitive map for understanding the experience. The literature is fairly clear that to derive maximum learning benefit, the instructor must be involved -- providing consistent, relevant, and timely feedback to the student.

FEEDBACK AND MULTIPLE PEDAGOGIES

Although there is extensive support in the literature for providing feedback for any given pedagogy, it is not clear what the interaction would be between multiple feedback for multiple pedagogies. When students are unsure of the true message of feedback, or are resistive to undesirable messages, they may tend to distort or misinterpret the feedback. This would be especially likely if feedback content arose from and differed between pedagogies. If a student received feedback that performance was acceptable on a business simulation, but below standard on case analyses or quizzes, the tendency might be to focus on the good news to the exclusion of bad news. Thus a false sense of well being might be engendered despite the fact that feedback identifying unacceptable performance has been provided to the student. If the feedback was clear and direct, however, there should be recognition of a performance shortfall and the student should experience at least an awareness change and hopefully a behavioral change. This leads to our hypothesis.

Hypothesis

Provision of timely feedback concerning unacceptable performance will engender an attitude change and intention to correct the deficiency.

ASSESSMENT OF FEEDBACK MISINTERPRETATION

The Sample

The sample consisted of 38 students attending a medium size university located in the southeast. The students were business majors at the senior level taking the capstone Business Policy and Strategy course. The demographic profile of these students was typical of the University's College of Business demographic profile.

As is typical of most policy courses, course work pedagogies included a business simulation, weekly case studies, and lectures. The class preparation expected of all students was as follows:
- reading of the assigned text material as preparation for the lectures. Feedback on the quality of preparation was provided through pop quizzes on the material.
- weekly preparation of a case analysis. Students would prepare case analysis notes according to a specified format. The case notes were subject to a possible collection by the instructor. Feedback on the case preparation was provided verbally during the class as the student participated and also by a written grade when the notes were collected.
- submission of a weekly decision for the game. Students were advised to submit timely decisions as the game would be run regardless of whether their decision had been received. This created a high degree of pressure for timely submissions as the adverse effects of not turning in a decision could be quite severe. Feedback on simulation performance was provided through statistics generated by the simulation and weekly competitive standings of the

various firms.

The syllabus clearly describes the course grading standards and this had been reiterated in class. Standards are the same for virtually all courses taught in the business program, and students are familiar with them. A grade of C- or below requires the student to repeat the course. Thus 73% is the minimum passing score. The grading policy is as follows:

GRADING SCALE

A   93 - 100%   A- 90 - 92.9%
B+ 87 - 89.9% B   83 - 87.9% B- 80 - 82.9%
C+ 77 - 79.9% C   73 - 77.9% C- 70 - 72.9%
D   60 - 69.9% F   < 60%

For the purposes of this research on feedback efficacy, an instrument was developed that provided feedback to the students on their performance as a class, and asked them to evaluate and draw conclusions about potential class grades based on the data provided. One of the feedback metrics indicated a very low overall level of performance for the class on daily work assignments. The data were presented as follows:

Number of class Members	% of Daily Work Points So Far
6	100%
3	84%
2	66%
20	50%
7	0%

The numbers clearly indicate that three fourths of the students were liable for a failing grade on this portion of the course. The interpretation anticipated by the instructor was a sudden recognition that insufficient attention had been given by the class to this portion of the course and additional preparation was necessary.

Students were advised that they were eligible for a minor amount of bonus course credit for completing the survey instrument, the amount of

credit depending on the depth and quality of their responses. Students were asked to provide narrative responses to two questions concerning the data:
1. Evaluate and draw conclusions about potential class grades given the data
2. Relate this to your performance so far.

A content analysis of the students' comments was conducted looking for two factors: did the student properly interpret the feedback, and did the student indicate any intent to change behavior. The possible groupings were:
A - High performing
B - Low Performing
1 - identified problem - appropriate behavior
2 - identified problem - no behavior change
3 - misidentified problem - behavior change
4 - misidentified problem - no behavior change

The results were as follows:

	High performing	Low performing
Identified problem / appropriate behavior	8	6
Identified problem / no behavior change	1	3
Did not identify problem / behavior change		4
Did not identify problem / no behavior change		16

- High performing students (84% or above, 9 students) all recognized that a significant portion of the class was in trouble and would have to change behaviors to pass the course and/or avoid damaging their grade. For this group, "appropriate behavior" means continuing to perform. Eight of the nine high performers made explicit statements about intending to maintain a level of performance sufficient to maintain their standing.
    - One high performer commented that the grade was high enough to avoid problems, but made no commitment to maintain or

improve it.
- Less than one third of the low performing (nine students with 66% or less) were able to properly assess the meaning of the data provided.
  - Six students in the low performing group (approximately 20% of the low performers) identified the problem and indicated an intention to work harder. Thus only one in five of the target group (low performers) were able to appropriately interpret the feedback and express an intention to change behavior.
  - Three students identified the problem that they were likely to damage their grade, but indicated no intention to change. Comments were
    - "grade doesn't reflect my performance"
    - "I could be in the gravy or in the slop"
    - the grade was due to game requirements and having to meet with a group "taking my reading time"
- Four students did not clearly assess the data's meaning but still indicated they would try harder in the course. With statements of intention to prepare more carefully, perhaps at some level, there was recognition of a problem.
- Sixteen out of twenty-nine low performers (55%) were unable to properly identify they were in trouble, and made no indication of an intention to change their behavior.
  - Four students merely recopied the given data as their answer to evaluating it. Their statement of intentions were blank or incoherent.
  - The remaining twelve low performers did not clearly identify the problem, and either provided no comments at all or made confusing statements about their intentions. For example:
    - My performance is acceptable but I will strive to be in the top 100%.
    - I feel I was preparing adequately for the quizzes.
    - I feel 11 members will get 94% or higher and 20 will get 90 to 93% and 7 will get

85% or lower.
- So far I am in the 0% group but increased quiz grades will provide greater returns.
- Most of class is 50%, I am 0%.
- I have half the available points.
- The majority of the class is doing 50% or better, people are doing their work, and so on.

DISCUSSION

The hypothesis is supported for high performing students. All of the high performing students assimilate feedback and eight of nine used it to express intentions about future behavior.

The hypothesis is not supported for low performing students. Only 20% of low performers were able to effectively interpret the feedback and utilize it to modify future behavioral intentions. Sixty-nine percent of low performers did not correctly interpret the feedback. This occurred despite the fact they knew they would get additional credit for quality responses.

Assuming that most, if not all, students enroll with the intention of at least passing a course, it can be inferred that the feedback data were not interpreted by low performers as an indicator they would fail the course. Some intervening variable must be operative to allow them at one and the same time to be presented with information that they are in danger of not passing a course, and yet continue to exert considerable effort to remain in a class that has very high demands on a student's time. If a student believed failure was imminent, a more logical response would be to withdraw from all aspects of the course.

Interestingly, some insight into the failure of the low performers may be deduced from comments by the high performers. These comments occurred in their analysis of the meaning of the overall low class performance. Several of the high performers stated they believed the low scores were attributable to

the fact that many students either focused on other parts of the course to the exclusion of reading the text, or the low performers believed that the portion of the course's grade derived from class preparation was insufficient to warrant much effort. Example comments include:

- it seems as though three fourths of the class is not interested in preparing for class - they are planning on making top grades in other course work.
- it is possible most students do not realize how important daily work assignments are.
- some students think the game is the only important thing.

The daily coursework does indeed constitute only 15% of the total grade. Those students with 0%, and to some extent those with 50%, have not concluded that a zero score for 15% of the course requires performance at an average of 86% for the remaining portions of the course just to pass. Given the nature of the course, it is likely that few, of the low performers would be able to achieve this performance level.

CONCLUSION

The writers, two professors with a combined 37 years in higher education (much of it teaching business strategy), were fascinated with the results of this simple study. The fascination arose because of the outcomes -- student responses -- and how they differed so markedly from our expectations. The first overarching conclusion was a wake-up call to (especially senior?) professors. We were greatly surprised that the students, in many cases, did not respond with either reasoning or reasonable conclusions from analysis of their data. Our hypothesis (an intention to correct the deficiency would occur) was not supported. Also, as we reflect, we assumed an implicit hypothesis that the data would be accurately and reasonably analyzed which would then lead to the conclusion of a corrective intention. This implicit hypothesis also was not supported in the results.

Basically, the two senior professors, who were attempting to give feedback to students, were given feedback themselves: the data analysis did not occur, and the intention to correct did not occur. The old saw

of not assuming anything was again brought strongly home to us. The main conclusion here is that we must regularly ask for feedback from our students: how is the class going, what are you thinking, are you getting this, any problems, and so forth. Merely providing typical means of performance feedback to students is not enough. Having the students tell us how they think they are doing is necessary to affirm that feedback has been effective, or at least understood.

A second conclusion is that students do have difficulty in making strange analyses; those they have not been taught. From their comments we do not infer a blocking mechanism in the lack of accurate analysis, just a lack of understanding about how to proceed.

A third conclusion is that for inferences after accurate analysis, there may be a blocking effect about actually concluding or "hearing" a performance deficiency or negative feedback. Instructors may be making unwarranted assumptions about the clarity and effectiveness of feedback in the form of individual grades, especially in a multi-pedagogy course. Lower performing students may be assuming that reasonable performance in some areas of a course will compensate for poor performance in another. Given the demands of a multi-pedagogy course, students may focus on those aspects where they have a high comfort level or personal skill. They may inadvertently ignore or downplay aspects where they feel they do not have time to prepare or which are not 'critical'.

From this interpretation we conclude that professors in multi-pedagogy course must be sure to give blatant (this does not mean unkind and inconsiderate) feedback about performance in each methodological area. And then, instructors must never assume too much about students' performance and students' interpretation of their performance. Direct and timely feedback for each performance area is a must to maximize student awareness, effort, and learning. And, along the way, instructors should never assume too much -- they need to arrange feedback for themselves as well.

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