Toward a better understanding of the use of feedback in the learning process among college students[1]

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Abstract

A large part of academic life involves continually being subjected to evaluative feedback. The lack of research on student use of faculty feedback suggests that the enhancement of students' academic achievement is being taken for granted in an area that could potentially yield high returns. The use of grades and feedback is a critical component to the learning process for college students and recent efforts to define learning outcomes and provide assessment tools in higher education confirm these assumptions. The purpose of the present study was to gain insight into the use of feedback by undergraduate students. Six undergraduates from two colleges were interviewed. Key findings emphasized the value of feedback and contextual support in the learning process. Implications and directions for future research are discussed.

In recent years, undergraduate education has been scrutinized with accusations of grade inflation, teaching ineffectiveness, and student anti-intellectualism (Shulman & Bowen, 2001; Sperber, 2000) despite a large part of academic life involving continually being subjected to evaluative feedback. From a faculty perspective, professors are typically caught in conflicts involving their dual roles as researchers and instructors (Sperber, 2000). With increasing pressure on their duties as researchers, many academics are declaring a decline in undergraduate education as they spend less time on teaching-related duties. Moreover, with the decreased time devoted to teaching, grading and related matters are especially hard hit (Sperber, 2000). Associated with these shifting priorities, the instructor feedback process may be implicated, leaving students perplexed in trying to understand their work's strengths and weaknesses. In sum, the decline in undergraduate teaching as a priority has effects on grading patterns and student use of faculty feedback.

Sperber (2000) compiled data from large American research institutions of higher education which lead to the characterization of what he termed the "beer-and-circus" atmosphere on college campuses. This environment is based on the party scene that is affiliated with inter-collegiate sports. The primary conclusion was that the emphasis on research and graduate education coupled with the lack of quality undergraduate education, many institutions are focusing on athletics to distract the undergraduate population and using it as a substitute for a meaningful education.

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In order to remedy the situation, a number of recommendations were made, including new incentives and rewards for undergraduate teaching and perhaps more importantly the transformation of undergraduates from being passive receptacles in large lecture halls into interactive, inquiry-based learners. As a part of this inquiry-based approach, increasing the quality of feedback may help develop undergraduate students' critical thinking abilities.

In response to recent pressures to change, some recent work on undergraduate education has concentrated efforts on providing clear learning outcomes (Paulson, 2001). For example, there exist newly implemented accreditation criteria in undergraduate education that focus around learning outcomes and assessment (Paulson, 2001). Moreover, higher education has made greater attempts to produce competency-based outcomes in order for students to better understand the end result of their education. One example of the movement toward providing learning outcomes that enhance the assessment of student learning in higher education is Alverno College, a leader in competency-based education, which has students develop portfolios that demonstrate their learning throughout their undergraduate education (Alverno College website, 2003). Such advances require a high degree of useful of feedback on behalf of professors. However, it remains unclear as to the effectiveness of feedback currently being used in higher education.

Views on grades

Students view grades as a way to decide if they will be successful in a chosen career while faculty view grades as a means of communication regarding demonstrated skills, weaknesses, and moments of enlightenment (McKeachie, 2002). This differential understanding of grades adds to confusion, pressure, and misunderstanding between students and faculty surrounding learning.

Initial directives in current higher education including the trend toward competency based education, outside criticism of undergraduate teaching, and vocational goals of undergraduates, dictate further study of the use of grades and faculty feedback in the learning process of undergraduate education. These trends, criticisms and student goals suggest the implementation of new assessment methodologies in undergraduate teaching. Student views on current grading systems along with the feedback they may or may not receive from faculty will enhance current understanding of undergraduate teaching and learning.

Types of feedback provided to undergraduate students

While there exists a handful of reviews and empirical studies that discuss feedback with respect to college students (e.g., Knoblauch & Brannon, 1981; MacDonald, 1991; McClure, 1994; Somers, 1982; Sperling, 1994; Zamel, 1985), they typically focus on the types of feedback that are offered to students on their essays in writing classes. Taken together, the work is indicative of positive and constructive feedback being beneficial for the student.

Byrne (1997) broke away from this mold and discussed the use of other forms such as audio and word-processed feedback. He concluded that it is difficult for professors to find the method that best suits the variety of students and learning styles. It should be re-iterated that much of the stated literature involves general reviews and discussions with few being empirically based. While student writing and providing different forms of feedback to undergraduate students is important, it says little as to what students are actually doing with the commentary. The next section discusses this issue.

Use of feedback by undergraduate students

Winter, Neal, and Waner (1996) surveyed 160 students enrolled in an undergraduate business communication course to determine how students make use of written instructor feedback and how it related to their course grades. It was found that all students regardless of final course grade used the written feedback on their papers. Moreover, when asked to re-write a paper, students at all grade levels used the written comments. Additionally, students with lower grades ('Ds' and 'Fs') demonstrated poorer understanding of the professor's comments. Students who received failing grades claimed to read comments less thoroughly, made less use of the feedback, and were less likely to request clarification from the instructor regarding the feedback. The authors advocate that merely distributing holistic grades are not beneficial to students since all of them make use of feedback, meaning that they are being deprived of commentary that may be beneficial toward their learning process and experience.

Due to the paucity of empirical research on the use of feedback by college students, the following study which focuses on continuing education students is presented. Crawford (1992) studied the feedback provided to 26 students (8 during one semester and 18 during a subsequent group) in Australia who were enrolled in an English for Academic Purposes program which is designed to prepare students to write independently. A review of the drafts of assignments by the first group of 8 students revealed that feedback consisted of twice as many questions related to the content as direct suggestions or statements. Moreover, it was found that all participants in this group believed

that reformulation, in which the teacher recasts the work into language that was more characteristic of the language they were learning, hence more natural was the most effective feedback technique. In the second group, 66.7% of students claimed to understand and use the corrective feedback and comments, while 22.2% of students used the feedback to make changes but had difficulty understanding why the changes were to be made. Moreover, traditional red ink corrections (83.3%), teacher comments (77.7%), and reformulation (72.2%) were the considered to be the most helpful forms of feedback. Finally, most participants (72.2%) believed that feedback on their drafts could be used to improve their work and viewed the feedback positively. It was concluded that corrective feedback techniques and strategies should be made explicit in order for both the teacher and the learner to enhance the common interpretation of their work. While the author acknowledges the limited sample size and lack of generalizability, the study does lay the foundation for future research.

In sum, the use of feedback by undergraduates and continuing education students may lead to more successful learning. In consideration of the use of feedback, the role of professors and assessment in the learning processes must be considered.

The role of professors and assessment in the learning process

Shepard (2001) developed a framework for a reformed view of assessment which involves the roles of teaching and learning. It is argued that in order to use assessment in a constructive manner, it must be transformed in two essential ways. First, the content and character of assessments in the current system of education must be drastically improved. Second, the use of assessment and related insights must be integrated into the ongoing learning process. Insight into feedback systems could be beneficial in this respect.

In an evaluation of student success at the college level, the role of assessment and the professor must be acknowledged. Wiggins (1999) argued that student assessment should be used to improve performance rather than merely observing and evaluating it, and that testing itself should comprise a relatively small component of assessment. One way to maximize the use of this learning-centered approach is to investigate student perspectives on assessment in relation to the role of professors. In one sense, students may perceive assessment (e.g., a grade) as necessary to represent the end product of their work. Conversely, they may acknowledge the learning process involved. This metacognitive knowledge could potentially aid the student in future learning assessments. In any case, the professor's system of feedback must be investigated from a student's perspective.

Hypotheses

This study was designed to provide insight into the use and influence of feedback on the learning process among undergraduate students. The overall purposes of the study were to see how students understand or articulate what the grades they receive signify, to gain insight as to whether students use grading of their work to advance their learning, and to provide useful information to professors for their assessment practices. In order to produce suitable data regarding these general goals, four hypotheses were generated, including the following:
   (1) Students do not understand why they receive particular grades. That is, they do not understand what it was in their work that merited such a grade.
   (2) Professors provide little or no detailed explanation with the grades they give students.
   (3) Lacking such understanding, students do not use their grades to correct specific deficiencies or to reinforce approved skills and understandings.
   (4) Contextual factors including parents, siblings, and peers would affect students' attitudes towards their grades and use of feedback in the learning process.

Methodology

Research design

The research approach for this inquiry is a qualitative interpretive comparative case study (Merriam, 2001). This method was chosen because it allowed the researchers to gain in-depth insight into a situation that might not otherwise be better accounted for through quantitative analysis, which among other drawbacks requires numerous and more abstract inferences concerning the participant's behavior (Merriam, 2001). Moreover, descriptive insight into the complexities of the learning process of college students can yield richer and more holistic accounts that might not otherwise be revealed through other experimental designs (Merriam, 2001, Miles & Huberman, 1994). This type of research approach also lends itself to situations and settings which are more amenable to policy and program changes (Merriam, 2001).

<u>Participants</u>

This study employed a unique purposeful sample (Merriam, 2001). Interest was placed on undergraduate students because their perspective was of particular interest. Participants were selected from two different institutions: a small liberal arts women's college and a medium sized research university. They were recruited through class announcements, email, or personal invitation. The study was then described as involving interviews to gather data on their opinions on their education, involvements and questions along the lines of what the education system means to them. It was explained that they would be asked a series of questions which should take approximately 30-45 minutes. It was indicated that anything they said would be strictly confidential and no associations between them and their opinions and anyone else would be made. The main selection criterion was that they had to be committed to extra-curricular activities that required extensive periods of time outside of their academic obligations. The rationale for this criterion was that these students may be more inclined to maintain a rigid schedule and as such may be more apt to benefit from appropriate instructor feedback. The final sample consisted of three undergraduate varsity athletes from the research university and three undergraduate Resident Advisers (RAs) from the liberal arts college (see Table 1). The inclusion varsity athletes is also of interest because recent reviews of undergraduate students at major colleges across the United States have indicated that varsity athletes have continually performed poorly in academics and completed their degrees less frequently than their non-athlete peers (Adelman, 1990; Suggs, 1999, 2000, 2001). As such, appropriate feedback could be even more beneficial for this population.

<u>Data collection procedures</u>

Participants met with the interviewers (the authors) and after a brief introduction and signing of the consent form, the interview began. Each of the interviews took place in a relatively small and quiet classroom or office located out of the way of external observers. The space was chosen for confidentiality purposes. Due to technical difficulties, one interview was not audiotape-recorded, however the subsequent interviews with the other five students were.

Each of the interviews was conducted using a semi-structured format. This set-up allows for a greater mix of structuring among the questions while simultaneously providing increased flexibility for generating responses from the participants (Merriam, 2001). The types of questions asked tended to be interpretive, with ideal position queries embedded throughout the interview (Merriam, 2001). The questions themselves were devised in order to elicit responses that could be divided into relevant categories during the data analysis stage of the project.

All three interviews progressed smoothly, with each ultimately lasting 35 to 55 minutes. After each interview was completed, a contact summary form (Miles & Huberman, 1994) was completed for the athlete participants while audio-taped interviews with the RAs were transcribed and coded, noting some of the main themes that emerged in the interviews. Additionally, the participants were sent a 'thank-you email."

<u>Data Analysis Procedures</u>

The data were analyzed through a series of steps. The first main step involved the transcription of the interview. Although one interviewer took extensive notes during the interview itself, the audio recordings were listened to in order to complete any gaps in the information and to ensure that citations that were to be used were quoted correctly. Once the information was checked for accuracy, it was typed into a word processing program which made it easier to arrange and use the data. The second interviewer transcribed the interviews. The next step involved critically reading through the data. This was done in order to become thoroughly familiar with the data, but also to get an initial glimpse at the emerging themes. Following this step, the authors reflected upon the data and developed tentative categories and codes. The coding process was cyclical, such that the first pass through the data served to refine the coding system. This was partly due to the increased familiarity with the data that resulted from the multiple passes.

Reporting of findings

Content analysis

Content analysis was used to identify broad themes among the participants' responses. The following cases begin with a brief biography, including insight into the personal, academic, and social activities of the students. This is followed by discussions on the purpose and importance of grades, sources, types, and use of feedback, contextual support, and other involvements.

The case of Beth

Beth is an 18-year-old Caucasian freshman on a full athletic scholarship in the Faculty of Arts and Science who is also from another east coast city. At the time of the interview she was considering a minor in either education or sociology. Beth has two sisters (aged 17 and 22 years) and a 14-year-old brother. Her younger sister also wants to be a scholarship athlete. Beth practices her sport for approximately 3 hours per day, 5 days per week. She also claims to spend about the same amount of time on academics, although she acknowledges that some weeks she has "nothing" to do. On the other hand, during some weeks she spends more time studying than in practice. Beth had played on a number of sports teams throughout high school. She spends time with her teammates since "they're your friends" but also recognizes that there is only so much time that can be spent with the same people and so makes time for a few non-athlete friends. Conversely, she feels that she gets sufficient downtime and alone time. She emphasized that she attended a high school that was academically very demanding which she feels has prepared her for the college setting. Although she commented that a major part of the high school to college transition has been the significant increase in memorization of her work. Beth believes that she is fortunate because she "gets by on little sleep", allowing her to keep up with her training and still have time for academics.

Use of feedback and grades

When questioned on her use of feedback Beth enthusiastically replied "Yes, I definitely read my professors' comments". She cannot put the assignment or paper away without looking it over several times. She understands most but not all of the comments that her professors make, admitting that occasionally the feedback is "over my head." If she is offered the chance to re-write a paper, she will attempt to use as much of the feedback as possible.

Beth believes that the purpose of the grading system is "to motivate students to do their work." She sees it as a method of assessment and stated that without such a system, students would not work hard. In order to achieve a high grade point average and academic honors, she felt that a lot of time and effort had to put into the educational aspect of her college life. She thinks that grades reflect the quality of her work and believes that professors are aware of how much time has gone into a given student's work and studying.

Sources of feedback

Beth stated that she receives most of her feedback on mid-terms and papers. However, she also receives outside guidance via her athletic advisor who is contact with her professors. While athletic advisors contact student athletes (especially scholarship athletes) if they are not doing well, she has received limited feedback since she claims to be doing well in her coursework.

Beth also believes that students should "get to know their professors". She has found that meetings with professor have been useful if occasionally intimidating, depending on the professor. In terms of specific types of feedback, she believes that it depends on whether the paper is a research paper or a reaction paper but all in all, professors provide sufficient input to help her correct her mistakes. She also says that class participation is another source of feedback.

Contextual support

While she finds it childish when her peers brag about their grades to their parents, she admits that they and her coaches expect a lot which is a source of pressure which adds to her motivation to do well. She only reports her grades to her mother if she does poorly on an assignment. Otherwise, it is assumed that she is doing well. She stated that she is a role model for her younger sister who wants to be a scholarship athlete, but also for her peers in her hometown that may never even make it to college.

The case of Cindy

Cindy, an African-American nineteen-year-old sophomore, double majors in Political Science and Economics. Cindy comes to college from her public high school in Texas and decided on her college choice because of its location, reputation, and the positive interaction between students and faculty. She presented herself during the interview as an enthusiastic, spirited, and happy student committed to her college community, her classes and her major. "I love politics. I can see what I'm learning and how it applies to my daily life". Her positive outlook on her college experience thus far certainly adds some insight to her views on grades, faculty relationships and parental expectations.

<u>Use of feedback and grades</u>

Cindy defined learning not necessarily by an A grade but rather by the process of completing an assignment itself and through the comments faculty made on her work. Papers, her preferred assignment, give her an "opportunity to demonstrate what she's learned from the material rather than just picking out what the professor said". Writing papers for Cindy gives her an opportunity to process the material, demonstrate her knowledge on the subject, and synthesize information into an argument. She is motivated by this type of assignment because it gives her the best method of demonstrating what she learned.

The next step, in the learning process for Cindy, involves the feedback faculty give her on her writing of papers. Cindy particularly appreciates faculty members' efforts to give extensive feedback. She states, "I like a paper that is bleeding (with comments) because it helps me to do better. I like detailed comments and the meticulous professor that really sits down and look at your paper even the really minute things because it is going to make you a better writer or test take or just help you in the future. I prefer meticulous professors who really take the time to sit down and thoroughly read your paper. More often than not, they provide the type of comments and corrections that will make you an overall better writer". Cindy described how formative feedback increased her motivation for future outcomes.

Cindy's motivation to get good grades comes in part from the formative feedback she receives from faculty. She always selects faculty comments as her preferred method of feedback because "faculty comments determine whether or not you'll do better or worse the next time not a letter grade. A letter grade without faculty comments really doesn't tell you much nor will it help you prepare for future assignments". Even on "A papers", Cindy feels that there is always more to learn and gain from an assignment, class or faculty member. Comments from faculty help Cindy develop her argument better, write more concisely, and think more comprehensively about a particular topic. This feedback contributes to her learning process as she prepares for future assignments, classes and careers.

Cindy also uses faculty comments in preparation for future assignments. Faculty comments "enhance your thinking process by providing critical feedback that you need to reevaluate why you chose a particular answer on a test or developed a certain argument in a paper, so that next time you have an assignment you can use that feedback to improve your performance and avoid making the same mistakes twice". Formative comments empower Cindy to perform better and she feels such comments prepare her for future successes. There was one faculty member that particularly prepared Cindy for future success in her political science major. "His comments were always so good and right on point so I'd go to his office to see if I could gain more feedback in order to do better next time. I truly believe the feedback he provided helped because next semester my political science course was a breeze. All the papers were a lot easier because I had a previous professor that really gave a lot of good comments". Cindy's motivation for future learning was enhanced not only through faculty feedback but also through the relationships she has with her faculty members.

<u>Sources of feedback</u>

Cindy made it clear that her passion from learning comes from the inspiration provided by the faculty. Despite high expectations and faculty demands, it is the "interaction between professors and the students that made me fall in love with (her college)". Cindy talked about the desire to learn from faculty and absorb everything they know about politics, economics and the world. Her motivation to succeed came from her interaction with her professors and the support they gave her in her learning process.

Cindy developed her relationship with her faculty members outside of class as well as during class. This approachability of faculty was clear when Cindy attempted to understand the feedback given to her. When she received a lower grade than she expected, Cindy "actually went to talk to my professor and said that this doesn't reflect what I know and what I know about this subject and she told me she totally understood. She gave me some tips on how I can study more efficiently and how I could calm down when I'm taking the test so that I could show my work more clearly and demonstrate what I really knew". Cindy's approach to her professor was not only to understand what she may have done wrong on a particular assignment but also to prove to the faculty member that she is a diligent worker and knowledgeable student.

This faculty approachability and formative feedback was not only important when a discouraging grade occurred but also for an encouraging grade that was still unclear. Cindy although received an A grade was "totally confused and I had no idea then I went back to look at my paper to find out what I did well but I was still a little fuzzy. So, I still went back to my professor and said I really don't know what was so good about this paper". Cindy's initiative with the professor provided her with the feedback necessary to understand her grade on this particular assignment so that she may repeat her strengths.

Clear expectations from faculty members give Cindy the best opportunities for learning. She described how this was helpful as "one of my professors just went through the process of her grading system. I think this was really important because a lot of times you don't really know what professors are exactly looking for when they are grading. Once I knew what my professors expectations were I used that to prepare for exams and papers because now I know what she's looking for". When expectations were made explicit by her faculty members, Cindy was able to perform informatively so that she could produce her best work. Much of Cindy's motivation for learning not only is driven by her faculty members but also through her view of grades influenced by her parental upbringing.

Contextual support

Cindy described her family as a supportive element in her college career. In support of her work, her dad would ask "so are you making As"? She viewed this not as pressure but as her dad's way of showing interest in her work. She confirms her parents' supportive role, "they've always encouraged me to do my best and as long as I'm trying and striving to do my best it doesn't matter what letter grade I bring home. But they always encourage me to do my best and they don't really dwell too much on grades". Cindy therefore is motivated by a drive for hard work rather than just a positive end result in an A grade. Cindy's parents instilled a work ethic of giving it your all and she has brought that into her class work and her view of grades.

The idea of learning for learning sake is a new college concept for Cindy. In high school, Cindy "was more obsessed with grades because (she) wanted to get into a good college. But now it's more about what I'm getting from the course versus the grade". Cindy with the encouragement and support of her family wants to get the most out of her college experience. She believes that her family support allows her to do so as she sees other "students' families put a lot of emphasis on letter grades and it really adds stress to students when you have that type of pressure". Cindy understands that her view of grades is influenced by her family's interest yet lack of pressure to achieve an A. This lack of pressure motivates Cindy to get the most from her classes, faculty, and overall college experience.

The case of Stephanie

As a nineteen-year-old Asian-American, Stephanie decided on this college based on academic standards. From New York, Stephanie is a double major in Sociology and English and delights in the learning that she gains in both her majors. Her chosen majors are due to the personal growth she hopes to continue to gain through the exploration of readings, class discussions, and interactions with faculty and peers. She spoke eloquently of the process of personal growth in her classes, the role faculty play in her development and the role parents play in her view of the learning process.

Use of feedback and grades

College for Stephanie is about her personal growth and development in relationship to the knowledge she is gaining in her coursework. Unlike high school, she is studying subjects (Sociology and English) that she is interested in and enjoys being "one of those people who can actually talk about it". Her motivation for success is really self-directed. Her academic experience is challenging because she is "evaluating myself and whether I'm proud of what I'm doing and whether I'm doing as well as I should be doing". The pressure she places on herself motivates her to do well and her definition of well is determined by her personal growth and how she see herself changing.

Grades in fact inhibit Stephanie to do her best work. She feels that she shows her best work on assignments where "I'm not being seriously graded on because I don't really like the pressure of being graded". She compares this grading phenomenon with our relationships with friends - "when you have relationships with people, their not evaluating you – you know your friends aren't grading you". Stephanie feels that grading her personal growth in even her majors is a judgment that prohibits her best work. This is also true for her as making mistakes is part of the learning process and mistakes are unworthy of final judgment.

Stephanie does grow, learn and develop by the feedback and comments her faculty make on her papers and in class discussions. It is this formative feedback that empowers Stephanie to develop an argument more clearly, form new views, and grow as a critical thinker. Feedback, she believes should be "really indifferent in that it's really just systematic and a direct reaction to what you wrote". This type of feedback involves faculty comments directly on word choice, grammatical structure and argument progression. Stephanie identified useful feedback as feedback on context rather than content. Her aversion to judgment comes in when faculty comment on the content of her argument rather than the process by which she makes her argument.

<u>Sources of feedback</u>

Stephanie finds that faculty feedback can have an impact on her view of the relationship between professor and student. She finds that when feedback appears to be subjective then it leaves her to wonder "do they not like me now". The most helpful feedback from faculty excuses an emotional connection to the student but at the same time she knows that faculty care about her and her learning. Stephanie finds that faculty comments could lead students to take things personally if not objective.

Stephanie does feel that she learns best through the interaction she has with her faculty members. When she doesn't understand a grade, Stephanie talks with her professor as she states, "I think that's really the only way you can find out what it's all about and if you don't then I don't really see anyway that you can. And so I think it's definitely the best way to go to their office hours and ask them questions about what's going on and even tell them what's going on in your head maybe to react to that". A grade and faculty comments creates an opportunity for Stephanie to have further conversations with her professor about the knowledge she is trying to understand. It is this mutual relationship that Stephanie believes faculty understand as part of their role to develop.

When discussing the role of faculty on her learning, Stephanie explained "I think for the most part they (faculty) understand that you're a student and so I feel like even if you got an A there is always something to be said and there is always feedback to be had". Stephanie sees the role of faculty as a partnership to her learning. Despite any final grade, growth can still occur and faculty work with you to see what more can be developed, gained, and learned.

<u>Contextual support</u>

For Stephanie, parental expectations for good grades are combined with other general expectations for her to be a good person. She doesn't recall how working hard was instilled in her but suspects it was from an early age. This made Stephanie wonder if the expectations directed her to work hard of if she somehow internalized the expectations and she just did so. Stephanie summarizes, "it's really easy for me to say that a lot has to do with my parents because they always kind of expected for my sister and I to have good grades and I don't know whether that was influential on us to be good students or that's just the way it was whether they told us to or not". Although Stephanie's foundation of grade expectation is unclear, she strives to produce good grades for herself and her family.

Stephanie combined grade expectations with her family's expectations to be a good person. She describes this instilling of values: "My sister and I have these big issues with lying and we have these big consciousness. We'll just tear ourselves up just more so than anyone else would tear us up because of something we've told them. A lot of it has to due with the ways our parents raised us. What they expect of us is what we expect of ourselves". This value of honesty drives Stephanie to be the best she can be.

A simultaneous value instilled in Stephanie was independence. Her parents also insisted that "we're very independent about taking responsibility for ourselves and getting things done on our own because our parents weren't always there to ride us and to get us to do stuff". This independence instilled in Stephanie the drive to be self-motivated. She identified this change as occurring her senior year of high school after she was accepted to college. As most seniors drifted from school work, Stephanie "started working even harder in my classes. And I enjoyed my readings a lot more because the grades I was getting didn't matter to colleges anymore. And they were for myself". Her independence as a core value instilled a corollary value of self-motivation. Her family values, expectations and teachings have led Stephanie toward motivations to learn for learning sake.

The case of Vicki

A nineteen-year-old Caucasian sophomore, Vicki attended a private high school and grew up in Vermont. Coming to college with her sights on medical school, she is in the process of declaring her major in anthropology and is reconsidering her original career choice for a vocation of teaching. Throughout the interview, Vicki was pensive and really thought hard about the questions I posed to her. It became clear that despite all of her accomplishments and successes, Vicki seemed to struggle with the expectations others place on her and how she is challenged to meet them. These struggles and challenges become apparent as we discussed her view on grades, faculty relationships and family expectations.

<u>Use of feedback and grades</u>

Vicki's attraction to the academic experience at this specific liberal arts college thus far has been in the diversity of experiences available to her. She commends the variety of classroom experiences students at her college can have as "it is important to take different kinds of classes to become a well-rounded individual". Learning for Vicki is about becoming a whole person. Her chosen major of anthropology synthesizes this learning goal for her as anthropology "connects different parts of the human experience because it has that scientific aspect to it but it is also

very much in tune with the social experience. You can explore how people live in a scientific manner". In this type of knowledge base, Vicki has found her passion in learning to understand human experience.

Like Cindy, Vicki has found that papers are the best method of demonstrating her knowledge of a given subject. This type of assignment for Vicki allows her to synthesize the knowledge gained from a variety of sources. Vicki states, "when you write a paper on things that you have actually discussed in class it's a good representation of what you've gotten from what they've given you and I think for the student it's helpful because you have to go over everything that you've learned and take out what's important and build upon it". This exercise of extracting information and synthesizing ideas assists Vicki in the learning process.

Grading this learning process has changed for Vicki. Grades are a personal indication of one's learning process and are never static. This changing definition of grades is evident when Vicki learns that "maybe you don't pull an A or even a B but if you get out of it what you want to get out of it then it kind of changes what the grade means". Study motivation is one of learning rather than simply attaining a perfect grade. Vicki also sees grades as a directive for future study habits – "if you need to work harder, study more, get extra help, etc.". Vicki spoke a lot of the role a grade plays on her study plans and development of priorities in her coursework.

Vicki also has hopes that grades reflect her hard work and understanding of what she has in fact learned. Grades act as a method for faculty to communicate their understanding of how Vicki works. Faculty comments then "would put more of an emphasis on what you've learned and how you've learned and how much effort you put in rather than if you've learned the right things and if you can report back exactly what the professor wants to hear. So personally, I think I would want to know that my hard work is what mattered more than what I was learning". Vicki sees faculty grading as a way to demonstrate her effort, hard work, and learning process rather than just an understanding of the material taught. She believes that grades should reflect your process of learning rather than simply the reporting of professor's teaching.

Sources of feedback

Vicki has found that the empathy she has received from faculty members in understanding difficult material to be very helpful. This is particularly true in classes that require a definitive answer such as mathematics and the sciences. Faculty in these classes play a significant role in that they "acknowledge what you are doing isn't easy and they somehow show that they understand, that they've been through it, that they didn't always have all the answers – that's encouraging and when they are willing to help you through that because they've been there that helps a lot". Not only does faculty feedback assist Vicki in understanding the material but also their empathetic approach motivates her to keep at it.

Faculty have not always made such feedback known to Vicki. Unclear expectations are scary for Vicki as "that makes it a bit stressful because you don't know exactly what your grade is weighing on and you don't know until the end" of the semester. However, when faculty don't give clear expectations and directive feedback, Vicki sought such support. This was certainly the case for Vicki when she took a higher level anthropology class with primarily seniors. She told her faculty member that, "I was a little worried that I wasn't used to the kind of work that you are going to be expecting and that I'm not going to live up to the standards that the other students are going to set and I think that doing that at the beginning helped a lot because she was very helpful to me the whole semester". This risk that Vicki took in making her fears known to the faculty member actually helped her in establishing her faculty member as an active player in her learning.

Despite this very positive role her faculty member played in her learning, Vicki normally tries to understand mistakes herself first before going to the faculty member. Her learning process initially involves a self-study of her mistakes then if necessary a conversation with her professor. Vicky first "identifies what I did wrong. And if I can't or if I don't really understand why I got the grade I did or why I got certain feedback, then I would probably approach my professor and try to talk about it". Vicky does value the feedback faculty give and the availability that faculty give to students but would rather attempt understanding herself first.

Contextual Support

Vicki strives to do her best for not only herself and her faculty but also for her family. She feels the pressure to succeed on behalf of her parents as they "like to see me do well". Vicki was easily able to meet her parents' expectations for A grades in high school but finds it more difficult to achieve in college. High school motivation to succeed centered on the future outcome of getting into a good college and "your end is to get into a good school and to be happy". Although medical school is a future outcome that Vicki would like to achieve not only for herself but her parents, she is reconsidering the purpose of her college education as a place to find what you do well and "to do well you really have to be passionate about something in the end". It is this change in motivation that Vicki has attempted to explain to her parents.

Despite the differing viewpoints between her parent's goals for her and her own, Vicki still strives to "make my parents happy and make them feel proud". She does understand however that this is not always possible and in the end "you just have to let that go and do what's best for you". She has found comfort and direction in developing her passion with her faculty. It is in the relationships she has with faculty that have helped her determine her passions and ultimately have "totally change what you want to do with the rest of your life". Vicki understands that her education is not just about a future outcome but also about the process of determining her passions. In the long run, "they (medical schools/employers) are looking for well rounded people" and Vicki's educational pursuits will fulfill her learning objectives.

The case of Stacy

Stacy is a 20-year-old junior who is Caucasian and plays on a varsity team sport. Her major is in communications and human development. At the time of the interview, she was living off-campus. She has a full sports scholarship and attends practice 6 days per week, typically with a break on Sunday or Monday, depending her playing schedule. Each of these days consists of 3 hours of practice, as well as 1 hour before practice for the treatment of injuries and 1.5 hours afterwards to change, do laundry, and "sit in the locker room listening to music". She says there is a lot of downtime after practice. She gets along well with teammates who she considers to be her best friends. Her 23-year-old bother is one of her best friends. Stacy says that blocks of 2-4 days typically go by where she does not study. She works better under pressure and does not procrastinate when it comes time to doing the work. When she does get to work, she will study for blocks of 4 hours for 3-4 days in a row. Stacy is from another east coast city that is "big on sports'. She has been actively involved in sports while growing up and in high school. After graduation, she would like to open a restaurant or work in public relations. She was uncertain about what she would do sports-wise in the future.

Use of feedback and grades

Stacy keeps a folder for each of her courses so that she can refer back it during and after the semester. She asserts that feedback is generally provided on her papers which she finds useful because she admittedly tends to do poorly on first drafts of her work but improves once she understands what the professor expects. She stated that because of the emphasis on grades, if she does well on a given assignment, she will not read the comments as closely as if she received a low grade. In such a case, she would want to know the professors reasons for her low grade and would try to re-submit the work if she could in order to attain a higher grade. If she re-writes a paper, she would use the professor's feedback, both written and verbal.

Stacy believes that the main purpose of grades is to evaluate a student's performance. It is also to provide the professor with a method of checking to see if the student has completed their assigned work. From her perspective, it is also a way to confirm which course are easiest so she can take them, although she does maintain that she is attending classes "for understanding".

While she maintains that the effort from a lot of studying shows when one does well on an assignment or mid-term exam, the system is far from foolproof. For example, she is "not a fan of multiple choice exams" because they do not represent a strength for her, yet when she performed poorly on a series of exams in her communications classes, she was turned off of the topic and changed her major. Another example of the failure of the system was when she completed a written mid-term for a Spanish class and performed poorly. In that case, she went to see the professor who subsequently reviewed her grading and saw that Stacy actually understood more than what she was given credit for and increased her grade. In both of these cases, the importance of the grade overshadowed the learning process.

Stacy asserted that she "worries about grades" which are important to her and when some form of assessment is return, she always rushes to the grade first, and then goes over the rest. On the other hand, when she is pleased with a grade, it motivates her to work hard.

Sources of feedback

Stacy says that she gets a lot of constructive feedback through conversations with her professors. Aside from the academic commentary, she feels that a by-product of these interactions are that she receives a lot of encouragement from the professors. She labels herself as being "teacher dependent" and feels that she needs to form a personal relationship with the professor. She has encountered situations where she sought help from a professor after performing poorly on an exam and the instructor would say that there was "nothing we can do about it."

Another form of feedback that Stacy has received involves personal comments being emailed to her. She found this particularly helpful, especially since the professor noted that had improved since papers she handed in earlier in the semester. An additional type of feedback she has received was after a professor asked the students in

the class to grade themselves, followed by a conversation on a one-to-one basis. One advantage of this method is that it allowed for detailed feedback regarding the quality of the student's work.

Stacy stated that an appropriate amount of feedback is provided on her papers. This feedback typically includes suggested changes in the organization, spelling, grammar, and content of her work. She finds that there is more creative maneuverability on papers which better suits her style of learning and working. She prefers to write papers because it gives her a chance to look over her work.

Contextual support

Stacy asserts that her parents "trust I'll do the right thing" with respect to her education. She is aware that it is a matter of trust and that her parents know it is up to her to do sufficient work to succeed in academics. She admits that "it's my loss if I don't do the work and so it's left up to me." Her parents occasionally ask how she is doing but she insists that doing well in school is "not for my parents." However, when a professor sent her emails which were highly motivating and positive, she forwarded them to her parents. She is close with her bother who she excitedly talks to about her successes in sports, although they do not discuss academics.

The case of Mark

Mark is a 21-year-old Caucasian senior from a small city located north of Boston in another state. His final decision on where to attend college was based on the idea that it is "not too far from home" and "is a big city". Major is French, double minor in Spanish and history. He is an only child. Leisure activities that he enjoys include traveling, skiing, going downtown and eating in various restaurants. Aside from his Junior year, he has lived on campus. Mark began his sport non-competitively in summer camp and high school. Due to NCAA Title 9 restrictions, he was not offered an athletic scholarship. Nonetheless, his athletic commitments require him to practice 6 days per week, comprising a total of 12 to 15 hours of training. It should be noted that in his freshman year he was injured which prevented him from playing until his sophomore year. With respect to his academic work, Mark spends roughly 1-2 hours per night (Monday to Thursday) and engages in sporadic studying from Friday to Sunday. He believes that this pattern has been relatively consistent from year to year. He tries to get his work done the same day it was assigned. Socially, he spends "about 30% of the time" with his athletic friends, although he recognizes that many of his athletic peers "only hang out with their teammates." Since he could not play in his sport during his freshman year he made more non-athlete friends which he continued to spend time with once he started playing again.

Use of feedback and grades

Mark admittedly performs poorly in certain topics and believes that even with positive feedback; he demonstrates certain weaknesses in some classes. Moreover, if he does not like the material or finds the class boring, he will put in less effort. He finds it very important to get appropriate feedback from professors. In his experience, one professor asked to speak to him while he approached the rest on his own. He does believe that professor comments are useful and typically uses them to perfect his writing in class, which he did on the one occasion that a professor allowed him to re-submit a paper.

Mark believes that the purpose of grades is to evaluate one's academic ability and they reflect how the student is performing in school. It is also to assess a student's progress. For example, in his freshman year, Mark was a 'C' student but with a lot of effort, he raised his academic standing to being an "A" student. He also claimed that grades do not always accurately assess because some professors are "easier or harder than others." During his first three years at college, he was "paranoid about grades" but he has since settled down.

Sources of feedback

Mark generally receives feedback through conversations with his professors, class participation, and the feedback he receives on the essay part of exams. The type of feedback that he has observed tends to focus on the structure and organization of ideas, rather than the content. However, he adds that he generally has a lot to say but earlier on had trouble organizing his ideas. He would prefer to write a paper over taking an exam.

Contextual support

Since Mark considers himself to be a highly competitive person, he feels the grades he receives are for him and his future. It makes him feel good about himself, "knowing that I am doing well." He does not discuss grades with his parents although he admits that his parents get excited when he is on the dean's list. Few of his high school peers went to college and he has no siblings, making the attainment of high grades more of a personal-goal issue than something to be attained due to external pressures. He acknowledged that graduate school is extremely

competitive but he may still apply. However, he cautioned that he is an overachiever and if he does not get admitted into the best schools, he "wouldn't even bother."

Discussion

This study is an investigation of undergraduate students' use of feedback, grades, and contextual factors in the learning process. We set out to gain a new understanding of current feedback systems, what the grades that students receive signify, to learn whether students use grading of their work to advance their learning, and to understand family and peer expectations on student achievement. In summary, the following is a review of the hypotheses and our findings.

The first hypothesis in this study was that students do not understand why they receive specific grades, that is, they do not understand what it was in their work that merited such a grade. This hypothesis was not confirmed. The consensus was that the students did understand why they received the grades they received.

The second hypothesis was that faculty provide little or no detailed explanations with the grades they give students. This hypothesis was also not confirmed. The participants in this study believed that they were receiving sufficient feedback such that they could improve their performance on subsequent assignments.

The third hypothesis was based on the first two. It was that since students lack an understanding of the rubrics in which they could explain and interpret their grades, they do not use their grades to correct specific deficiencies or to reinforce approved skills and understandings. This hypothesis was also not confirmed. All students explained that they did use feedback on later work, albeit to varying degrees.

The fourth hypothesis was that contextual factors including parents, siblings, and peers would affect students' attitudes towards their grades and use of feedback in the learning process. This hypothesis was partially confirmed. The results suggest the students were partially influenced by external pressures and often fought the internalization of grade meanings. Two students revealed that their positions as role models for siblings in particular add to their pressure and motivation to succeed. (Table 2 summarizes the findings).

This study suggests that students need more than a grade in the learning process. McKeachie (2002) states that students benefit from formative feedback including comments on papers, responses to classroom discussion, and conversations with faculty that indicate improvement areas. His recommendations confirm the implications of this study and suggests to faculty that student learning and motivation for learning occurs through several modes of communication with students. Students in this study demand verbal and written feedback from their faculty to assist in their learning process. Students require faculty availability and approachability both in class and during office hours. Students are best motivated by faculty who care about their development and take the time to comment objectively on their content and context.

The developmental contextual approach as advocated by Lerner (1986, 1991) provides a framework for viewing the interactions between students and their relationships with family, peers, professors and extra-curricular responsibilities. This model considers the student to be an active and dynamic learner rather than a passive observer. Moreover, positives outcomes can be achieved when an individual's personality is congruent with their social context. When there is a "goodness-of-fit" that satisfies given requirements, circumstances are created whereby constructive, adaptive development and adjustment are enhanced. As such, helping the student in various areas of their lives, including the learning context can create positive change. Due to its complexity, it is impossible to study the entire developmental contextual model in a one-shot effort (Lerner, 1991). Rather, different subsystems within the larger model can be studied as pieces of the larger puzzle. One such subsystem includes the examination of the student within the context of the learning environment. The co-constructivist Vygotskian perspective (e.g., Vygotsky, 1978) serves as an appropriate area of analysis. From this approach it can be argued that professors should use their positions in order to help students maximize their learning process while de-emphasizing the role of assessment as simply a measurement tool. The findings of this study suggest that contextual factors (e.g., professors, family, and peers) have a strong influence on student's learning process.

Student athletes dedicate their college-level academic careers to their sport while simultaneously adding to the prestige of their universities and generating revenue for the general student population (Hollis, 2002). Nonetheless, upon graduation, many student athletes must rely on their education and not the sport to which they were so dedicated (Hollis, 2002). That being the case, it is to everyone's advantage to help these students succeed in all facets of academia. The learning process and the use of feedback should be viewed as important in their success.

Implications

Based on the findings of this study, a number of suggestions can be made to further assist undergraduate students in their learning processes. First, professors should attempt to diversify the sources of feedback that are offered to students. Next, the content of that feedback should be varied yet constructive. A shift should be made

from professor-centered assessment practices such as the high reliance on multiple choice exams where there is little or no feedback, to more of a student-centered approach.

Given the findings by Hollis (2002) that summer school before the freshman year had a significant impact on later graduation rates, it is imperative that the student be taught how to use feedback and that professors attempt to offer suitable forms of feedback. Additionally, class sizes should be smaller in order to offer students more opportunities to interact with their professors. Similarly, it is recommended that professors get to know their students on a personal level.

More emphasis should be placed on the process of learning as opposed to the mere distribution of grades. This involves making it clear what is expected of the students. Professors should also offer rubrics and examples of previous work to students in order for them to better understand what is expected of them. Professors could also offer 'second chances' for students who perform poorly the first time and/or provide feedback on early drafts before the student submits a final draft.

Workshops that incorporate these ideas for the professional development of professors should be made into educational policy among institutions of higher education. Shepard (2001) acknowledges that changing the 'cultural practices' in a class setting is relatively difficult because it requires that professors change their existing teaching habits. Nonetheless, the findings of this study suggest that the overall system of feedback for student athletes at this particular medium-sized private university is appropriate but could be enhanced. One such enhancement would be to remind professors and other purveyors of academic feedback that the types of information provided to the students clearly play a positive role in their development. These suggestions for practice can enhance student learning and motivation while prohibiting stressful factors in the learning process such as grades and external expectations.

In summary, some practical implications we might suggest as a result of this study are:

(1) Provide students with opportunities to receive feedback in both written and verbal form from their faculty members and peers.
(2) Stress the importance of comments rather than grades so much so that maybe faculty should eliminate a letter grade on some assignments.
(3) Have students write peer reviews of assignments as such exercises might enhance student's developmental stage toward a co-creation of knowledge.
(4) Suggest that students develop at least one significant faculty relationship per semester and reward faculty through the tenure process for establishing such a relationship.
(5) Finally, provide students with a skills tool kit including language that assists them in talking with family about grade expectations.

Limitations

This is a qualitative study which inherently limits the generalizability of the findings. Clearly student athletes and resident advisers are not a homogenous group. There exists as much diversity among this population as that found among the greater student body. Another limitation of the study is that the participants were from a private university and a private women's college which severely biases the results. For example, Hollis (2002) found that student athletes who attend private colleges had higher grade point averages in high school than those in public colleges.

Directions for Future Research

Given the importance of this topic for both educators and students, future research should focus on a number of areas. For students, specific demographics should be taken into account. For example, students with learning disabilities, psychological characteristics, and varied ethnic backgrounds would be beneficial. Future research should include both theoretical and methodological triangulation in order to add credibility to the results. For example, interviews with professors, coaches, siblings and parents may add to the trustworthiness of the data. Samples should be drawn from other levels of competition within the NCAA and other levels of student leadership involvements, since some students spend more time in co-curricular activities than others and some leadership positions are more biased by their larger stature. Also, a 'mini' control group consisting of students who are not involved at all could be used for comparison purposes.

This study involved the perspectives of women primarily so it would be interesting to see if gender plays a role in a student's view of grades, use of grades and particularly the importance of faculty relationships. The six respondents also represented three different races. Further research might investigate the effect of culture on view of grades and particularly parental expectations. Further research might also be suggested across institutional type to include public universities, community colleges, business schools, and so on. Overall, this study suggests that

factors such as race, gender, family background, student's attitudes toward college and faculty could use more exploration and investigation.

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Table 1

Characteristics of the participants

Name	Class year	Gender	Ethnicity	Involvement	Institution type
Beth	Freshmen	Female	Caucasian	Varsity Athlete	Research
Cindy	Sophomore	Female	African-American	Residence Adviser	Liberal Arts
Stephanie	Sophomore	Female	Asian-American	Residence Adviser	Liberal Arts
Vicki	Sophomore	Female	Caucasian	Residence Adviser	Liberal Arts
Stacy	Junior	Female	Caucasian	Varsity Athlete	Research
Mark	Senior	Male	Caucasian	Varsity Athlete	Research

Table 2

Report of the Findings

Hypotheses	Findings
Students do not understand their grades or what it is about their work that merits such a grade.	Hypothesis not confirmed: Students do understand the grades they receive and report faculty willingness to explain all types of feedback.
Professors do not provide sufficient feedback.	Hypothesis not confirmed: Students reported receiving feedback from faculty and commented that the best teachers give significant written and verbal feedback on their work.
Lacking understanding of their grades, students do not use their grades to improve their work.	Hypothesis not confirmed: Students did in fact report that faculty feedback was helpful and useful in the preparation of future assignments and exams.
Contextual supports such as family and peers affect students' attitudes toward grades.	Hypothesis partially confirmed: Students reported varying degrees of "pressure" to succeed based on family and peer expectations. Two respondents particularly commented that role modeling for younger siblings was a critical expectation in their college success.