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Students' Views of Feedback on Electronic Assignments

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Abstract—With the rapid development of technology, more and more universities put courses online. Electronic submissions become ordinary and seem largely reasonable choices. Yet, those instructors who employ blended approaches to interacting with students may also require students to submit their assignments electronically even though instructors and students meet on campus regularly as scheduled. Providing electronic feedback (e-feedback) by instructors becomes one of the central concerns in higher education. However, there is limited research in students' views of e-feedback provided on submissions. This study, part of a large study, was intended to fill the void. All undergraduate students from a Midwestern university were surveyed regarding what they support: e-feedback and handwritten feedback and what their perceptions on e-feedback based on the following five categories: accessibility, timeliness, legibility, quality and personal. Data were analyzed quantitatively and qualitatively. The results show that the majority of the respondents preferred e-feedback for accessibility, timeliness, and legibility. While there were not as many supporters as those for accessibility, timeliness, and legibility, the theme of quality was supported more than that of personal. In this article, addressed are also limitations, educational implications, and future research suggestions.

Keyword—*feedback, electronic feedback, instructors, students*

I. INTRODUCTION

Deepened learning fostered by a course instructor partially comes from feedback [1,2], which is a vital component of effective and efficient teaching and learning in higher education [3-5]. Good teaching is represented by helpful comments on students' assignments [6], because students are able to improve and advance their understanding based on instructors' feedback [1]. Providing feedback on students' submitted work is regarded as individualized teaching outside the classroom [7]. With the use of Microsoft Word "TrackChanges" and that of Microsoft Word "New Comment", instructors could make comments or provide feedback in a digital format [1,7], making clear where and how certain areas require students' further attention [8].

Students' views of feedback help frame both effective and efficient instruction and learning in higher education [1,5]. It is important to know students' perceptions of e-

feedback [3]. Therefore, explored from a larger study were the perceptions of undergraduate students of their choice of feedback: e-feedback vs. handwritten and what their perceptions on e-feedback based on the following five categories: *accessibility, timeliness, legibility, quality and personal*. The research questions underlying this study were "Do students support e-feedback or handwritten feedback? What are students' perceptions of e-feedback in regards to the five themes: *accessibility, timeliness, legibility, quality and personal*?"

II. LITERATURE REVIEW

A. Accessibility

While feedback could help improve students' learning [1], accessibility is a general expectation of students in the millennial generation [9]. A survey study conducted by Costa [10] found that accessibility was mostly recognized by the students as a component in defining useful feedback.

B. Timeliness

Although desiring to receive feedback that is constructive, students have a strong preference for feedback that is timely [11]. If feedback is received late, it becomes useless to students, as many students have already moved on [1]. To receive feedback early, it seems electronically delivered feedback gets the majority of student support [12]. When Bridge et al. [13] asked students to consider the issue of online feedback, 88% reported that they favored online feedback because they were able to receive it faster than in the more conventional format of hand delivery.

C. Legibility

When feedback is typed rather than handwritten, feedback is readable. Legibility is a significant element in supporting student learning [11]. Price et al. [14] reported students' general criticism of feedback was mainly due to illegible writing. Illegible feedback makes it unclear, leaving students both disappointed and frustrated [12].

D. Quality

Case [15] identified poor and low quality feedback as issues in the feedback students received. Quality of instructors' feedback is often mentioned in student course evaluations [16]. Quality feedback embraces feedback that

is constructive and helpful. The content of feedback is easy to be understood. Feedback should also enable students to know what and where their attention is needed and whether or not their work is on right track [8]. When time and quality are considered as competing aspects of feedback, students would be happy to wait a little longer for feedback if quality increased [11,12].

E. Personal

Krause and Stark [19] found that when being personal, feedback was mostly useful to students. Students, who responded to Ferguson’s study desired to receive feedback, which was both positive and personal [13]. When the tone of feedback is overly negative, students would often feel that instructors do not care about their learning [14]. With feedback that is not personal, students may view assignments as mere products, leaving them feeling alienated and disengaged [10,14].

Accessibility, timeliness, legibility, quality, and personal were the five themes to be based on in the exploration of students’ perceptions of e-feedback on their assignments along with their preference on certain feedback: e-feedback vs. handwritten.

III. METHODS

A. Participants and setting

All undergraduate students at a Midwestern university were invited to participate in a survey study by email. Of the approximate 7,200 students, 763 undergraduate students responded, with a return rate of almost 11%.

B. Data Collection

The online survey was hosted on Survey Monkey and was used to collect data based on the five themes: *accessibility, timeliness, legibility, quality, and personal* with a few corresponding items under each them on a 7 point Likert scale. For example, there were four factors under the theme of *accessibility*: (a) *allows me to get information easily*, (b) *allows me to receive and send information conveniently*, (c) *allows me to ask questions easily* and (d) *makes me feel secure to receive feedback from the professor*.

C. Procedure

After the Institutional Review Board approval, the survey link was sent out to all undergraduate students who were in attendance at the university via an email invitation. On the Survey Monkey, the students were first prompted with a study information sheet, which informed them of the purpose of the study, ensured confidentiality and also made it clear that participation was voluntary. If potential respondents agreed to participate, they continued on to complete the survey. All potential participants received a first follow-up letter electronically two weeks after the initial invitation letter was sent out. A second follow-up

letter was emailed to all potential participants two weeks later. The study was closed two weeks following the second follow-up letter.

D. Data Analysis

To answer the research questions of whether the undergraduate students preferred e-feedback or handwritten feedback, nonparametric and parametric tests were utilized. SPSS 20 was used to answer why either of these options was preferred over the other. A crosstabs procedure, using the Chi-square test of independence was used to analyze the nominal variables. A Chi-square test of independence measures the degree to which a sample of data comes from a population with a specific distribution [8,20,22,23]. It tests whether the observed frequency count of a distribution of scores fits the theoretical distribution of scores. This issue was addressed through the use of the Pearson’s Chi-square procedure [18-20]. Independent t-tests were conducted to compare feedback preference [22]. In addition all responses to open ended questions were analyzed with respect to their justifications or preferences for handwritten or e-feedback providing a purposeful examination of detailed actual experience [22].

IV. RESULTS AND DISCUSSION

With respect to the first research question: “Do students support e-feedback or handwritten feedback?” It was found that the majority of the participants (n=476, 63.3%) supported e-feedback. The studies conducted by Denton, Parkin, Chang et al. [1,5,14] yielded similar findings in which the majority of students preferred e-feedback. T-test was conducted to compare how much preference for handwritten and e-feedback based on choice of feedback (see Table 1).

TABLE I. COMPARING PREFERENCE FOR HANDWRITTEN AND E-FEEDBACK FEEDBACK

	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Handwritten	274	4.33	0.921.39	29.33	748	0.00
E-feedback	476	1.86	0.92			

The following provides the results and discussion with respect to the second research question: “What are students’ perceptions of e-feedback in regards to the five themes: *accessibility, timeliness, legibility, quality and personal*?”

A. Accessibility

There were four factors under the theme of *accessibility*. The majority of the respondents support all the four factors: (a) *allows me to get information easily* (n=468; mean=1.511; SD=0.773), (b) *allows me to receive and send information conveniently* (n=466; mean=1.280; SD=0.703), (c) *allows me to ask questions easily* (n=467; mean=1.830; SD=1.164), and (d) *makes me feel secure to*

receive feedback from the professor (n=464; mean=1.882; SD=1.167).

The provided justifications for (a) *allows me to get information easily* include, "I'm always online, always even on my phone so it makes things easier for me." "[N]o matter where you are, you usually have access to the internet therefore you can get it anywhere at any time." Denton, Parkin et al. [1,5] found similar data. They found that technology enabled students to access their grades and feedback at a time and place of their choosing. In commenting on (b) *allows me to receive and send information conveniently*, some students wrote, "Easily accessible as it only requires one or two clicks of the mouse." "Very helpful because I can log on whenever it is convenient for my schedule to check on things." Similarly, conveniently receiving and sending information with the use of the Internet was concluded in the research of Chang and Mertler et al. [12,19]. Students recognized and appreciated the flexibility and convenience that technology could provide in facilitating their learning [1,5].

To avoid redundancy, the discussion of (c) *allows me to ask questions easily* will be made in section of Personal. In explaining (d) *felt secure to receive feedback from professors*, the students wrote, "I don't have to worry about losing it!" "It's nice that you can always go back to refer to it when it's saved online." In general, the students positively preferred this theme. Yet, even though Chang et al. [12] identified and supported this theme, few other studies have examined it. Therefore future research is warranted for better facilitating student learning.

B. Timeliness

There is only one factor under the theme of *timeliness*: (e) *[E-feedback] allows me to receive feedback fast* (n=466; mean=1.504; SD=0.883). It is apparent that the majority of the students supported e-feedback for fast and timely delivery. Similar findings were determined in the reports by Denton, Chang et al. [1,12]. When feedback is delivered electronically, students do not have to wait until next class or another week, as a student wrote, "... I don't have to wait a week to hear back on how well I did or what I need to improve on." Another student pointed out, "If I receive feedback that is very late, I usually disregard it because it is irrelevant." The findings are consistent with Parkin et al. [5], who found that if students did not receive feedback in time for it to be meaningful germane to a task assessed, the relevance of the feedback could thus be reduced. Feedback needs to be timely to appropriately promote student learning [1,10-12].

C. Legibility

Overall the majority students supported e-feedback on two factors under the theme of *legibility*: (f) *[E-feedback] enables me to read the feedback* (n=463; mean=1.324;

SD=0.788) and (g) *[E-feedback] enables me to understand what the professor writes* (n=463; mean=1.495; SD=1.021).

Common justifications provided by the respondents include, "Since it is typed, it is legible [,] [i]f their spelling and grammar is good at least." "... electronic feedback wins in this category [legibility]." Denton, Parkin et al. [1,5] found that many students were likely to read or use feedback if it was returned to them in a typed and legible format, Johnson, Ferguson, Chang et al. [2,8,11,12] also confirmed the finding that typed feedback enabled students to read feedback without difficulty. With respect to (g), *[E-feedback] enables me to understand what the professor writes*, to some respondents, e-feedback, even if it is typed, does not make sense to students and is full of spelling errors, it is of little use, as a respondent expressed, "You will always be able to read typed [feedback], but that doesn't matter if [it] is not necessarily comprehensible and more subject to misspellings." On the contrary, if feedback's quality was good, the respondents were willing to take time to decipher it. A student put it this way: "If the quality of what is written is high enough, student time to making out the writing is worth it." The linkage between legibility and quality appears to suggest that students care about their learning and hope to act on feedback to better their work [13,14]. However, further research is needed for a deep look at this factor.

D. Quality

The majority of the respondents supported seven factors under the theme of *quality*: (h) *offers constructive criticism or comments* (n=464; mean=2.070; SD=1.180), (i) *is helpful* (n=464; mean=1.819; SD=1.057), (j) *allows me to understand the content of the professor's comment* (n=465; mean=2.039; SD=1.159), (k) *allows for revisions and improvement* (n=460; mean=2.078; SD=1.148), (l) *provides detailed information that I would like to know in text* (n=460; mean=2.174; SD=1.259), (m) *provides detailed information that I would like to know at the end of paper* (n=457; mean=2.230; SD=1.310), and (n) *allows me to feel and touch the feedback, which is conducive to my reading and understanding* (n=456; mean=3.384; SD=1.943).

From the participants' perspectives, e-feedback was specific and offered useful explanations. Some wrote, "I've noticed that most of the electronic feedbacks are more in-depth in their explanations and reasons." Parkin et al. [5] echoed that the participants in their study felt that online feedback was thoughtful. Additional reasons given by the students include, "The clarity I receive from electronic feedback has been better than written. I suspect that is because thoughts can be edited and organized in such a way that handwritten examples do not allow." Parkin et al. [5] also reported that their respondents recognized editing and revising feedback could become fairly easy to tutors with the use of electronic tools. Apparently, technology has made teaching more effective, as instructors are able to edit and

reorganize feedback that has been composed. An e-feedback supporter commented, “Handwritten comments tend to be abbreviated more often and leaves you occasionally wondering if you missed something or if you correctly understand the abbreviations.” Decoding abbreviations and wondering whether the resulting work matched the instructor’s intended meaning were fairly uneasy to the respondents and could generate a sense of uncertainty. Such feeling and emotional status could plausibly become the reasons for some respondents to support e-feedback. However, these aspects were not found by the studies conducted by Chang et al. [8,12]. As such, an investigation could be warranted to further the understanding of how to facilitate student learning via assessment feedback.

E. Personal

In comparison with the previous themes, this theme was somewhat supported by the majority of the respondents: [E-feedback] (o) *allows me to establish rapport with my professor* (n=458; mean=2.769; SD=1.647), (p) *encourages me to read feedback* (n=458; mean=2.109; SD=1.280), (q) *shows that the professor cares about me* (n=456; mean=2.540; SD=1.516) and (r) *makes me appreciate my professor's time and attention* (n=456; mean=2.318; SD=1.342).

Commonly felt by the respondents is that e-feedback appears to distance instructors from students psychologically [19], as some students noted: “There seems to be a distance between you and the professor if all feedback is just electronic.” The respondents explained, “Electronic is usually more of a summary...” “... they ... just copy and paste a generic statement.” Similarly Chang et al. [12] found that “... sometimes electronic feedback feels generic and impersonal.” As such, if feedback is handwritten, it would be difficult for instructors to “duplicate” feedback, as a respondent pointed out, “I feel like an instructor is much less likely to copy and paste when the feedback is handwritten.” If feedback is copied and pasted on a student’s assignment, the student would be made to “most feel as if I’m simply a part of a mass email that is sent out to a lot of students.” This is implicit that instructors care very little about student learning, if e-feedback is delivered in this fashion.

Asking instructors questions face-to-face could promote a positive relationship between instructor and student, which seemed, in turn, to encourage students to read feedback. Otherwise, reading feedback is unlikely to happen, as a respondent shared, “[M]y professor does not get to know me this way ..., if it can be all uniform and not unique to each student, the connection is not there so reading the “comments” is much less likely to happen.” It is apparent that students’ emotions, derived from the relationship between instructor and student, play a very important role in student learning. “The personal relationship between a professor and me is very important

to me.” “I love to feel the connection between the professors,” remarked the respondents. Costa [10] also reported that students wanted instructors to consider their feelings; they wanted instructors to be empathetic and understandable.

Some e-feedback supporters disagreed with their peers and believed that e-feedback had its capability to establish rapport with professors. They defended that e-feedback was “[m]ore one on one [in] the classroom,” and “... was speaking directly to me.” In view of e-feedback supporters, e-feedback was “[m]ore personal.” The findings are consistent with Costa [10] that students requested feedback to be more personal, as it could motivate student learning and guide students in the right direction.

V. EDUCATIONAL IMPLICATIONS

The findings offer useful insights of the respondents on their preferred feedback form and the related rationale behind their preferences. As such, it is time for instructors and concerned administrators to start contemplating how to compose/or develop and deliver feedback, be it handwritten or e-feedback, in order to genuinely facilitate student learning. To be more specific, it is time to make changes to ways to develop and deliver e-feedback to bolster its quality and personal attributes to make it useful and beneficial to student learning. Therefore, in providing feedback, instructors need to “engage with students, consider their responses and offer individualized challenges” [24]. Perhaps, basic training or professional development for instructors would enable them to establish a better understanding of how to provide e-feedback as scaffold to students’ learning. In addition, the delivery style impacts student learning, as a student pointed out, “The few times I have received feedback in these ways [electronically] (especially through annotations), I found it [e-feedback] immensely helpful. As such, I think this problem is more of one of education on the part of professors; if they are aware of this method of giving feedback and how to provide it in this way, then maybe they would be more likely to do so. Professor training would be very helpful.” Professional training converging on how to compose e-feedback is of great significance.

VI. FUTURE RESEARCH

This study demonstrated that to facilitate student learning via assessment feedback, future research would be useful to examine specifically what content of e-feedback is desired by respondents and, when and how instructors deliver this feedback to students. Further research may also be focused on if “a hybrid approach” to providing and sending feedback to students is helpful from the students’ point of view, e.g. Tablet PC or iAnnotate PDF on iPad. These approaches would allow for handwriting and delivering feedback electronically. Or future research may

need to be focused on the following question: “Do students prefer feedback provided with the use of VoiceThread, the software that allows for recording feedback orally and delivering it electronically?” In addition, future research may look into whether or not feedback provided through various electronic means, such as email, webs, OnCourse, phones, etc., would result in different students’ perceptions or even in different impact on their learning. Interested others could also delve into to what extent e-feedback could really improve teaching and learning.

VII. LIMITATIONS

The following limitations were identified (1) Even though the survey instrument was modified and improved from the previous study, 2% of the respondents thought the survey was a bit too long. Thus, it might be the case that some respondents might not be able to complete the survey in earnest or honestly convey their insights. (2) This survey was conducted at the beginning of the spring semester. It might be that some students had not had much experience receiving or reading e-feedback. (3) It might be that some respondents’ perceptions might not fully reflect their views taken into consideration that they might not comprehend certain survey questions and/or might be distracted by their surroundings when the survey was being taken. (4) Lastly, since there was no clear definition of e-feedback given, it might bear on the answers of the respondents to some survey questions. Nonetheless, with a large number of the respondents involved in this study, the findings could still make useful contributions to teaching and learning in higher education, generating a stimulating topic for the best interest of students.

VIII. CONCLUSION

Feedback preferences of undergraduate students at a Midwestern university were explored with regards to which feedback form was preferred, e-feedback or handwritten along with the rationale behind e-feedback under five themes: *accessibility*, *timeliness*, *legibility*, *quality*, and *personal*. It was found that about two thirds of the respondents preferred e-feedback. There were stronger ratings and more respondents supported e-feedback for its *accessibility*, *timeliness*, and *legibility*. The justifications, which backed up their expressed preferences, could also explain why there were relatively lower ratings for the themes of *quality* and *personal*.

The findings indicate that the majority of students long for assistance from instructors to improve their learning via assessment feedback. It is important for instructors to be mindful when providing feedback on students’ assignments in terms of what, why, how, and when. Since feedback offering has been recognized by literature to have significant effect on student learning [2,8,11,15,17] and

fundamental in supporting and regulating the learning process [23]. It is time for all faculty concerned with effective student learning to understand more about the provision of feedback via the assessment process. Awarding a single grade is not welcomed by students and is not conducive to improving learning. Students do desire to receive feedback [2,8]. However, the feedback should truly help advance their learning.

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