

Pre-service teachers' views: How did e-feedback through assessment facilitate their learning?

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Abstract: This survey study was intended to explore whether or not students supported the way a university course instructor provided timely and detailed e-feedback directly onto their online assignments and how the e-feedback facilitated their learning. Twenty pre-service teachers, who had experienced the process, participated in the study. The data were analyzed quantitatively and qualitatively to answer the research questions. The findings indicate that the majority of students favored the instructor's provision of e-feedback. From their perspectives, the feedback was helpful, immediate, and convenient, allowing them to know whether they were "on the right track", encouraged them to think, enhanced their learning through reflections and corrections, and promoted their time management and writing skills. Implications of the study and suggestions for further research are provided at the conclusion of this report.

Keywords: e-feedback, student learning, assignments, instructor and student interaction

I. Introduction.

E-feedback is characterized as comments and responses that an instructor provides to students' written assignments or learning activities submitted via the Internet in the assessment process. In our contemporary technologically oriented society, the utilization of instant text messaging and omnipresent cell phones forms a habitual mindset that instant feedback is what students expect. However, the traditional methods of submitting and receiving feedback, e.g. in a face-to-face setting, may not satisfactorily meet the students' expectation. To allow quick feedback delivery to take place, many resort to electronic communication through various means, such as emails, course management systems (CMS), and the like. These allow teaching and learning to take place at 24 hours a day, 7 days a week, independent of location and learning style (Hong, 2002). However, in spite of the fact that the email system and CMS have the capability to convey feedback rapidly to meet the students' expectations, according to Hong (2002) and Young and Norgard (2006), there still exists online students' dissatisfaction with Web-based learning. For instance, based on the 2004 National Survey of Student Engagement (NSSE), almost 90% of faculty reported that they did provide prompt feedback to academic performance. But only less than 60% of the students agreed with the report. The disparity can be explained by the distinct perceptions held by the faculty members and students in viewing of "quickness" or timeframe in regard to offering feedback. The faculty members might respond the students' assignments faster than before thanks to the advancement of computer technology, but to the students (Generation

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Y), who are “technology savvy,” do not see eye to eye on the issue. The discontent apparently converges on the instructors’ delayed feedback (Hong, 2002; Young & Norgard, 2006).

Research has shown positive effects on students’ learning as a result of immediate feedback. For example, Dennen, Darabi, and Smith (2007), Hong (2002), and Young and Norgard (2006) believed that prompt feedback could strengthen the active interaction between the instructor and student, which positively affected student learning. The student-instructor interaction via feedback allows for supporting students to gain knowledge and skills, which computers alone cannot make happen.

However, there is scant research reporting the justifications behind the students’ preferences of the instructors’ feedback. The present study, therefore, was intended to contribute to the emerging field of scholarship in the aforementioned areas by exploring students’ perceptions of whether or not they liked the way online feedback was offered and of how the e-feedback assisted them in learning. The underlying research questions thus were, “Are students satisfied with the way the instructor provided feedback to their submitted online assignments?” And “How does feedback facilitate student learning?”

II. Literature Review.

A. Provision of Feedback through Assessment.

Currently, there is a growing demand from students for feedback on their performances (Siew, 2002) irrespective of an online or a face-to-face setting. In fact, current theory, research, and pedagogical standards have influenced the standards of teaching to include the need for students to receive feedback (Chang, 2009a, 2009b, 2009c; Chang & Pertersen, 2006). E-feedback works as individualized scaffolding and is what today’s students increasingly need. Apart from the fact that students need more individualized support from instructors (Peat & Franklin, 2002), they also have higher expectations than before for the quality of feedback (Peat & Franklin, 2002). MacDonald and Twining (1992) suggested that students need not only the feedback that is immediate, but also the feedback that should effectively promote their learning, help them construct concepts (Berge, 1995), and assist them in meeting objectives (Laurillard, 2002).

In meeting the stated course objectives, the instructor’s guidance is indispensable (Hall, 2002; Nicol & MacFarlane, 2006). Goals/standards/criteria of performance or an assignment affect how students are going to complete a task and interpret feedback provided by an instructor. Students’ engagement in completing a given assignment is for the purpose of deepening understanding based on the objectives set in advance. Unfortunately, it is quite common that students may have trouble understanding objectives and goals fully before an assignment is completed. One of the reasons is that making assessment goals or criteria explicit can be a difficult undertaking (Rust, Price, & O’Donovan, 2003). “Statements of expected standards, curriculum objectives or learning outcomes are generally insufficient to convey the richness of meaning that is wrapped up in them” (Yorke, 2003, p. 408) and “[t]hey are often ‘tacit’ and unarticulated in the mind of the teacher” (Nicol & MacFarlane, 2006, p. 206) owing to their complex and multidimensional nature. To bring about effective performances, an instructor is obligated to aid students in establishing a good understanding of goals, which comes, in part, from the assessment process by offering constructive feedback.

Zimmerman and Kitsanas (2002) reported that social feedback “has been consistently linked with higher achievement and greater motivation to learn” (p. 662). Provision of feedback

is a process of scaffolding, which reflects the core concept of the 'Zone of Proximal Development,' or ZPD (Vygotsky, 1978). From Vygotsky's perspective, learning takes place in a social context, where a learner is assisted by a more skilled learning partner (Lindblom-Ylänne & Pihlajamäki, 2003). With assistance of caring and understanding instructors, students tend to be motivated to learn. Such an environment for learning is often deemed as an emotionally supportive classroom (Hall, 2002; Stipeck, Feiler, Byler, Ryan, & Salmon, 1998; Sheppard, 2008). In the emotionally supportive environment, the psychological distance between the instructor and students is shortened and the instructor strives to cultivate positive affect for learning. Affective learning contributes to the mastery of learning (Brookfield, 1987; Christopel, 1990, Hall, 2002; Pogue & Kimo, 2006).

The same principle is applied to an assessment or grading process. In the assessment process, if grading students' work merely equates with assigning a grade or a numeral score to students' papers, possible affect for learning would not germinate and subsequently grow. Winter and Dye (2003/2004) found that students tended not to collect marked assignments and accompanying feedback if they knew their grades: "Students couldn't care less when they know their grades" (p. 138). It is apparent that if assessment is limited to gauging students' work in order to grant a corresponding grade to each student, much is missed, and the practice of teaching and learning is diminished (Chang, 2009a; Chang, in press). Such an assessment process only focuses on the evaluation of learning outcomes rather than its process (Bothel, 2002; Chang, 2007; Chang, 2009a; Siew, 2003).

Grading is, in effect, a process of teaching transpired through a meaningful dialogue in the assessment process (Chang, 2007; Chang, 2009a; Chang, in press; Hall, 2002). In such a process, an instructor diagnoses misconceptions (Chang, 2007; Chang, 2009a, 2009b, 2009c; Garrison et al., 2000) and detects learners' learning needs in order to render assistance (Berge, 1995, Chang, 2009b, 2009c) and to help remove barriers to students' successful learning (Chang, 2009c; Chang & Petersen, 2006; Ko & Rossen, 2001). The instructor's provision of feedback in the context offers knowledge useful to make corrections based on his or her content knowledge and pedagogical expertise (Higgins, 2000). The feedback can thus engage students in knowledge building (Lim & Cheah, 2003) and deepen students' knowledge (Chang, 2007; Chang, 2009a, 2009b, 2009c; Chang & Petersen, 2006; Garrison et al., 2000; Higgins, 2000; Kanuka & Anderson, 1998; Winter & Dye, 2003/2004). Dynamic involvement of an instructor in student learning emphasizes process rather than products; connectivity and process vs. products and a repository of information (ESRC Economic and Social Research Council, 2002; Siew, 2003),

Personalized online coaching can also be expounded and understood with Garrison, Anderson, and Archer (2000) three presences: cognitive presence, social presence, and teaching presence. Cognitive presence exists when there is communication between the instructor and student centering on the student's written work. Garrison et al. (2000) noted that there was a positive link between written communication and a higher order of thinking. In the critical discourse with the student, the instructor interacts with the student, which represents social presence and which is fundamental to successful attainment of knowledge. Assisted by the instructor's explanatory feedback (teaching presence), students gradually learn how to think as the dialogical communication is domain-specific and context-dependent. Garrison et al. pointed out, "Explanatory feedback becomes crucial when one's ideas are being constructively but critically assessed" (Garrison et al., 2000, p. 25). Feedback from the instructor directs students to focus on what to think (cognitive presence) (Garrison et al., 2000). Hence, students learn to

question the information they have attained rather than to simply translate it into one's words without thinking and reflection, which is coined by Hall (2002) as "a knock-on effect" (p. 157).

B. Students' Perceptions.

Young and Norgard (2006) examined the quality of online courses from the students' perspectives. Of 233 participants, about 90% surveyed agreed that the interaction between the instructor and students was important to learning. The researchers found that timely interaction between the instructor and learners was crucial in promoting student learning. The students felt that when there was an absence of the instructor's presence, they were unsure of themselves with respect to learning outcomes, which was consistent with the reports by Yang and Cornelius (2004), and Zeng and Perris (2004).

Hong (2002) explored 26 students' perceptions about an e-problem-based course and found that students who had positive perceptions about the student-instructor interactions felt more satisfied with the course than those who held a negative attitude concerning the relationship between the instructor and students. Jiang and Ting (1998) and Swan et al. (2000) pointed out that interactions between the instructor and students made the most significant contribution to the learners' satisfaction and desirable learning outcomes in Web-based courses. In short, students' satisfaction is closely linked to the instructor's highly visible and tangible presence.

Dennen et al. (2007) conducted a study with 32 instructors and 170 students to examine their perceived importance of particular instructor's actions on performance and satisfaction. They found dissonance between instructors and students in terms of the perceived importance of various instructors' actions on course satisfaction. The majority of the students placed the provision of timely feedback at a much higher rank (ranked 1st) than did the faculty members (ranked 4th), which implies that the students expected the instructor's feedback in a quick fashion. In terms of extensive feedback, 96.9% of the faculty members ranked it first while 82.9% of the students ranked it the ninth place. The statistics show that the students preferred the feedback that the instructor returns quickly, but do not appreciate lengthy feedback.

III. Methodology.

A. Research Design.

To answer the research questions of "Are students satisfied with the way the instructor provided feedback to their submitted online assignments?" and "How does feedback facilitate student learning?" a survey was used to solicit the students' perceptions. The use of the survey rather than that of interviews were due to the following reasons. Given the fact the students must have the experiences of receiving and communicating with the instructor about the e-feedback, the end-semester data collection would make much sense. However, at the end of a semester, there was always very little time left for both the researcher and the participants to meet face to face individually in order to complete interviews, owing to much work and other obligations demanding the attention of both parties. Therefore, the survey was used as the data collection means.

B. The Study.

This study was approved by the IU Institutional Review Board and took place on an IU campus with 20 students enrolled in two sections of a course titled “Introduction to Early Childhood Education” in the spring semester of 2009. This course was required of all pre-service teachers seeking teaching licenses and Elementary Education degree.

In this web-enhanced or a hybrid course, the instructor and students met on Tuesdays and Thursdays for 75 minutes each session. Not only was computer technology incorporated into face-to-face meetings, but also was continuously utilized outside of the class. That is, all the students were expected to submit their assignments through Forums via Oncourse (<https://oncourse.iu.edu/portal>) and the subsequent communications between the instructor and students also took place via the Internet outside of the class. As a means of individualized coaching, the written feedback was detailed, pointing out strengths and weaknesses in relation to a particular requirement and was delivered electronically to the students no more than 24 hours. The identification of students’ written mechanical errors was also part of the feedback.

Upon the receipt of the instructor’s feedback, students were allowed to make revisions within 30 days, starting a due date. If a student decided to opt out the opportunity to make revisions, all he or she needed to do was to email the instructor, who then awarded a grade to the student’s submitted assignment based on the quality of the work. If making revisions was the choice of a student, within the 30 days, ongoing communications between the instructor and student would focus on the student’s assignment content until satisfactory outcomes were recognized by either or both parties (the instructor and/or the student). Each time after the instructor reviewed the resubmitted work, the student’s grade might be readjusted depending on the quality of the revisions.

C. The Survey.

The survey instrument was developed by the researcher/instructor. Three initial questions sought demographic information, such as student status (grade level), grade point average (GPA), and age. The demographic information was followed by a closed-ended question that was intended to solicit the students’ preferences regarding the instructor’s detailed feedback on a five-point Likert scale, with 1 being the least supportive and 5 being the most supportive. And then an open-ended question was intended to seek the students’ justifications for their varying levels of preferences.

The next two survey questions intended to solicit the students’ perceptions with respect to seven types of feedback and their justifications for the choices they made. This was an attempt to answer the second research question of how the e-feedback promoted student learning.

Then the students were asked to share their preferences as to where they would like feedback placed in their paper, being in the margin (as specific feedback) or at the end of the paper (as general), or both. Relevant justifications on this topic were also sought in order to answer the second research question as to how the e-feedback facilitated student learning.

The next two survey questions asked the students to report whether or not they a) had easy access to computers and the Internet, and b) were interested in learning with computers. These survey questions were intended to assist in answering the research questions as to whether or not they would support the e-feedback and how the e-feedback facilitated student learning. In other words, it might be the case that if a student had his or her personal computer and access to

the Internet, it would be likely that he or she would support e-feedback and find that e-feedback facilitated their learning.

The last two survey questions sought the participants' perceptions of what and why percentages of online computer technology they preferred to be integrated into a university course. These survey questions enabled the researcher to answer the research questions from a different angle: If the students felt that they benefited from e-feedback, they would preferably suggest more percentages of computer technology to be included in their learning, i.e., increasing more percentages of computer technology in classroom instruction in order to help them learn better.

This survey instrument had been read and reread by two education professors who were knowledgeable about instructional technology. Their feedback and input led to the modification and refinement of the instrument. In addition, the instrument was tested with other education students and, again, revisions were made before the survey was formally used.

D. Data Collection.

At the end of the spring semester of 2009, 20 participants filled out the survey questions voluntarily. After the researcher/instructor explained the purpose of this survey and responded to all the questions from students, a student volunteer was identified to collect the completed surveys in an envelope before delivering it to the assistant Dean's office. The researcher was absent in the classroom where the survey questions were being completed. The envelope was retrieved after all the grades were posted online.

In the informed consent form approved by the Institutional Review Board and distributed to the students along with the surveys, the purpose of the study, voluntary participation, and confidentiality were clearly stated and explained to the participants.

E. Data Analysis.

Descriptive statistics were performed to answer the research questions of whether or not the students were satisfied with the way that the instructor offered the feedback to their online assignments and how e-feedback facilitated student learning. To answer the second research question, a Pearson Product Moment Correlation was also performed in order to examine the relationship between the supportiveness of e-feedback and factors that included students' age, student status, GPA, interest in learning with computers, having access to computers and the Internet, and percentages of computer technology integration into classroom instruction. To answer the second research question, a qualitative analysis was also performed, which consisted of coding the survey responses and of aggregating the codes to identify themes (Charmaz, 2000; Creswell, 2002). Three surveys were first randomly selected, read, and coded with the abbreviations of the tentative codes. The resulting coding system became the basic coding guide for the remaining survey data (see Table 1). The codes were continuously modified and refined as every survey was compared, analyzed, and coded. The process ended when all the data were matched with their appropriate codes.

Table 1. Coding and examples.

Code	Meaning	Examples
H	Helpful	<p>The comments are helpful for learning the material.</p> <p>The feedback helped me develop my papers (ideas) to the fullest.</p> <p>The feedback makes the assignments easier to correct.</p> <p>Dr. Chang’s online feedback was always prompt and encouraging to do better as a student to further our education.</p> <p>I appreciated its immediacy and specificity.</p> <p>It was easy to read since it was typed.</p> <p>It was good to have the comments at exactly where the comment was regarding the assignment—instead of at just the bottom of the assignment.</p>
P	Prompt/Immediate	Dr. Chang was very timely and helpful with her suggestions.
CV	Convenient	<p>I support online feedback because it is easier to submit and correct papers from the comments.</p> <p>. . . it is very easy to respond via emails so I like the accessibility.</p> <p>You are saving trees because we are not printing out multiple copies.</p>
NE	Negative	<p>I didn’t give you “5” because there was a lot [nit-picky]and it overwhelmed me sometimes and shut me down.</p> <p>Sometimes it’s hard to know what you are referring to when the feedback is done online. . .</p> <p>I don’t have internet at home so it was difficult.</p>

IV. Results.

Descriptive statistics were performed to answer the first research question, “Are students satisfied with the way the instructor provided feedback to their submitted online assignments?” Table 2 shows that 13 students (65%) strongly supported while four students (20%) supported the practice ($M = 4.45, SD = 0.89$).

The answers to the second research question, “How does it [the feedback] facilitate student learning?” were gained through various channels, which started with the qualitative analysis of the participants’ justifications of the way that the instructor provided feedback to their submitted assignments. The analysis resulted in four emerging themes: beneficial, immediate, convenient, and negative. Most of the students (85%) felt that the feedback was beneficial to their learning. Convenience in sending and composing revisions was also favored by the students

(20%). In terms of immediate feedback, three students (15%) clearly noted that immediate feedback was useful in advancing their learning. However, two students (10%) justified their negative views.

Table 2. Degree of participant support of instructor's online feedback.

Strongly Support	Support	Neutral	Against	Strongly Against
13 (65%)	4 (20%)	3 (10%)	2 (5%)	0 (0%)

To answer the second research questions, Table 3 shows the results of the participants' preferences with respect to the types of feedback students deemed to be helpful for their learning. (Note, these types of feedback may also be applicable to any methods of instruction, including face-to-face meetings, blended learning, or online learning. Since the focus of this study was placed on the perceptions of the students' experiencing e-feedback, feedback offered electronically was the center of the attention).

Table 3. Students' preferences to the seven types of feedback.

	Type	Number
	I like feedback that	
1	Confirms with a positive short note, such as "A good point."	17
2	Confirms with a positive short note like the above with an extension to explain it, such as "I like this because . . ."	17
3	Helps me improve the use of APA style.	17
4	Provokes my thinking, such as "What do you think about this observation you made . . ."	14
5	Encourages me to reflect upon my work, such as "Please go back to your objectives to reexamine your assessment."	14
6	Helps me be aware of spelling and grammar mistakes.	14
7	Encourages me to reread the guidelines, such as "Please reread the guidelines before revising this part."	8
8	Others (please specify)	0

To further explore how the e-feedback facilitated student learning, the researcher examined the students' perspectives as to where the feedback was preferably placed in a student's assignment. The result shows that eight students preferred to have the feedback offered in the margin of a paper (specific feedback) while four preferred to receive "general" feedback

that appeared at the end of the paper. Yet, most of the students (11 students) liked feedback to be placed both in the margin (specific feedback) and at the end of the paper (general feedback).

To continuously answer the second research question of how the feedback helped students learn, descriptive statistics were performed on age, student status, GPA, interest in learning with computers, and percentage of the students' willingness to include computer technology into instruction and learning (see Table 4). And then a Pearson Product Moment Correlation was performed to examine the associations between feedback and age, status, GPA, interest in learning with computers, having access to computers and the Internet, and percentage of online components integrated into a course. Table 5 shows that there are no statistically significant correlations among any of the relationships.

Table 4. Descriptive statistics.

	<i>N</i>	<i>*Minimum</i>	<i>**Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>
Age	20	2.00	4.00	3.10	0.64
Status	20	3.00	4.00	3.35	0.49
GPA	20	2.00	4.00	3.65	0.67
Learning	20	2.00	3.00	2.85	0.37
Access	20	1.00	2.00	1.95	0.22
Percentage	20	2.00	7.00	4.10	1.52
Feedback	20	2.00	5.00	4.45	0.89

*Age 2.00=21-24 *Status 3.00=Junior *GPA 2.00=2.00-2.5 * Learning 2.00=Interested in learning with computers *Access 1.00=Having access to a personal computer * Percentage 2.00= 20% * Feedback 2.00=Disagree ** Age 4.00=>30 **Status 4.00=Senior **GPA 4.00=>3.0 ** Learning 3.00= Not interested in learning with computers ** Access 2 = having no access to a personal computer ** Percentage 7.00= 70%** Feedback 5.00=Strongly supportive

V. Discussion.

The study was intended to explore whether the students were supportive of the e-feedback provided by the instructor and how the feedback facilitated their learning. The results of the study demonstrate that the majority of the students (85%) supported the way that the feedback was offered. The students highly preferred the e-feedback offered by the instructor through the assessment process, because the instructor offered extended instruction outside of class to each student that was comparable to his or her actual learning level (Chang, 2009a, 2009b, 2009c). As the individualized coaching, e-feedback was useful and beneficial to student learning, which was recognized by Cindy, "Your comments assisted in learning." Carly and John concurred, "The instructor was very timely and helpful with her suggestions" and "The comments are helpful for learning the material." The finding was also consistent with the reports by MacDonald and Twining (2002) as well as by Orsmond and Merry (2011) that feedback helped student learning. Specifically, the instructor's e-feedback was conducive to the participants' acquisition of concepts (Berge, 1995) and to meeting objectives (Laurillard, 2002). The research result was in line with Garrison et al.'s (2000) three presences, namely, three presences (namely, teaching, social, and cognitive). That is, the instructor extended instruction through the assessment process

even when the class was not in session (teaching presence). The e-feedback was intended to deepen the students' understandings of course-related materials (cognitive presence), which transpired through e-communication that exclusively centered on the students' assignments (social presence).

The reason that the e-feedback could benefit students learning can also be reflected from Ashley's comment: "I felt it gave me the knowledge that I was on track." Sandra added, "I like to be told exactly what is wrong with what I am doing." The findings were consistent with the reports by Yang and Cornelius (2004), Young and Norgard (2006), and Zeng and Perris (2004) that the feedback enabled students to know what to improve and what to correct. Chang (2007), Chang (2009a), (2009b), (2009c); Chang and Petersen (2006), and Garrison et al. (2000) put forward that based on his or her content knowledge, an instructor was able to appropriately identify misunderstandings and offer knowledge so that students were able to enhance their own learning through corrections. The diagnoses were communicated through the instructor's feedback. And the remedial or diagnostic feedback to students' responses could advance their knowledge building (Lim & Cheah, 2003).

Table 5. Associations between feedback and other independent variables.

		Status	GPA	Learn	Access	%	Feedback
Age	Pearson Correlation	.554*	0.086	0.291	0.037	-0.065	0.287
	Sig. (2-tailed)	0.011	0.719	0.212	0.878	0.786	0.220
Status	Pearson Correlation		-0.088	0.308	0.168	0.092	0.346
	Sig. (2-tailed)		0.712	0.186	0.478	0.699	0.136
GPA	Pearson Correlation			-0.011	-0.123	-0.171	0.279
	Sig. (2-tailed)			0.964	0.606	0.472	0.234
Learning	Pearson Correlation				.546*	-0.255	0.057
	Sig. (2-tailed)				0.013	0.277	0.812
Access	Pearson Correlation					0.171	-0.146
	Sig. (2-tailed)					0.472	0.539
%	Pearson Correlation						-0.191
	Sig. (2-tailed)						0.419

*. Correlation is significant at the 0.05 level (2-tailed).

E-feedback could also provoke the students' thinking, thereby promoting their learning. Amanda and Holly confirmed, "She gave very thorough feedback that made me think about what I was doing and learning," and "I really like when I received feedback that made me rethink what I wrote and also got me to analyze something more." Garrison et al. (2000) supported the notion

that as the dialogical communication was domain-specific and context-dependent, it directed students to focus on what to think. Garrison et al. affirmed that there was a positive association between written communication and a higher order of thinking. This kind of scaffolded communication attends to learning process rather than products (ESRC Economic and Social Research Council, 2002; Siew, 2003).

The reason that the feedback was conducive to student learning was also due to its specificity and straightforwardness. In regards to the nature of specific feedback, the majority (n=17) liked the feedback that conveyed words like, “A good point.” Alisa noted, “I like to know when I have a good idea and the teacher notices it.” However, this type of feedback would be more useful when it was backed up by the instructor’s explanation, as expressed by Emily, “I like when she explains why she liked a certain point instead of just saying it was good.” Furthermore, the students perceived that it was helpful when feedback specially pointed out weaknesses, such as the APA style formatting requirement, and grammatical and mechanical errors. A student wrote, “I am continuing needing help in spelling and grammar.” And another said, “[It] help me take responsibility for my work and allow me to learn from my mistakes.”

The helpfulness of the detailed e-feedback lent itself to the improvement of students’ time-management skills. Although this was not overwhelmingly perceived as the factor for the facilitation of their learning, addressing it here would be worth the possible promising discussion in the near future. Eminia commented, “The instructor is right to the point and is concise in her feedback. It is helpful because there are about twenty other things we need to read or correct on top of hers, so it helps for time management.” Piffell and Sibley (2003) believed that feedback was tied to three components useful for effective learning. These include self-motivation, time management, and organization. In this sense, the feedback encouraged the students to reexamine their ways of managing time and organizing their learning process (Chang, in press). Equally important is the notion that individualized instruction also helped students’ writing skills, “This . . . helps me improve my writing skills” (Jennie, Spring, 2009). Admittedly, there was only one student specifically indicating the positive relationship between the e-feedback and writing skills. Further endeavors need to be taken to investigate this issue.

In exploring how feedback facilitated student learning, the notion of where the feedback ought to be posted should not be overlooked. Many students (40%) preferred the feedback placed in the margin of a paper or the specific feedback, because “It was good to have the comments at exactly where the comment was regarding the assignment—instead of at just the bottom of the assignment” (Ali) Samantha also commented, “Having the remarks on the side left on question to what you were talking about” avoided confusion as noted by Orsmond and Merry (2011). As a matter of fact, the majority of the students (78%) actually wanted to see the instructor’s feedback offered both in the margin and at the bottom of a paper. A student reasoned, “I appreciate both comments as one allows for more detailed explanation and one allows for pinpointing of small problems with work.” Sally added, “(Both) are helpful in correcting and improving work which also increase the amount of learning acquired.” It is apparent that the e-feedback placed in the margin as well as at the end of the paper served various purposes, all of which were geared toward the promotion of student learning and reducing the psychological distance between the instructor and student. The way that the e-feedback was noted might help prevent different levels of frustration from taking place and help the students know the expectations and ways to reach objectives. This kind of learning environment positively affects students’ disposition to learn (Christophel, 1990, Hall, 2002; Stipeck et al., 1998; Sheppard, 2008). And their affect for

learning is conducive to the mastery of learning (Brookfield, 1987; Hall, 2002; Pogue & Kimo, 2006).

The promptness or immediate feedback was also one of the rationales to facilitate student learning, which was consistent with Dennen's (2006) finding that a great number of the students placed immediate feedback at the top rank. Brianna noted, "This way [feedback] I knew what needed to be adjusted right away." The student's perspectives were also substantiated by Piffell and Sibley (2003) in that frequent and detailed hints (programmed feedback) were fundamental to students' significantly increasing ability to learn. Prompt feedback was not only helpful, but also enabled the students to understand the course materials (Piffell & Sibley, 2003; Song, Singleton, Hill, & Koh, 2004). Although there were only three students who provided the justifications on this theme, it by no means indicates that the participants were against immediate feedback. The reason for a lack of identification may be because the students might take for granted that feedback provided by the instructor was always received within 48 hours. Nonetheless, further investigations on this variable would be very useful.

Convenience is the third factor that the students endorsed in terms of e-feedback being conducive to their learning. Considering that most of the students currently in college are Generation Y, who are "extremely comfortable with technology" and have no real memory of life without computers, cell phones, and digital music (Rockler-Gladen, 2006), typing is preferred than writing when it comes to completing assignments. To send the completed homework directly to the instructor at any time before a deadline, all a student needs to execute is a few clicks. The instructor's responses can conveniently be received electronically and quickly as well. Reading the feedback and revising one's work according to the feedback can also happen when a student feels mentally ready or when he or she has time regardless of where he or she may be, as online communication is entirely independent of location, fostering students to become the owners of their own learning (Chang, 2009b). Ali wrote, "It all allowed me to be responsible for my own learning as well as learn from (and correct) my mistakes."

In comparison, "inconvenience" characterizes those who conveyed displeasing feelings toward the feedback. Although there were only two out of 20 students held these perceptions, it would be beneficial to discuss them here. Inconvenience, in part, included a students' inaccessibility to the Internet, "I don't have internet at home so it was difficult" (Melissa). This inaccessibility must have resulted in the student, who had to stay in a computer lab longer than others did or who had to find an alternative means to complete, submit, and revise homework. Thus, meticulous time management skills apparently became a big challenge to the student. Yet, interestingly in contrast, a participant, who did not even own a computer, strongly supported the feedback. In addition, this study confirmed the notion that there was no significant association between the support for e-feedback and the status of owning a computer. Nevertheless, this sharp contrast poses a potential future investigation opportunity.

"Inconvenience" can also be explained by what a student termed as "pickiness." From her perspective, the instructor should not have paid attention to many seemingly minor errors, such as misspellings, mechanical mistakes, grammatical mistakes, and the illogicality of a paper. But, the instructor's major focus should be placed on content, because if all these errors needed to be fixed, it would certainly be time-consuming, thereby being inconvenient. Should or should not an instructor point out "minor errors?" If not, does it imply that an instructor is supportive of the paper filled with the minor errors? Could the minor errors potentially become "major errors" that would make the instructor's review or comprehension of the content difficult? These questions indeed require further investigations.

In facilitating student learning, it appears that the way the instructor offered the feedback mostly suited older students (25 and above, $M = 3.10$, $SD = 0.64$), juniors and seniors ($M = 3.35$, $SD = 0.49$), those who held a 3.0 or better GPA ($M = 3.65$, $SD = 0.67$), and those who had easy access to a computer and the Internet ($M = 1.95$, $SD = 0.22$). However, considering there were no apparent statistically significant relationships between feedback and age, student status, and GPA, future research effort is necessary to advance the understanding by confirming the study results and/or by exploring if younger students and those who have lower GPA may be unsupportive of receiving and revising work according to e-feedback.

Although there were no statistically significant relationships between supportiveness of feedback and interest in learning with computers and a certain percentage of computer technology integrated into a course, one aspect warrants a discussion. It is understood that receiving e-feedback from the instructor and revising an assignment according to the feedback are considered computer-technology assisted learning or, in short, learning with computers. The participants were informed by the survey as well as by the researcher prior to their completion of the survey that online communications with the instructor based on the e-feedback constituted 30% of the entire course. In answering the survey question of how many percentages the students preferred to have computer technology integrated into the course, surprisingly less than 50% of the students noted that no more than 40% of the course should be computer-technology assisted or Web-enhanced. This finding demonstrates that even though the majority of the students (85%) supported the way that the instructor provided e-feedback to their work, in regard to the incorporation of computer technology into their teaching and learning, the students were willing to only increase less than 10% of computer technology in their course. Interestingly, however, most of these students (89%) claimed they were interested in learning with computer. These findings may explain that the students might not be completely ready to take charge of their own learning, as it is understood that receiving and reading feedback along with revisions according to the received feedback are all self-regulated activities, requiring reading, independent thinking, time management, and self-motivation for self-development. After experiencing the online dialogical communication with the instructor, the students might feel that the traditional face-to-face meetings were still relatively a comfortable learning means. This could be translated to the notion that these participants might prefer to travel twice to and from campus every week, irrespective of weather conditions, than simply stay put and learn with computers in “pajamas” (web-based or online course). The findings imply that, in facilitating student learning individually and electronically through the process of assessment, an instructor should take into account students’ characteristics, especially the possibility that even though students declare to be interested in learning with computers, too much expectation of independent learning with the use of computer technology may adversely affect otherwise positive affect for learning and mastery learning. For this, it may be useful to explore, as future research effort, what “learning with computer” means to students and also what are rationales behind students’ “fear” of involvement in online independent learning.

VI. Conclusion.

The study placed its focus on whether or not the students supported the way that the instructor provided feedback to their assignments and how the feedback facilitated their learning in the online component of the course. It is concluded that the way the instructor offered feedback to the students’ assignments was widely welcomed by the students. The feedback guided them

individually through the assessment process to develop an understanding of how to improve their performance, encouraged them to think at a higher level, pointed out areas that required their attention, addressed their time management skills, and helped improve their writing skills. The feedback that was provided quickly also played a major role in providing scaffolding for student learning. The students' favorable feelings toward the feedback were also due to the fact that it was convenient for the instructor and students to communicate electronically centering on submitted or revised assignments.

Although providing explanatory and diagnostic feedback is time consuming, this study demonstrates that it is worth the instructor's efforts. In Rowntree's (1987) words, feedback "is the life blood of learning (in Winter & Dye, 2003/3004). As shown by this study, the students benefited from e-feedback in many ways. This study also indicates that many students need guidance from the instructor to enhance their learning, even when it is outside of class time. Although this study just focused on e-feedback, it is acknowledged that in-person feedback would play a similar role in facilitating student learning, as pointed out by Hatziapostolou and Paraskakis (2010), "Feedback is an essential component in all learning contexts" (p. 111). Therefore, providing feedback to students' assignments that is timely, detailed, and straightforward would be beneficial to student learning.

In the facilitation of student learning via the Internet, an instructor should keep in mind that feedback offered at the end of the paper as well as in the margin of a paper with the use of New Comment are all conducive to student learning. Sometimes, it could be helpful if an instructor explains why a certain point made by a student is "a good point." If an instructor perceives that certain aspects require students' attention, a detailed explanation or reasoning is necessary. A simple notation may become a vague message to students that may result in students' frustration. Using the Track Changes feature offered by Microsoft Word would be useful for an instructor to point out errors or areas needing students' attention.

An instructor can take advantage of what course delivery system can offer by making it clear to students that assignments can be submitted whenever they believe that the quality of work is completed as long as it is done by a due date. In this way, the instructor can break a large workload into smaller manageable pieces and would have time to provide constructively useful feedback to meet the individual student's needs, hence helping the student gain knowledge or aid him or her to reach the learning objectives.

An instructor also needs to take into consideration how to approach those who may or may not be interested in learning with computers. That is, how to present what needs to be said as feedback may affect students' reception and understanding of feedback.

Research effort can be exerted to examine the length of specific feedback, as a student noted in the survey that short feedback was abrupt. This is certainly not consistent with Dennen et al.'s (2007) finding that in terms of extensive feedback, 96.9% of the faculty members ranked it first while 82.9% of the students ranked it the ninth place. An investigation may be helpful to explore this aspect. In addition, future research endeavors could also focus on whether or not feedback should strictly be targeted on content knowledge without regard to grammatical, spellings, and mechanical errors.

A limitation may be concerned with dishonesty given that the survey was the means of the data collection. However this should be lessened by the assumption that the participants should not have many reasons to be dishonest about the responses they made in the survey. After the students completed the survey, the instructor would not have a chance to teach those participants. These participants would move to Block Two (there are three blocks plus student

teaching that pre-service teachers must undergo before they receive their teaching licenses and Elementary Education Degree. Block One focuses on early childhood, namely, from pre-kindergarten to second grade, whereas Block Two and Block Three concentrate on middle childhood, intermediate grades, namely, from third grade to sixth grade). The researcher only teaches students in Block One or courses in relation to early childhood education. Therefore, the participants should not have many reasons to intentionally conceal their true insights and/or to feel discomfort in completing the survey.

The small sample size of the study may affect the conclusion of the study. The generalization of the research findings may still need to be made with caution. Yet, the results of the study should be able to stimulate promising discussions for ways to appropriately enhance student learning with e-feedback.

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