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The Use and Effectiveness of Formative Feedback Provided Via Audio Files

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THE USE AND EFFECTIVENESS OF FORMATIVE FEEDBACK PROVIDED VIA AUDIO FILES

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TABLE OF CONTENTS

Chapter One

INTRODUCTION

Statement of the Problem

Researchers have investigated the effect of feedback on student performance, and found that students identified feedback as a valuable tool for learning (Weaver, 2006) and used feedback for self-evaluation and improvement (Hounsell, et. al. 2005). Feedback that provided information on improving grades and applying knowledge in the future was also identified as effective by Poulos and Mahony (2008). Students who received elaborate feedback on their work benefited more than students who received general feedback (Chase & Houmanfar, 2009).

Teachers have been challenged to balance the need for quality feedback with their available resources. Time constraints and increased class enrollments were factors that limited the ability of teachers to provide individualized comments that teach rather than correct, and lead to the use of accuracy feedback- feedback that determines correctness, or provides generalized corrections with incomplete or unclear instructions for improvement. Technology in the classroom has provided tools that capitalize on the resources of teachers. The use of technology maximized teacher time, and provided methods of higher efficiency. Teachers were able to utilize technology to provide individual, formative feedback to students that referenced instructional material, guided students in correcting their mistakes and applying knowledge, or provided details that explained problems with student reasoning. The purpose of this study was to examine the perceptions of students and teachers regarding the use and effectiveness of individual,

formative feedback digitally recorded by teachers and sent to students' school computer accounts for retrieval.

Significance of the Study

Assisting students in the development of subject area comprehension, critical thinking skills, and real world application of skills have become goals of education. The ability of teachers to effectively provide this service was a concern that lead to this study. The development of methods of instruction that engage students in reflection, revision of work, and academic growth has become an important factor in improving student learning.

Fletcher (1994) suggested that teachers could improve instruction by making curriculum adjustments based on interaction with students. Participating staff were able to use student journals to gauge the effectiveness of the feedback they provided, and make adjustments to meet the needs of students. Teachers benefited from this investigation by evaluating their previous feedback habits, exploring the use of a new method of assessment, and reflecting on the impact of the assessment and feedback procedures utilized in their classrooms. Students learned to use feedback as a tool for improving their learning and internalizing content. The formative feedback they received from staff allowed them to focus on areas of weakness as they revised their work. The school that sought to increase the quality of education it provided for students analyzed the usefulness of feedback as a mode of increasing student learning. The results of this study lead to reflective teaching practices and the development of evaluation tools and methods that encouraged the engagement of students for improved learning.

Chase and Houmanfar (2009) investigated the impact of basic or elaborate feedback on student work. Harper (2009) utilized digital oral feedback files to provide feedback, and examined its' impact on student motivation and feelings of competence. Merry and Orsmond (2008) studied student attitudes toward the use of audio files to provide feedback, and examined how students used these files to further their learning. Bevan, Badge, Cann, Wilmott, & Scott (2008) compared the perceptions of staff and students regarding feedback. These studies were conducted at the university level. This study sought to build on previous research and expand it by applying to the high school setting. Audio feedback files containing digital voice recordings of teacher comments were used to provide formative feedback, specifically designed to reference student work, and provide individual instruction that guided students in correcting their mistakes and applying knowledge, or providing details that explained problems in student reasoning. The perceptions of staff and students regarding the use and effectiveness of this format were evaluated.

Question to be Investigated

1. What were the perceptions of students and teachers regarding the use of individual, formative feedback delivered via audio files?
2. What were the perceptions of students and teachers regarding the effectiveness of individual, formative feedback delivered via audio files?

Definition of Terms

1. Accuracy feedback- feedback that assessed student work and indicated if the response was correct, or provided the correct answer.
2. Audacity- sound editing software.
3. Audio feedback- feedback provided to students via digital audio files.
4. Formative Feedback- feedback that referenced instructional material, guided students in correcting their mistakes and applying knowledge, or provided details that explained problems in student reasoning.
5. Smart Recorder- audio and screen capture software.
6. Technological Skills- the ability to meaningfully interact with technology and technology applications.
7. Technology- Equipment such as computers, cameras, recorders, and projectors.
8. Technology applications- Network drives, web pages, recording programs, word processing, and other applications that use technology to create, share, organize, and store data.

Assumptions of the Study

1. Students and teachers in the sample had sufficient technological skills to work comfortably with formative audio feedback files.
2. Survey, focus group, and interview participants provided honest, thoughtful responses.
3. Participants in the research were open to investigating the impact of formative feedback delivered via audio files, and participated to the best of their ability.
4. Self-reports of students and teacher perceptions of the effectiveness of formative audio feedback files accurately measured the effectiveness of the feedback.

Limitations

1. The sample was highly specialized and limited the generalizability of the study.
2. The degree to which the research question could be studied was limited by the resources available to the researcher.
3. Researcher developed surveys used in the study did not have established measures of validity or reliability.

Delimitations

1. Convenience sampling was used.
2. Multiple sources of evidence were collected to determine conclusions.
3. Achievement levels between classes were not equivalent.

Chapter Two

RELATED RESEARCH AND LITERATURE

Research has recognized the importance of feedback in assessing and promoting deep learning, and has sought to explore applications of this tool (Ayala et al., 2008; Huxham 2007; Smits, Boon, Sluijsmans, & van Gog 2008), while commentaries have addressed its potential impact on student achievement (Rotheram, 2007; Rushton, 2005; Shepard, 2009). Gibbs and Simpson (2005) viewed assessment as the most opportune channel for improving teaching and identified ten conditions of effective assessment that support learning, six of which related to feedback. Feedback has been identified as a critical component of developing and carrying out assessment. (Fowell, Southgate, & Bligh, 1999). Taras (2002) called for more involvement of students in the assessment process and noted that assessment and feedback are the central element of learning and validation, while Montgomery and Baker (2007) felt that teacher reflection to improve the transferability of feedback to other assignments would lead to improved learning and Lee (2008) argued that teachers should consider the perceptions and attitudes of learners when providing feedback, in an effort to encourage meaningful student interaction with feedback.

In their meta- analysis of studies on assessment and classroom learning, Black and William (1998) defined formative assessment as "activities undertaken by teachers and/or their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged." Elements of formative assessment have been linked to effective student learning (Marsh, 2009) and McMillan (2000) argues that the essential element of formative assessment is an understanding

fundamental assessment ideas and their ability to enhance teacher effectiveness and student learning. Leahy, Lyon, Thompson, & William (2005) argued that effective feedback must initiate thinking, and feedback that focuses on how students can improve lead to student ownership of learning while Nicol and MacFarlane-Dick (2005) identified student reflection and response to feedback a trigger that moved learners from passive to proactive. Clearly stated goals and success criteria, student support structures, focused time on the learning process of a task, and dedicated time for feedback were found to improve student understanding in the creation of a final product (Allen, Ort, & Schmidt, 2009) while Boston (2002) noted learning that was accompanied by feedback that was specific about errors and suggestions for improvement engaged thoughtful responses from students. Carless (2007) argued for pre-emptive feedback, that highlighted prior knowledge at the beginning of a learning task and promoted individual student response to new knowledge as the learning task progressed. Constructivist approaches to education recognize the importance of developing student understanding through reflection and experience- providing effective feedback meets this need.

Whitington, Glover, & Harley (2004) described feedback as a process that provides information regarding the study process and achievement of learning goals, and facilitates learning. Students that received specific advice from an advisor on planning the development of their learning skills experienced higher levels of achievement in career training (Kicken, Brand-Gruwel, van Merrienboer, & Slot, 2009). Students felt more prepared for instruction in clinical settings after they received formative feedback in the classroom (Duers & Brown, 2009) and perceived greater retention of knowledge from formative rather than summative experiences. Joughin (2004) identified student

participation with feedback as vital to its effectiveness. Timely delivery of feedback that contained clear expectations and instructions for student interaction allowed for this student participation. Feedback played a role in improving student performance when they used feedback to improve the quality of their work (Freestone, 2008).

The tone of feedback impacted student performance. Coursework scores were higher for students that received positive feedback for correct responses and encouragement for incorrect responses than those of students who received neutral responses (Economides, 2009). Lizzio and Wilson (2008) found that students reported hopeful and encouraging comments as the major factor that motivated them to persist with their efforts when they performed below their expectation. Stiggins and Chappuis (2005) found that involving students in ongoing formative assessment encouraged confidence and excited students about their learning potential. Students that received formative feedback in Harper's study (2009) reported increased motivation and feelings of competence, while Chur- Hansen and Koopowitz (2005) found students identified practical learning gains as a result of formative assessment, and also noted improved confidence levels and feelings of reassurance about their progress as a result of formative feedback. Students that received elaborate feedback perceived the feedback as more effective than students who received basic feedback (Kicken, et al., 2009). Chappuis (2005) noted that by using formative practices in the classroom, students were prompted to embrace learning and take ownership of their success while Boud and Falchikov (2006) promoted formative assessment that addressed the immediate needs of learning for a current class and course of study as well as the need to contribute to perspective

learning as a means of changing the disposition of students to encourage life long learning.

Many students recognized the importance of formative feedback while identifying shortcomings that often occurred, creating barriers to effective feedback. Qualitative research conducted by Weaver (2006) identified feedback on written work that was too general or vague and feedback with a lack of guidance as two categories of student dissatisfaction with feedback. Zacharias (2007) noted these concerns as well as a student preference for oral feedback that could be justified through discussion, and expanded to explain how to adjust reasoning to make necessary revisions. Students in Duers and Brown's (2009) study noted that written feedback was often difficult to read and used terminology that was difficult to understand, and preferred oral communication that was more detailed. According to Higgins (2000) the feedback process was often filled with miscommunication between students and staff, as participants worked through the emotions and struggles of giving and receiving feedback. Differences in student and teacher perceptions of the detail and usefulness of feedback, as well as student concerns with the lack of transferability of given feedback to other learning tasks were concerns that surfaced in Carless' (2006) study. These concerns were identified as components of the guidance feedback loop proposed by Hounsell, McCune, Hounsell, and Litjens (2006) that could lead to a breakdown in the effectiveness of feedback if not adequately addressed. Another component of the guidance feedback loop concerned the learner's prior experience with an assignment type, and the role of guidance to meet the basic needs of the novice learner, such as identifying assessment criteria. More sophisticated learners required higher quality feedback than their novice counterparts, and looked for

feedback to assist them in learning to apply and transfer the assessed skill. Scott, Badge, and Cann (2009) found that second year university students experienced lower levels of satisfaction with provided feedback than their first year counterparts, specifically in the area of generalizability of feedback to other assessments. Smith and Gorard (2005) worked with high school students, and found that their treatment group that received comments rather than grades on assessed work cited difficulty in understanding and interpreting comments to gauge their progress. Other barriers to formative feedback were identified when Gibbs and Simpson (2005) and Whitington, Glover, and Harley (2004) noted large class sizes and time constraints of teachers as factors that prevented effective feedback, while Higgins (2000) theorized that students' work load might prevent them from properly utilizing feedback.

Although Denton, Madden, Roberts & Rowe (2008) had similar observations regarding the barriers to providing effective feedback teachers encountered, their study found that the use of technology could aid teachers in overcoming these obstacles to providing effective feedback. Jenkins (2004-05) explored methods of using information and communication technology to assist instructors in providing effective feedback and fulfilling the promise of formative assessment. Yakura (2009) studied the use of videotaped feedback to provide quality assessment to students, and noted that while the video captured classroom interactions, proper interpretation of the feedback was time intensive and required learners to develop skills beyond simple observation to benefit fully. Heinrich (2004) proposed the use of banks of assessed student work as models for future students, as well as the development of group collaboration and peer evaluation communities to engage students in reflecting thinking on assignments. Dippold (2009)

evaluated the usefulness of blogs as a tool for teaching and learning by incorporating peer and teacher feedback in one format, but found several aspects of the blog format were difficult to manage and maintain focus on learning goals. While several studies pointed to the benefits of technology as a tool for improving student assessment and the development of thinking and revising skills, Ravitz (2002) cautioned against the use of computer programs that rely on rudimentary skills rather than promote teaching and learning.

Several studies that used digital recordings of verbal feedback found that students and teachers benefited from the quality of the feedback provided (Blackmore, 2006; Harper, 2009; Merry & Orsmond, 2008). Oral feedback delivered electronically was viewed as beneficial by students, who found they were able to interact with the feedback at their convenience and as often as they needed, and were able to gain deeper insight into the feedback by interpreting the tone of voice and verbal emphasis of the comments, while the instructor found that the process allowed for more quality detailed feedback in a shorter period of time (McCormack & Taylor, 2006).

Chapter Three

PROCEDURES FOR THE STUDY

Subject Case

This study was conducted at a secondary career technical school with a population of 750 students in southwest Ohio. Participants in this case were unique in their ability to work with technology. The learning environment was saturated with daily use of technology; in most classes, lessons were delivered, student work was compiled, and completed assignments were submitted using technology, and communication among staff, students, and parents was achieved through the use of technology. The school had integrated technology into the classroom by investing in equipment and training. Websites for each instructor, on-line parent and student access to grades, full wireless access across campus, LCD projectors in all classrooms, and other equipment as requested by staff, including scanners, portable document cameras, smart boards, digital cameras and video recorders, and other electronic equipment, had been available since the 2004-2005 school year. Staff training sessions were conducted each year, teams attended technology conferences, and technology coaches were made available to staff as needed for individual assistance. Students were provided with three sessions of computer training during new student orientation the first week of the school.

Students were issued a laptop computer, given an email account through the school, and provided with space on the school's internet server to securely store work. Teachers were also provided with laptop computers and access to personal space on the school server. By logging on to the school's network, students and staff were able to access a drop box. The drop box area was established by teachers, with one folder

assigned for each student in the class. Students completed assignments on their computers, and submitted them electronically to their folder in the drop box. Staff accessed the work of students by opening the drop box file, evaluated the work and provided formative feedback, then saved their comments to the student folders. Instructor feedback was retrieved by the students from the drop box folders.

During this time of technology implementation, student enrollment increased yearly, while staff size reduced due to attrition and reassignment, resulting in increased class sizes. Many staff members began to rely heavily on technology resources offered by the school to manage the increased class sizes that resulted. This lead to students who were exposed to technology in various forms several times throughout the school day, and who were able to refine their personal skills in the use of technology to advanced levels. The district participated in the High Schools That Work Initiative (HSTW), and focused on providing rigorous curriculum to students that integrated technology across the curriculum. Teachers sought methods to promote learning, encourage high level thinking to meet the goals of HSTW, provide quality instruction to meet the needs of individual learners while balancing the demands of increased class sizes, and focused on reflection for continuous improvement.

Subjects

Participants in the study were a convenience sample of 11th and 12th grade students enrolled in the school, and academic teachers with previous experience at the school. The unique fabric of a career technical setting, which includes the merging of several school cultures, an emphasis on career training and industry recognized

certification across the curriculum, and the extensive use of technology by staff and students, were factors that prompted the use of a single site case study.

Instrumentation

Multiple data sources were collected from students and staff. Students were surveyed about feedback before the treatment period, and near its conclusion. They also responded to writing prompts, and participated in focus group discussions. Teachers completed feedback surveys, provided notes about feedback, and participated in interviews. Triangulation of data sources was based on thematic units that emerged as the data was analyzed.

A Likert-type survey was administered to students and staff prior to treatment to identify their initial perceptions of feedback. During the treatment period students responded to writing prompts about the feedback process, and teachers kept a journal of their observations and experiences. Both groups then completed an exit survey. At the conclusion of treatment student focus groups and teacher interviews were conducted to determine the specific aspects of formative feedback that were deemed beneficial or detrimental, and to reflect on changes that could be made to improve the effectiveness of audio feedback files. Researcher observations were used as an informal data source.

Procedures

Prior to treatment, participating staff installed "Audacity" and "Smart Recorder" software, used to record the audio feedback files, on their computers, and created student drop boxes. During the treatment period, staff focused on providing verbal formative

feedback to students, which was digitally recorded and delivered to student folders on the school's common drive. Weekly meetings that reviewed the treatment guidelines were held with participating staff to focus participants on the key principals of formative feedback and promote internal validity of findings. Journals were used by staff to record their experiences while providing formative audio feedback, and their observations on the impact on student learning in their classrooms. Journal entries and weekly informal meetings with teachers were used to shape the teacher interview protocol. After the treatment period, teacher interviews were conducted to gain insight into the teacher observations of the treatment, to learn details of individual classroom environments that prompted their remarks, and to probe the student outcomes that occurred when this method was used.

Students were surveyed prior to treatment to determine their initial beliefs regarding the purpose of feedback, and to survey the ways that students currently utilized teacher feedback. The survey results were evaluated, and used to develop the student focus group protocol. During treatment, students completed class assignments and received formative feedback, which referenced instructional material, guided them in correcting their mistakes and applying knowledge, or provided details that explained problems in their reasoning. The formative feedback was electronically recorded by teachers, and delivered via audio file to individual student drop box folders, located on the school's common drive. Students responded to writing prompts in class during the treatment period, recording their impressions of the treatment.

After interacting with the audio feedback files, the students completed a second feedback survey. A convenience sample of students participated in focus group

discussion of the treatment to evaluate the perceived impact of the formative feedback. Focus group protocol was developed after analysis of the results of the surveys and writing prompt responses, and was designed to gain further insight into survey trends and writing prompt responses.

Descriptive statistics were used to evaluate responses to the staff and student surveys. Responses were tallied, entered into a spreadsheet, and converted to percentages to analyze trends. Results of student perceptions of the effectiveness of the formative feedback files and their self-reported use of the feedback files were correlated. Student journal responses were evaluated to determine major themes, and then assigned to thematic groups and tabulated. Focus group responses, teacher interviews, and teacher reflections were also evaluated and characterized into themes with this procedure. Researcher observations were categorized and analyses of these data sources were triangulated to determine the student and staff perceptions of the use and effectiveness of formative feedback delivered via audio file.

Chapter Four

ANALYSIS OF THE DATA

A source by source format was used in analyzing and discussing the data collected during the study, due to the multiple sources of evidence that were investigated. Data were collected from students, teachers, and review of literature; student sources included journal entries, focus group interviews, and initial and exit feedback surveys, and teacher sources included journal entries, anecdotal observations, and interviews. Each data source was individually analyzed to determine major themes, and the themes from the sources were then compared to triangulate commonalities regarding the research questions of use and effectiveness of formative feedback provided via audio files.

Students were given five writing prompts to complete throughout the study. These writing prompts explored types of feedback, response to feedback, positive and negative feedback, individual and group feedback, and use of feedback. Analysis of writing prompts was based on thematic units derived by the researcher, which were tallied and converted to percentages. The first writing prompt asked students to name types of feedback and describe how the feedback helped them learn. Two main categories emerged- 35 % of students identified comments on graded work as an important method of feedback, and 39% identified feedback that was formative and individual, including messages and meetings, and feedback through audio files, as important. When asked to identify ways feedback helped them learn 36% of students noted that feedback helped correct errors in learning. Responses by 67% of students mentioned formative feedback that was specific in addressing their errors, encouraging and motivating, and easily utilized, due to its clarity and accessibility, as helpful in

learning. The second writing prompt asked students to describe positive and negative feedback scenarios and discuss their responses to them. The majority of student responses were unclear, incomplete, or did not address the intended question. A follow-up journal question was created to focus students' responses on positive and negative feedback. For this third writing prompt, students were asked to discuss the benefits of positive feedback, which focused on strengths of student work, and negative feedback, which identified areas of student weakness, and select which tone of feedback they preferred. Happiness, focus, and confidence were reported as motivating benefits of positive feedback by 59% of respondents, while only 21% associated motivation to improve with negative feedback. Positive feedback was cited by 21% of students, who indicated that the feedback helped them identify areas of incompetence, while 71% felt that negative feedback helped them recognize and improve areas of incompetence. Student comments revealed a slight preference for negative feedback, which quickly pinpointed skills that needed improvement, but adequate details in feedback which explained how students could improve were more important than the positive or negative perspective of the assessment. The fourth writing prompt asked students to describe their responses when feedback was given to a large group or to individuals. Student identified review or discussion of assignments as a method of feedback that was provided to the entire class in 47% of the responses, and 40% identified discussion of examples as methods of feedback given to an entire class. Written comments on assignments as a method of individual feedback was identified by 25% of respondents, and 67% of responses identified formative and individual methods of feedback, including messages and meetings, and feedback through audio files, as a method of feedback that was

provided to individuals. Responses of 40% of the students indicated that they revised their work as a result of feedback provided to an entire class, while 80% of responses indicated that students revised their work as a result of individual feedback. The fifth writing prompt asked students to describe their involvement with assignments after they had been graded, and to discuss the purpose of feedback. When asked to select their level of involvement with feedback received on returned assignments, 7% did not view feedback, 52% of students read their feedback, and 41% used feedback to revise their work. The vast majority of students, 98%, cited improved understanding or correction of errors as the purpose of feedback. While 89% of students felt their teachers used feedback for the same purpose, 22% thought that their peers did not understand the importance of feedback and did not use it for the same purpose.

Interview questions were based on four themes: types of feedback, usefulness of feedback, effectiveness of feedback, and the role of feedback in learning. Five students participated in a pilot group to refine interview protocols. Twenty- two students participated in three focus group interviews. The first segment of the interview questions discussed types of feedback that teachers utilized, and student responses to the feedback. The questions were designed to ensure that the members of each focus group, who were formed combining students from the three participating teachers, shared a common awareness of types of feedback as well as a broad exposure to ways that feedback in general was beneficial to learning. Students described several feedback scenarios, including comments on work, notes, grades, class discussions, and individual meetings or individual messages, and why they liked each type of feedback. The next interview questions aimed to gauge student perceptions of the usefulness of formative audio

feedback files. Students were asked to list and explain the benefits of these files, describe how they were utilized. Benefits of audio files included clarity and improved understanding. Students found that written comments were often difficult to read, and were sometimes lacking detail and hard to interpret, but verbal feedback was more complete and easy to understand. Students also recognized that they could achieve a greater depth of understanding by listening to the tone and emphasis of the speaker. Students found that using audio feedback saved study time; they commented that written feedback often had to be read over and over to interpret its meaning, but audio feedback was clear the first time it was heard. Written feedback was more difficult to understand if students did not understand symbols or abbreviations that the teacher used, and some students found it difficult to pair feedback written in the margins of the page with the incorrect portion of their work. Students noted that the individualized nature of the formative audio feedback files was useful for identifying and correcting misinformation. The files identified specific problems in student reasoning, and the audio file could be used at the student's convenience- in a setting away from distractions, most suited to their learning style. The audio file format also allowed students to utilize the instruction as often as needed until a concept was mastered. Students felt that asking the same question repeatedly irritated teachers, who assumed that a student was not paying attention if they repeated a question. Students moved at their own pace when utilizing the audio file format by pausing the recording as needed and repeating the recording for deeper understanding. Because of these characteristics, students found that the feedback could be useful for future learning, even if it was received at the conclusion of an assignment. The third section of the interviews focused on the effectiveness of formative audio

feedback files in improving learning. An aspect of the audio feedback files which assisted students in deeper learning was the step by step nature of directions offered, which helped students identify and correct errors as they revised their work. The audio files offered more details on how submitted work did not match correct procedures than other forms of feedback. Students envisioned using audio feedback files in other classes, and described learning scenarios with the audio files that could occur. Some of the effectiveness of the files came from an increased level of student engagement. Students felt motivated by the time and interest shown by the teachers in providing individual audio files, and spent time using them to revise work and study for tests. They reported that too many comments on a paper, even if they were positive, could be discouraging, but feedback files were always appreciated, even the negative comments. The final segment of the interview questions asked students to reflect on the role of feedback in learning. Students reported that they learned more when they used formative audio files. They found that after exposure to the use of audio feedback files, they recognized how that feedback could help them improve their understanding. Students also expressed a preference for individual feedback designed to specifically help with their areas of misunderstanding. Some students reported greater attention to all forms of feedback, but felt that their classmates were not mature enough to recognize the importance of feedback for learning. Generally, students recognized the value of audio feedback files in learning, and preferred those files to other feedback.

Eighty-two students participated in the initial survey, which was adapted from the Assessment Experience Questionnaire (Gibbs & Simpson, 2003). Twenty survey questions involved five categories, including respondent demographics,

assignments and learning, quantity and timing of feedback, quality of feedback, and student use of feedback. The feedback exit survey, with seventy-eight participants, was based on the same categories but focused specifically on audio feedback files. Grade 12 students comprised 70% of the treatment population; the remaining 30% were grade 11, with 75% female participants. Questions that focused on assignments and learning showed that students attributed academic success to the use of audio feedback files; 54% of respondents agreed or strongly agreed that that they learned more when using audio feedback files, and 45% felt that using audio feedback files helped them improve their grades. Quality and timing of feedback questions showed a change in student views regarding feedback. On the initial feedback survey, 72% of students agreed or strongly agreed that they did not receive much guidance on addressing wrong answers or misunderstood information. After treatment with audio files, 61% of students agreed that audio feedback files helped them correct their work. There was a 21% decrease in the number of students that reported feedback came too late to use for learning. The mean response increased by 0.45 to the statement "I would learn more if I received more feedback," but a two tailed independent t- test did not reveal a statistical significance to these measures. Student responses to items that measured the quality of feedback showed that 58% of students agreed or strongly agreed that audio feedback files helped them understand better, and 55% of students agreed or strongly agreed that audio feedback files showed them how to improve on subsequent assignments. Students reported greater understanding when using audio feedback files; the number of students who disagreed or strongly disagreed agreed that they did not understand the feedback they received increased by 22% when students were asked about audio feedback files rather than

feedback in general. Respondents indicated a growing awareness in the transferability of feedback from audio files to future learning- mean response of students replying to the statement "audio feedback files did not help me in completing future assignments" dropped by 0.51. Analysis of this measure did not indicate a statistically significant change in student responses from initial to exit surveys.

Three participating teachers were asked to respond to writing prompts that mirrored the topics in the student journal questions: types of feedback, positive and negative feedback, individual and group feedback, and use of feedback. The first writing prompt asked teachers to describe the types of feedback used in their classrooms. All teachers reported verbal feedback in class as a primary method of providing feedback; two used written feedback on individual work in conjunction with the verbal feedback. The teacher that primarily used verbal feedback in class tended to use summative feedback and rely on test scores to evaluate the effectiveness of feedback, teachers who used of formative feedback in the development of lessons based the evaluation of learning on student progress throughout a unit. Teachers reported the use of individual conferences with students to discuss changes needed to improve work; the effectiveness of feedback was measured by the change between draft and final copies of assignments, as well as application of skills on future assignments. The use of written comments and whole class discussions to provide feedback to students and the allotment of class time for students to revise their work and submit corrections was reported. Corrections of work were used to determine the effectiveness of feedback on improving learning. In the second writing prompt, teachers were asked to discuss the use of individual and group feedback in their classes, and to report their use of positive and negative feedback, and

the perceived impact on learning from each. Equal use of positive and negative feedback was reported once; the teacher tended to use the same methods for delivering positive and negative feedback, and used both positive and negative feedback with groups or individuals. She relied heavily on formative feedback for both positive and negative feedback, and noted that the scheduling of time and setting to deliver this feedback varied rather than the time requirement itself; but felt that the determining factor in deciding if positive or negative feedback should be used was the type of unit lesson covered. Other teachers tended to use some positive feedback, but relied more heavily on negative feedback. For these teachers, positive feedback tended to be verbal and given to an entire class, while negative feedback seemed to be focused on individuals, and was often recorded on graded homework assignments. While only one of these teachers tended to use formative feedback as part of her lessons, both noted that positive feedback to individuals was often summative in nature and appeared on tests or other finished projects. Both teachers reported that negative feedback tended to take more time and planning to produce. In the final writing prompt teachers described the role of feedback and student use of feedback. The three respondents agreed that the purpose of feedback was to re-teach areas of student error and refine student understanding. The teachers that relied on formative feedback in their lessons found that students attended to feedback, and often engaged it to correct mistakes and refine their understanding. Conversely, the teacher that tended to use summative feedback found that students were only interested in their grade.

Teachers were interviewed to discuss the impressions they had recorded during the treatment period, along with their experiences in providing audio feedback files and

their perceptions of the effectiveness of those files on student learning. Technology issues were a concern for the three teachers. Each teacher experienced problems with student access to the school network, which kept them from accessing their personal files and receiving feedback. Some of these problems stemmed from the school's network and others came from students who were new to using drop boxes and unfamiliar with the proper procedures for accessing them. Teachers also reported some scheduling concerns with the audio feedback files; a quiet place and a dedicated block of time were needed to record the audio files; additional time had to be set aside on the school's campus to transfer files to the school's network. The teacher who provided two feedback files found that not all of students utilized the files; the most attentive students did not use the audio files, they had already developed methods to correct their errors from regular class lessons and the least attentive students did not exert the extra effort to improve their understanding. Although the teachers reported hurdles in technology and time management, they also reported benefits in providing formative audio feedback files. Teachers reported that students who struggled with weak background skills or took more time to absorb material utilized the audio feedback files repeatedly, and showed significant improvement. The ability to record audio was beneficial to solving step by step problems, and this procedure was used to create sample problem files which were posted on a teacher web page for student use. The teacher who relied most heavily on providing written formative feedback provided three audio feedback files and found her students most appreciative of the ability to interpret the tone of voice used to record the audio files. Recording formative audio feedback files helped speed up the process of providing formative feedback when students had trouble reading teacher writing; it faster

to record comments than to take the time to clearly write on student papers. Audio feedback files were used to make better use of teacher time when teachers were able to give more detailed information when speaking than when writing for the same amount of time. The ability to record thoughts in private rather than during an interview with class present was a reported benefit that allowed greater freedom to provide criticism and express disappointment in a student's effort, when needed. The teacher who provided six feedback files found that student use of the feedback files grew over time. Many students did not complete assignments for the first two treatments, and only a small portion of the class received the audio feedback files. An in-class assignment was used for audio file assessment, and then the next class day time was devoted to using the files to correct work. After students experienced success with these revisions, they began to use feedback to improve their work on a regular basis, and the earned an average chapter test score 9% higher than students who did not receive treatment. Teacher reflection lead to a greater awareness of the role of feedback in teaching, and the need to instruct students in the proper use of feedback. All teachers reported increased student success, and valued the potential impact on learning from formative audio files to the point that they had begun to develop methods of adapting their use to overcome the time constraints associated with the files, so that they may be utilized in the future. Teachers indicated students embraced audio feedback files and asked for additional files, offered suggestions for improving their usefulness, and shared their success from the files with people outside of the study. Two teachers from the building heard student reports of the effectiveness of the audio feedback files, and have expressed interest in learning the procedure.

Triangulation of these evidence sources is reported in chapter five.

Chapter Five

SUMMARY OF FINDINGS

Summary of Findings

Triangulation of student journal responses, focus group interviews, and initial and exit surveys, as well as teacher journal responses, anecdotal evidence debriefings, and interviews revealed student and teacher perceptions of formative feedback delivered via audio file in this single site case study.

Audio feedback files were found to be useful due to their clarity, utility, individuality. Student and interviews and journals revealed frustration with reading and interpreting written feedback, which was often sloppy, incomplete, and difficult to interpret. Students found audio feedback files eliminated the need to read written explanations over and over to interpret their meaning, and that the teacher emphasis and tone of voice on the audio file helped them understand the intent of the feedback. Teachers reached similar conclusions, which were supported by anecdotal evidence and responses to interview questions. They found it easer to provide clear instructions on the audio files, without the worry of writing neatly or limiting their words due to time and space constraints, and were less restrained in the content of their feedback, since students could listen to criticism in privacy without fear of embarrassment. Students noted in interviews, and teachers reported as anecdotal evidence, that the ability to use feedback files at their own pace, pausing as needed or even repeating them, made them useful for learning. Students perceived teacher irritation and dismissal of their effort in class if they asked for material to be repeated over and over. The ability to use feedback files as often as needed, and away from distractions at times that fit their schedules were identified

benefits. Student journals and interviews revealed the preference for individualized details provided in the audio feedback files. The percentage of students who reported correcting or revising their work based on feedback doubled when audio files were utilized, and students attributed this to the attention paid to their individual learning needs. Teachers reported anecdotal evidence that also supported this view; during the treatment period, students identified success with the personalization of feedback on the feedback files, which led them step by step through the correct procedures for completing work.

The effectiveness of audio feedback files emerged in the categories of providing motivation, improving understanding of content, and increasing student awareness and appreciation of feedback. Student journals and interviews revealed feelings of importance, happiness, and encouragement when students realized the extra efforts of teachers to create the audio files. Their response was to reciprocate by putting extra effort of their own into working and learning. Teacher anecdotes revealed students began to request audio feedback files after encountering difficulties on homework assignments, and in preparation for quizzes; they also wanted feedback more quickly, to see their mistakes and learn from them. Student surveys along with teacher interviews and anecdotes supported the effectiveness of audio feedback files in improving student understanding of work. Student averages on homework and tests were higher for the treatment group, who received audio feedback files, than their counterparts who did not. Survey responses of over half of the students agreed that feedback helped students correct their mistakes and learn to do better on future assignments. The same portion of students reported that feedback helped improve understanding and helped them to learn more, and

helped to improve their grades. Audio feedback files were also effective in promoting student awareness of feedback and appreciation of its use in learning. During interviews, students were able to describe how formative feedback delivered via audio file would be beneficial in other classes. Student journal responses indicated an increase in student engagement with feedback; 93% of students listened to audio feedback files to understand their mistakes or make revisions to their work. The percentage of students that reported feedback did not help them learn dropped 30% from the initial survey to the exit survey. Teachers noted in their interview session that they observed involved student interaction with audio feedback files, as well as increased involvement with other forms of feedback. Anecdotal evidence supplied by the teachers also supported the effectiveness of audio feedback files in increasing student appreciation of feedback. Teachers reported that their attention to the role of feedback in instruction was increased during the study, and the positive implication of this awareness was increased reflection on providing instruction in guiding students to use feedback to bridge gaps in their understanding, which led to more effective teaching and learning. Participating teachers were approached by other staff members who inquired about training in the use of audio feedback files in their classes; students of these staff members had reported how the feedback in the audio files benefited them, and the staff members wanted to see similar results in their own classes.

Conclusions

Student awareness of feedback was initially measured by survey, journal response, and teacher observation. Additional observations from students, journal

responses from students and teachers, student exit survey, and interviews with students and teachers showed that audio files were a useful method of learning, and were effective in promoting student understanding. Analysis of the emerging themes from these data sources indicated the characteristics of audio file feedback that were most recognized as beneficial.

Students responded to the personal nature of individual audio feedback files. The clear directions for improving were easy to follow, as the frustration of interpreting traditional written or whole class feedback was removed. The ability to use audio feedback files at a student determined pace and as often as needed led to increased student use and satisfaction and subsequent understanding of the content. Students were motivated to work hard in response to the effort teachers put forth for them as individuals. The increased engagement of students with feedback lead to improved understanding of the course material that feedback addressed, and developed in the students an awareness of the importance of using all types of feedback for learning. Applying the process of learning from audio feedback files to other types of feedback created more efficient and independent learners.

Teachers also enjoyed benefits from using audio feedback files. They were able to provide greater depth and detail in feedback by using verbal expression, and to emphasize critical information to enhance student recognition of its importance. Teachers were able to use both positive and negative feedback more freely, and felt more secure in providing personal information in individual recording than they felt in giving that type of feedback in a conference or open discussion held in the classroom. Student responses

to feedback lead to a focus on learning from work and feedback, and applying that knowledge to future assignments.

Implications

The role of feedback in the learning process is well documented and often utilized by teachers, but not to its full potential. The correct use of this learning tool has the ability to dramatically impact students. Beyond the simple inclusion of feedback as a part of a lesson or instructional unit, care should be taken to ensure that it is implemented as a method of expanding understanding rather than a summary mode of reporting student understanding.

Including feedback as a dedicated part of every lesson could be viewed as an adequate measure of ensuring thorough instruction. Appropriate use of feedback, however, is a much more challenging endeavor. Feedback cannot reach its full potential unless it is first recognized and then utilized. Student awareness of feedback must be taught, the ability to implement it as a scaffolding strategy to reach higher levels if understanding must be cultured through careful attention and planning. Engaging feedback and acting on it to construct new knowledge are skills that students must practice. Teachers must be knowledgeable about providing useful feedback, and should understand how to incorporate it into classroom practices for it to be effective.

Useful feedback should engage student interest to promote further learning. It should include specific information about strengths and weaknesses in student work and provide details that explain how those strengths can be capitalized and weaknesses improved. Attention to individual learner needs encourages students to attend to

feedback instruction. Feedback should be straightforward- that which is sloppy or difficult to read and interpret will not encourage student interaction and will not play a role in learning.

Feedback that contains these characteristics is not guaranteed to be effective. Teachers must create a classroom environment that incorporates attention to feedback and revision of work into its daily operations. Feedback should be given to students often and in a timely manner so that it can be internalized and then redirected toward learning goals. Students should be provided with opportunities for students to engage feedback and revise their work to improve their understanding, so they become adept at using feedback to its full potential.

Recommendations and Future Research

Exploration of strategies high performing students employ to utilize of feedback would benefit teachers and students. Teachers reported anecdotal observations during interviews and noted that many top students did not utilize the audio feedback files they were given because they had mastered the material through other methods. Conversely, it was noted that struggling students, especially those without a rigorous course background found striking success when using the audio feedback files. Insight into the differences in practice between those who experienced growth while using the audio files and those who did not utilize them but still reached high levels of achievement would shed light on skill sets teachers need to address in remediating lower performing students and expose strategies currently utilized by high performing students that teachers could promote.

Although teachers and students widely reported positive results from the use of formative feedback delivered via audio files, there were some drawbacks that should be addressed to make this a viable option of providing additional instruction on a regular basis. To produce the highly individualized, detail rich feedback that students responded to, teachers spent significant amounts of time recording audio feedback files. Although the time requirement decreased as teachers developed familiarity with the software and refined their methods of creating the feedback files, they were still prohibitive of using audio feedback files on a daily basis. Teachers began to develop methods of adapting the formative audio feedback files. Their goal was to achieve the same level of student response with a more generalized presentation. Based on the documented success of formative audio feedback files, exploration of methods to adapt the procedure to make the creating of formative feedback more viable for teacher use on a daily basis is a topic that lends itself to further consideration.

Although the unique characteristics of the research setting limited the scope of the study to a single case site, broadening the sample size and duration of the treatment period could reveal deeper insight into the study questions.

Appendices

Appendix A

School Participation Letter

SCHOOL OF EDUCATION AND SPORTS STUDIES

URBANA UNIVERSITY

February 3, 2010

Dear Principal's Name,

I am currently enrolled in the Master of Education degree program at Urbana University. The final requirement for this program of study is to complete a Master's thesis. The subject of my thesis is the use of audio files to provide formative feedback on student assignments. I am requesting permission for students and staff to participate in this research endeavor.

My intent is to conduct a comprehensive case study of *(school name)*. Students and staff would be surveyed to determine their practices and beliefs regarding the use of feedback prior to the study. Student participants would complete regular course assignments, and participating staff would assess the work, focusing on providing individual, formative feedback to guide students to a deeper understanding of strong and weak points of their work. This feedback would be delivered to individual student files on the school's common drive. Journaling activities and focus group interviews with students and staff would be used to determine the perceived effects of feedback.

Participation in this study would benefit staff and students. Teacher benefits from this investigation include the opportunity to evaluate feedback habits, explore the use of a new method of assessment, and reflect on the impact of the assessment and feedback procedures utilized in their classrooms. Students will be able to develop the skill of using feedback as a tool for improving their learning and internalizing content. The formative feedback they receive from staff will allow students to focus on areas of weakness as they revise their work.

(School name) will benefit by striving to increase the quality of education provided for its students and analyzing the usefulness of formative feedback as a mode of increasing student learning. This study will lead to reflective teaching practices and the development of evaluation tools and methods that encourage the engagement of students for improved learning.

If you have questions or need clarification regarding this research study, please contact me. Thank you for your time and participation.

Sincerely,

Jenni Smith

Appendix B

Student Participation Letter

SCHOOL OF EDUCATION AND SPORTS STUDIES

URBANA UNIVERSITY

Parents of *participating school* students,

My name is Jenni Smith, and I am the chemistry and science 12 instructor at *participating school*. I am conducting a research study learn how to improve the feedback we provide students. During the next few weeks, several teachers will be working with me in this study.

Selected groups from *participating teacher's* science classes, *participating teacher's* English classes, and *participating teacher's* math classes will participate. The students will complete in-class surveys about feedback such as grades, comments, and corrections they receive on their work, and how they use this feedback to learn.

Students will then complete regular class assignments, and teachers will provide recorded messages that explain strong and weak points of the work. These individual messages are designed to provide additional instruction in areas of weakness, and reinforce strengths in the student work. Throughout the study, students will respond to brief writing prompts and discuss the impact of the audio feedback on their learning.

At the conclusion of the study a small group of participants will be selected to participate in a focus group interview during intervention period. The purpose of this discussion is to explore the effectiveness of the individual audio feedback files in promoting student learning.

Participating staff will also participate in surveys, journaling, and focus group discussions. They will also provide anecdotal evidence about student performance in their classrooms.

Student participation in this study will remain completely confidential. The *participating school* will not be identified as the participating school in the research study, and individual teachers and students will not be named.

Student participation is also voluntary; contributors will not receive any compensation for their involvement with the research study. If you do not want your student to participate in this study, please sign below and return to school by March 1st, 2010.

Thank you for your consideration,

Jenni Smith

My student, _____ will not participate in the feedback research study.

Parent/Guardian signature _____.

Appendix C

Student Journal Prompts

Student Journal Prompt 1

Name: _____ Date: _____ Total # of feedback files received: _____

Select the statement that best describes your use of the formative feedback file(s) received:

_____ I did not open the file.

_____ I listened to the file.

_____ I reviewed my work based on the information given in the feedback file.

Describe two ways that your teachers provide feedback, and how those methods help you learn.

_____

_____

_____

_____

_____

_____

_____

_____

_____

Student Journal Prompt 2

Name: _____ Date:____ Total # feedback files received: ____

Select the Statement that best describes your use of formative feedback file(s) received:

I do not use the files I listen to the files I revise my work based on the files

Think of two experiences where you have received feedback, one positive, one negative.

	Positive Feedback	**Negative Feedback**
Briefly describe the type of feedback and how you received it. **(written, verbal/ on an assignment, during class)**		
How did you feel when you received the feedback?		
What did you "do" in response to the feedback?		
What did you learn from the feedback?		
How could the feedback have been better for your learning?		

Student Journal Prompt 3

Name: _____ Date: _____ Total # of feedback files received: _____

Select the statement that best describes your use of formative feedback files received:

I do not use the file I listen to the files I revise my work based on the files

For the purpose of this survey, feedback refers to spoken or written comments, as well as body language.

1. Describe the benefits of receiving positive feedback, which identifies areas of strength, correct responses, and provides encouragement, from your teacher.

2. Describe the benefits of receiving negative feedback, which identifies areas of weakness and incorrect responses, from your teacher.

3. Identify the type of feedback that helps you learn best, and explain why it is helpful.

Student Journal Prompt 4

Name: _____ Date: _____ Total # of files received: _____

Select the statement that best describes your use of formative feedback files received:

I do not use the files I listen to the file I revise my work based on the files

For the purpose of this survey, think about all of your teachers and classes.

1. Describe one method of feedback a teacher uses to instruct the whole class at once, and then explain what you do with that feedback to improve your understanding.

2. Describe one method of feedback a teacher uses to guide you individually, and then explain what you do with that feedback to improve your understanding.

Student Journal Prompt 5

Name: _____ Date: _____ Total # of files received: _____

Select the statement that best describes your use of formative feedback files received:

I do not use the files I listen to the files I revise my work based on the files

Select the statement that best describes you.

When I complete an assignment, I am done learning that task, and I only look at my grade to see if I was successful.	When I complete an assignment, I am done learning that task, but I still read comments and try to understand what I missed.	When I complete an assignment, I use my grade and comments to correct my mistakes and keep learning.

1. Describe what you do when your teacher passes back graded work, and explain how you learn from this work.

Complete this thought: The purpose of feedback is: _____.

2. How do you think your teachers would answer that question? Explain any differences in your responses.

3. How do you think your classmates answered that question? Explain any differences in your responses.

Appendix D

Student Interview Protocols

Student Interview Protocols

Definitions

1. Describe some types of feedback your teachers use.
2. How are these types of feedback effective?
3. What types do you like best?
4. What are the benefits of audio files?

Usefulness

1. What did you use as your first resource for understanding assignments?
2. How were audio files different from the individual feedback received on previous assignments?
3. Did you receive audio files in time to learn from them?
4. Did you use audio files differently from other types of feedback?

Effectiveness

1. Could audio files be used in other types of classes?
2. Did audio files have a different effect on learning/understanding than other types of feedback?
3. Did audio files have a different effect on grades than other types of feedback?

Role of Feedback

1. What is the first thing you normally do when a teachers passes back work with feedback?
    a. What do you do after that/did that change after using audio files?
2. Do you learn from group feedback?
3. Do you think differently about the importance of feedback as a result of your exposure to audio files?
4. Has your interaction with feedback changed as a result of your exposure to audio files?

Appendix E

Feedback Surveys

INITIAL FEEDBACK SURVEY

Grade	11 12
Gender	M F
Vocational Program	

	SD	D	N	A	SA
Assignments are not very challenging.	1	2	3	4	5
I learn more from completing assignments than studying other course materials.	1	2	3	4	5
In completing assignments you can get away with not understanding, but still get good grades.	I	2	3	4	5
Tackling assignments really makes me think.	1	2	3	4	5
There is hardly any feedback on assignments when I get them back.	1	2	3	4	5
When I get things wrong or misunderstand them I don't receive much guidance in what to do about it.	1	2	3	4	5
I would learn more if I received more feedback.	1	2	3	4	5
Whatever feedback I get is too late to be useful in learning	1	2	3	4	5
Feedback helps me understand things better.	1	2	3	4	5
I don't understand some of the feedback I receive.	1	2	3	4	5
Feedback demonstrates how to do better next time.	1	2	3	4	5
Feedback is incomplete or difficult to understand.	I	2	3	4	5
I tend to only look at my final score.	1	2	3	4	5
I read feedback carefully and try to understand what it is saying.	1	2	3	4	5
I do not use feedback in revising my work.	1	2	3	4	5
I use feedback to go over what I have done in the assignment.	1	2	3	4	5
Feedback does not help me in completing future assignments.	1	2	3	4	5

Feedback Exit Survey

Grade	11 12
Gender	M F
Vocational Program	

	SD	D	N	A	SA
Using the audio files did not change my level of understanding.	1	2	3	4	5
I learned more from completing assignments when appropriate audio feedback files were provided.	1	2	3	4	5
Using audio files helped me improve my grades.	1	2	3	4	5
Revising my work using audio feedback files really made me think.	1	2	3	4	5
Audio feedback on assignments provided too much information.	1	2	3	4	5
Audio feedback files helped me correct wrong ideas and misunderstandings.	1	2	3	4	5
I would learn more if I received more audio feedback files.	1	2	3	4	5
I received audio feedback files too late to be useful in learning.	1	2	3	4	5
Audio feedback files helped me understand things better.	1	2	3	4	5
I didn't understand some of the audio feedback files I received.	1	2	3	4	5
Audio feedback files demonstrated how to do things better next time.	1	2	3	4	5
The audio feedback files were incomplete or difficult to understand.	1	2	3	4	5
I tended to only look at my final score.	1	2	3	4	5
I listened to audio feedback files carefully and tried to understand what they were saying.	1	2	3	4	5
I tended not to listen to my audio feedback files.	1	2	3	4	5
I used audio feedback files to go over what I had done on the assignment, and correct my work.	1	2	3	4	5
Audio feedback did not help me in completing future assignments.	1	2	3	4	5

Appendix F

Teacher Journal Prompts

TEACHER JOURNAL PROMPTS

#1 Feedback types

1. What ways do you most often provide feedback?

2. Is feedback most often formative, summative, or a combination?

    a. What types are most often formative?

    b. What types are most often summative?

3. Describe the most effective feedback for student learning that you use.

4. Explain how you gauge the effectiveness of this feedback.

#2 and #3 Positive or Negative Feedback

1. Do you give more positive or negative feedback?

2. What delivery method(s) do you use to provide positive feedback?

3. What delivery method(s) do you use to provide negative feedback?

4. Explain who the audience is for positive feedback (group, individual, mix)?

5. Explain who the audience is for negative feedback (group, individual, mix)?

6. Explain any differences in preparation and time requirements when planning positive or negative feedback.

7. During the course of a unit or extended lesson, when is positive assessment the best method of evaluating students, when is negative assessment the best method of evaluating students, or do the circumstances vary from unit to unit.

8. Is positive feedback usually formative, summative, or a mix?

9. I negative feedback usually formative, summative, or a mix?

#4 and 5 Purpose of Feedback

1. Describe one method of providing feedback that you use for the whole class.

2. How do individual students engage with this feedback?

3. Describe one method of providing feedback that you use for individual students.

4. How do individual students engage with this feedback?

5. Evaluate the effectiveness of these methods- is there a difference in student learning?

6. When students receive work that has been evaluated, do most:

   Read the grade only read comments try to internalize marks and make corrections

7. How would you account for differences among student responses to evaluated work they receive?

8. What is the purpose of feedback?

9. How do your students define the purpose of feedback?

Appendix G

Teacher Interview Protocols

Teacher Interview Protocols

Creating Formative Audio Feedback Files

1. Describe any problems with creating audio feedback files.

2. Describe any benefits with creating audio feedback files.

Use of Formative Audio Feedback Files

3. Describe the ways students used audio feedback files.

4. How were audio feedback files useful?

5. Describe problems associated with using audio feedback files

6. How will you use audio feedback files in the future?

Effectiveness of Formative Audio Feedback Files

7. Describe academic growth students experienced when using audio feedback files.

8. Describe professional growth you experienced when using audio feedback files.

9. How are audio feedback files effective?

View of Formative Audio Feedback Files

10. What is your opinion of formative audio feedback files?

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