

The Relationship between the Strategy of Knowledge Folders and Study Skills

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Introduction

Over the past several years, I have had students in my junior classes who were not performing well on their summative evaluations and did not seem to understand the importance of quality class work and homework. I currently teach juniors and seniors in a high school science academy where they are expected to be prepared for college and beyond. The students' study skills were not evolved to the point where they could be successful in college or the workplace. I wanted the students to understand that they needed to take on the responsibility for learning and acquiring new skills which is expected in college work and in today's changing and evolving workplace. Metacognition and motivation by the students for new study skills are important to me as a teacher. I want to enable students to succeed beyond high school by teaching them skills that will transfer to college and to the workplace. My hope is that the students will take on the responsibility for their own learning – that they would realize they have control over their actions. I decided to try to change the students' concepts of learning and responsibility by implementing a strategy of Knowledge Folder assessments.

Literature Review

Simpson, Hynd, Nwast, and Burrell (1997), promoted learning study skills in the classroom as part of the daily curriculum, and not as a separate lesson from learning about the content. The study skill of “free writing” involved gathering details about the concepts that would be part of the assessment. Writing-to-learn was the “idea that one can write as a way of learning” which was applicable to any content, including science. “If writing does, indeed, increase understanding, then students who better understand content concepts as a result of writing may experience increases in their feelings of self-efficacy” (Simpson et al., 1997). I hoped that when a student learned that when he/she wrote competently about a topic, then he/she

would do well on an assessment. I hoped that they would come to know that they have the power to be self-sufficient in their study habits.

Tuckman (2003) defined study skills as “the learning and motivation strategies that enable a student to be successful.” Chadha (2006) states that independent learning was required for those secondary students going on to college and into the ever changing workplace. Weiner, in 1995, (as cited by Tuckman) emphasized “the student take responsibility” method of teaching in which the student realized how their efforts affected their test grade. The student behavior of taking on responsibility could be modified by training, as shown by S. Graham in 1997 (cited by Tuckman); this suggests that a teacher may teach a student how to take on the responsibility for their learning. A teacher could change the personal belief a student has regarding his or her ability by emphasizing that the student has control. Tuckman, in 2003, pointed out that a good grade did not depend on IQ, but on how well the student performed his/her work and how much he/she studied for a test. Thus, the student could learn how to learn, which is defined as metacognition. Simpson et al. (1997) stated that learning how to learn may promote self-awareness of study skills. Having a successful learning strategy may make the student more motivated to apply the strategy in new situations. Metacognition and motivation thus could be “mutually supportive” (Simpson et al., 1997).

Action Research Question

When I first started teaching juniors, I found that they did not have well-defined study skills and were not doing well on their assessments. I wanted to teach the students study skills that could transfer to other subjects and would enable them to feel successful in learning how to learn. I found a promising solution at a 2006 ASCD conference after listening to Spence Rogers’ presentation on “Using Assessment to Teach and Increase Achievement.” Rogers

stated that “assessment was the gathering of information in order to change our behavior to improve performance” (Rogers, 2006).

I wanted to change the behavior of the students by providing strategies for improving the way they completed their work and the way they studied. I decided to modify one of Rogers’ Peak Learning Systems assessment strategies, the Knowledge Wall, into Knowledge Folders. These were folders in which the students placed all their class work and homework and could access during a timed assessment. I hoped that the Knowledge Folders would help with the students’ study skills of free writing and emphasize quality homework and class work. If the students had written thoroughly about the concept, and had much detail in their class work and homework, then they were able to answer the questions on the assessment with greater clarity. This could show them the relationship between their work and the assessment questions during the course of the assessment period. Explicitly teaching the use of this strategy could increase the learner’s motivation and lead to increased achievement for doing quality class work and homework.

This led to my action research question of: “**What is the relationship between the assessment strategy of Knowledge Folders and improved study skills as measured by student motivation and academic performance?**”

Methodology

I decided to implement the strategy of Knowledge Folders during assessments in hopes of the students improving their metacognition and motivation. The Knowledge Folder assessment strategy involved helping the students learn how to learn. I acquired the idea of learning through assessments during a presentation by Spence Rogers at an ASCD conference in 2006. Spence Rogers’ Knowledge Wall was a spot on a classroom wall where students could post

information they thought they would need to know. I modified this strategy into a strategy I called Knowledge Folders - a folder into which each student put all of his/her homework and class work, and then put the folder into a hanging folder inside a crate at the front of the room, which could then be accessed during an assessment.

The Knowledge Folders strategy encompassed the study skills of free writing and completion, with many details of class work and homework. I utilized the Knowledge Folders strategy during a 45-minute, short-answer assessment. Each student filled their Knowledge Folder with their work before the assessment, and then they placed the folders in a crate on my desk. During the assessment, the students could leave their seats (which exercised the brain as a side benefit) to peruse their folder items. They could not directly copy anything from their folder – the assessment was not a “copy your notes” test. They could memorize on the spot and then go back to their seats. The student could access their folder at any time and as many times as they needed during the assessment. This put the responsibility of time management upon the student, getting up to look at their folder takes time away from writing on the assessment.

I informed the students which concepts would be on the assessment during the class before the assessment. Then I described a writing strategy to use for the Knowledge Folder test; the students should gather their homework and class work together in order to research and write a page about each concept. Students could then place the pages in their Knowledge Folders, along with other class work and homework of their choice, for use during the 45-minute assessment.

I collected quantitative data from multiple-choice summative assessments before and after the implementation of the Knowledge Folder strategy during 2006-2007. I also designed and administered a student survey to gain a student’s perspective of their study skills in 2008

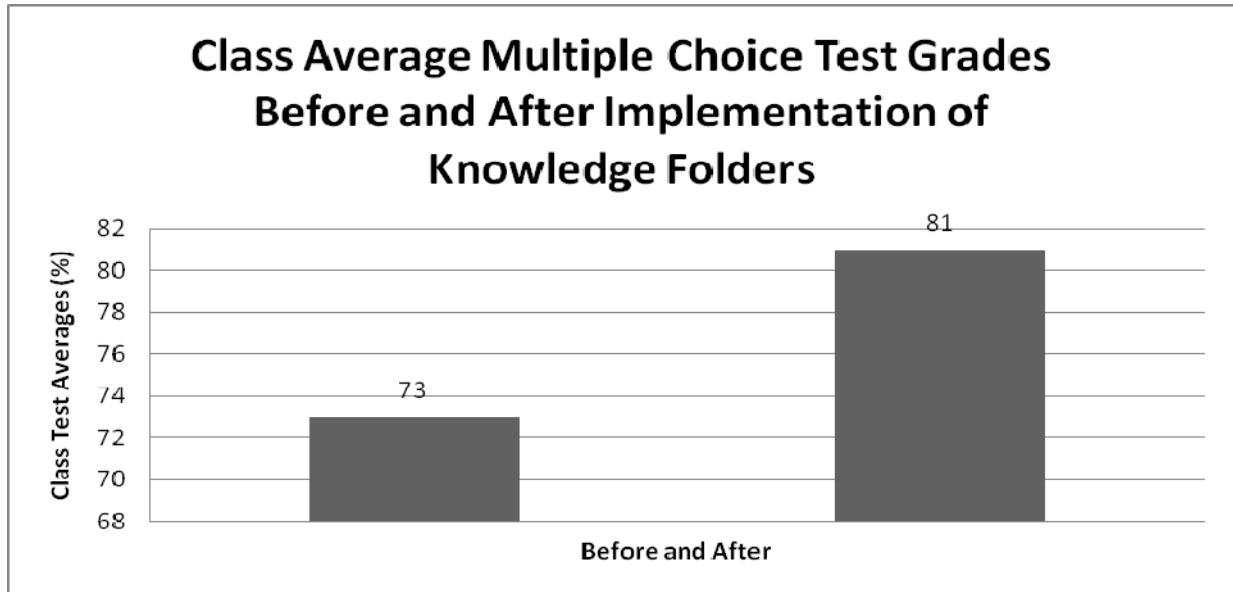
(Appendix A). Informal observations were made by asking the students how they perceived the Knowledge Folder strategy and observing their behavior in the classroom from 2006-2008 (Appendices B and C). In addition, I sent parents letters requesting permission for the students to help me with a research project (Appendix D).

Please note the discrepancy in the dates of the data collection. I only have data for multiple-choice test scores before and after implementation of the Knowledge Folder assessments from the 2006-2007 students because the Knowledge Folder strategy worked so well that I did not want to deprive future students of their implementation. Thus, there was no more before and after multiple-choice data to review after 2006-2007. I did not conduct a formal student survey until fall of 2008 when I took the Action Research class and wanted to formalize my observations.

Data Analysis

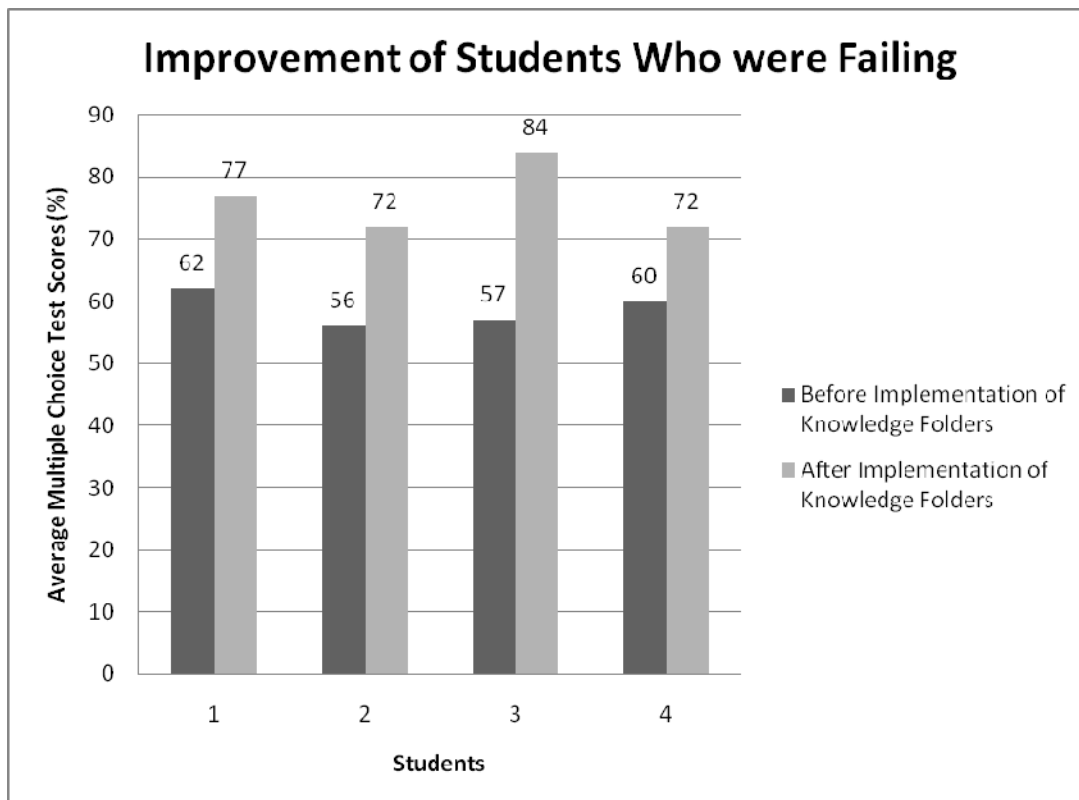
I collected data to verify the usefulness of the Knowledge Folder strategy in helping students' metacognition and motivation. I collected data through the grades of follow-up multiple-choice tests, student surveys, and teacher observational notes of students' behavior. I implemented the Knowledge Folder strategy after three multiple-choice tests in 2006. The grades of the multiple-choice tests before and after the implementation of Knowledge Folder assessments were analyzed and graphed. The graph in Figure 1 shows the class test averages before and after implementation of the Knowledge Folder assessment. The graph in Figure 2 shows the improvement of the weakest students of 2006-2007.

Figure 1. Class Average Multiple-Choice Test Grades Before and After Implementation of Knowledge Folders.



Note the 8-point increase in multiple-choice test class averages after the implementation of Knowledge Folders.

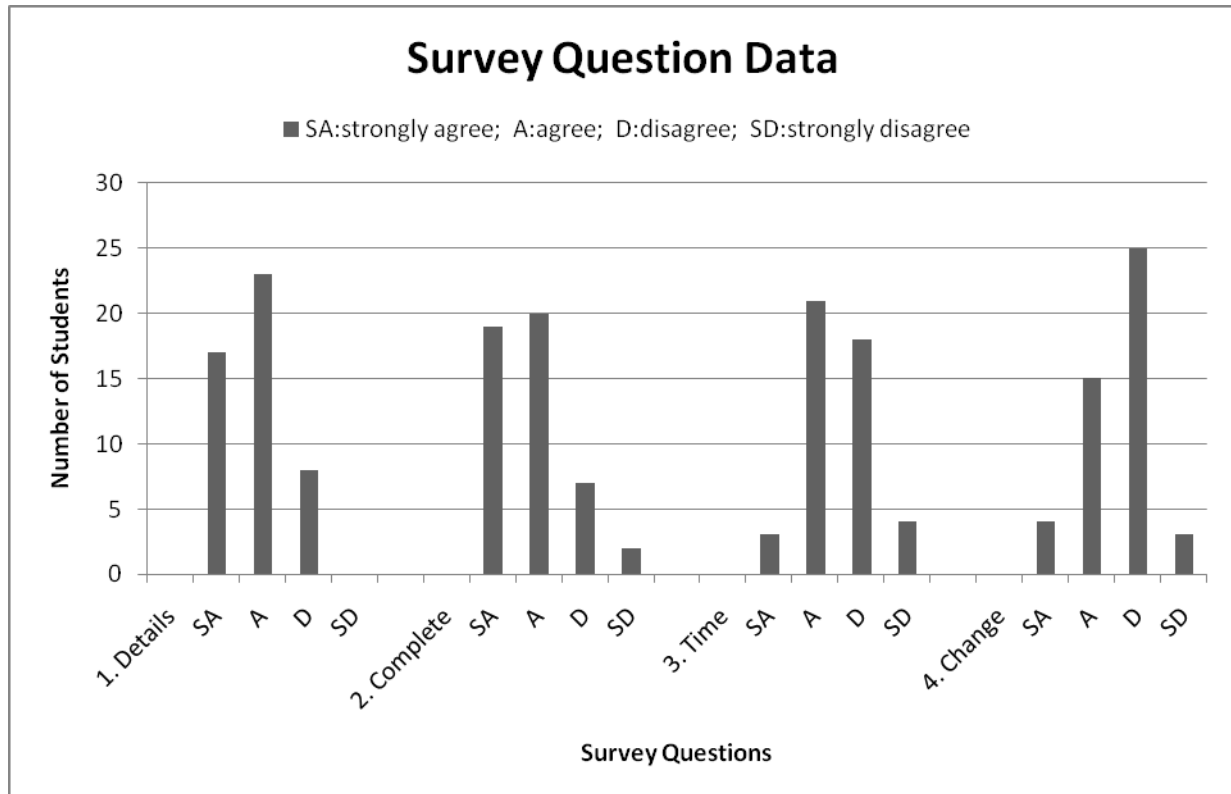
Figure 2. Improvement of Students Who Were Failing.



Students who were failing their multiple-choice tests had the most improvement of test scores. Note improvement of 12 to 27 points.

I performed quantitative and qualitative data analyses on student surveys in the fall of 2008. This study included student surveys (Appendix A) regarding their personal study habits after the Knowledge Folder assessments had been utilized two times in 2008. Figure 3 shows the results of the student surveys.

Figure 3. Survey Question Data



Survey given after the Knowledge Folder assessment had been utilized by the students twice.

I conducted informal observations of the students concerning their study habits and attitudes from 2006 through 2008 (Appendix C). The multiple-choice test grade analysis was compared with the student surveys to detect if there was a change in student grades and behavior. I also compared my informal observations with the multiple-choice test grade analysis.

Results

The quantitative results showed positive improvement in multiple-choice test scores by the students after the implementation of Knowledge Folder strategy, as shown in Figure 1. I

disaggregated the data to separate the students with the poorest test grades. Their individual test grades showed a dramatic increase from their lowest test grade to their highest test grade (21 to 42 points). Figure 2 showed that the poorest students gained the most points on their multiple-choice scores after the use of this strategy. The students who already performed well on summative assessments did not show such a significant increase in their individual test grades, as shown by the average test scores in Figure 1.

The quantitative analysis of the Student Surveys (Appendix A) yielded positive results--the students indicated that Knowledge Folders assisted them in various ways, see Figure 3. They agreed that the Knowledge Folders helped them put more details in their work and helped them make sure that their work was complete. Most students felt they spent more time studying, but others did not feel this way. The data from the fourth question, "My way of studying changed after the Knowledge Folders were implemented," showed that the majority of the students felt their way of studying had not changed; yet, in the first three survey questions, they indicated that specific study habits had changed.

The students made positive comments; no negative comments were made in regard to this strategy (all the comments may be found in Appendix B). The student comments and the teacher observations revealed a positive relationship between the multiple-choice test data and the implemented strategy. The multiple-choice scores increased in a positive manner, and the students' comments and teacher observations showed a positive impact on the students.

In this action research project, there were limitations to using data from different student datasets from different years. However, the similarity of the students were that these were all science academy juniors, they were all learning new study skills with me, and they were all studying the same content using the same text and multiple-choice tests. I chose to implement the

Knowledge Folder strategy immediately the next year because it helped the students so much that I could not deprive future students after 2006-2007.

Summary and Conclusions

I hypothesized that the students would become more responsible for what went into their Knowledge Folder and that they would realize that quality work would lead to a good assessment result. I hoped that the students would realize that writing about the concepts that would be on the assessment would help them to organize their thoughts in order to gain a good grade. I hoped that the result would be that the students would learn to self-monitor their class work and homework. A positive relationship was demonstrated between their work and the Knowledge Folder assessment, because they were able to directly check if they had completed their work during the assessment. The student could check for understanding of the material when they looked for the answers to the assessment questions in their Knowledge Folder. If they did not have enough details and quality work inside their folder to use for the assessment, then they did not earn a satisfactory grade (C or better). From the comments the students made (see Appendix B), I believe they internalized the lesson of doing quality work.

I concluded that the quantitative and qualitative data showed that the Knowledge Folder strategy helped the students with study skills and improved their grades. I have also concluded that the poorest students were helped the most. Perhaps they had never developed an understanding of the relationship between their efforts and their results on an assessment. The multiple-choice test scores could have also improved because students started studying earlier rather than waiting until the night before the summative assessment. Because the Knowledge Folder assessment was given one week prior to the summative assessment, the students were reviewing the material much earlier.

The students' comments on the surveys provided useful insight to their perspective. One made a comment about being more motivated; this correlates with Simpson's view of metacognition and motivation being linked (Simpson et al., 1997). Another student indicated that he/she had less stress with the Knowledge Folder assessments, which lends itself to Maslow's hierarchy of needs. The student felt more comfortable and gained confidence on how to study and was thus able to learn better. The students seemed to gain a sense of control over their actions as evidenced by their comments such as: "I put more effort," "I studied more," "I put more details."

I concluded that the use of the Knowledge Folder strategy helped the students earn better grades on their summative assessments and, in the process, learn better study skills. I hope that the study skills will transfer to other classes and to the students' future endeavors.

Future Actions and Directions

I will continue to utilize this strategy in my future classes in order to improve student's study skills and prepare them for college and the working world.

The survey question of "My way of studying *changed* after the Knowledge Folders were implemented" needs to be addressed in future surveys because the students indicated that they did not change; yet, their answers to the other questions indicated they did change in detail, completeness, and time. The question was too nebulous and should be removed from the survey. The survey as is could lead to another study concerning how students view themselves.

Reflections

I believed the students learned how to learn and felt more confident as learners after this strategy was implemented. I think that any teacher can put this strategy into practice, especially with struggling learners. The time taken to grade the Knowledge Folder assessments is more than for multiple-choice tests, but it is worth the time when the students are successful and feel

successful. I think this strategy carries over to other subjects and other parts of the students' lives where they must put in time and effort to accomplish something.

My next project is to increase the analytical skills of the students. I am working on this through the use of problem-based concept maps with the students.

References

- Chadha, D. (2006) A curriculum model for transferable skills development. *Engineering Education*, 1, 19-23.
- Rogers, S. (October 14, 2006) Using Assessment to Teach and Increase Achievement. Session presented at the ASCD conference, Orlando, FL.
- Simpson, M. L., Hynd C. R., Nwast S. I., Burrell K. I.. (1997). College Academic Assistance Programs and Practices. *Educational Psychology Review*, 9, 39-87.
- Tuckman, B. W. (2003). The Strategies-For-Achievement Approach for Teaching Study Skills. Paper presented at the Annual Meeting of the American Psychological Association, Toronto.

Appendix A
Survey Questions

Your responses are confidential.

Circle one answer for each statement below.

Using Knowledge Folders helped me to put more *details* in my work.

Strongly Disagree Disagree Agree Strongly Agree

Using Knowledge Folders helped me make sure my work was *complete*.

Strongly Disagree Disagree Agree Strongly Agree

I spent more time *studying* after the Knowledge Folders were implemented.

Strongly Disagree Disagree Agree Strongly Agree

My way of studying *changed* after the Knowledge Folders were implemented.

Strongly Disagree Disagree Agree Strongly Agree

If you *agree* or *strongly agree* to the above statement, then please explain how your way of studying has changed.

Please write any additional comments you may have on the back of this survey.

Appendix B

Survey Question Comments

(In the student's own words.)

- It motivates you.
- It made me more organized and I studied everything that would go in the folder instead of studying one paper.
- I didn't want to look stupid going up to the Knowledge Folder each time so I would make sure to study.
- I studied and paid more attention to details.
- I learned to put more effort into my notes and to study each of my notes carefully.
- I started doing all my homework. I focused and explained on my class work and homework.
- I study more and more efficiently.
- I put more details in my work because it paid off for me when I got better grades on my Knowledge Folder test.
- With the Knowledge Folder I am able to see specific details for my work. I do my homework so that I can use the work on a test.
- I would look at what was on the Knowledge Folder test more and then look at other stuff I thought would help.
- I like the way these Knowledge Folders are done because I don't usually have to do much studying because as I write the homework, it makes me have to read and understand. I paraphrase it in my own words. My test scores have dramatically improved.
- I noticed that I worked harder to understand the materials covered. The Knowledge Folder helps me retain information and I study harder because I know that I have to remember the stuff for the test. I think that the Knowledge Folder is an excellent tool for high school students.
- If maybe there was a word I forgot or I only knew half of the information it helped because I could go back and refresh or revise what I wrote. I think all tests should be taken like this. It gives relief to the students and it reassures their strength not to freak out and bomb the test.
- If I took good details I could get a good grade on the Knowledge Folder test.
- I love Knowledge Folders because they reward us for doing our work with a good test grade.

Note: there were no negative comments.

Appendix C

Teacher Observations

- My informal observations noted that the students were more prepared for their summative assessments after the implementation of the Knowledge Folder assessments.
- The students said that the Knowledge Folder assessments were “crazy hard” until they learned to put quality work in their Knowledge Folder.
- The students claimed to hate the Knowledge Folder assessments – I believe because it induced them to improve and enhance their study skills, which takes hard work on the part of the students.
- They also told me verbally that the Knowledge Folders helped them improve their grades, put more details in their work and organize their work; this input was reflected in the comments on the surveys (Appendix B).

Appendix D

Dear Parent/Guardian,

I am participating in a University of Virginia class entitled “Action Research for Teachers” during the months of October and November of 2008. We are learning to document the strategies that work in our classrooms. I have written a paper concerning the strategy of the Knowledge Folder Assessment where the students are allowed to read over their homework and class work during a timed test. I am in the process of collecting data to confirm my findings that this strategy improves study skills. I am not doing anything different in the class or with the students – the purpose of the action research is to find out whether the instructional method is effective. Your child will not be denied any instruction or benefits because of my inquiry.

One of the methods to gather data on this strategy is to distribute a written survey to the students to gather their thoughts about the Knowledge Folder Assessment. The survey questions will focus on whether this has helped them complete their work in a more complete and detailed manner. The students will submit the surveys anonymously. Another method is to look at grades, anonymously, over time.

Please be assured that confidentiality will be maintained, and your child and the school will not be identified by me in any way. The principal, Kay Thomas, of Bayside High has approved the action research. Below is a place for you to sign your name informing me that you do **not** want your child to participate, to be returned by your student to me. *There is no need to return the letter or contact me if there are no objections.*

Sincerely,

Clara J. Heyder
 Body Diseases/Pathophysiology Teacher
 Health Sciences Academy, Bayside High School
 Virginia Beach, VA
cjheyder@vbschools.com

I do **not** grant my permission for the use of my child’s ideas, schoolwork, or words in research conducted during this school year by the teacher, Clara Heyder. I understand that if I do not grant this permission, he/she will not be denied any educational opportunity.

 Child’s name

 Date

 Parent/Guardian Signature

 Date

 Printed Parent/Guardian Name