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Peer tutoring and technology integration : you too can make it happen!

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Peer tutoring and technology integration : you too can make it happen!

Abstract

Technology is motivating to students and brings with it a sense of empowerment. This article looks at a successful model of technology integration. This model comes in the form of an after-school club called the "Tech Club" built upon a peer tutoring model. A lead teacher trained third grade student leaders, or the "Tech Kids" to facilitate technology "how-to" sessions in their classrooms. After learning technology basics, this core group of Tech Kids visited different third grade classrooms to teach their peers this magic. This article explains how this peer tutoring model greatly empowered these third grade students and allowed technology integration to happen across their grade level.

Peer Tutoring and Technology Integration: You Too Can Make It Happen!

A Graduate Journal Article

Submitted to the

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by

Brandy Smith

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Titled: Peer Tutoring and Technology Integration: You Too Can Make It Happen!

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Degree of Master of Arts.

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6/3/05

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ABSTRACT

Technology is motivating to students and brings with it a sense of empowerment. This article looks at a successful model of technology integration. This model comes in the form of an after-school club called the "Tech Club" built upon a peer tutoring model. A lead teacher trained third grade student leaders, or the "Tech Kids" to facilitate technology "how-to" sessions in their classrooms. After learning technology basics, this core group of Tech Kids visited different third grade classrooms to teach their peers this magic. This article explains how this peer tutoring model greatly empowered these third grade students and allowed technology integration to happen across their grade level.

INTRODUCTION

Description of Topic

McKinstry Elementary School in Waterloo, Iowa, was recently the fortunate recipient of three technology grants that supplied the school with three wireless carts of laptop computers. In addition, these grants aided in setting up an after-school technology club to help students learn the "basics" of computers and how to teach their peers what they had learned in this after-school club. The intent was for the students to become motivated through what they learned and increase their levels of technology literacy. This original club was somewhat successful. There was evidence that teachers were using the computers more. Some questions, however, were never explored. The first question needing investigation was, "How were the skills being taught affecting the students?" The second question, "Were the technology skills learned in the tech club beneficial to students?"

The answers to these questions were found in the 2002-2003 school year through holding another Tech Club with specific monitoring strategies in place from the beginning. This was a ten-week study which considered how students learn with technology and how technology affected students' motivation and thinking. Furthermore the idea of peer tutoring and the benefit of this learning mode were considered.

The study of the McKinstry after-school program showed the benefits of technology for the students. Observation and data revealed how students used technology as a learning tool to enhance the curriculum presented, as well as the motivation technology brings to student learning. The following journal article reports on this project.

Importance of the Article

This article addresses two important aspects of developing technology literacy in students. It provides a model for such development and describes the effect the model has upon the students. The *No Child Left Behind* act requires students to be technology literate by eighth grade. This after-school Tech Club model shows districts an effective way to facilitate this level of technology literacy.

More importantly, this article explains the level of personal empowerment the students found in the club. The article illustrates how empowering peer tutoring was for everyone involved in the process, in addition to showing how technology itself has an empowerment element for students.

Rational for the Topic

For the past several decades, schools across the country have gradually increased the amount of technology that students can access. Integrating this technology is an on-going problem for elementary classrooms today. Historically, technology has been pushed into a classroom through administrative directives with little teacher support or understanding of the implementation (Cuban, 1986). Making technology integration a success requires a specific mode of implementation.

The After-School Tech Club discussed in this article is a specific illustration of technology integration implementation. This article was written for classroom teachers and district technology coordinators to demonstrate the model, describe the benefits, and provide necessary plans for them to consider a similar implementation in their own districts.

Purpose

This article was written to share a successfully integrated technology support model with colleagues. The success of the after-school Tech Club discussed in this article had such an impact on the students it touched; it needed to be shared with a wider audience. Hopefully the readers of the article will study this model of integration and consider how easily this could be implemented in their school.

METHODOLOGY

Journal Guidelines

I am writing for the journal *Learning and Leading with Technology*. This journal is targeted to classroom teachers and technology coordinators with a variety of technology experiences and knowledge. The editor of the journal looks for articles that will be helpful and practical to educators that are technology innovators.

I read an array of articles from previous *Learning and Leading* issues to get a feel for the writing style of the articles and to see if my information would be appropriate to submit to this journal. Upon deciding my article would meet the journal requirements, I decided to write a "feature article" for *Learning and Leading*. Although the guidelines are general, the word count must be between 2,000 and 3,000 words total (including all graphics, references, etc.) My article turned out to be 2,565 words. A copy of the full submission guidelines and letter of submission to the Editor are included in Appendix A and B of this document.

Gathering Data

Justification for writing the article came from the incredible success of this study. Pre/post testing and surveys helped determine this success. A standard checklist was made to analyze the student standards to be achieved. This checklist stayed the same for pre and post testing information.

A specifically created student and teacher survey determined the additional affects of the Tech Club on the school. These questions on the survey given before the Tech Club differed from the questions given after the completion of Tech Club. Initial pre-surveys were created and analyzed. From this analysis the data was broken into relevant

categories that would be monitored throughout the study. These categories were then used to create the post-survey. Although the surveys differed, the information collected was of the same value, due to a specific alignment process for these surveys.

Writing Process

This journal article was an iterative process initially between Dr. Mary Herring and myself. The first draft of this article was much too academic for the purposes of the journal for which the article was written. Upon major revision of this first draft, it was found the article was much too colloquial and simply not appropriate for the journal. The third draft found the article more on target as it bridged draft one and two. At this point a second reader, Dr. Leigh Zeitz, who was my second reader, was brought into the team. His contributions were critical to this writing process, as he has been published in *Learning and Leading.* His familiarity with the publication requirements helped guide the numerous drafts that followed to get to the final manuscript contained in this document.

Method Discrimination

As mentioned earlier, the content of the article was decided upon based upon the guidelines of the journal for which the article has been written. The challenge in writing this article was due to using Human Subjects consent forms. The Human Subject Review process changed from the time of the initial study to the writing of the article. At the time of the initial study, the proctor(s) of the study were not required to have participants sign Human Subjects consent forms if the study was done in a university class setting, which was the case with my study. The lack of these forms was later detrimental. It was going to be impossible to find all the participants of the study and obtain consent. Due to this issue, the article was written with no hard data or direct quotes from participants. The

article was written solely from the perspective of the study facilitator and her impression of the successes of the project.

Peer Tutoring and Technology Integration: You Too Can Make It Happen!

Technology is motivational and can enhance student academic performance. Henry Becker (2000) writes about the positive impact technology has on student performance and motivation. He finds that although there are many frustrations with technology integration, when properly used it can have great effect. His research supports what many teachers know. When you say it is "Computer time" - students perk up. This motivation comes from empowerment. Teachers can help create this sense of empowerment through proper technology integration.

Many teachers understand the sense of empowerment that technology can bring to students and its importance in learning (Young, 2002). However, the problematic issues when dealing with technology can make teachers throw up their hands at the idea of technology integration. These problematic issues can include, but certainly are not limited to:

- not enough time in the day
- lack of training with technology
- not enough computers
- teachers feel there are more important curricular areas to cover

Teachers would like to integrate technology more, but with all these frustrations many simply give up.

There are ways to make technology integration happen! Recently I lead an after school club, called the "Tech Club" that built upon a peer tutoring model. I (the lead teacher facilitator for purposes of this article) trained student leaders, or the "Tech Kids" to facilitate technology "how-to" sessions in their third grade classrooms. After learning

technology basics, this core group of Tech Kids visited different third grade classrooms to teach their peers this magic. This article will explain how this peer tutoring model greatly empowered these third grade students; allowing technology integration to happen across their grade level. Appendix C1 provides a graphic representation of this model.

"A Peer What?"

Peer tutoring is the "process by which a competent pupil, with minimal training and with a teacher's guidance helps one or more students at the same grade level learn a skill or concept" (Thomas, 1993). Peer tutoring is essentially peers teaching peers. Many teachers already incorporate this idea into their classrooms in other curricular areas and appreciate the benefits that come from this type of teaching. Teachers can implement peer tutoring by teaching a small group of students a subject, or using a group that already understands the subject area, who in turn will be able to teach that concept to their peers.

One benefit of peer tutoring is nurturing social interaction between peers. According to Roger Johnson and David Johnson (1985) an objective of peer tutoring is linking individuals together for a common goal. This type of benefit was definitely shown through this Tech Club peer tutoring experience. The students worked together rather than in isolation while learning technology skills. Working together with technology gives students who are not usually class leaders more opportunity to build positive social skills (Dobosenski, 2001). This peer tutoring experience allowed students who were not class leaders an opportunity to build their social skills. These students were not involved in other school activities and this Tech Club offered that perfect opportunity.

McRue (2001) found peer tutoring also allows students more small group and one-on-one time with the computers. In a time when most schools do not have enough

computers to allow adequate time in the allotted "computer lab time," peer tutoring can help alleviate this problem. The students not participating in the Tech Club can use the computers independently with their Tech Kid peers when they have time. They do not rely on their teacher and an allotted thirty minutes twice a week to get computer time. The Tech Kids can take small groups of students into the lab when there are only one or two computers available. Having flexibility with Tech Kids peer tutoring does not require the entire class to wait until the classroom teacher provides the integration instruction.

An additional benefit of peer tutoring is that it frees the teacher to focus on curricular areas. It is possible under this model because the Tech Kids do the technology teaching. This frees the classroom teacher to continue his or her curricular teaching. If other students are able to assist their peers with technology issues, it means the teacher can put focus on his or her teaching. This is a great benefit in technology integration because the teacher can be teaching certain aspects of the curriculum while the peer tutoring groups can assist in integrating aspects of that curriculum into the lessons through technology integrate.

"But how do I train the peer tutors???"

At this point you may be thinking, "Peer tutoring sounds like a great idea, but where do I find the time to train the students who will do the tutoring?" I found the answer in the Tech Club. This club helped a small group of third grade students, Tech Kids, learn the "basics" of computer use. They would then go back and teach their peers what they had learned in this after-school club. The intent was that the students would become excited and knowledgeable so they could assist their teachers in feeling

comfortable when using technology as a tool in their classrooms. See Appendix D2 for an overview of the Tech Club process.

It is important to understand the school setting of this club to better appreciate its impact. Our school is in a mid-western, urban location. The demographics of the area generate a school setting of diversity; approximately half African-American and half Caucasian. The school is set in one of the lower socio-economic areas of the state and has approximately 75% of its students receive free or reduced lunches.

The Tech Club served three classrooms that had approximately sixty students, including ten special needs students. Ten of sixty students participated in the after-school program for two hours a week. These ten participants were selected by their teachers under certain criteria. As reflected earlier, they needed to be students who would not have contact with technology outside the school setting. Due to the basic demographics of the school, this was true for most students since only 25% of the students had computers in their homes. However, the criteria also specified that the participants would be enriched by the after-school program because they did not have other extra-curricular outlets in their lives. These were students who needed something special in their lives. Additionally, the students needed to have the potential to build confidence to teach their peers once they had learned the information themselves.

As one of the lead teacher facilitators who originated the Tech Club with grant funding, I continued after those monies ran out due to my enormous enthusiasm for the program's success and belief in the need to facilitate further technology integration in the school's curriculum. The technology objectives for the club were directed by the district's technology integration plan and dictated by the lead teacher's knowledge of the

appropriate integration skills for the curricular area of study. Since the lead teacher had collaborated with the building principal and district technology coordinator to write the district technology integration plan, administrative support for the project was strong. The Tech Club was also aligned with the district technology plan. Support came in the form of allowing the Tech Club kids transportation on the after-school buses that served other after-school children and encouraging me, the Tech Facilitator, to continue building the Tech Club.

The club ran for one hour after school on Tuesdays and Thursdays. Those days were selected because students could take advantage of after-school transportation from other after-school programs. Twenty wireless laptop computers housed in a cart, which were funded through the original grant that started the club, were used for instruction.

I would select an objective for the evening (e.g., how to do a basic Internet search) and teach that objective to the Tech Club participants. Once I taught the skill, the Tech Kids would be required to demonstrate it independently and then teach the skill to a small group of Tech Kids that evening. Next, the students would practice how they would teach the information to their class. Great student empowerment came from these decision making procedures.

Once I felt confident in the students' ability to teach a skill, arrangements would be made with classroom teachers to push the cart of portable computers into the classroom with the Tech Kids. They would begin with a whole class demonstration. The demonstration would be short in nature, followed by breaking students into small groups (one to three students) to give the class hands-on time with the computers. I monitored the progress of these demonstrations by attending the sessions when possible and

observing to assure success by all the students. If I was not able to observe the sessions, feedback was taken from the Tech Kids and classroom teacher to see if additional tutoring sessions were needed.

The Tech Club required a commitment from the classroom teachers in addition to the students. The teachers needed to be willing to find time slots in their schedules each week to allow the club to teach the technology skills in their classrooms. Furthermore, the teachers needed to open their curricula and allow technology integration to transpire. Integrating this technology into the curriculum simply required the teachers to look at what they were currently teaching and open their minds to how technology could be infused. For example, when the students were studying habitats in social studies, it seemed natural to teach ways technology tools could enhance research on habitats. That required teaching basic searching techniques, as well as the idea of reading what is found and deciphering important information.

"Did it work?"

The short answer to this question is a resounding "YES!!" Two wonderful things came from the club: empowered, happy students and empowered, happy teachers. This model demonstrated what great impact children could have in teaching their peers. What happened in those classrooms has positive reinforcement for the integration of peer tutoring and technology integration.

Observation and analysis showed the benefits were almost a perfect execution with what was originally envisioned. Prior to this experience, few students could use basic computer terminology, successfully turn on a computer, operate basic software, or perform Internet searches. Post analysis revealed the majority of the students achieved all

of these district standards. Even greater evidence demonstrates improvement in all third grade students' perceptions of themselves as technology learners. Before the start of the project, only a few of the students thought they were knowledgeable in regards to technology. When asked, all students felt they were technologically literate. Many educators would find this important, since No Child Left Behind will require students to be technologically literacy by 8th grade in 2006 (U.S. Department of Education, 2005).

The social aspects of the club were amazing. As the club progressed, the original ten Tech Kids were seen as leaders amongst their peers. For these children, this was a fantastic feeling. Many of them had never been seen in a leadership role. Remember that one of the original criteria was "The students selected for the club did not have other extra-curricular outlets in their lives." For some of these students the after-school club motivated them control their behaviors so they could participate. The Tech Kids, in addition to their peers, became more willing to teach others about technology and work together to learn about technology as a result of this leadership project. The children felt they had learned from each other and became better technology users in the process.

The club definitely allowed more one-on-one computer time for each third grade student. Because the Tech Kids went into the classrooms and assembled the students in small groups, there was time for hands on computer use with a peer tutor to help with the new computer skill. The students attained the computer objectives from their peers. The Tech Kids could also do one-on-one pull-out tutorials with students who may have been absent on the day the computer lesson was taught or with students who wanted to use the computers for research purposes.

Finally, the model showed how the children as teachers motivated a slightly older age group of learners: the classroom teachers. This project demonstrated how the children actually helped the teachers become more confident in their technological abilities and willingness to use technology in the classrooms. The results of this activity also illustrated that the children motivated the teachers to want to help fellow educators learn more about technology. These ideas were realized due to an increase in the teachers' willingness to use the portable computer cart in their classrooms. After the Tech Club began, there was a definite increase in teacher requests to use the cart. The cart's popularity went from never being checked out, to being used at least two to three times a week. The requests focused on using the technology for Internet searches for research projects and teaching the students more about computers. These were direct skills taught in the Tech Club.

This model saved teachers time because they were learning the technology skills with their students instead of taking in-service or their own after-school time. The teachers could focus on their curriculum and let the Tech Kids deal with teaching the technology skills.

"Anything else I need to know?"

Although briefly mentioned, it is important to understand that the initial selection of the Tech Kids is important. These children do not need to be the brightest or most skilled technology users in their classroom, but they must be willing to first learn and then stand in front of their peers and teach. The children selected as the Tech Kids must also have the patience and understanding to teach their peers when the information they are presenting is somewhat challenging.

Conclusion

Properly integrating technology into daily curriculum is an ongoing quandary. Teacher frustration toward technology integration can be due to lack of time, knowledge, and computer shortages. The model of the after school Tech Club is a way of affecting the technology curriculum for an entire school; in addition to bridging across other academic and social areas of school curriculums.

If a similar model to the Tech Club was adopted by your school, limited amounts of staff could train children to become tutors of technology. This could have a significant impact in the technology curriculum of the entire school. The experiences demonstrated here show how effective this model can be in teaching effective technology curriculum and should be considered by others in the district as a model for infusing technology into the daily curriculum.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

This process has been long and tedious, but one that I enjoyed and appreciated. Writing this article has allowed me to clarify the knowledge I have about technology integration because it has forced me to truly consider what I did in my study and how to convey those reflections to peers in the field. This has not been an easy task. What makes sense in my head can be hard to write in explanation for others. Although this has been frustrating, the publication process is something I will start again when another valuable topic reveals itself.

An additional benefit that has come from this process is allowing me to work closely with two professors and appreciate how hard they work in publishing their research and data. I am grateful for their patience and perseverance with me in this process.

Recommendations

I am the first graduate student in the Instructional Technology Division to attempt writing a journal article for her final masters project. I think this is an undertaking that is well worth the time and extremely practical for the education field. It can be intimidating to write for a journal as a masters candidate because I feel publishing is often something thought of as only done by university faculty. Although I have relied heavily on the two faculty advisors for my project, I feel that I could go through the publication process again and be much more successful. In short, publication can and should be done by students and this was a great way to show that is true.

This process has been of great benefit to me because I intend to pursue my doctorate degree in education. Since my hope is to eventually become a university professor within five years, I know publishing will be a requirement. Anyone who has this intention should also go through this process to understand the intensity and expectation.

There are a few things I will change in my next publication venture. The first will involve how I go about obtaining consent for the involvement of human subjects. I did not obtain consent that meet current expectations because, at the time of the study, written consent from each participant was not required if the study was done as part of a university class. I will go through the University's Human Subjects Review Board process next time. This will be a top priority in my next project. Additionally, I will use an action research model for my next endeavor, as it will require a more stringent plan. I now know that this type of plan will make everything go smoother towards the final publication.

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Appendix A

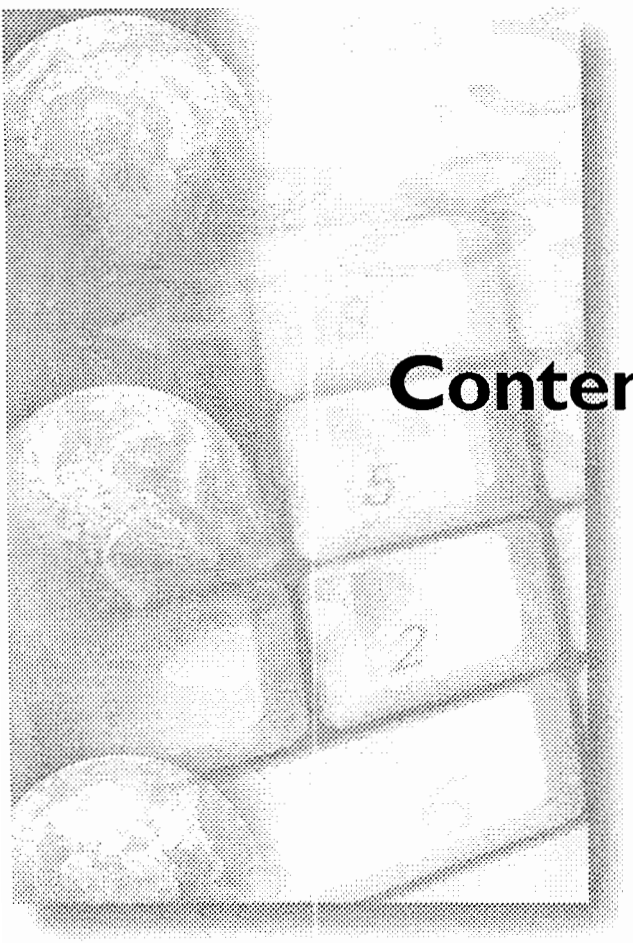
Editorial Submission Guidelines & Policies

Learning & Leading with Technology

Contributors to L&L *are going the extra mile to advance technology integration. As the magazine of a professional membership association,* L&L *depends on this willingness to share.*

Revised December 2002

iste International Society for Technology in Education



Contents

Audience

Articles in *Learning & Leading with Technology (L&L)* are written by educators for educators, including classroom teachers, lab teachers, technology coordinators, library/media specialists, and teacher educators. Our readers—from raw beginners to seasoned veterans—have a broad range of experience in integrating technology into the curriculum and the classroom. Both readers and contributors are willing to try something new, and many of them are involved in technology-purchasing decisions for their schools and districts.

To help our readers, *L&L* emphasizes practical ideas about technology and how to use it in the K–12 curriculum, especially where it can make a difference: easing a teacher's job; saving time; or motivating and helping students develop, practice, or play with difficult concepts or creative processes.

L&L is not a peer-reviewed academic journal. If you feel that your article is more appropriate for an academic research journal, or if you require peer-reviewed publication, consider submitting your manuscript to the *Journal of Research on Technology in Education (JRTE)*. For questions or to submit your manuscript, contact the *JRTE* staff at jrte@iste.org.

Content

A typical issue of *L&L* includes at least one feature article, curriculum articles, columns, and software reviews. Our aim is that every *L&L* reader will find something to use immediately in the classroom.

Feature Articles

(2,000–3,000 words)

Each *L&L* feature covers a subject of broad appeal to many educators and demonstrates the author's awareness of the latest learning theories and classroom practices. Many feature articles include lesson plans, reproducible pages of student lessons and worksheets, and teacher-to-teacher advice on the best ways to integrate technology.

Curriculum Articles

(1,800–2,000 words)

L&L's articles can help educators use technology as they teach a broad array of subject areas from language arts and social studies to mathematics and science. These articles emphasize interdisciplinary applications and constructivist activities, and many feature lesson plans and reproducible activities.

Articles might describe time-savings provided by using technology, a lesson plan for one class period, or a tutorial on some aspect of technology. A longer article provides a deeper look at a project or unit and serves as a good introduction to some technological advance or new use.

Columns & Reviews

(1,500–2,000 words)

L&L's regular columns provide more detail on specific topics. They include the following:

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- *Research Windows*: Discussions of current research and practices
- *For Tech Leaders:* practical information on fundraising and technology planning and coordination
- *Student Voices* (Dennis Harper, column editor): Student-written column in which K–12 students describe their leadership experiences with technology

Editorial & Copyright Policies

EDITORIAL

Style

ISTE's style is a hybrid: It relies primarily on the *Chicago Manual of Style* (14th ed.), but the American Psychological Association's *Publication Manual* (5th ed.) is followed for styling numbers and references.

For general questions of editorial style, consult the *ISTE Editorial Style Guide*; an online version is available through ISTE's Web site at www.iste.org/LL/about/.

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L&L's readability depends on bright and friendly writing rather than formal and academic prose. When considering the tone of your article, keep in mind who *L&L*'s audience is (see Audience on p. 4). As with good writing anywhere, ours is active and direct. For example, instead of writing "The assignment was completed by the student" (passive voice). write "The student completed the assignment" (active voice).

Copyediting

Manuscripts accepted for publication are copyedited to meet house style and the needs of *L&L*'s readers (see p. 4).

Notification

You should receive notice of acceptance or rejection of your submission approximately two months after you have submitted a manuscript. If we decide to publish your work, we will provide you with a detailed publishing schedule.

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  3. the material is not altered without the author's express written consent.

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- Consult the following online resources for more information:

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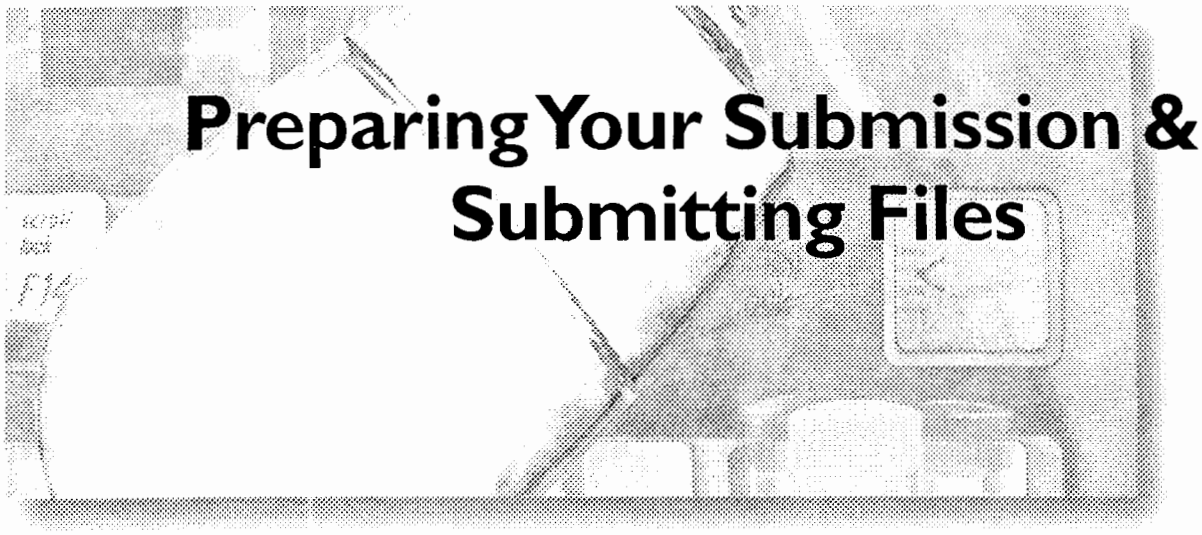

Preparing Your Submission & Submitting Files

PREPARING TEXT

General Requirements

In addition to completing the checklist on p. 10, please fulfill the requirements below. Please include a separate cover page at the front of your article with a word count and each author's name, job title, affiliation, address, telephone and fax numbers, and e-mail and Web address (if applicable). Should your manuscript be published, we use e-mail to send you PDFs to proof and your mailing address to send complimentary copies of the magazine.

Please observe the following requirements when submitting your work. By doing so, you will ensure that your piece is edited more quickly and has fewer queries from the editors.

- Check for accuracy and consistency in spelling, punctuation, and capitalization.
- Verify all dates, names, numbers, and facts.
- Clearly indicate all headings and figure and table placements.
- Supply complete contact information for yourself and coauthors (if any). In the case of coauthors, specify the order in which their names should appear in the article's byline.
- Supply complete references in APA style and cited correctly in the text as well as in the reference list.

Style

For general questions of editorial style, consult the *ISTE Editorial Style Guide*; online and PDF versions are available at www.iste.org/LL/about/.

Word Counts

Each type of article or column must fit *L&L*'s layout, so we have established word counts to help guide our authors in their writing. **Do not** exceed the maximum length.

- ***Feature Article***
  2,000 to 3,000 words*
- ***Curriculum Article***
  1,800 to 2,000 words*
- ***Column or Review***
  1,500 to 2,000 words*

***Note**: Word counts include article text, table text, figure captions, sidebars, author biographies, and references.

Outline

A brief outline should show the following (this information helps us create the informational graphic readers see at the beginning of each article):

1. major topic and specific point or conclusion;
2. intended audience (e.g., K–8 tech coordinators, Grades 3–4 science teachers);
3. photos, art, or tables included;
4. technology discussed (including manufacturer);
5. software mentioned (including manufacturer);
6. applicable standards (curriculum and NETS); and
7. a simple outline or concept map of your article.

Author Information

L&L includes photographs and short biographical sketches (up to 75 words) of our authors. Bios should include job title, affiliation, a basic job description, information on your education, and any additional details you would like to share.

Should your manuscript be accepted for publication, you will be asked to supply us with a photograph (black & white or color) of yourself. Author photos are typically headshots. Submit digital photos in high resolution TIFF, JPG, or EPS format. We can scan print photographs, as well.

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Appropriate graphical materials—tables, figures, charts, student work, photographs, etc.—must be clearly referenced within the text and supplied on separate pages with the same labels or designations used in the text (e.g., "Figure 1" in text and on a corresponding printout). Please DO NOT place graphical materials in your word processing file. If you normally "print screen" and paste it into your text file, instead paste the screen into a separate graphics file.

Both tables and figures must be numbered consecutively, beginning with Arabic numeral 1. Cite each element by number in the body of the article, and add the table or figure number, title, and caption (if any) at the end of the manuscript and at the end of the electronic text file. Print each table or figure on a separate sheet and include its number, title, and caption (if any) on the printout.

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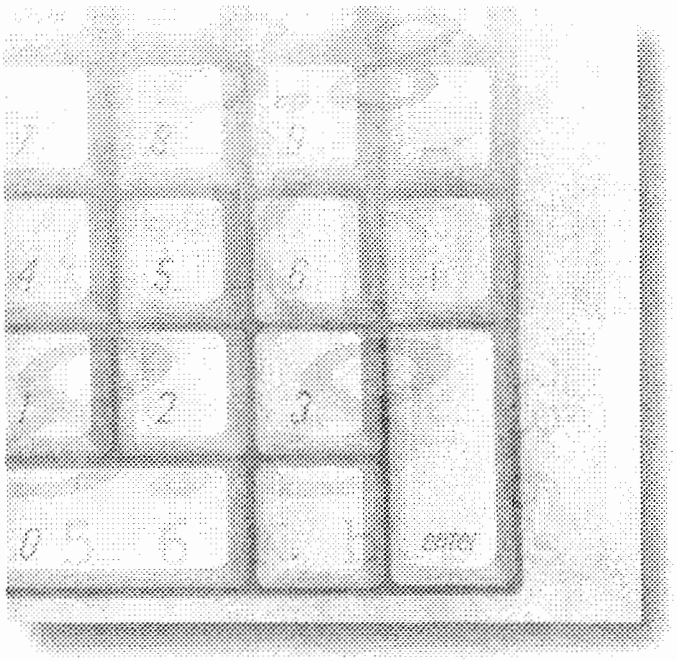

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ISTE uses the Macintosh operating system, but can typically translate most files. Electronic files can be supplied by e-mail or mailed on a disk. If you prefer to use FTP, contact the acquisitions editor for instructions. Whichever way you submit your materials, please observe the following for both text and graphics.

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Disk: Please supply a word-processing file. Microsoft Word or Rich Text Format (RTF) files are preferred. No desktop publishing or PDF files, please.

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We encourage you to submit your manuscript electronically, but if you wish to send a hard copy, supply one complete copy of your manuscript formatted as follows (an electronic file is still required):

- Print on one side only of each sheet of paper.
- Use at least one-inch margins on all sides.
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- Number all pages in the upper right corner.

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If you submit electronic files for art, student-created work, photographs, or other items, please provide originals in the following formats (listed in preferred order): TIFF, JPG/JPEG, EPS, PICT, bitmap. DO NOT insert graphics into your word processing file.

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If your article is accepted, it will likely go through one or more rounds of revisions with the acquisitions editor. The revision process can take from two weeks to nine months. The acquisitions editor will also work with you to ensure that any missing pieces (e.g., model releases, permission to use graphics) arrive here at the ISTE editorial offices.

After revisions, the acquisitions editor will schedule your article for a specific issue and turn it over to the editor and senior editors for content and copy editing. These editors will likely contact you with questions and for clarification of points. The turnaround time is usually short at this stage of the process, sometimes as short as two days. We will let you know when to expect to hear form the editors so that you can plan accordingly (or let the editors know when you will be able to devote time to the article). As many as three editors will work on your article, so you may hear from us more than once.

After editing is complete, the art director and graphic designer will lay out your article. We will send you a layout proof to check for gross factual or grammatical errors, with 48-hour turnaround. (Again, we will let you know when to expect this.)

Once you've signed off on the article, we will print the magazine. You will receive complimentary copies at the mailing address you've given us at about the same time as subscribers.

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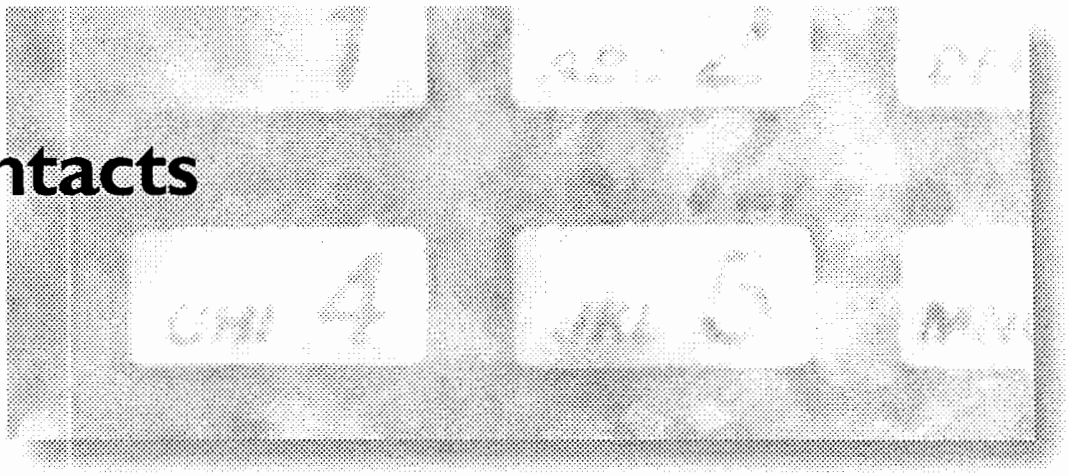

We provide these guidelines for both regular and prospective contributors to make the article-writing and -submission process easier. This document will be revised periodically, so your comments and feedback are important to us. Submit them to Editor Kate Conley at kconley@iste.org. ***Last revised August 2002.***

For more information, please contact one of the following ISTE editors:

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Submission Checklist

Use this checklist when preparing your manuscript to ensure the review of your submission. Photocopy this page and use it to check off your materials.

COVER MATERIAL (see p. 8)

___ Word count(s) included? (Please provide word counts for *all* elements, including sidebars and tables.)

___ Author(s) name, affiliation, address, phone, fax, e-mail, and Web address?

___ Outline or concept map of article?

EDITORIAL CHECK (see p. 8–9)

___ Electronic file(s) of manuscript provided?

___ Spelling has been checked?

___ Text has been proofread?

___ All dates and names verified?

___ Headings indicated?

___ Figure and table placements indicated?

___ Information supplied for all product(s) mentioned? (Product name, company name, address, telephone number, and e-mail and Web address.)

___ Contact information supplied for all authors?

___ Brief bio for each author at end of article (75 words max.)?

___ Byline order indicated for coauthors?

___ Contact information included for other contact persons or organizations mentioned?

___ *ISTE Editorial Style Guide* consulted (www.iste.org/LL/about/)?

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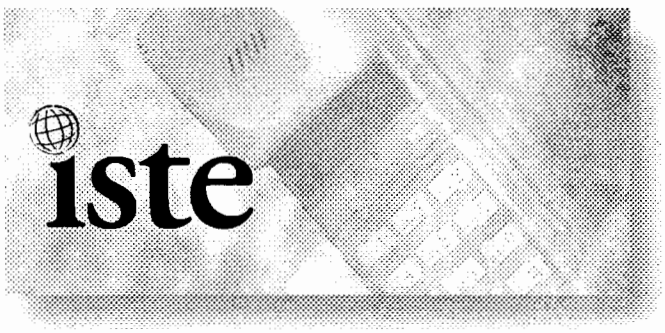

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Appendix B

June 2, 2005

Kate Conley
Editor, *Learning and Leading with Technology*
ISTE
480 Charnelton Street
Eugene, OR 97401-2626

Dear Ms. Conley:

I am enclosing a submission to *Learning and Leading with Technology* entitled, "Peer Tutoring and Technology Integration: You Too Can Make It Happen!" The manuscript has a word count of 2,565 words, with an additional 61 words included in an embedded figure. Attached you will also find a concept map providing a general outline of the article.

I will be the primary contact for this article. The contact information for myself and the other co-authors is included in this correspondence. Please feel free to contact me with any questions and I will assure they are informed of all communication happening in the anticipated publication process of the article.

Thank you for your time and consideration. I look forward to hearing from you in the near future.

Sincerely,

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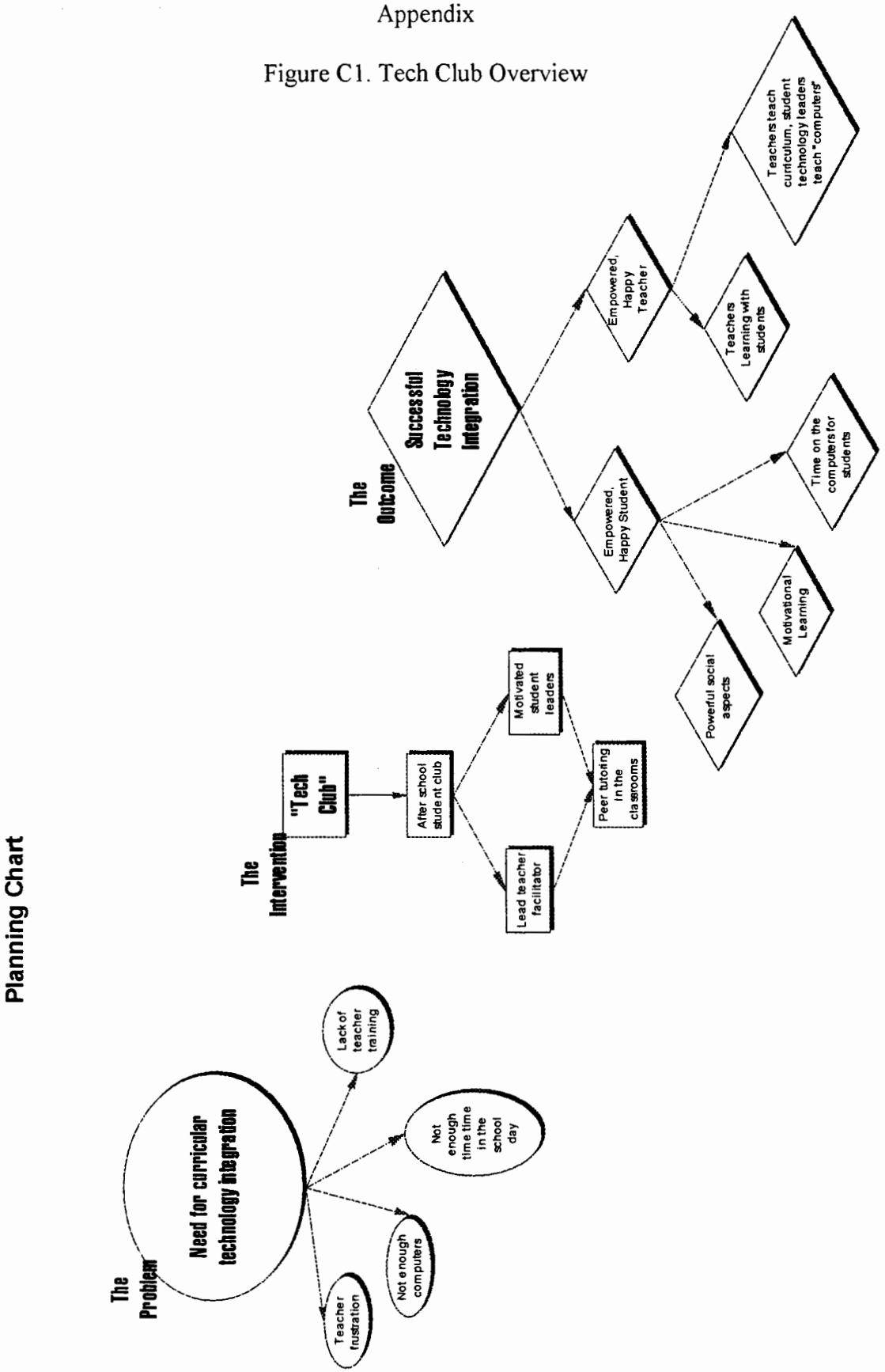
Appendix

Figure C1. Tech Club Overview



Appendix

Figure D2. Flowchart of Tech Club's Process