

## **Writing Team Term Project**

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### The Discipline of Writing

The discipline of writing involves a number of important aspects. Writing is a form of communication through recording information and ideas that we want to remember and/or share with others. We attempt to write in a form that communicates in the most effective way, thus solving a problem. In solving this problem, we must consider that writing can be either a linear or nonlinear process. Writing is a linear process when done on paper, but with the use of ICT, writing can become a nonlinear process. Formal writing involves a step-by-step process, which begins with developing ideas. Each of the following sequential stage aids in creating a final published product.

### Writing vs. Other Disciplines

Writing is an all-encompassing discipline because it is used throughout every academic domain. Each discipline in school requires the use of writing to communicate ideas and information about that discipline. Writing is also used to record information in these other disciplines. Writing and reading are most closely related, as many skills about letter and word sounds are developed through a combination of these subjects. Overall, it is necessary to transfer writing skills from one subject to another.

### Expertise in Writing

In order to be an expert in the discipline of writing, you need to know the basics, including being able to form words, sentences, and paragraphs that communicate ideas effectively. Once these basic concepts are learned, writers synthesize ideas into logical and flowing organization. Also, writing can take on a more artistic form when using different genres for certain audiences and purposes, and experts need to have knowledge about each genre. For instance, writers could be skilled at poetry, creative writing, and/or informational text.

### Oregon Standards for the Discipline of Writing

In the state of Oregon, standards are composed of common curricular goals and grade level benchmarks. Common curricular goals are consistent throughout the grade levels, explaining what students should know within each discipline, whereas the grade level standards develop more specifically what students in each grade level should be able to perform. Since we are defining how ICT impacts writing in grades K-5, we are focusing on the common curricular goals within that discipline. Listed below are the standards for writing in grades K-5.

- Common Curricular Goals: Oregon State Standards: K-5:

- Writing: Pre-write, draft, revise, edit, and publish across the subject areas
- Communicate supported ideas across the subject areas, including relevant examples, facts, anecdotes, and details appropriate to audience and purpose that engage reader interest; organize information in clear sequence, making connections and transitions among ideas, sentences and paragraphs; and use precise words and fluent sentence structures that support meaning
- Demonstrate knowledge of spelling, grammar, punctuation, capitalization and penmanship across the subject areas
- Write narrative, expository, and persuasive texts using a variety of written forms-including journals, essays, short stories, poems, research reports, research papers, business and technical writing-to express ideas appropriate to audience and purpose across the subject areas
- Investigate topics of interest and importance across the subject areas, selecting appropriate media sources, using effective research processes, and demonstrating ethical use of resources and materials

### Discipline-Specific Content

Discipline-specific content within writing includes writing letters, words, and sentences. Once these concepts have been developed, grammatical rules must be learned, understood, and implemented into writing. Creating paragraphs, topic sentences, main ideas, and conclusions are all necessary for organizational skills within this discipline. Genres of writing are also important in this discipline's content, including fiction, nonfiction, and poetry. Students learn the elements of fiction. These elements include: characters, setting, plot, theme, and style (Fountas & Pinnell, 2001, 395). The elements of nonfiction are integrity, accuracy and authenticity, and style and language (Fountas & Pinnell, 2001, 400). Writing content within poetry focuses on figurative language, rhyme, rhythm, and types of poems (Fountas & Pinnell, 2001, 411). The writing process (brainstorming, organizing those ideas, developing a draft, obtaining feedback, revising, and publishing) is a large part of the writing content (ISTE).

When using ICT in the writing curriculum, there are several important ICT-related content topics that must be addressed. One of these is word processing; being able to type letters and symbols on a keyboard is an important skill that should be taught as part of writing content. Additionally, the content includes using the Internet to find information and web pages. In order to include these topics in the writing content, students and teachers must be equipped with some basic skills for using ICT. They must be able to maneuver around on a computer and navigate through the Internet. For instance, they should know how to access the Internet, sign on, and type in a web address. Software such as *Inspiration* and *Kidspiration* are beneficial to use for teaching writing, and therefore being able to use these programs is part of the ICT-related content.

### Discipline-Specific Maturity

Writers begin in this discipline by simply learning and understanding how symbols, such as letters and punctuation marks, are used to communicate ideas and information. This topic is inexorably tied to the discipline of reading. As students grow in their level of maturity, they are able to make connections between reading and writing. For example, students can take information that they read, and use it to respond through writing. Writing maturity can also occur through the organization of information. As students continue to develop their maturity, they will have stronger organizational skills. Also, students who master the basics of writing will be able

to build upon their understanding by incorporating more details into their writing. For example, students gaining maturity could use a dictionary and thesaurus to build their vocabulary and develop their word choice within their text. Voice in writing is another concept that shows growth in writing skills because this is a more abstract concept. Writers develop writing style and their voice is expressed uniquely. Writing maturity is shown through individuality in the use of these more abstract concepts, while still retaining proper grammar and conventions.

### Piagetian Scale in Writing

Moving throughout different phases of writing ability can be examined under the Piagetian Cognitive Developmental Scale. This scale begins with the sensorimotor stage from birth to age 2. In this stage, object permanence is not yet developed. A child is building a set of concepts about reality through physical interaction. The next stage, known as the preoperational stage, occurs from age 2 to age 7. This is where physical concepts are still the primary way of learning. Children in this stage do not yet understand abstract concepts. Following this stage is the concrete operations, spanning from ages 7 to 11. Here, abstract problem solving begins to be developed. Children's experiences are accumulating into logic. Finally, the last stage is formal operations. Between ages 11-15, conceptual reasoning is developed. Cognitive structures are beginning to resemble those of an adult's (Funderstanding, 2004).

In working with students in grades K-5, we will be teaching writing skills to children who are at the preoperational and concrete operational stages. Our job is to help students to move from writing about physical concepts to more abstract concepts in writing. By teaching these parts of writing content, we are guiding students as they move their way up the scale of discipline-specific maturity. ICT can promote development of abstract thinking, leading to communication and problem solving in writing. For instance, software programs and word processors offer a route to documenting ideas in a physical manner. By getting the ideas into a physical form, students can begin to develop more abstract thinking. They will organize small thoughts in a non-linear program. These small ideas can lead to a larger composition after some organization of the ideas. Also, insertion of additional ideas and information can be done throughout the writing process, including abstract thoughts added to the more concrete ideas.

### Roles of ICT in the Writing Discipline

ICT is a tool with the potential to drastically change and improve the way we teach writing. It can be used for writing instruction, writing activities, and the writing process. ICT has the ability to transform writing into a nonlinear process. When working on a computer, students can add words, sentences, and paragraphs in their writing and the text will automatically expand to fit the new text. In the same sense, students can delete unneeded writing. This allows students the capability to revise their work more efficiently and effectively, as well as building organizational skills. ICT also creates the ability to more easily publish writing that has been developed through the writing process. Students can print work that looks very presentable and professional because they do not have to worry about their handwriting and the spell checker will help them remove spelling errors. Also, errors in sentence structure are highlighted by desktop programs. When students have written informational text, they can use convenient citation programs to document other's ideas that they have presented through their own writing. ICT offers the opportunity to publish for in-class purposes, but students can also publish their writing to a larger audience through the Internet. Many web pages have response links or students can

create their own web page. Students can, in turn, look at their peer's writing projects and provide feedback.

Using ICT can allow students to work on their writing skills through both synchronous and asynchronous communication. Chat rooms, instant messenger, and email are all types of Internet communication that promote the use of writing. Writing using these forms takes on a new genre, in which students are learning to use writing for practical purposes. Students are writing to communicate, without having to be as formal as some other writing genres. It is important that students are taught proper "netiquette" for communicating through email and instant messenger (ISTE). One thing that is critical for teachers to keep in mind when using communication programs is the possibility of students getting off-task by using instant messenger instead of doing their work (Jackson, 2004).

When teaching writing, ICT can also be influential in lesson planning and curriculum design. The Internet provides access to an abundance of resources, including lesson plans and writing excerpts. A wide variety of writing is available on our global library. These lesson ideas and curricula found on the Internet can be accessed quickly through the use of search engines. Teachers can also publish their own writing on the Internet for instructional purposes. For instance, a classroom webpage designed by the teacher can be an important form of written communication. It is easily updated and extremely accessible.

During instruction, teachers can use ICT to aid their teaching. ICT offers access to learning that could not otherwise take place inside a classroom. For instance, videoconferencing allows for students to interview people or see sights that exist far away from their school. Reflecting on these unique experiences can be a wonderful opportunity to use writing.

The use of ICT in the writing curriculum brings up several important issues that must be considered when developing the roles of ICT. ICT-related instruction is often faced with problems such as a lack of funding and lack of teacher training. The US Department of Education performed a study where they found that less than 35% of teachers feel either "well prepared" or "very well prepared" to use ICT in their instruction (NEA, 2000). The NEA recommends that at least 25% of a school district's technology budget should be allocated to professional development for teachers and staff in the area of ICT (NEA, 2000). This data indicates that ICT is important in the field of education and it is important to ensure that teachers are able to use it effectively.

Writing is a discipline that can be highly impacted by the use of ICT. In one study done by Microsoft with seventh-grade students, results showed that students who had access to laptops for writing showed improvement within this discipline (Microsoft, 1998). Students who used laptops showed overall improvement, did writing more frequently, and displayed greater efficiency with grammar, spelling, revisions, and the writing process (Microsoft, 1998).

### Integration of ICT into Curricula

Writing activities can be enhanced through the use of ICT in the writing curriculum. There are many activities that can be done through the use of computers and the Internet to meet the curriculum goals and state standards. By using the Internet, students can develop their writing skills through activities such as email pen pals, personal web pages, research, and citation programs. The following is a list of some activities that can be used in writing instruction and ICT.

- WIB (palm tree-writing activity)
- Classroom newspaper
- Email pen-pals
- KidPix illustrations with creative writing
- Brainstorming for writing in Inspiration
- Multimeadia presentation
- Digital portfolios
- Research on the Internet (family genealogy as one idea)
- Personal web page as character development
- Citation programs (Citation Maker)

### Assessment

Assessing writing can be a difficult task, since it is often a creative process and never has one “right” answer. However, using a rubric with components of good writing can guide a teacher through the assessment process. The six characteristics of good writing, as outlined by Fountas & Pinnell (2001), are organization, ideas and content, voice, sentence fluency, conventions, and word choice.

To assess students’ skills and knowledge in the ICT-related aspects of writing, we would need to observe students as they are using word processing programs and the Internet to identify if they are able to manipulate the text and find needed information. Along with the observation process it is important to take notes on how students are performing in the ICT content. Also, it is important to look at student work during each phase of the writing process. For example, during the brainstorming process, we could check students’ *Inspiration* concept maps to see if they were able to use the program to record their ideas.

To assess the instruction of ICT-related aspects in writing, teachers should make sure they are meeting the teacher NETS standards for instruction with ICT as well as writing objectives for their lessons to include the NETS standards for students.

### NETS Standards for Students

Along with state standards in the discipline of writing, there are national technology standards that have been developed to determine the level of technology performance for students at each grade level. These standards can serve as another form of assessing students’ performance in ICT-related aspects of the writing curriculum. Teachers can determine if students are meeting the specific technology standards that are being implemented through the use of ICT in writing. Here is a list of the six categories of NETS standards in which students should be able to meet during their K-12 education.

1. Basic operations and concepts
  - Students demonstrate a sound understanding of the nature and operation of technology systems.
  - Students are proficient in the use of technology.
2. Social, ethical, and human issues
  - Students practice responsible use of technology systems, information, and software.
  - Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

3. Technology productivity tools
  - Students use technology tools to enhance learning, increase productivity, and promote creativity.
  - Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.
4. Technology communications tools
  - Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
  - Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.
5. Technology research tools
  - Students use technology to locate, evaluate, and collect information from a variety of sources.
6. Technology problem-solving and decision-making tools
  - Students use technology resources for solving problems and making informed decisions.
  - Students employ technology in the development of strategies for solving problems in the real world.

### NETS Standards for Teachers

National standards for technology use by teachers have also been developed. Teachers need to be able to meet standards for using and teaching with ICT in order to help their students develop appropriate ICT skills. As a general rule of thumb, teachers should be able to meet the 12<sup>th</sup> grade NETS standards, as well as the following NETS teacher standards.

#### 1. Technology concepts and Operations

*Teachers demonstrate a sound understanding of technology operations and concepts. Teachers:*

- Demonstrate introductory knowledge, skills, and understanding of concepts related to technology (as described in the ISTE National Education [Technology Standards for Students](#))
- Demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies.

#### 2. Planning and designing learning environment and experiences.

*Teachers plan and design effective learning environments and experiences supported by technology. Teachers:*

- Design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners.
- Apply current research on teaching and learning with technology when planning learning environments and experiences.
- Identify and locate technology resources and evaluate them for accuracy and suitability.
- Plan for the management of technology resources within the context of learning activities.
- Plan strategies to manage student learning in a technology-enhanced environment.

#### 3. Teaching, Learning and the curriculum

*Teachers implement curriculum plans, that include methods and strategies for applying technology to maximize student learning. Teachers:*

- Facilitate technology-enhanced experiences that address content standards and student technology standards.
- Use technology to support learner-centered strategies that address the diverse needs of students.
- Apply technology to develop students' higher order skills and creativity.
- Manage student learning activities in a technology-enhanced environment.

#### 4. Assessment and Evaluation

Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies. Teachers:

- Apply technology in assessing student learning of subject matter using a variety of assessment techniques.
- Use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.
- Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

#### 5. Productivity and professional practice

*Teachers use technology to enhance their productivity and professional practice. Teachers:*

- Use technology resources to engage in ongoing professional development and lifelong learning.
- Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.
- Apply technology to increase productivity.
- Use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

#### 6. Social, ethical, and human Issues

*Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice. Teachers:*

- Model and teach legal and ethical practice related to technology use.
- Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
- Identify and use technology resources that affirm diversity
- Promote safe and healthy use of technology resources.
- Facilitate equitable access to technology resources for all students.

#### Conclusion

Implementing ICT into the discipline of writing is beneficial to our students. It changes the linear process into a new form. With ICT writing can expand and retract. In addition ICT provides students with an abundance of resources and communication opportunities that they have not had before. The Internet is larger than any school library could hope to be! Lastly, students can be motivated by the ability to publish their writing for the whole world to see. ICT can take a child beyond their school classroom.

Once it is agreed that ICT has an important place in the discipline of writing, a number of steps need to be taken. Teachers and schools need to take responsibility to learn ICT skills

before they can teach students these skills. In addition, schools need to provide students and teachers with access to ICT. Lastly, teachers need to make a daily effort to include ICT in their lessons. Integrating ICT into the curriculum is a momentous task, but we need to remember that every small step leads us closer to achieving this task.

#### Annotated Bibliography

Fountas, I. & Pinnell, G.S. (2001). Guiding readers and writers: Grades 3 through 6. Heinemann Publishing: Portsmouth, NH.

This book is for teachers of the upper primary grades. It explores various writing activities, instructional methods, and characteristics of good writing.

Funderstanding. Piaget. Accessed on 10/22/04 at <http://www.funderstanding.com/piaget.cfm>

This site explores the life and learning theories of Jean Piaget. It describes his ideas of the four developmental stages of learners.

Information Technology in Writing-The Research. Retrieved November 23, 2004 from <http://www.iste.org/research/reports/tlcu/writing.cfm>.

This article contains information about the discipline of writing as well as research about implementing ICT into writing.

Jackson, L. (2004). Education World. One-to-one Computing: Lessons Learned and Pitfalls to Avoid. Retrieved November 27, 2004 from [http://www.education-world.com/a\\_tech/tech/tech197.shtml](http://www.education-world.com/a_tech/tech/tech197.shtml)

This article discusses some issues around the use of ICT in education, including a lack of funding and teacher training, and things to look out for when using ICT in instruction.

Microsoft Corporation (1998). Powerful Tools For Schooling: Second Year Study of the Laptop Program. Retrieved on 11/23/04 from <http://www.microsoft.com/education/k12/aal/resource/research2.doc>

This article provides information about a study performed on seventh grade students using laptops for writing. It provides statistics, results, and information about the study.

Moursund, D. Introduction to Information and Communication Technology in Education. (2004).

This book discusses the need for and roles of ICT in education including implementation and issues that arise from it. It discusses ICT as a whole and also within specific disciplines.

National Education Association. Technology in Schools. Retrieved on November 23, 2004 from <http://www.nea.org/technology/>

This site provides information about the importance of using ICT in education. There are statistics and facts from an NEA study.

National Educational Technology Standards. (2004). Retrieved from: [www.iste.org](http://www.iste.org).

This site contains lists of the NETS Standards for students, teachers, and administrators. There is also a lot of other information about the development of the standards and information about important current issues relating to educational technology.

Oregon Department of Education. Grade Level Foundations and Standards. (2003-2004).

This newspaper handout provides teachers with the Oregon State Standards for each subject and each grade level. It is organized by grade level and teachers are able to use the newspaper to look up goals and benchmarks.