

Journals Across the Curriculum: By Examining How Student Journals are Used in K-12 Classrooms, Environmental Educators Can Better Understand How to Use Journals in the Field

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Journaling has become a popular trend in the K-12 classroom, especially among teachers of science, math and language arts. Student journals are used to increase opportunities for content-based reading and writing, to reinforce concepts, and to communicate knowledge and beliefs about the subject area. By examining how student journals are used in k-12 classrooms, environmental and experiential educators can better understand how to use journals in the field.

Open to a blank page in your journal, pull out a pen, and welcome a world of possibilities. Settle in on a boulder along a tumbling creek, pull a chair up to your kitchen window or sit completely camouflaged among a field of tall grasses. Creative nature journals are a popular tool among environmental educators and experiential educators for increasing interactions with a place, providing space for creative drawing and writing, and for encouraging personal reflection before, during or after an intense experience. Yet, student journals are found in another place beside field, stream and woods. Journaling has become a popular trend in the K-12 classroom, especially among teachers of science, math and language arts. Student journals are used to increase opportunities for content-based reading and writing, to reinforce concepts, and to communicate knowledge and beliefs about the subject area. “Journals are the all-purpose answer to writing across the curriculum—they work in every class” (Ross, 1998, p.189). By examining how student journals are used in k-12 classrooms, environmental and experiential educators can better understand how to use journals in the field.

History of the Journal

Just about as long as paper and ink have been available, humans have been using these tools to record both external observations and internal reflections. Dymont and O’Connell explain in their article *Journal Writing in Experiential Education: Possibilities, Problems, and Recommendations*, that early journal writers “included the Greeks and Romans, women of 10th-century Japan, and ‘enlightened’ individuals during the Renaissance” (2003, p.3). Notable journals include those of explorers and scientists, such as Lewis and Clark, John Wesley Powell and Charles Darwin. Nature writers have long used the journal as a way to record observations, drawings and emotions while in the field, such as the works of Henry David Thoreau, John Muir, Margaret Mead, Aldo Leopold and Terry Tempest Williams. Personal journals have often become important documents that offer a look into the more human side of a historical event, such as the diary of Anne Frank. However, as Dymont and O’Connell note, “it was not until the early 1960s that researchers recognized the

value of journal writing in educational setting” (p.3). Now, you can find student journals in a variety of K-12 classroom settings, especially in science, math, and language arts. Ernst writes that “journals provide students—as well as artists, writers and scientists—with a tool for observation and a place to practice writing, respond to literature, take notes, solve problems, express themselves and think in words and pictures” (1997, p.26).

Journals in the Field

How are journals used? Journals have become a standard educational tool in the fields of environmental and experiential education. Journals are used within these fields for three main purposes: to provide opportunities for reflection; to enhance skills; and to enhance students’ connection to the natural world (Dyment, p.3). Journals are often used as a safe place for students to reflect on an experience, be it an intense outdoor education adventure, an interpersonal interaction, or a service-learning or internship experience. Journal writing is recognized by many educators as a way to enhance observation skills, encourage critical-thinking and problem solving-skills, as well as providing writing and drawing practice. Field journals are often employed as a way to provide students with quiet time within a natural setting, where they can collect data, sketch, create a poem, make leaf rubbings, or make a sound map, while deepening their connections to place. Journals are also used to integrate across disciplines, to encourage various styles of learning, “to increase self-esteem, to strengthen the attention span, to enrich academic skills, and to find strength and wisdom within” (Capacchione, 1989).

What are some examples of use? Field journals can take on many forms. A natural history journal focuses on data collection, such as charting weather, animal and plant species, and geography. A reflection journal is used in conjunction with service-learning projects, internship experiences, or intensive outdoor education adventures. A response journal provides a space to respond to prompts or to literature. While personal journals are more prevalent, some educators use group journals in order to collect responses to a group experience, or as a way for individuals to address the group following an intense experience.

Is this use exemplary? Dyment and O’Connell offers nine recommendations, based on a literature review, for environmental and experiential educators who want to implement the use of journals. However, I believe these nine points are applicable to any subject-area teacher who uses journals with students. A summary of these recommendations follows:

1. “Offer thorough and detailed feedback.
2. Improve students’ journal writing skills by offering workshops.
3. Recognize that students will have varying interests in journal writing.
4. Recognize the different ways that males and females perceive journal writing.
5. Set aside semi-structured time for journal writing.
6. Model good journal writing behavior.
7. Consider alternative models for evaluating journals.
8. Establish a trusting community between journal writers and journal readers.
9. Avoid journal writing students ‘to death’” (p.4).

A strength of field journals is that they often integrate across disciplines, creating opportunities for students to use many skills, including data collection, observation, drawing, writing, creativity and reflection. Journals can be used to meet some of the North American Association for Environmental Education’s (NAAEE) *Excellence in Environmental Education—Guidelines for Learning (Pre K–12)*. Journal writing is aligned with many of these guidelines, including: Questioning, Collecting Information, Individuals and Groups, Change and Conflict, Human/Environment Interactions, Places, and Evaluating the Results of Citizen Action (NAAEE 2004). Journal writing is also aligned with the principles of experiential education, as outlined by the Association for Experiential Education (AEE). Journal writing can support the following AEE principles:

- “Experiential learning occurs when carefully chosen experiences are supported by reflection, critical analysis, and synthesis.
- Throughout the experiential learning process, the learner is actively engaged in posing questions, investigating, experimenting, being curious, solving problems, assuming responsibility, being creative, and constructing meaning.
- Learners are engaged intellectually, emotionally, socially, soulfully, and/or physically. This involvement produces a perception that the learning task is authentic.
- Relationships are developed and nurtured: learner to self, learner to others, and learner to the world at large.
- Opportunities are nurtured for learners and educators to explore and examine their own values” (AEE).

What evidence is there that this works? Dymont and O’Connell found that while journals are popular, there is little research published about the “theory and practice” of journal use in the fields of environmental and experiential education (p.3). Most of the published literature on field journals tends to be more anecdotal. The majority of research related to student journals focuses on the improvement of students’ writing skills.

Most students seem to enjoy field journals and become completely absorbed in recording their observations and reflections. As quoted by Ernst, a fourth grade girl wrote,

“My journal is a place to put thoughts on paper, sort of a storage room until I fish them out. A journal is also a place to learn about myself. You uncover thoughts you’d never think about. You draw and drawing comes to writing. Everything is a passage to another link, to a never-ending chain” (Ernst, p.27).

What are the issues/concerns? In their literature review, Dymont and O’Connell identified several potential problems with student journals. These concerns include:

- The overuse of journals, which leads students to identify journaling as “a pointless ritual.”
- Students may fall into writing what they think will please the instructor, especially if journals are graded.
- Journals may be misused, such as students using them to “attack other students or make inappropriate comments.”
- Students may not receive adequate training in improving their journal writing skills.

- Putting too much emphasis on journals as a reflection tool, instead of balancing the use of journals with other opportunities for reflection.
- Evaluating journals can be difficult, especially if it is being assessed for a grade (p.3).

Journals in the Science Classroom

How are journals used? Student journals have become popular in science classrooms, from the elementary to secondary level. The ability to communicate effectively is a crucial characteristic of any professional scientists. Ediger proposes that just like scientists, “students in the public schools should also be able to read and communicate well in the scientific arena” (2001, p.1). In addition, Young believes that through science notebooks, “students model one of the most vital and enduring functions of scientists in all disciplines—recording information, figures, and data” (2003, p.44).

Science journals are often called “science notebooks.” Journals are used mainly as a way to improve and reinforce understanding of science content, to improve writing skills, and to provide opportunities for assessment. Some teachers also use science journals to improve observation skills, for data collection, and to practice observational drawing. Science journals are less often used for student reflection or open-ended writing.

Young provides several student objectives that are supported by the use of science notebooks. The student should be able to:

- “Increase their understanding of science concepts based on the standards for each grade level.
- Use writing as a process for discovery.
- Improve their ability to organize ideas and information.
- Recognize the connection between thinking and writing.
- Write more freely, more comfortably, and more often” (p.45).

What are some examples of use? In the science classroom, journal entries are often structured. Students often receive explicit instruction on what prompt to respond to, what data to include in their entry, and what format their journal page should replicate. A common format for science notebooks is an input-output journal, where the page spread is used so that the right-hand page is used to record information provided by the teacher (input), which may include “notes, vocabulary, video notes, labs, etc.”, while the left-hand side is used for the students to process that information (output), such as “brainstorming, reflections, drawings/figures, worksheets, etc.” (Young, 2003, p.44). Young states that science notebooks “are a tool used to strengthen student learning of curriculum (the input) through increased student participation (the output)” (p.44). Another common format is a before-during-after journal, which captures a scientific process as it evolves. In this kind of journal, students are expected to follow the scientific method, including the elements of hypothesis, observation, data, and conclusion (Kepler, 1998, p.83).

Is this use exemplary? The Washington State EALRs in Science state “All students...should have the opportunity to attain scientific literacy” (OSPI Science, p.1). This includes the ability to communicate scientific concepts and ideas. When science journals are related to the on-going unit of study, students will be motivated to participate in journal writing (Ediger, p.3). Kepler provides several tips for helping students get the most out of their science journals. The recommendations include:

- “Select a format that matches your goals for your students.
- Make sure that students get in the habit of dating all their entries.
- Be consistent.
- Keep your own science journal and share it with students from time to time.
- Don’t forget the value of a drawing.
- Avoid grading journal entries” (p.83).

What evidence is there that this works? Young states that science journals “can transform classrooms into dynamic learning environment. In the process, students connect their prior experience with new material and learn to acquire knowledge in ways that will make them life-long learners” (p.47). While reviewing previous research, Baxter, Bass and Glaser believe that science notebooks “are useful strategies for promoting some aspects of science understanding,” (2001, p. 139) however it is demonstrated that these notebooks are not inclusive of all of the kinds of learning that field journals emphasize.

In their study, *Notebook Writing in Three Fifth-Grade Science Classrooms*, Baxter, Bass, and Glaser examined 83 student notebooks in response to a kit curriculum on electric circuits. Their study was enhanced by examining videotapes of the teachers instructing their students in their use of the notebooks. As a result of their study, Baxter, Bass and Glaser concluded that notebooks are justified as “a tool for monitoring science instruction and assessing student learning” (p.125). However, they found at least in these three science classrooms, the emphasis on writing was to “document what was done and produced in science class (i.e. product)” rather than “writing as a way of thinking about and learning science (i.e. process)” (p. 125). Since the observed teachers often gave explicit instruction on what to include in the notebooks, and what exact format to use, the notebooks were more of a depository for information than a tool for processing learning. The teachers “provided little in-class opportunity for students to reflect on what was learned, consider implications of information and evidence across investigations, or to generate questions for further study” (Baxter, p.133). The notebooks “gave little indication of the quality of student thinking or understanding” (Baxter, p. 138).

What are the issues/concerns? A major concern with science notebooks is whether or not they really qualify as journals. While science notebooks are valuable tools for recording science data, many of the qualities of an exemplary journal are missing. As Baxter, Bass and Glaser found in their study of fifth-grade journals, the “notebooks did not contain information about problem-solving strategies, thinking, and reasoning” (p.138). Teachers should be aware that “writing in and of itself does not guarantee learning” (Baxter, p. 139). Without opportunities for creativity, personal reflection, or an emphasis on problem-solving and critical thinking skills, science notebooks tend

to serve as a way to record experiment data and classroom notes than an authentic form of a journal.

Another issue with science notebooks is that science teachers provide little, if any feedback. When feedback is given on students' entries, it not authentic. Usually, "comments [take] the form of a grade, checkmark, or a code phrase" (Ruiz-Primo, 2002). In their study of fifth-grade notebooks, Baxter, Bass and Glaser noted that teacher comments on the "quality or substance of the written work or students' reflections on what they had learned" was noticeably absent. When feedback was present, it "consisted of checks and initials, or comments about the completeness of entries" (p.134).

There are differing opinions on whether science notebooks should be graded. For example, Young believes that notebooks should be graded using a six-point rubric, including levels of completeness and effort (p.46). Kepler, on the other hand, believes that teachers should avoid grading science notebooks in order to avoid students writing what they believe the teacher wants. She believes that "science journal writing is not about the 'right answers,' but should be an enjoyable laboratory in which children explore the journey of science learning" (p.83). Ediger asserts that notebooks should be graded, however "each student then should be assessed based on making improvement as compared to previous journal entries written, rather than achieving absolute standards" (p.3). The literature on science notebooks differs in opinion on whether English mechanics should be upheld or overlooked in the science classroom.

Finally, some teachers are concerned with the amount of time it takes to engage students in journal writing in the science classroom. Young reassures teachers, explaining that "with proper planning, however, writing becomes a natural part of the rhythm of the science class" (p. 45).

Journals in the Math Classroom

How are journals used? Math journals are most often used to provide students with an opportunity to communicate and reinforce mathematical concepts, to show their problem-solving processes, and to communicate their beliefs both about the concepts, and about the class itself. Koirala found that "math journals were effective in soliciting students' mathematical thinking, both cognitive and affective," and that since the journals gave the teacher the opportunity to respond to students' entries, this interaction improved students' mathematical understanding (2002, p.8). Math journals are helpful in providing teachers "insight into students' conceptual and procedural knowledge and attitudes toward mathematics" (Di Pillo, 1997). Students find math journals helpful as "a way of sharing their thoughts about mathematics, a learning tool that facilitated retention, and a way to communicate with teachers" (Di Pillo). In addition, some teachers use story problem journal prompts as a way to prepare students for the "open-ended, open-response test items" found on math assessment tests such as the WASL (Dougherty, 1996).

What are some examples of use? A kindergarten teacher used a group math journal as a way for students to "record their problem-solving processes, make them think about and use various symbols to represent their thoughts, keep them actively engaged in reasoning, comparing,

counting, and other mathematical concepts, and encourage them to explore the many uses of language” (Fuqua, 1998). The Problem-Solving Book, as she called the group journal, was a place that students could gather evidence of their problem solving skills. She focused on problems that were authentic and driven by the students’ own questions and concerns. For example, when a child brought Halloween rings to give to his classmates, the other students wanted to know how many people received each of the three ring types. The children worked together to create a table where they counted how many children received each ring. “This was truly a children’s problem-solving activity, because they thought of the question, as well as how to solve it and record it” (Fuqua, p.75).

Is this use exemplary? Math journals help support national recommendations in mathematics education, such as the National Council of Teachers of Mathematics (NCTM) and the American Mathematical Association of Two Year Colleges (AMATYC), both which emphasize that “students should be able to communicate mathematically, both in written and oral forms, using mathematical vocabulary and notations” and that “writing in mathematics provides opportunities for students to express their thinking” (Koirala, 2002, p. 2). Math journals also support the Washington State EALRs in Math, which states “all students must develop and sharpen their skills; deepen their understanding of mathematical concepts and processes; and hone their problem-solving, reasoning, and communication abilities while using mathematics to make sense of and to solve compelling problems” (OSPI Math, p.2).

What evidence is there that this works? In a study of 1,800 journal entries written by pre-service math teachers, Koirala found that “all the students interviewed valued the role of journals in their mathematical learning” (p. 4). One pre-service student wrote, as quoted by Koralala, “I like the journals because they give me time to think and reflect about what I learned and ask questions as they come up, and not have to wait until class-time” (p.7).

What are the issues/concerns? A common concern of math teachers who have been instructed to include writing in their classroom is that there is not enough time to do so. A kindergartener teacher wrote that she “was concerned about adding an additional writing activity to our already full schedule,” and that “more writing would not be the best use of our limited time together” (Fuqua, p.73). Another concern is that math journals, which tend to focus on the solving of story problems, may not be “relevant and meaningful to all of the children,” (Fuqua, p. 73) especially since students may solve the problems individually with little interaction or discussion of their reasoning.

While math journals may be effective ways for students to record their problem solving processes, a larger concern is whether these are actually authentic journals, or if they are simply a different way for students to show their work. It appears that most journal entries are in response to teacher-driven prompts and offer little opportunity for personal reflection or creative expression. Some teachers appear to use the journals as a way for students to provide some feedback on their opinions about the class culture or the quality of instruction.

Journals in the Language Arts Classroom

How are journals used? Student journals are most commonly used as a way to practice writing, an opportunity to write freely, independently, and creatively, and as a way to connect teachers with their students on a personal level. “Journal writing provides daily opportunities for students to express themselves, practice using the features of print they controlled and extend their knowledge of print” (Slinger, 1997, p.3). Journal writing also allows “personal connections with the curriculum and teachers, documents life experiences, and contributes towards increased fluency and improved attitudes toward writing” (Eastman, 1997).

What are some examples of use? Several kinds of journal entries are popular in the language arts classroom. Response journals provide students with an opportunity to respond to literature that they have read. Dialogue journals provide students and teachers a chance to have a personal written conversation about a topic. Dialogue journals are also sometimes used between students, or with students and their parents. Journals are often used as a place to pre-write or to brainstorm topics for an assigned essay. One of the most popular uses of journals is for free-writing, which is also called independent writing. Free-writing allows students to write freely for a set period of time without self-criticism. Double-entry journals (similar to the input-output journal described in the science section) provide students the opportunity to take notes on one side of their paper and record responses and questions on the other side of the paper.

Cheri Slinger, an emergent reader teacher of young children, used journal writing about life stories as a way promote independent writing and to motivate students to write. When she received a letter from a mother of a former student, Slinger realized the impact that these Life Stories Journals had both on her young students, and their families. Slinger writes,

“She told me that she had spent the evening reading through all the books and realized that Rebekah had personally and in her own perspective recorded every important family event that took place during that year. There were stitches and Strep throat, a new baby and a car accident, vacations and visits with grandparents. This was their family history recorded by a seven year old.”

Through independent writing about personal events, Slinger found that her students “had not only gained skill in writing but had discovered the true essence of ‘journaling’—recording moments in life in their own personal way” (p.6).

Is this use exemplary? The Washington State EALRs in Writing describe why students need to be able to write,

“Learning to write brings the learner into the literate community as an active participant in the conversation. Writing is our catalyst for creating the future. Committed writers use writing for a wide spectrum of practical, economic, social, personal, and aesthetic purposes. Engaged writers use a language that is alive, flexible and adaptable to the highest expression of which the human being is capable” (OSPI Writing, p.1).

In addition, journal writing specifically meets the following EALR: “Write in a variety of forms, including narratives, journals, poems, essays, stories, research reports, and technical writing”

(OSPI Writing, p.3). Writing in the language arts classroom seems to most closely meet the standards for exemplary journal writing as used by environmental and experiential educators.

What evidence is there that this works? Journal writing can improve attitudes toward writing, motivate students to write, increase reading comprehension, and enhance the element of trust between teachers and their students. In a study of second graders' journal writing, Adams-Boateng found that "journal writing is an effective tool in improving second graders' comprehension of texts" as shown by improved test scores as compared to a control group (2001).

Journal writing provides students with an opportunity to write in a different format and in a different way. In *What Research Says About Writing*, Egawa finds that "language skills and conventions...are most successfully learned...applied within the context of meaningful writing," and that "opportunity to use multiple expressions of language increases language learning and ability" (1996). Journal writing supports both of these findings.

What are the issues/concerns? One concern is having enough time to provide students with daily opportunities to write in their journals. Slinger found that even with young children, the "majority of children could sustain writing for a fair amount of time and usually wanted a little more time" (p.4).

Another concern is the time it takes for teacher to read student journals and provide authentic feedback. "The clear imperative...is that you do read your students' entries. If you don't, students won't take their journal writing seriously, and you won't learn anything about how your students are progressing or what questions they have about class work" (Ross, p.189). Slinger warns teachers against correcting every grammatical error in a journal entry. She feels that "if we correct too many things in children's writing, it is not only ineffective teaching, but it quite often squelches children's desire to write" (p.4). This is especially true given the creative and free nature of journal writing. Slinger encourages teachers to use journal entries as a way to focus on only one or two features for the student to work to improve. Ross believes that "there is absolutely no reason for you to look for grammatical, spelling, or punctuation errors" in student journals (p.190). Instead, teachers can provide points based on completeness, effort, number of pages, or thoughtful content.

Are Student Journals a Trend?

While journal writing has only been integrated into the classroom since the 1960s, it appears that it may be here to stay. Published personal journals are part of the American literature tradition and are valued for the insight they provide on historical events and people. Research supports the claims by teachers of science, math and language arts that journal writing improves student learning and retention of key concepts and facilitates the practice of writing across the curriculum.

In his chapter *Fads, Fashions, and Rituals: The Instability of Curriculum Change*, Kliebard asserts that there are three main factors that influence whether a curriculum component will become a fading fad. First, Kliebard believes that, "when a curriculum change is introduced without due

regard for a modification of the context in which the change is to take place, that innovation is almost surely doomed to a short life” (p.22). However, there is nothing within the structure of the school which appears to be a barrier to the further use of student journals. In fact, the role that student journals play in increasing academic skills, and can play in test preparation, are arguments for the continued popularity of student journals. Secondly, Kliebard believes that curriculum change is subject to the influences of the social and political mood of society. Americans are obsessed with self-reflection, as evidenced by the number of commercial products and professional offering self-help and tools for inner reflection. Personal journals, memoirs, diaries, and family histories are popular among the general public. While the number of commercial products and professionals, such as therapists and healers, may eventually drop in numbers, self-reflection and self-healing seems to be a part of American society. Last, Kliebard proposes that the changing fads and pressures among school administrators creates constant curriculum change. With the current emphasis on assessment tests and the push for literacy across the curriculum, it appears that journal writing is in support of these current curriculum trends. However, while journal writing supports these trends, it also goes beyond them, providing many other benefits to students and teachers. Therefore, I believe that journal writing is not a short-lived fad, as evidenced by its gaining popularity over the past forty years and the diverse benefits it provides.

Student journals can also be evaluated through the three curriculum orientations. Intellectual traditionalists support the inclusion of the great books and big ideas. They would support the use of journal writing to strengthen writing, problem solving and critical thinking skills. Using journals to respond to works of literature and as a catapult for contemplation and discussion would be supported. The social behaviorists support research-based approaches to education and the attainment of basic skills. They would support the emphasis on increasing students’ ability to communicate, specifically within the fields of math and science. Social behaviorists would support the findings of research studies on the impacts of journals on student learning. Finally, experientialists support free expression and the discovery of cultures, lifestyles and self. Experientialists would support the use of journals to explore inner wisdom, to record and contemplate life events, and to reflect on experiences. They would also support content-based writing across the curriculum and journal writing that encouraged creative, free writing styles.

Recommendations

As environmental and experiential educators, it is important that we understand the context of what we teach with what is taught in the school curriculum. The student journal is one example of a tool that is popular among environmental and experiential educators, but also integrated into the school curriculum. One concern may be that students are getting journaled to death, between journal exercises in their science, math and language arts classes. Are field journals going to put students over the edge, or will they become a meaningless ritual? I believe that journals are an important tool both inside and outside the classroom. We can use some of the same techniques as classroom teachers in using field journals to record observations, collect data, track learning processes, and provide opportunities for reflection, scaffolding on techniques that students may already know. However, field journals provide a unique opportunity to engage students in new ways to use their journal. Through sensory games, observation and awareness activities, and

opportunities for authentic, deep reflection, field journals can inspire students with these fresh ways to see and record the natural and inner worlds.

Resources

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