The use of reflective SEED and I-Search papers in a higher education classroom at North Carolina's Ramseur College has allowed both undergraduate and graduate education students to reflect on their knowledge and experiences, gain meaning from these higher educational experiences, and make connections between their learning and the "real world." SEED papers are similar to first drafts and are designed to allow students to get their ideas on paper as quickly as possible. Students are required to submit 10 SEED papers per semester and are not required to edit for grammar or other mechanical errors unless their meaning is not clear. The I-Search papers, based on Macrorie's model, provide students with the opportunity to conduct research which is personally meaningful to their lives and their own unique learning environments. In the process, students identify an anomaly from their own lived experience as a topic for research and, after discussing their topics in groups, write the I-Search paper describing their search for data on the topic. After the papers have been revised, students present their I-Search papers to the class. The papers are evaluated primarily on the development of ideas and their connection to the writer's anomaly. Student responses to both the SEED and I-Search assignments have been positive. Contains 31 references. (BCY)
Seeds and Searches: The Writing Process in Higher Education

Thomas J. Smith

SEEDS AND SEARCHES: THE WRITING PROCESS IN HIGHER EDUCATION

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Abstract
By employing Charles Sandler's Pierce's Theory of Logic as the philosophical foundation, this presentation will explore the utilization of the writing process in the higher education setting. The paper reviews the philosophical nature of the writing process and provides examples of student creativity which have been stimulated by the use of reflective SEED papers and Ken Macrorie's I-Search papers. These papers are vehicles which encourage higher education students to write, to engage in research, and to attain personal satisfaction and meaning through writing. They have also made excellent motivational tools.

Introduction
Through the use of Papers - Reflective SEED and an adaptation of Ken Macrorie's I-Search Paper (1980), the writer has attempted to integrate the writing process into a higher education classroom. These two types of papers have allowed undergraduate and graduate education students to reflect on their knowledge and experiences, to gain meaning from these higher educational experiences and to forge connections between the "real world" which exist beyond the on-campus classrooms and textbook environment.

Both the SEED Paper and the I-Search Paper are outgrowths of the writing process philosophy which emerged as an educational paradigm during the 1970's. This paradigm suggests that the emphasis of teaching writing as well as teaching itself should be more concerned with the process of producing the product than the final product itself (Gebhardt, 1981). Philosophical assumptions which underlie this orientation are diametrically opposed to the traditional method of imparting knowledge through the use of textbooks and workbooks. According to the process orientation, this type of learning assumes that (a) learners come to know their world by actively constructing it rather than by its passive acceptance, (b) knowledge of the whole reveals knowledge of the parts, and (c) learning cannot be divorced from context. Writing, which is constructive in nature, begins with writers who "need to get something done with language" (Shuy, 1981, p.102). Thus, the process approach requires that learners' personal goals drive their writing and that the learners must be given opportunities to broaden their repertoire of situations in which language is used (Applebee, 1986).

When writing is constructively conceptualized, the roles of teachers, students, and the teaching materials are greatly altered. Teachers don't solely evaluate the learner's knowledge but also must actively collaborate as their students construct knowledge. The subject matter, is not only found within the textbook but also in those areas which mean something to the learner such as:

- firsthand content [from] feelings, fantasies, sensations, memories, and reflections, and second
  hand contents drawn from interviews, stored information, and the writings of others to the extent that the [writers]...re-abstract these in their own synthesis (Moffet, 1981, p.76).

Research has also suggested that the writing process is composed of a series of stages, and during the act of writing the writer constructs knowledge by moving back and forth between the stages of pre-writing, drafting, and revision (Elbow, 1973; Emig, 1971; Flower and Hayes; 1981; and Graves, 1983).

Although researchers tend to disagree as to the number of components in the writing process, most do agree that the writing process has three distinct stages: prewriting, writing or drafting, and rewriting or revision (Holdzkom, Reed, Porter, and Rubin, 1982).

During prewriting the writer topic is conceptualized. It is at this stage that the writer informally plans how a topic will be approached. Holdzkom et al. (1982), have suggested that during this stage the writer rehearses; a process by which the writer begins to gain control of the topic which will help to compose the first draft. Because writers approach writing tasks differently, there are many avenues which writers take in order to generate their ideas. Some of those avenues might include talking about the idea to one's peers, reading and reflecting on the topic, doing...
library research, generating outlines, or sitting on the porch swing and allowing ideas to percolate. Prewriting can be as short as five minutes or as long as a month or longer.

For the writer, the goal of the first draft is to get one's ideas down on paper. Usually written as fast as possible, with or without notes, drafting is the process the writer uses to find out what is known about a topic. The writing may be free flowing or may follow an outline, but during drafting little attention is paid to spelling, grammar, word usage, or mechanics.

During rewriting/revision the writer develops through definition, description, and documentation, as fully as possible, each point which was made during drafting (Busching, 1989). The writer may clarify the text so that the meaning is made clear to the reader. The writer may make one or two simple changes, may rearrange sentences within a paragraph, may remove paragraphs or pages which cloud meaning, or may completely reorganize the entire piece and write a different draft altogether. If meaning proves satisfactory, the writer then checks the piece for grammatical, spelling, or mechanical errors. The final step during rewriting involves publication. In the classroom, publication may be as simple as reading one's piece to a peer, posting it on a bulletin board, or submitting it to a literary magazine.

The above stages describe the writing process but a final note must be added here. Writing is a recursive process. The writer may constantly move back and forth between the stages, may spend very little time in one stage or may skip a stage completely. After rewriting, the writer may discover a new thread of meaning to follow and rework the entire piece and then discover something new again. Thus, a piece of writing may never reach its final draft because something new can always loom on the horizon.

Reflective Seed Papers

A SEED Paper is a seed for thought. Typically, each of the ten SEED Papers which students submit during the course of a semester are at least one but not more than two double spaced pages in length. Similar to a writer's first draft, a SEED Paper allows writers to get their ideas down on paper as quickly as possible and, if the meaning is not clouded, students are not required to edit their SEED papers for spelling, grammar, word usage, or mechanical errors.

Although many students have been at first reluctant to write SEED Papers, many quickly learn that a SEED Paper can be written in as little as five minutes and can cover a wide range of topics. In the past year and one-half that the author has required SEEDS, the papers have contained summaries of the material covered in class or they have been written on any topic of student interest. For example, the breadth of topics from recent student SEED Papers include comments on the behavior of sixth grade students, Black History Month, the rising crime rate, segregation, the purpose of golf, Valentine's Day, and the importance of education in society.

Each SEED Paper submitted automatically receives a score of two points. After SEED Papers are read, comments are frequently written in the margins before the SEEDS are returned to the students. These responses serve many purposes. Since the primary focus of this instructional in educational foundations is to enable students to examine the assumptions which underlie their educational convictions, the instructor's comments may push students to clarify and support any irrational or underdeveloped beliefs. In addition, these comments often stimulate informal dialogues which lessen the pedagogical distance between the instructor and the students. Occasionally, the instructor informally publishes a student's SEED Paper by reading it aloud at the beginning of the next class. In this way, many SEED Papers have made wonderful springboards for class discussions. Finally, and perhaps most importantly, it is believed that the instructor's responses lead the students to discern that a genuine concern exists for those topics which are of personal interest to the students.

Student Responses to SEED Papers

As noted earlier, many students have been hesitant to write SEED Papers during the first few weeks of class. This reluctance may be attributed to students' lack of confidence in their ability to write as well as an indecisiveness on topic selection. However, as writing process research has demonstrated, individuals can become better writers if they are given opportunity to frequently practice their writing. In essence, SEED Papers can give students this opportunity to practice writing.
Occasionally, after students realize that anything is a legitimate topic for a SEED Paper, students will comment about the benefits they have received while writing SEEDS. For example, one student indicated that writing SEED Papers allowed her the opportunity to think for herself. She wrote:

Actually, I appreciate the SEED Paper. It gives me a chance to think on my own and to not just [listen] to a lot of instructions....it requires thought on what I think not [the thoughts] on someone else (Allen, 1993).

In a similar vein, another student remarked that SEED Papers provided her with the opportunity to privately chat with the professor on topics which time didn’t afford her during a 50 minute class period.

Even though I never expressed my feelings in class, I used the [SEED Papers] to get my ideas across, so you, as the professor could understand my views (Wilson, 1993).

An excerpt from a third student reiterated the problems which students encounter when they first begin writing SEED Papers. However, this student has also discovered that writing SEED Papers have enabled her to express herself as well as to focus on an additional problem to address:

This is the fourth SEED Paper that I have written. On this particular occasion I have no general idea on what to write. Therefore, I have decided to write on my indecisiveness. The SEED Papers have made me search within myself and have brought out some of the feelings [which] I can write better than I can verbalize. The SEED Papers have caused me to establish opinions on many issues [which] have been in the news lately....The only problem I have with writing is that the words don’t flow from my mind to the paper....I know that I must continue to write so that my ideas are clear and concise...I must continue to write to improve presentation of my ideas so it doesn’t appear that I am babbling without a clear focus (Adams, 1994).

Finally, a number of graduate students, who are practitioners in elementary and secondary classrooms have related how they are employing the practice by asking their own students write SEED Papers. In the following excerpt, a graduate student who teaches keyboarding in a local high school wrote recently about the benefits she has received from having her own students write SEED Papers.

Having students to write SEED Papers is a wonderful idea. It permits them to freely share anything. For some, this is the only opportunity to express themselves freely. It also opens up a communication path between students and teacher. By opening this pathway, students and teacher begin to develop a special relationship and trust that would otherwise be lost....Initially, [my students] did not like the idea [of a SEED Paper]...but soon looked forward to Friday’s when they could share with me their teenage, school, and home problems...Soon they were anxiously waiting for Monday’s to receive their papers in order to read my advice. Some Friday’s, they did not have the opportunity to write and expressed negative feelings about this (Leak, 1994.)

The I-Search Paper
Within the past few years, "an alternative research tradition has been evolving in this country" (Goswami and Stillman, 1987). This type of inquiry, illustrates the difference in what Garth Boomer has described as "BIG R" and "small r" research (1986, p.5). Boomer defined "BIG R" research as the study of legitimate problems which exist "elsewhere" from the context of the researcher whose primary goal is to generalize and apply the resultant knowledge regardless of the context. On-the-other-hand, "small r" research projects are context specific and are initiated in response to the felt needs of those individuals whose lifestyles will be fundamentally impacted by the results of the research.

An adaptation of Ken Macrorie’s I-Search Paper has afforded many students the opportunity to engage in just this type of "small r" research. It is research which is personally meaningful both to their lives and their own unique learning environments. In short, an I-Search Paper is a process by which students first learn to ask and then to seek answers for questions which have erupted out of their own experience and not out of the experience of their instructor.
Philosophical Basis of the I-Search Paper

The philosophical foundation for an I-Search Paper rests with Charles Sanders Pierce who posited that reasoning was actually embedded within the continuous cycle of abduction, deduction, and induction (Siegel and Carey, 1989). In short, abduction, or the genesis of ideas (Truesdale, 1991), is the point at which ideas are spawned (Deely, 1982) while deduction involves the "movement from ideas to other ideas" (Siegel, 1984, p.59) and induction tests the ideas back against the realm of experience (Siegel and Carey, 1989, p.24).

Pierce (Skagestad, 1981) likened the learner’s pursuit of knowledge to walking across an endless bog. If the learner stood in one place for very long, he or she sank. In order to retain sufficient footing, the learner had to therefore continuously traverse the bog. Occasionally, however, the learner stepped into an anomaly (Kuhn, 1970) within the contextual landscape of the bog. An anomaly was an unexpected sign or something that could not be explained but which caused the learner to pause and to start to reflect upon its meaning. The learner then engaged in abduction as a way of beginning to explain the unexpected occurrence. In an attempt to further develop and refine his or her ideas, the learner then deduced. Finally, armed with a credible hypotheses, the learner inducted or tested this new theory against experience. However, if after discovering that the theory could not explain the anomaly, the cycle of reasoning was set into motion once again and beliefs were altered yet again.

The I-Search Process

The process of composing an I-Search Paper begins when students are asked to monitor their inner-selves in order to pay attention to those anomalies which have arisen during their lived experiences. In essence, instead of choosing a topic for study, the students are allowing the topic to choose them.

Next, the students bring their personal anomalies to class and with the instructor, arrange their desks into one large circle. Then, one by one, the students are asked to talk about their anomalies plus explain why or how they became interested in their topics. The purpose of this process is twofold. First, as each student explains his/her anomaly, the questions from their peers enable each student to further define their research question. Second, because the actual research of an I-Search Paper is dependent upon interviews, many class members are frequently able to suggest individuals who can be contacted for an interview. After all students have been given a chance to discuss their anomaly as well as receive the names of their initial contacts a brief lesson is conducted on how to design appropriate interview questions is presented by the instructor. After determining the interview questions, the individual search begins.

During a subsequent class session, students write the introductions to their I-Search papers. The content of the introductions is extremely simple to compose. Basically, the students assess their knowledge about the topic before they begin to develop the search and determine how this process might impact their learning as well as their lives.

The remainder of the I-Search Paper is composed of "the story of the hunt" for data. Although the I-Search Paper can be any length, primarily because new anomalies arise during the search, it is generally limited to five to seven pages. In addition, as the due date for submission draws near, a class period is scheduled for students to bring their drafts to be edited by their peers. Since many undergraduate students have rarely participated in a peer editing session, a Peer Critiquing Guide Sheet is distributed which can be used as scripts during peer editing conferences.

I-Search Paper Presentations

After the I-Search Papers have been revised, students are expected to present their I-Search Papers to their peers. The only stipulation for the presentation is that it must involve the participation of classroom peers. Presentations have ranged from small group discussions, to role playing, to presentations in which an entire class was asked to leave their seats and move around the classroom. For example, a secondary dance teacher, led one class through an improvised dance routine which combined dance, music, and positive and negative numbers (Temple, 1993).

Prior to the I-Search presentation, an agreement is usually made between the instructor and the students regarding presentation evaluation. Since one of the goals of an I-Search Paper and presentation is to enable students to learn from each other, the evaluation of an I-Search presentation has usually been the responsibility of the students. Typically, the presentation represents one-third of the overall grade; thus, students have used an evaluation form.
which includes the presenter's knowledge of the subject, the organization and delivery, originality, the level of enthusiasm, and a plausible answer to the initial anomaly.

Evaluation of an I-Search Paper
The real essence of an I-Search Paper remains the development of ideas and their connection to the writer's anomaly. Therefore, the evaluation form used to assess an I-Search Paper reflects this agenda. Olson (1986, p. 118-119) has devised a scoring guide which ranges from a high of ten points, if the I-Search Paper is "well-written, clearly organized, insightful, and technically correct" to a score of one point if "the paper is completely off-track and has no redeeming qualities." Another type of evaluation form is the "Diedrich Scale" (Zemmelman and Daniels, 1986), in which the writer is rated from excellent to poor on a variety of descending items. For example, a paper which reflects well-developed ideas and relevance is given a greater numerical value than the paper's style, phrasing, sentence structure, and legibility.

Range of Anomalies and Student Response
As an outgrowth of a student's experience the I-Search Papers presented over a period of three (3) semesters have evidenced a range of anomalies. Students in pursuit of a bachelor's or master's degree in education have addressed educational issues in their papers. A sizeable number have focused on classroom teaching practices including: the effects of interest; the importance of Home Economics to our student population; hands-on learning versus the lecture method; and incorporating critical thinking skills into the history classroom. Several graduate students have questioned their interest in becoming public school administrators. Questions which have been raised on this issue include: What are the expectations and the duties of an elementary school principal? Why people choose to become administrators? Do I really want to become an administrator? Students have attempted to answer questions pertaining to issues unique in North Carolina's educational setting. Topics addressed include: Why should North Carolina have an organization such as the NCAE? What are the benefits of year-round education? How and why is Ritalin used in the elementary classroom?

Students who I-Searched non-educational concerns focused on: heartache, fear of flying, the meaning of and analysis of dreams, the characteristics of a successful marriage, how to lose 30 pounds in three months, juvenile offenders, cancer, the expectations of God in order to get into heaven, societal views of public housing occupants, the effects of domestic violence on women, alcoholism's effect on the family, and the qualities of a good clown (See Appendix B, for an example of a graduate student's I-Search Paper).

Student response evaluations concerning the I-Search Paper have been extremely positive. In the written end-of-course comments, some students have remarked that their writing of an I-Search Paper changed the way they felt about research. As one student commented:

When I think of the two words "research paper" I think of a forced assignment on some topic that is boring. An assignment that takes days and days and I dread even thinking about...however, the I-Search paper gave us the opportunity to choose a topic that interested us and answer a question that we wanted. It was fun and interesting to do...it was a good way for us to see that student interest plays a key role in learning (Mitchell, 1993).

For other students, the opportunity to write an I-Search Paper allowed them "to conduct interviews and do field work in community organizations," and the opportunity to learn from one another as well as acquire deeper insights into the personalities and the individual interests of their classmates.

Having had the opportunity to participate in the searching process, many students have commented that they intend to infuse the I-Search Paper concept into their future classroom teaching practices. As one student wrote:

I am going to [ask] my students to do I-Search Papers in Social Studies. They will be utilizing their critical thinking skills through the method of discovery/inquiry learning. This will cut down on boring social studies lessons and focus more attention on what's really going on in society...this is what social studies is all about....the idea should be incorporated into all classes at all levels (Barrows, 1993).
Finally, other students have remarked how writing their I-Search Paper and presenting it to their peers had personally affected them. In the search for answers to their anomalies, students were able to reflect about their experiences as both as students and teachers and aided them in becoming more in touch with the endless possibilities of learning. One student summed it all when she wrote that the entire process had:

...taught me how to search for answers to questions that I'd always wondered about...I received a chance to know myself better as an educator....[it] was a new experience [which] led me in a directions that I had no intention of going (Ingram, 1993).
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