



The writing approaches of university students

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Abstract. University students' beliefs about themselves as writers and about the experience of learning in writing were investigated as related to writing approaches as measured by the Inventory of Processes in College Composition (Lavelle 1993). General findings included support for the deep and surface paradigm as well as variation in students' conceptions of writing, in their attitudes about themselves as writers, and in their felt need for personal expression in writing. Implications for instruction and further research are included.

Keywords: interview methodology, tertiary or university learning, writing approaches, writing beliefs

Introduction

Although cognitive models have focused on describing the writing processes of college students in terms of problem solving (Flower and Hayes 1979), memory (McCutchenson 1996), and cognitive development (Bereiter and Scardamalia 1987; Fitzgerald and Shanahan 2000), writing theory remains somewhat limited. One shortcoming involves the reductionistic nature of the traditional cognitive perspective, which results in isolating processes such as planning, translating and revision (e.g. Flower and Hayes 1979); doing violence to the nature of writing as an integrative process (Luria 1981). Along the same line, the assumption that writing processes occur in a tidy, linear sequence is questionable. Additionally, the role of writers' intentions and beliefs as related to writing processes has not been a major consideration. Writing is the externalization and remaking of thinking (Applebee 1984; Emig 1977), and to consider writing as separate from the intentions and beliefs of the writer is not to address composition as a reflective tool for making meaning.

In the area of university learning, researchers have described students' approaches to learning as reflective of the relationship between the student and the task (cf. Biggs 1999; Marton et al. 1997), and the same notion has been applied to college writing (Biggs 1988a, b; Hounsell 1999; Lavelle 1993, 1997) and to writing at the graduate level (Biggs et al. 1999). The

emphasis is on variation in how it is that students go about making meaning in writing to include consideration of writing intentions as related to writing strategies, rather than on the acquisition of skills as independent processes (e.g. Hayes and Flower 1980). Here beliefs about the function of writing, and about the writing situation, are linked to writing processes and outcomes. The primary goal of the present research is to examine university writing approaches as measured by the *Inventory of Processes in College Composition* (Lavelle 1993) in relation to students' beliefs about the nature of writing, and about themselves as writers, thus extending the writing approaches paradigm. A secondary goal is to use interview data to further validate the *Inventory of Processes in College Composition (IPIC)*. Previous validity studies (Biggs et al. 1999; Lavelle 1993, 1997) supported validity using quantitative methods, but it was felt that the interview strategy would offer an additional dimension of support.

Writing approaches

Models of individual variation in student learning have offered a comprehensive and sensitive perspective on how it is that students engage in academic tasks such as reading (Marton and Saljo 1976), studying (Schmeck 1983), and academic writing (Biggs 1988a, 1988b; Hounsell 1997; Lavelle 1993, 1997; Prosser and Webb 1994). The assumption has been that students' beliefs affect their choices of strategies, which, in turn, affect learning outcomes (cf. Van Rossum and Schenk 1984). However, the process is largely a reciprocal one in writing because revision, as both a reflective and behavioral undertaking, clearly serves to reshape both thinking and product. The term "approach" was originally used by Marton to describe the quality of students' processing, and later the same notion was extended to include emphasis on students' intentions as related to the quality of processes (Marton et al. 1997). The basic distinction is between a deep, meaningful approach based on seeing the task as a whole and proactive engagement in learning, and a surface approach based on reproduction of information and memorization. In a psychometric study, Biggs (1987) elaborated that paradigm to incorporate motivational factors (intrinsic, extrinsic and achievement oriented) as linked to study strategies, and extended it to include the student's level of focus (high, low or alternating) as related to the structure of learning outcome. The approach perspective is dynamic, with learning processes serving as an interface between the situation of learning, or teaching context, and student factors such as intentionality and motivation. When the student's goal is just to comply with task demands, the learning activity involves a low level of cognitive engagement (e.g. memorizing or repetition) and a superficial, linear outcome (listing or organizing), a surface approach. On

the other hand, when the intention is to fully engage the task based on a need to know, the focus is at a higher conceptual level, geared toward manipulating layers of meaning, a deep approach. It is the activity of learning that affects the quality of the learning outcome. Thus, approaches are not consistent personal differences, as stylistic models such as those of Kolb and Schmeck (as cited in Rayner and Riding 1997) would suggest, nor are they entirely determined by context (cf. Marton and Saljo as cited in Biggs 1999). Rather, approaches represent an interaction between the learner and the situation of learning with strategies serving as a negotiating link leading to task outcomes.

Biggs (1988a, b) extended the approach paradigm to address university – level writing. Drawing on studies of text comprehension (e.g. Kirby 1988; Marton and Saljo 1976), Biggs (1988a) articulated a Process x Levels framework to include consideration of writers' levels of ideation (e.g. thematic, paragraph, sentence, word level, grammatical) as related to processes in writing along a deep and surface approach continuum. Lavelle then drew on the approaches to writing model to formulate the Inventory of Processes in College Composition as a measure of writing approaches.

The factor structure of university writing

Working from a psychometric perspective, Lavelle (1993) factor analyzed students' responses to 119 items reflecting writing strategies and writing motives to operationalize the approaches-to-writing framework. Items were designed to reflect the deep and surface continuum as defined in models of college learning (Schmeck 1988; Biggs 1987), as well Bigg's adaptation of that model to college writing, and Hounsell's (1997) conceptual analyses. In particular, items were written to mirror writers' intentions, conceptions of the function of writing, levels of focus, as well as common writing strategies (outlining, grammar, revision). Writing processes had previously been linked to the beliefs of college students regarding writing (Hounsell 1997; Ryan 1984; Silva and Nicholls 1993) and to the structure of writing outcomes (Hounsell 1997; Biggs 1988a, b; Biggs and Collis 1982). Dimensions paralleling the deep and surface dichotomy had also been identified by composition researchers working with children: reactive and reflective (Graves 1973), symbolizers and socializers (Dyson 1987), knowledge telling v. knowledge transforming (Scardamalia and Bereiter 1982), and, in young adults, reflexive and extensive (Emig 1971) (Appendix A).

Based on this broad framework, 212 items were devised to reflect the core trends in the literature. The inventory was administered using a true and false response format to 423 undergraduates enrolled in general education courses at a major Midwestern (USA) university. Based on a scree test and on an

interpretability criterion, the number of factors was adjusted downward and then rotated to the varimax criterion.

Five factors, thought to be reflective of the writing approaches of college students, emerged (Appendix B). The first factor "Elaborative" is marked by a search for personal meaning, self-investment, and by viewing writing as symbolic, a deep personal investment. The focus is high employing tools such as visualization, manipulation of audience and voice, and extension or going beyond the bounds of the assignment in general. The Elaborative approach reflects self-referencing, a strategy based on using writing as a tool for one's own learning or bringing oneself to the situation of writing: "Writing makes me feel good." "I put a lot of myself in my writing." A similar dimension had been defined in college learning, an Elaborative processing strategy, involving applying new information in a personal manner (Schmeck et al. 1991), and Silva and Nichols (1993) have subsequently defined a similar writing factor, "Poetic quality and personal taste." High scores on the Elaborative scale have been related to the degree of personal involvement in writing a narrative essay (Lavelle 1997) but were not predictive of competence in academic writing (Lavelle 1993).

The second factor "Low Self-Efficacy" describes a highly fearful approach based on doubting ability and thinking about writing as a painful task. It is as though students scoring high on this scale have a high degree of learned helplessness. These writers appear needy: "Studying grammar and punctuation would greatly improve my writing." "Having my writing evaluated scares me." This approach evolves around poor writing self-concept, accompanying perceptions of skill deficits, and little, if any, awareness of the function of writing as a tool of meaning and of personal expression. The focus is low involving grammar and sentence structure, surface concerns. College writing performance has been associated with self-efficacy (Meier et al. 1984; Zimmerman and Bandura 1994) and self-esteem (Daly and Wilson 1983), and it may be that self-efficacy provides a critical link to acquiring skill and mastering various genres (Lavelle et al. 2001).

"Reflective-Revision," the third approach, describes a deep writing process based on a sophisticated understanding of revision as a remaking or rebuilding of one's thinking, similar to Silva and Nicholls' (1993) logical reasoning factor. Reflective-Revision implies willingness to take charge in writing to make meaning for oneself and for the audience. The level of focus is high involving thematic and global concerns, and ideation is hierarchical: "In my writing, I use some ideas to support other, larger ideas," similar to Hounsell's "essay as argument" conception (1999). The strategy is to get it all out in a rough draft for revision rather than to dawdle at the sentence level: "I (do not) complete each sentence and revise it before going on to the next." It is

as though these students adopt the “sculptor” rather than “engineer” strategy (cf. Biggs et al. 1999). Writing and revision are intertwined in a dynamic process geared toward making meaning: “Revision is finding the shape of my essay.” Reflective-Revision scale scores predicted high grades in a freshman composition course (Lavelle 1993).

The fourth factor, “Spontaneous-Impulsive,” profiles an impulsive and unplanned approach similar to Biggs’ Surface Restrictive approach (1988a). The Spontaneous-Impulsive approach represents overestimating skill and fear of fully dealing with what the writer perceives as limitations; the approach is defensive. It is as though you just do it and then it is done, “When writing an essay or paper, I just say what I would if I were talking!” The focus is at the surface level: “Revision is making minor alterations, just touching things up.” “I never think about how I go about writing.”

The “Procedural” approach involves a method-driven strategy based on strict adherence to the rules and a minimal amount of involvement, similar to Silva and Nichol’s methodological orientation (1993), Berieter’s communicative (1980), or Biggs’ Surface-Elaborative approach (1998a). Such writers ask themselves, “Where can I put this information that I just came across?” The strategy is listing or providing a “sequence of ideas, an orderly arrangement” which is reflective of Hounsell’s “essay as arrangement” conception. If writers are unsure of themselves, the rules and “arranging” may keep them afloat, or as Stafford (1978) says in *Writing the Australian Crawl*:

But swimmers know that if they relax on the water, it will prove to be miraculously buoyant: and writers know that a succession of little strokes on the material nearest them, without any prejudgments about the specific gravity of the topic or reasonableness of their expectations, will result in creative progress. (p. 23)

The procedural approach reflects wanting to please the teacher rather than the intention to communicate or reflect. It is as though writing is to be managed and controlled toward that end. Similar approaches based on striving to manifest competence have been identified in studying (Biggs 1987; Entwistle 1999). Procedural scale scores were predictive of the complexity of writing outcomes when writers wrote under a timed condition (Lavelle 1997). Perhaps the procedural emphasis on “control” in writing, not allowing for emergent factors such as voice and theme, keeps writers on task as limited by time demands.

Reflective-Revision and Elaborative represent deep approaches with Procedural, Spontaneous-Impulsive and Low Self-Efficacy interpreted as surface approaches. Reflective-Revision represents a deep thinking, analytic component while Elaborative represents the more personal and affective

dimension in writing similar to Silva and Nicholl's aesthetic and expressive goals orientation (1993) (Appendix C).

However, Webb (1997) has warned that the binary notion of "deep" and "surface" may be too crude, noting that some learners may take surface approaches for deep purposes (although that would be predictable given that approaches are largely modifiable given the writing/learning situation). However, from a processing perspective, it is useful to think about the alternating levels of focus in writing as writers constantly shift between macro concerns (theme, voice, audience), and micro concerns (words, sentences, punctuation, and syntax (Biggs 1988; Biggs et al. 1999)), although the dichotomy may be a bit crude for describing writers' beliefs or conceptions of writing.

Writing approaches are relational in nature and modifiable. Biggs et al. (1999) found increased Elaborative scale scores and decreased Spontaneous-Impulsive and Procedural scores for graduate students writing in English as a Second language who were enrolled in a two day academic writing workshop. Students may use spontaneous writing as a tool to get it all started, then move toward refining via genre familiarity and procedures, and hopefully move toward a deep outcome.

Although the original assumption was for consistency among the factors, a stylistic perspective, it is possible to interpret the factor scores as either an outcome of a particular teaching environment or as a more stable student characteristic or trait (Biggs et al. 1999). However, writing is about change and the assumption that students are driven by personal characteristics is a dangerous one given the potential impact of instruction. The style interpretation "encourages teachers to take student differences as given" while the approaches perspective "addresses the challenges of teaching", an instructional vantage point (Biggs et al. 1999, p. 296).

In the present study, we wanted to investigate Students' experiences of writing as reflected in personal interviews, and as related to their writing approaches as measured by the IPIC. Querying students as to the nature of their writing experiences had previously been used in college writing research by Hounsell (1984) to support conceptions of the academic essay as related to writing strategies and essay outcomes, by Biggs (1988b) to further define writing approaches in term of level of ideation, and by Entwistle (1994) in investigating the 'knowledge object', an emergent structure reflecting students' understanding in preparing for written examinations. Here the interview methodology was used to further differentiate and expand categories of writing processes. Similarly, Prosser and Webb (1994) had interviewed students and supported deep and surface approaches in terms of students' conceptions of academic essay writing, and Ryan (1984) linked epistemolo-

gical beliefs to college students' definitions of coherence in writing and to writing outcomes. Now we sought students' comments on developing knowledge as per writing approaches as measured by the IPIC with the goal of elaborating the writing approaches paradigm, as well as offering additional validity for the writing approaches model. In line with earlier research on the role of selfhood in writing (cf. Daly and Wilson 1983; Lavelle 1997; Meier et al. 1984), we also wanted to examine the relationship of students' personal interpretations of themselves as writers to their writing approaches as measured by the IPIC inventory. We felt that the interview strategy would provide an additional method to support the inventory and thus lend validity. In particular, we hypothesized, based on Lavelle's psychometric research, that students adopting a deep approach in writing, as measured by the Reflective-Revision and Elaborative scales of the IPIC, would be more likely to view themselves as writers, own writing, have a more positive writing self-concept, and describe the experience of writing as involving learning and changes in thinking. We also suspected that there would be less concern for how much time the writing task took among Reflective-Revision and Elaborative writers than among writers scoring high on the surface level scales (Low Self-Efficacy, Procedural, Spontaneous-Impulsive).

1. Method

Sample

The sample consisted of 30 students enrolled in two freshman composition classes at a medium sized Midwestern (U.S.A.) university. Of the total seventeen were male and thirteen were female.

Instrumentation

The *Inventory of Processes in College Composition* (previously discussed) is a 74-item scale measuring five college writing approaches (Appendix B). Reliability estimates for the scales were considered acceptable (0.83–0.66), and content, concurrent and predictive validity were supported in the original development of the scales (Lavelle 1993, 1997).

Procedures

The IPIC was administered during a regular 50-minute class period. Students were instructed to respond on a four-level Likert format on computerized answer sheets. Participation was anonymous and voluntary. Thirteen students were chosen for interviews based on high scores on the scales (scores lying

beyond 1 s.d. above the mean). Participants were not informed as to their scores so as not to bias their comments, to add truth value (Merriam 1988) to the research process. Interviews were conducted by the researchers in a private office and tape recorded for transcription.

Interview format

A semi-structured interview format, in line with previous writing approach research (e.g. Entwistle and Entwistle 1991; Hounsell 1997; Biggs 1988b), was used to allow maximum opportunities for depth, interpretation and expansion. Our strategy was to alternate several open questions with several specific (safe) questions in order to provide a supportive framework. The open questions were geared to reflect students' emerging comments regarding their writing self-concepts and their experiences of learning in the writing situation. The minor questions involved students' perception of time as related to engaging in writing task and writing preferences. Focus on "how long it takes" had been associated with surface learning, and a preference for narrative writing had been related to the Elaborative approach (Lavelle 1997). However, preferences for various genres as related to writing processes has not largely been addressed by researchers.

After introducing herself, the interviewer individually asked permission to tape record the interview for transcription and then proceeded to ask each student the following:

1. Who are you as a writer?
2. What types of writing tasks do you prefer? Why?
3. Describe your experience of writing. Does your thinking change in writing? Your interpretation of the task?
4. Are you concerned about how much time your writing task takes?

2. Results

Table 1 shows IPIC Scale means, standard deviations and range, and Table 2 indicates individual students' scores. Interestingly, students scoring high on more than one scale reflected either the deep or surface dichotomy with one exception, Matt, who also scored high on Procedural, a surface scale.

Albert	Low Self-Efficacy/Procedural
Kathy	Elaborative/Reflective-Revision
Tara	Elaborative
Bob	Procedural
Joe	Low Self-Efficacy/Procedural
Barb	Elaborative

Table 1. Means and standard deviations for the IPIC scale scores

Scale	Mean	sd.	Range
Elaborative	16.3	4.5	8–24
Low Self-Efficacy	5.9	2.7	1–10
Reflective-Revision	10.5	3.9	4–22
Spontaneous-Impulsive	8.8	3.3	2–15
Procedural	6.6	2.1	3–10

Table 2. students with high scores on the inventory of processes in college composition

Students	Elab.	L.S.E.	R.R.	S.I.	Pr.
Kathy	21		12		
Carol			14		
Mary				14	
Barb	24				
Joe		9			
Albert		9			9
Bob					10
Tara	22				
Christa			18		
Jack	22				
Mike		9			
Melanie		10		15	
Matt	21		12		10

- Carol Reflective-Revision
- Mary Spontaneous-Impulsive
- Matt Elaborative/Reflective-Revision/Procedural
- Mike Low Self-Efficacy
- Crista Reflective-Revision
- Mellanie Low Self-Efficacy/Spontaneous-Impulsive
- Jack Elaborative

A pervasive trend involved students' awareness of the role of process in writing as related to their writing approaches. Those scoring high on Elaborative and Reflective-Revision, both deep approaches, articulately and consistently voiced process as a critical component, inseparable from product. In particular, high Elaborative scorers linked process to self-expression. Barb,

an Elaborative scorer, stated “. . . I pick up an idea and start . . . the topic may change as I go but it’s still the way that I think, it expresses who I am.” Interestingly, all students adopting a deep approach were comfortable in fully articulating their writing processes, and students scoring high on any of the surface scales (Low Self-Efficacy, Spontaneous-Impulsive and Procedural), were not similarly inclined.

Those students scoring high on both the Elaborative and Reflective-Revision scales described writing as primarily related to changing one’s own thinking about the topic, a feeling of satisfaction and wholeness (cf. Entwistle 1994). One “Elaborative” felt that often his thinking changed so much in writing that he readily developed ideas for subsequent papers. Matt, who scored high on the Elaborative, Reflective-Revision and Procedural scales, stated, “Sometimes I change direction and I change as an individual because it gives me a new look, it changes my life.” Similarly, Kathy, also an Elaborative and Reflective-Revision scorer, stated, “Ideas develop in writing as I go. I start with one idea but finish in a different direction.” Carol, whose approach was also Reflective-Revision claimed “My ideas about writing change when I look at what others have written; class evaluation is very important.” Although neither deep nor surface writers consistently cited classroom revision or peer comments as critical to their processes, both Reflective-Revision and Elaborative approach writers expressed a willingness to fully engage the topic, and concern for an intricate structure. Writers adopting the Elaborative approach more consistently cited meaning as personally relevant, and spoke to the generative nature of writing and to the impact of writing on their lives.

Along the same line, Elaborative writers reported having a strong awareness or feeling as to the completeness of their composition. Tara, an Elaborative, stated “It’s like your clothes, maybe the colors or style are not right, its a feeling that you get when something’s missing.” Similarly, Jack described his process, “If the concept is large, writing simplifies it. I see the task changing and have a feeling if something is missing; it kinda evolves.” The awareness of what’s missing has been described as a critical component of the emergent “knowledge object” an organizational structure of knowledge (Entwistle 1994). It is likely that this “intuition” is related to the Elaborative approaches’ emotional connection to product. Students scoring high on Elaborative seem to bring an strong affective dimension to their writing, one that affords them skill in troubleshooting.

Surprisingly, only two students saw themselves as writers in response to the prompt “Who are you as a writer?” Again, both scored high on the Elaborative scale. Jack reported “It’s not easy but I know what I’m doing,” and Matt claimed “I’m confident, I wear the hat. I feel fine about writing papers; I see myself as a good writer.” It is, perhaps this personal orientation of seeking

self-expression that leads one to developing an identity as a writer. Jack states “I think of myself as a writer. I won’t say it comes easy. Writing is for me and if someone else doesn’t like it that is their bag. It’s about personal growth often through reading and having a revelation.”

Here, a basic distinction may be made between Reflective-Revision and Elaborative approaches involving personal relevance and the role that self-reference plays. Although Reflective-Revision approach emphasizes the synthesis of information, extensive revision, process awareness, students scoring high on the Reflective-Revision scale did not report a great deal of concern for personal expression or for their personal relationship to writing. Their comments were more factual and concise, whereas Elaboratives seemed more inclined to “tell the story” of their writing. Elaboratives also referred to their feelings about writing and to personal ownership of their documents more than Reflective-Revision approach writers. Barb stated “Writing expresses who I am. I like to pick my topic; things that I have experience with.” She also keeps a journal as does Tara. Tara stated “I feel that what I write is my opinion. I think writing is therapeutic, it calms you and helps you realize things more, because in your head it’s a mind race, and writing makes my own understanding more clear.” Elaboratives’ interviews were longer and more in-depth. Only Reflective-Revisions specifically cited making their ideas clear to the audience, but it may be that Elaboratives take this for granted.

The validity of the three surface scales (Low Self-efficacy, Procedural, Spontaneous-Impulsive) was confirmed by the interviews. Writers scoring high on Low Self-Efficacy reported disliking writing. For example, Mike said “I hate writing, I only write if I have to,” and Joe said, in a low almost inaudible tone, “I write because I have to, I put my thoughts on paper, it seems to take a long time.” Similarly, Bob, a high Procedural, responded, “I have no writing preference. If there is a process, it’s just pretty unorganized. I write stuff down. Writing just rolls off the top of my head, and then I reorder.” Mary, a Spontaneous-Impulsive scorer, commented “I just sit down with no planning and organize a bit after; it usually takes me 15 minutes to an hour from start to finish.” No writers scoring high on the surface scales reported emphasizing revision, understanding their own process, or a need for self-expression. Most spoke in a very low tone and answered in brief responses, although the interviewer made every effort to help them to feel at home. One exception was Albert, a Low Self-Efficacy/Procedural writer. Stating that he wrote better without pressure, he cited his attempt to organize with the goal of meeting the requirements. He claimed that he had come a long way, and he was concerned with how much time his assignments took. He preferred writing by hand but was easily distracted. Albert took pride in his progress

which may be a key to helping basic writers. His attitude was fairly positive, and he was able to acknowledge his shortcomings in writing. Self-acceptance accompanied by a certain reliance on the rules may serve to keep surface writers “afloat.” Similarly a certain degree of reliance on procedure may, as Stafford has articulated, keep poor writers “afloat” (Stafford 1978) as perhaps a critical step toward maturity in writing.

3. Discussion

Although our writing approaches model is not yet fully crystallized, interviews with student writers have extended the basic framework along several important lines. Generally writers’ perceptions of the writing situation (including writing self-concept, and beliefs about the function of composition) emerged as critical process components which serve to support the basic deep and surface continuum, and to more fully extend that paradigm to writing. Most notably, the Reflection Revision approach may be further distinguished from the Elaborative approach in terms of the former implying a more critical, structural, dimension, and the latter a more personal, affective dimension involving a high degree of connection and self-reference and feeling in writing. It is the writer’s relationship to writing which serves as a defining motivational factor with the Elaborative approach linked to feeling and writing self-concept, and the Reflective-Revision approach more the detached, analytic, and critical dimension. However, both represent a proactive stance aimed at making meaning, awareness of writing as a learning tool, hierarchical structure and a high or alternating level of focus; a deep approach.

The interview data confirmed the three surface approaches. Here, a dislike and a general fear and avoidance of writing situations was a trend in the comments of students scoring high on the Low Self – Efficacy approach. Similarly, writers scoring high on the Procedural approach reported emphasis on organization and a concern for how much time writing tasks take, and those scoring high on the Spontaneous – Impulsive scale, reporting a “get it all out and be done” strategy. None of the surface approaches reflected awareness of process as related to outcome, a sense of involvement or feelings of completeness, wholeness in writing, nor the experience of finding oneself or learning in writing.

The key to facilitating writing at the university level is found in designing a high quality writing climate to include deep tasks, emphasis on revision and meaning, scaffolding, modeling and integrating writing across content areas (relevance). While these themes may be familiar, the approaches – to – writing framework brings a new understanding of these tactics. Here

the emphasis is on the situation of writing to include focus on the cues, messages, interventions and artifacts that are part of the writing environment as opposed to a focus on the discrete acquisition of skills or on the persistent characteristics that writers might bring to the classroom. For example, well-defined tasks that engender deep processes such as analysis, perspective taking and self-expression need to be well-specified. Along the same line, clear evaluation rubrics should incorporate deep criteria such as structural complexity to reflect the dynamic nature between structure and meaning (cf. Biggs and Collis 1982). Evaluating writing on a point system fosters surface approaches, and breaking writing into numerous component parts as common in many rubrics is not in line with fostering writing as a tool of meaning. Instructors need to value perspective taking in writing, or movement in terms of ontological position as reflected in written work. Along the same line, instructors need to provide meaningful feedback, and to generally model a deep reflective approach to instruction themselves. Perhaps the axiom "Physician heal thyself" is applicable here. Clearly our system engenders surface learning with an abundance of atomistic, or listing expectations, common in tasks and assessments.

Writing across the curriculum may be redefined as a key to relevance. Here tasks might be both academic as well as personal to foster both Reflective Revision and Elaborative writing flexibility. For example, in addition to academic essays, history courses might require journal-writing to reflect students' developing paradigms regarding critical events and movements.

In terms of writing instruction, it is important to help writers to gain a positive identity in writing in conjunction with acquiring increased skills. Students need to be familiar with how writing works as a tool of learning and of self-expression as well as to find personal voice in expository and academic tasks. Here, in addition to familiarizing students with a variety of academic genres, essays on the nature of writing, and opportunities for students to share their own perspectives on the role of process could be important. This may be especially critical for those adopting a Low Self-Efficacy approach.

Spontaneous-Impulsive and Procedural approaches may represent progress at an early stage of writing development. Indeed, "getting it all out" or free writing is a well respected instructional tactic in composition (Elbow 1998), and, as Stafford says "Reliance on the rules keeps you afloat." It is as though writing is a dialectic between intention and form. Here, combining the two strategies as a beginning step might advance writing skills for novice writers, as well as for writers faced with mastering a new genre. Future research should fully investigate this hypothesis.

Theoretical implications drawn from the current study provide a strong basis for future research. The present study served to confirm and elaborate

the original model particularly in terms of supporting the basic deep and surface paradigm. In particular, the bidimensional nature of deep writing processes to include both an affective and critical dimensions, merits further exploration, as does the relationship of approaches to writing to various types of tasks. Tests for cross – cultural validity using various student populations (e.g. international students, community college or vocational training students, graduate students) should also be conducted to examine the cultural validity of the inventory.

Future research plans also include examination of developmental trends across the scale scores both in longitudinal and instructional investigations. A preliminary investigation has supported significantly lower Procedural and Spontaneous scale scores, and higher Elaboration scale scores given a writing workshop intervention at the graduate level (Biggs et al. 1999).

Familiarity with the approaches to writing model may help teachers to gain a more sensitive understanding of that process. The *Inventory of Processes in College Composition* also provides a tool for students' personal assessment and reflection as well as a comprehensive model for teachers and researchers.

Appendix A

Deep and surface writing approaches of university students

Deep Writing	Surface Writing
Metacognitive, Reflective	Redundant, reproductive
High or alternating level of focus	Focus at the local level
Hierarchical organization	Linear, sequential structure
Engagement, self-referencing	Detachment
Actively making meaning (agentic)	Passive ordering of data
Audience concern	Less audience concern
Thinks about essay as an integrated whole	Sees essay as an organized display
Thesis-driven	Data-driven
Revision	Editing
Transforming, going beyond assignment	Telling within the given context
Autonomous	Rule-bound
Teacher independent	Teacher dependent
Feelings of satisfaction, coherence and Connectedness	

Appendix B

Inventory of processes in college composition: sample questions

FACTOR I Elaborative		
1.	Writing makes me feel good.	0.62
2.	I tend to give a lot of description and detail.	0.56
3.	I put a lot of myself in writing.	0.54
4.	I use written assignments as learning experiences.	0.51
5.	Writing an essay or paper is making a new meaning.	0.50
6.	At times, my writing has given me deep personal satisfaction.	0.49
7.	Writing is like a journey.	0.48
8.	It's important to me to like what I've written.	0.47
9.	I think about how I come across in my writing.	0.45
10.	I often think about my essay when I'm not writing (e.g. late at night).	0.44
11.	I sometimes get sudden inspirations in writing.	0.43
12.	Writing helps me organize information in my mind.	0.42
13.	I cue the reader by giving a hint of what's to come.	0.41
14.	I often use analogy and metaphor in my writing.	0.41
15.	I imagine the reaction that my readers might have to my paper.	0.40
16.	When writing a paper, I often get ideas for other papers.	0.38
17.	I compare and contrast ideas to make my writing clear.	0.38
18.	I visualize what I'm writing about.	0.37
19.	Writing reminds me of other things that I do.	0.36
20.	Writing is symbolic.	0.35
21.	Originality in writing is highly important.	0.33
22.	I try to entertain, inform or impress my audience.	0.33
23.	I use a lot of definitions and examples to make things clear.	0.31
FACTOR II Low Self-efficacy		
1.	I can write a term paper.	-0.54
2.	Writing an essay or paper is always a slow process.	0.52
3.	Studying grammar and punctuation would greatly improve my writing.	0.47
4.	Having my writing evaluated scares me.	0.41
5.	I expect good grades on essays and papers.	-0.41
6.	I need special encouragement to do my best writing.	0.39
7.	I do well on essay tests.	-0.38
8.	I can write simple, compound and complex sentences.	-0.37
9.	My writing rarely expresses what I really think.	0.36
10.	I like to work in small groups to discuss ideas or to do revision in writing.	0.35

11.	The most important thing in writing is observing the rules of grammar, punctuation and organization.	0.35
12.	I often do written assignments at the last minute and still get a good grade.	-0.33
13.	I can't revise my own writing because I can't see my own mistakes.	0.29
14.	If the assignment calls for 1000 words, I try to write just about that many.	0.26

FACTOR III Reflective-Revision

1.	I re-examine and restate my thoughts in revision.	0.52
2.	There is one best way to write a written assignment.	-0.45
3.	I complete each sentence and revise it before going onto the next.	-0.41
4.	The reason for writing an essay really doesn't matter to me.	-0.39
5.	Often my first draft is my finished product.	-0.39
6.	Revision is a one time process at the end.	-0.39
7.	When given an assignment calling for an argument or viewpoint, I immediately know which side I'll take.	-0.39
8.	My prewriting notes are always a mess.	0.36
9.	I plan out my writing and stick to the plan.	-0.35
10.	In my writing, I use some ideas to support other, larger ideas.	0.33
11.	It's important to me to like what I've written.	0.33
12.	Revision is the process of finding the shape of my writing.	0.35
13.	The question dictates the type of essay called for.	0.31

FACTOR IV Spontaneous-Impulsive

1.	My writing 'just happens' with little planning or preparation.	0.51
2.	I often do written assignments at the last minute and still get a good grade.	0.47
3.	I never think about how I go about writing.	0.45
4.	Often my first draft is my finished product.	0.45
5.	I usually write several paragraphs before rereading.	0.42
6.	I just write 'off the top of my head' and then go back and rework the whole thing.	0.41
7.	I start with a fairly detailed outline.	-0.40
8.	I plan, write and revise all the same time.	0.37
9.	I am my own audience.	0.30
10.	When I begin to write, I have only a vague idea of how my essay would come out.	0.34

11.	Revision is making minor alterations – just touching things up and rewording.	0.34
12.	I can't revise my own writing because I can't see my own mistakes.	0.33
13.	When writing an essay or paper, I just write out what I would say if I were talking.	0.32
14.	Revision is a one time process at the end.	0.31
15.	I set aside specific time to do written assignments.	-0.29

FACTOR V Procedural

1.	When writing an essay, I stick to the rules.	0.54
2.	I closely examine what the essay calls for.	0.52
3.	I keep my theme or topic clearly in mind as I write.	0.43
4.	I can usually find one main sentence that tells the theme of my essay.	0.41
5.	The teacher is the most important audience.	0.40
6.	I like written assignments to be well-specified with details included.	0.34
7.	My intention in writing papers or essays is just to answer the question.	0.33
8.	The main reason for writing an essay or paper is to get a good grade on it.	0.31
9.	An essay is primarily a sequence of ideas, an orderly arrangement.	0.29
10.	I worry about how much time my essay or paper will take.	0.28

Appendix C

Approaches to Writing

Approach	Motive	Strategy
Elaborative voice	To self-express	Visualization, audience.
Low Self-Efficacy	To acquire skills/avoid pain	Study grammar, collaborate, find encouragement.
Reflective-Revision	To make meaning	Revision, reshaping, drafting.
Spontaneous-Impulsive	To get done	Last minute, no planning or Revision, just like talking.
Procedural	Please the teacher	Observe rules, organize and manage writing.

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