

## Emotion and Learning: Feeling our Way Toward a New Theory of Reflection in Service-Learning

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*Service-learning researchers and practitioners agree that reflection is the essential link between community experience and academic learning: "reflection is the hyphen in service-learning" (Eyler, 2001, p. 35). The theoretical and pedagogical foundations for service-learning reflection pay scant attention to the emotional content and context of student service experience or to the positive role emotion may play in helping students connect experience with academic study. This neglect needs to end. Recent research in cognitive psychology and neuroscience reveals emotion's central role throughout the thinking and learning process. We explore how inattention to emotion has molded service-learning research and practice, and then suggest ways to re-orient an approach to reflection to acknowledge the continuous interplay between the intellectual and the emotional throughout the reflective learning process.*

"I think therefore I am." Rene Descartes  
(1596-1650)

"The advantage of emotions is that they lead us  
astray." Oscar Wilde (1854-1900)

Giles and Eyler (1994), Furco (1996), Hatcher and Bringle (1997), and others trace the theoretical roots of service-learning from John Dewey's educational and social philosophy to David Kolb's conceptions of experiential education. Dewey and Kolb embrace a holistic view of learning as a life-long "process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 38). They further recognize that not all experiences are "genuinely or equally educative" (Dewey, 1938, p. 25). Instead, reflection acts as a bridge between conceptual understandings and concrete experiences. Service-learning proponents share this view, and research demonstrates that reflection is one of the core program characteristics necessary to effective practice in service-learning (Eyler & Giles, 1999; Eyler, Giles, & Schmiede, 1996; Hatcher & Bringle; Jacoby & Associates, 1996). Hatcher, Bringle, and Muthiah recently (2004) summarized the consensus among service-learning scholars:

When reflection activities engage the learner in examining and analyzing the relationship between relevant, meaningful service and the

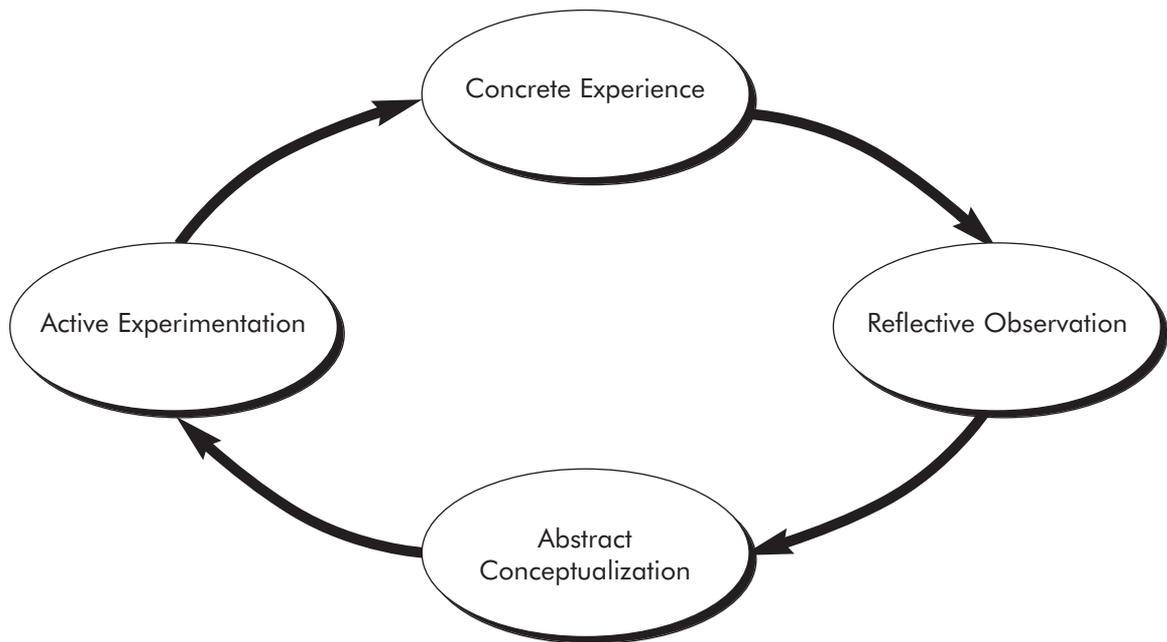
interpretive template of a discipline, there is enormous potential for learning to broaden and deepen along academic, social, moral, personal, and civic dimensions. (p. 39)

### Reflection and Learning

Dewey's central pillars of reflective thought and reflective activities serve as the foundation for contemporary service-learning practice, although the concept of service-learning had not been articulated when he wrote his philosophy of education. According to Giles and Eyler (1994), Dewey's explorations of "experience, inquiry, and reflection [are] the key elements of a theory of knowing in service-learning" (p. 79). In Dewey's scheme, reflection is a necessary connection between experience and theory. Experience alone does not produce learning; instead, as Bringle and Hatcher (1999) explain, "Experience becomes educative when critical reflective thought creates new meaning and leads to growth and the ability to take informed actions" (p. 180). Dewey posits that learners continuously construct new meanings based on experience and analysis, moving from action to reflection to new action. Dewey's influence is apparent in standard definitions of reflection in the service-learning literature; for example:

- Reflection is the "intentional consideration of

Figure 1



Note: Chart excerpted from Kolb (1984), p. 33.

an experience in light of particular learning objectives” (Hatcher & Bringle, 1997, p. 153).

- Reflection “is the process that helps students connect what they observe and experience in the community with their academic study” (Eyler, 2001, p. 35).
- Reflection is “the ability to step back and ponder one’s own experience, to abstract from it some meaning or knowledge relevant to other experiences” (Hutchings & Wutzorff, 1988, p. 15).
- “It is through careful reflection that service-learning—indeed any form of experiential education generates meaningful learning” (Ash, Clayton, & Atkinson, 2005, p. 50).

Dewey’s approach to learning clearly establishes the theoretical foundation of service-learning practice and research.

Dewey’s philosophy of learning emerged from a Western tradition that values reason above all. His Five Phases or Aspects of Reflective Thought are derived from the scientific method and are explicitly rational:

1. Suggestions
2. Intellectualization
3. The Hypothesis
4. Reasoning

5. Testing the hypothesis in action (from Giles & Eyler, 1994, pp. 79-80).

According to Dewey (1933), structured reflection permits learning to occur from the chaos and ambiguity of experience: “The function of reflection is to bring about a new situation in which the difficulty is resolved, the confusion cleared away, the trouble smoothed out, and the question it puts is answered” (p. 100). Emotion<sup>1</sup> plays a central yet subtle role in Dewey’s scheme: “Emotion is the moving and cementing force. It selects what is congruous and dyes what it selected with its color, thereby giving qualitative unity to material externally disparate and dissimilar” (Dewey, 1934, p. 42). For Dewey, reflection is essentially a rational act, and emotion’s role is crucial but limited. Emotion serves to catalyze scientific thought.

Like Dewey, David Kolb (1984) posits a constructivist and rationalist theory of learning. Kolb acknowledges that emotion has a role in the learning process: “To learn is not the special province of a single specialized realm of human functioning such as cognition or perception. It involves the integrated functioning of the total organism—thinking, feeling, perceiving, and behaving” (p. 31). However, Kolb’s cycle of experiential learning, like Dewey’s, makes emotion simply the catalyst for rational thought. Kolb describes learners moving through a cyclic experience (see Figure 1).

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Eyler and Giles (1999) summarize the cycle neatly: "One moves from feeling, to observing, to thinking, to doing" (p. 195). Once again, emotion is merely the trigger for the intellectual work of reflection. The emphasis on the rational is further reflected in Kolb's four basic learning styles: convergent, divergent, assimilation, accommodation. This approach to learning styles and the learning process, despite holistic window-dressing, fails to recognize emotion as a valid and persistent aspect of the reflective process.

### Emotions and Service-Learning

Dewey and Kolb serve not only as the theoretical foundations but also as the practical basis for research on and pedagogical models of reflection in service-learning. The rationalist approach to reflection is evident throughout the research literature on service-learning. Eyler and Giles (1999) make provocative but passing reference to emotion in *Where's the Learning in Service-Learning?* In their analysis of program characteristics of effective service-learning, Eyler and Giles emphasize the essential role of connections in good practice, including links "between affective and cognitive learning...experience and analysis, feeling and thinking, now and future" (p. 183). A few pages later, Eyler and Giles echo Dewey by distinguishing between emotion (the precursor) and reason (the goal):

Students need considerable emotional support when they work in settings that are new to them; there needs to be a safe space where they know that their feelings and insights will be respected and appreciated. As their service develops and their questions become more sophisticated, they need intellectual support to think in new ways, develop alternative explanations for experiences and observations, and question their original interpretations of issues and events. (p. 185)

The progression from "emotional" response to "more sophisticated" and "intellectual" thinking reiterates the traditions both of separating emotion from reason and of privileging the rational over the emotional. Eyler and Giles are not unique in maintaining this division. The *Michigan Journal of Community Service Learning's* special issue on strategic directions for service-learning research (2000), for example, virtually ignores emotion as a consideration in any aspect of the reflective process or of the field's research agenda. The potential for emotion to have a role in reflection is, at most, implicit in service-learning research.

The literature on reflection in practice is no different. Howard's (2001) updated *Principles of Good Practice for Service-Learning Pedagogy* fails to mention emotion as a factor in student learning or faculty teaching. Eyler and Giles (1999) propose the

"5 Cs" as fundamental principles of reflection: connection, continuity, context, challenge, and coaching. The "5 Cs" do not exclude emotion, but they do not grant any explicit role to emotion in the reflection process. Hatcher and Bringle (1997) suggest that effective reflection must have five characteristics: link experience to learning, be guided, occur regularly, permit feedback and assessment, and encourage the exploration of values. Hatcher and Bringle allude to emotion's possible role only when addressing the clarification of values, noting that faculty can "assist students in processing the conflicting values that are often a part of a service experience" and that student reflection may produce "a poignant description of the personal impact of the service" (pp. 156-57). In a recent study, Hatcher, Bringle, and Muthiah (2004) develop this theme, demonstrating that "reflection activities should help students not only process the course material but also their personal values, civic attitudes, goals, and intentions" (p. 42). Once again, emotion is hinted at, but not seriously addressed, as a part of the reflective learning process.

The leading guides to service-learning course construction adopt and build on these models (e.g., Heffernan, 2001; Howard, 2001). Heffernan's *Fundamentals of Service-Learning Course Construction*, for instance, acknowledges the emotional aspects of service-learning in her initial chapter: "As faculty, we might think of our syllabi as maps that guide students as they develop cognitively, affectively, emotionally, and morally over the course of the semester" (p. 8). Despite the myriad of examples that Heffernan cites through her book, emotion appears less than a handful of times. The most explicit reference is in an excerpt of a syllabus from Waynesburg College that includes the following prompt questions in a longer section on "Reflection":

Possible personal reflections include: What am I feeling? Why did I react the way I did? How might I react differently next time? What am I discovering about myself that I didn't know before?... Without reflection, students simply go through the motions of service [and] remain cognitively unaffected by the experience. (p. 27)

Even when emotion is given a prominent place in reflection, as this quote illustrates, it is framed as "personal" and used primarily to promote larger cognitive goals. The practice-oriented literature on service-learning, in short, echoes the theoretical foundations of service-learning by giving little substantive attention the roles emotion may play in the reflective learning process.

### Psychology of Emotions

Recent research in the psychology of emotions has

challenged the traditional Western view that separates thinking and feeling, an assumption at the foundation of our theory and practice in reflection. Contrary to what Descartes, *Star Trek*'s Mister Spock, and scores of others have argued for centuries, pure reason cannot be divorced from emotion. Antonio Damasio (1994), for example, has used the tools of neuroscience to demonstrate that "certain aspects of the process of emotion and feeling are indispensable for rationality" (p. xiii). Joseph LeDoux (2002) puts it more bluntly: "A purely cognitive view of the mind, one that overlooks the role of emotions, simply won't do" (p. 200). Emotion, in other words, is an *essential part* of the thinking process, not simply a catalyst for reason nor inherently an obstacle to or a distraction from rational thought.

Just as reason and emotion can no longer be viewed as distinct and separable, the traditional divide between mind and body is no longer upheld by current theories of emotions. Instead, psychologists have found that in the elicitation of emotions, the brain is activated through neurological networks (LeDoux, 1996; Lewis & Haviland-Jones, 2000). These networks send signals to different parts of the brain depending on the type of emotions. For example, when a person experiences anger the central nervous system notifies the amygdala, which produces a range of physiological and cognitive responses to emotion—including both accelerated heartbeat and a conscious awareness (or labeling) of the emotion (LeDoux & Phelps, 2000). Indeed, the networks sending signals to different aspects of the brain for emotions are the same networks notifying the brain of all other cognitive and physiological responses. LeDoux (1996) explains "Emotions are things that happen to us rather than things we will to occur. Although people set up situations to modulate their emotions all the time . . . We have little direct control over emotional reactions" (p. 19). In other words, cognition and emotions are interrelated rather than parallel processes.

In research that complements these findings on the biological basis of emotions, cognitive psychologists have explored the ways individuals process and label emotions. At the root of all cognitive theories of emotion is the belief that emotions cannot occur without "cognitive appraisals." Lazarus (2001) explained that the term cognitive appraisal "emphasize[s] the complex, judgmental, and conscious process that must often be involved in appraising" an event (p. 51). In this process individuals respond to an experience by asking, implicitly or explicitly, the following questions: (a) How relevant is this event for me? Does it directly affect me or my social reference group? (relevance); (b) What are the implications or consequences of this event and how do these affect

my well-being and my immediate or long-term goals? (implications); (c) How well can I cope with or adjust to the consequences [of this event]? (coping potential); and (d) What is the significance of this event with respect to my self-concept and to social norms and values? (normative significance) (Scherer, Schorr & Johnstone, 2001, p. 94). Individual responses to these questions dictate the scaffolding and labeling of the emotion involved in the experience.

Cognitive theorists (Scherer, Schorr, & Johnstone, 2001) have varying views regarding the process individuals use in labeling and assessing their emotions. Scherer (1984) argued that individuals ask themselves the four questions above in a fixed order, with no fluctuation in the sequence of questions. Conversely, Lazarus and Smith (1988) found that individuals move back and forth between these questions in what they perceive as a flexible process. How individuals label their emotions remains an area of debate in the study of emotions (Ekman, 1992; Fridja, 2000; Johnson-Laird & Oatley, 1989; Russell & Lemay, 2000; Sabina & Silver, 2005). However, research has demonstrated that emotion is not a separate process from cognition. While neurological networks shape the initial physiological experience of emotions, individuals reflect on, make sense of, and learn from their emotions through the cognitive appraisal process.

If we acknowledge the inherent links between emotion and intellect in the process of learning from experience, must we automatically abandon critical analysis and adopt a "touchy-feely" agenda? No. As Damasio (1994) contends

Knowing about the relevance of feelings in the processes of reason does not suggest that reason is less important than feelings, that it should take a backseat to them or that it should be less cultivated. On the contrary, taking stock of the pervasive role of feelings may give us a chance of enhancing their positive effects and reducing their potential harm. (p. 246)

Just as service and learning are mutually dependent in good practice, we need to acknowledge that both reason and emotion are essential components of the reflective learning process. By considering the continual interplay of reason and emotion, we have the opportunity to develop more sophisticated and more effective theoretical models for research and practice in service-learning.

### Emotions in Reflection

By opening the door to emotion, we are *not* suggesting that we should bring emotion into the reflection process; it always has been, and always will be

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present; nor are we encouraging faculty to guide reflection merely by asking students how they feel; nor do we advocate a new line of research simply counting the number of times students cry or get angry during service. Instead, we are suggesting that service-learning researchers and teachers explicitly consider the roles emotion may play throughout the reflective learning process. This consideration seems particularly important in service-learning because often students are placed in highly challenging community environments. If emotion always is a part of any learning process, it likely plays especially significant roles in the learning equations that link service to academic objectives.

So, what would it mean to take emotion seriously in the reflection and learning process? We will propose some tentative steps in this direction, focusing on the way service-learning proponents define, practice, and research the reflective learning process. Our ideas are designed to initiate conversation rather than be the final word in this discussion. As our paper's title suggests, we are just beginning to feel our way toward a new understanding of emotion's roles in learning.

We do not need to abandon Dewey and Kolb to define the reflective learning process in a way that acknowledges emotion. As we suggested earlier, Dewey and Kolb grant emotion's role as a catalyst for reflective activity. This is not a minor point, and psychological research by Kegan (1994) and others reinforces Dewey and Kolb's attention to difference, discrepancy, and anomaly as a crucial trigger for learning and growth. However, a new definition should allow emotion to be present throughout the reflective process, not just at the beginning. The adult learning literature provides the baseline for such an approach. For example, Boud, Keogh, and Walker (1985) define reflection as a "generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciation" (p. 3). Integrating emotion into the service-learning literature would mean we re-define effective reflection in service-learning as *a process involving the interplay of emotion and cognition in which people (students, teachers, and community partners) intentionally connect service experiences with academic learning objectives.*

### Implications for Teaching Practice

Accepting this re-definition should lead to new practices in service-learning pedagogy, although the changes might not be great for some faculty and students. Eyler, Giles, and Schmiede (1996) suggest that some students already may find ways to bring together intellect and emotion throughout the

reflective process:

Students interviewed also stressed the importance of informal reflection...which takes place on an individual basis during unstructured personal time, or through casual conversations with friends, relatives and coworkers. Students commented on the need to balance this informal reflection with the more formalized critical thinking. (pp. 15-16)

Anecdotal conversations with faculty seem to indicate that at least some service-learning educators also find ways to weave emotional considerations through the reflective process. Some faculty use art, film, literature, or music to help students make intellectual and emotional connections between service experiences and academic analysis. In addition, many of the standard pedagogical tools for reflection, such as various forms of journaling, allow for the interplay of emotional and intellectual processing. For example, in an upper-level undergraduate service-learning course on gender and violence, Professor Alison Piepmeier uses critical incident journaling (Eyler, Giles, & Schmeide, 1996) to create "a space for airing issues or feelings that are too fresh or messy to be analyzed just yet" (personal communication, November 14, 2005). Piepmeier provides important support to her students through substantial written feedback honoring emotional and intellectual content of each reflection. Cultivating this emotional space in student journals also helps Piepmeier foster academic learning and civic engagement. Piepmeier, for example, encourages students to use the anger and other emotions emerging from their service experiences at domestic violence shelters as a motivator and a reality check ("What would the women at the shelter think about this?"). This explicit acknowledgement of student emotion, Piepmeier has found, leads students both to more rigorous academic analysis of the structural factors behind domestic violence and deeper engagement with activism outside the classroom.

For practitioners, then, adapting a new theory of reflection should involve intentionally considering how emotion might emerge and be used throughout the reflective process. Just as we provide intellectual scaffolding to help our students develop more sophisticated critical thinking skills (Bransford, Brown, & Cocking, 2000), we also should provide supports to students as they struggle to acknowledge, make sense of, and learn from the emotions they experience. Recent research by Hatcher, Bringle, and Muthiah (2004) and by Ash et al. (2005) demonstrate the significance of frequent and structured reflective activities for student learning. Reflection is an acquired skill, these studies conclude. Students are more like-

ly to become proficient at learning from experience when faculty provide multiple opportunities to practice reflection, guiding prompts to focus that reflection, and regular feedback to reinforce reflective learning.

Although these recent studies do not address emotion directly, new research on emotion's role in the learning of poetry suggests that such scaffolding can have a profound effect on student understanding. Eva-Wood's (2004) experimental study demonstrates that "Explicit attention to feelings and thoughts on the part of readers can lead to deeper, more complex responses to poetry" (p. 189). First-year college students in this study, however, required *explicit* cues about emotion "to become aware of their affective [or emotional] responses" (p. 190). In this case, poetry and service-learning pedagogy might be parallel—the emotional content of "texts" (poetry and service) are essential for student learning, but students also need scaffolding to access that complexity and to develop their ability in cognitive appraisal. While such scaffolding might appear most often in service-learning journaling assignments like Piepmeier's, explicit attention to emotion in the reflective learning process need not be constrained to solitary writing. Faculty also might prompt students to integrate emotion into the presentations and portfolios that often conclude service-learning courses. Students could be asked, for example, to draw on individual journals or small group discussions throughout the term to analyze how emotion helped to shape their understanding of a social problem or a service context. Faculty additionally might have students gather evidence about how emotion informs the work and perspectives of community members and agency staff at a service site. This evidence might allow students to identify how emotions influence decision-making and shape social contexts. The explicit inclusion of emotion in the reflective learning process, then, likely will result in students developing more sophisticated understandings of themselves, their community, and the academic material they are studying.

Openly including emotion in the service-learning reflection process does not make faculty into counselors, nor does it equate with emotional brainwashing. When providing intellectual prompts in reflection, we assist students to develop habits and processes that will help them think critically beyond the classroom world; we are not trying to create students who simply echo our own personal opinions. Similarly, prompts addressing emotions in reflection should be designed to guide students as they learn the habits and processes that will help them use emotions productively beyond the classroom world; we are *not* trying to tell students what or how to feel. The cognitive appraisal literature might be particularly help-

ful to faculty attempting to design such scaffolding. Indeed, many service-learning practitioners already use questioning sequences, including the "What? So what? Now what?" approach to reflection (Eyler & Giles, 1999), akin to cognitive appraisal's focus on relevance, implications and coping potential (Scherer et al., 2001). Cognitive appraisal research, however, suggests that the reflective learning process should explicitly prompt the labeling of emotion ("How did this experience make you feel?") and then connect that emotional response to the analysis of experience ("What are the implications of this experience, and of your reaction to it, for how you will think, feel, and act in the future?"). Some, perhaps many, service-learning faculty already may have their own examples of such pedagogical tools. However, few models currently exist in the practitioner literature to serve as guides for faculty who seek to explicitly link emotion and intellect in the reflective learning process.

The dearth of examples may be a legacy of not just the rationalist foundations of service-learning but also of what Howard (2001) has called "a widespread perception in academic circles that community service is a 'soft' learning resource" (p. 16). In other words, some practitioners have been defensive about service-learning's intellectual rigor because they have faced skepticism from colleagues. Acknowledging emotion's roles in learning, however, is not "soft." Rather, neuroscientists, psychologists and other "hard" disciplines are leading a revolution in understanding of cognition. Taking emotion seriously as one component of the reflective learning process makes us more, not less, rigorous as long as our attention to emotion (like our attention to critical thinking) aims toward academic goals.

Attending to emotion, however, may not be easy for many service-learning practitioners. Faculty and community partners may legitimately fear that they will not be able to adequately or safely address student emotions—or their own emotions. Faculty also may worry about how grading enters the equation; after all, grading some service-learning experiences is complicated enough without adding another layer of subjectivity. Indeed, when teachers acknowledge the role of emotion in the classroom, they tend to highlight the importance of "emotional control" (McDrury & Alterio, 2002, p. 41). However, such a view focuses on emotion as a negative influence on the classroom, despite the growing evidence that emotion also has a significant positive influence on learning. By ignoring emotions that exist and shape learning, we threaten to shirk our responsibility as educators and to limit the potential for real academic learning. Indeed, neglecting emotions in our classrooms and service-learning experiences may leave students to do their most difficult course work alone.<sup>2</sup>

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If service-learning's "best practices" literature were to take emotion into account, practitioners would have resources to help address important pedagogical questions including:

- What are effective ways to help students (and faculty) anticipate and learn from their emotional responses to community experiences?
- What types of exercises (journaling, discussion, etc.) most effectively help students integrate the emotional and intellectual components of reflective learning?
- What types of feedback from faculty or community partners most effectively help students integrate the emotional and intellectual components of reflective learning?
- What are effective ways for faculty to leverage the range of emotions likely to emerge at varying times during a service-learning project?
- How might storytelling and other narrative techniques (McDrury & Alterio, 2002) be adapted to foster reflection that honors the interplay of the emotional and intellectual in service-learning classes?
- What can college service-learning faculty learn from new initiatives on Social and Emotional Learning in K-12 education? (Education Commission of the States, 2003)
- What feedback and grading approaches best support students as they engage in both the intellectual and emotional aspects of the reflective learning process?

Such questions do not require us to abandon what we know of the "best practices" of service-learning pedagogy, but rather to think in new ways about what we already do in our courses.

### Implications for Research

The service-learning research agenda also should expand to consider emotion throughout the reflective learning process. Once again, we will not propose a fully-formed theoretical model here, nor will we lay out a detailed research agenda. We simply will pose a few of the questions researchers might consider:

- Does explicit attention to the interplay of emotion and intellect throughout the reflective process produce enhanced achievement of *academic* learning goals?
- Does it result in different levels of student motivation and engagement? Does it lead to increased clarification of student values? Does it enable more purposeful civic learning by students?

- At what points in the reflective learning process (beyond catalyst) is emotion most significant?
- What are the characteristics of informal (non-faculty initiated) reflection activities that some students use in highly challenging community environments? How does this informal reflection influence both faculty-initiated reflection and overall student learning?
- How might service-learning researchers adapt innovative methodologies used by scholars studying emotion and cognition to answer significant questions in this field? Possible approaches to open new lines of research would include employing techniques developed to explore cognitive appraisal (Scherer et al., 2001), positive psychology (Peterson & Seligman, 2004), and social and emotional learning (Education Commission of the States, 2003).

As these questions suggest, many important research areas deserve attention.

### The Next Step

The first step toward a new understanding of reflection in service-learning, however, does not require us to answer any of those research questions. We first need to face our own beliefs about emotion and learning. If we look closely at the theoretical foundations of our field, including Dewey and Kolb but also their many followers, we can see an implicit assumption that emotion is a difficult and complicating factor in learning. That, undoubtedly, is true. However, emotion also can have positive and clarifying roles in learning and our lives (Seligman, 2002).

Service-learning researchers and practitioners need to acknowledge that emotion is an important part of the reflective learning process. Sometimes emotions may enhance motivation and learning, while at other times emotion may complicate or hinder learning. Regardless, emotion no longer should be ignored. Resolving the tension between the rationalist and a more holistic theory of reflection, ironically, returns us to our roots in Dewey and Kolb. After all, both men taught us, to quote Kolb, "the process of learning requires the resolution of conflicts between dialectical opposed modes of adaptation to the world" (1984, p. 29).

### Notes

<sup>1</sup> Although "feeling," "emotion," and "affect" sometimes are used interchangeably, we follow the psychological convention of distinguishing the three. Feelings are extremely short in duration. Emotions are of short duration while affect refers to a long-term mood of the person

(Ekman, 1992; Fridja, 2000).

<sup>2</sup> Walvoord and Anderson (1998) critique the common if unfortunate faculty practice of using class time to cover basic information and then sending students home alone to do the more complex work of "analyzing and synthesizing the material, using it to solve problems, and so on" (p. 54).

## References

- Ash, S. L., Clayton, P. H., & Atkinson, M. P. (2005, Spring). Integrating reflection and assessment to capture and improve student learning. *Michigan Journal of Community Service Learning*, 11(2), 49-60.
- Boud, D., Keogh, R., & Walker, D. (Eds.). (1985). *Reflection: Turning experience into learning*. London: Routledge & Kegan Paul.
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.). (2000). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press.
- Bingle, R. G., & Hatcher, J. A. (1999, Summer). Reflection in service learning: Making meaning of experience. *Educational Horizons*, 77(4), 179-85.
- Damasio, A. R. (1994). *Descartes' error: Emotion, reason, and the human brain*. New York: HarperCollins.
- Dewey, J. (1933). *How we think*. Boston: Heath.
- Dewey, J. (1934). *Art as experience*. New York: Capricorn.
- Dewey, J. (1938). *Experience and education*. New York: Collier Books.
- Education Commission of the States, Collaborative for Academic, Social and Emotional Learning, & Laboratory for Student Success. (2003). *Making the case for social and emotional learning and service-learning*. Denver, CO: Education Commission of the States.
- Ekman, P. (1992). An argument for basic emotions. *Cognition and Emotion*, 6(3/4), 169-200.
- Eva-Wood, A. (2004, April). Thinking and feeling poetry: Exploring meanings aloud. *Journal of Educational Psychology*, 96(1), 182-191.
- Eyler, J. S. (2000). What do we most need to know about the impact of service-learning on student learning?[Special issue] *Michigan Journal of Community Service Learning*, 11-17.
- Eyler, J. S. (2001, Summer). Creating your reflection map. *New Directions for Higher Education*, 114, 35-43.
- Eyler, J., & Giles, D. (1999). *Where is the learning in service-learning?* San Francisco: Jossey-Bass.
- Eyler, J., Giles, D. E. Jr., & Schmiede, A. (1996). *A practitioner's guide to reflection in service-learning: Student voices & reflections*. Nashville, TN: Vanderbilt University.
- Fridja, N.H. (2000). The psychologists' point of view. In M. Lewis & J.M. Haviland-Jones (Eds.), *Handbook of emotions (2nd ed.)* (pp. 59-74). New York: Guilford Press.
- Furco, A. (1996). Service-learning: A balanced approach to experiential education. In B. Taylor (Ed.), *Expanding boundaries: Service and learning*. Washington, DC: Corporation for National Service.
- Giles, D. E., Jr., & Eyler, J. (1994). The theoretical roots of service-learning in John Dewey: Towards a theory of service-learning. *Michigan Journal of Community Service Learning*, 1(1), 77-85.
- Hatcher, J. A., & Bringle, R. G. (1997, Fall). Reflection: Bridging the gap between service and learning. *College Teaching*, 45(4), 32-37.
- Hatcher, J. A., Bringle, R. G., & Muthiah, R. (2004, Fall). Designing Effective Reflection: What Matters to Service-Learning? *Michigan Journal of Community Service Learning*, 38-46.
- Heffernan, K. (2001). *Fundamentals of service-learning course construction*. Providence, RI: Campus Compact.
- Howard, J. (2001, Summer). Service-learning course design workbook. *Michigan Journal of Community Service Learning*, Companion Volume.
- Howard, J. (Ed.). (2000). Strategic directions for service-learning research [Special issue]. *Michigan Journal of Community Service Learning*.
- Hutchings, P., & Wutzdorff, A. (1988). Experiential learning across the curriculum: Assumptions and principles. In P. Hutchings and A. Wutzdorff (Eds.), *Knowing and doing: Learning through experience. New directions in teaching and learning*. San Francisco: Jossey-Bass.
- Jacoby, B., & Associates. (1996). *Service-learning in higher education: Concepts and practices*. San Francisco: Jossey-Bass.
- Johnson-Laird, P.N., & Oatley, K. (1989). The language of emotions: An analysis of a semantic field. *Cognition and Emotion*, 3(2), 81-123.
- Kegan, R. (1994). *In over our heads: The mental demands of modern life*. Cambridge, MA: Harvard University Press.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.
- Lazarus, R.S. (2001). Relational meaning and discrete emotions. In K.R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal processes in emotions: Theory, methods, research*. Oxford: University Press.
- LeDoux, J. (1996). *The emotional brain: The mysterious underpinnings of emotional life*. New York: Simon & Schuster.
- LeDoux, J. (2002). *Synaptic self: How our brains become who we are*. New York: Viking.
- LeDoux, J., & Phelps. (2000). Emotional networks in the brain. In M. Lewis & J.M. Haviland-Jones (Eds.), *Handbook of emotions (2nd ed.)*. New York: Guilford Press.
- Lewis & Haviland-Jones (2000). *Handbook of emotions (2nd ed.)*. New York: Guilford Press.

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- McDrury, J., & Alterio, M. (2002). *Learning through storytelling in higher education: Using reflection and experience to improve learning*. Sterling, VA: Kogan Page.
- Peterson, C. & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. New York: Oxford University Press.
- Russell, J.A. & Lemay, G. (2000). Emotion concepts. In M. Lewis and J.M. Haviland-Jones (Eds.), *Handbook of emotions (2nd ed.)*. New York: Guilford Press.
- Sabina, J., & Silver, M. (2005). Why emotional names and experiences don't neatly pair. *Psychological Inquiry*, 16, 1-10.
- Scherer, K., A., Schorr, A., & Johnstone, T. (2001). *Appraisal process in emotion: Theory, methods, research*. New York: Oxford University Press.
- Seligman, M.E.P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York: Free Press.
- Walvoord, B.E., & Anderson, V.J. (1998). *Effective grading: A tool for learning and assessment*. San Francisco: Jossey-Bass.

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