
Intentionality as one of many neglected learning dimensions.

Intentionality and Other “Nonsignificant” Issues in Learning: Commentary on Margaret Martinez’s “Intentional Learning in an Intentional World”

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The learning examined may or may not involve teaching or instruction

(Brown and Duguid, 1992, p. 167).

Institutional and Instructional Contexts for Learner Studies

The backdrop facilitating Margaret Martinez’s study and the increased interest in studies of learners and of alternative learning environments is a complicated one. Most certainly, technological advances during the last decade have invigorated educational institutions and corporate interest in providing alternative educational opportunities for under-represented audiences. Additionally, numerous educational researchers have noted the increased pressure to provide improved educational experiences that are driven by both internal and external pressures on traditional educational institutions.

Internally, educational institutions are responding to concerns about student quality and learning issues related to existing instruction. Koshmann, Kelson, Feltoich, and Barrows (1996), in their discussion of what graduates should be but are frequently not, suggest that many believe that “existing educational systems are producing individuals who fail to develop a valid, robust knowledge base; who have difficulty reasoning with and applying knowledge; and who lack the ability to reflect upon their performance and continue the process of learning” (p. 85). Moran (1992) argues that the public perception of higher education is not

particularly favorable, noting that there “is the widespread perception that we are not now doing our job very well” (p. 9).

Internally, university administrators have suggested that the need to revise existing instructional structures has as much to do with financial pressures as it does with the demands of emerging student populations. Hanna (1998) suggests that educational reform is occurring due to the rapid growth of customer-oriented approaches to education, in addition to the university’s increased “focus on responsiveness to learner needs and desires such as convenience, timing, engagement, application of knowledge to the workplace, and learning by doing” (p. 91).

Unfortunately, how this struggle plays itself out at the administrative level is likely to bear only a slight relationship to empirical developments related to learner types, instructional approaches and settings. Still, Martinez’s study challenges us to address a shortcoming with traditionally cognitive approaches to the problem that I applaud.

Intentionality in Learning

At its core, Martinez’s article challenges “traditional cognitive-rich instructional models” for inviting “fuzzy, ‘one-size-fits-all’ solutions where audiences are treated as a homogenous, conglomer-

ate whole.” Her contention is that the intentions and emotions of learners not only temper but guide and form cognitive strategies for learning; as Brown and Duguid (1992) posit, our focus on particular contexts for learning may cause us to deemphasize or overlook more important contexts (for example, the learning that occurs outside our educational institutions), such as the motivation to learn. Importantly, Martinez’s continuum of intentional learner types represents a useful and important addition to our understanding of learners-as-audience even without our necessarily having to agree with her argument that a focus on learner intention runs counter to cognitive models of learning and behavior.

Martinez views learners as complex amalgamates of emotional and cognitive goals, operating both strategically and nonstrategically, actively and passively incorporating new materials, and subject to a host of variables including how well or poorly instructional materials map onto their established aptitudes, experiences, and expectations. Her continuum of learner orientations ranges from intentional learners, through performing learners, to conforming and resistant learners. Intentional learners represent the instructor’s ideal, intrinsically motivated, committed, persistent, and sophisticated in their learning strategies and performance. Performing learners, on the other hand, are learners that instructors encounter more frequently, systematic, capable, low-risk, and skilled yet more extrinsically than intrinsically motivated. Conforming learners are probably the most common learner type (unfortunately), more passive, pleasing, with little desire to control or manage their learning processes or to actively create personal learning goals. Finally, resistant learners are (thankfully) less frequently encountered by instructors and are difficult to motivate, hesitant to move beyond elementary route procedures, and conflicted in terms of their educational values, goals, and experiences.

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The Emotional-Cognitive Learning Continuum

Martinez’s continuum of learner types acts as a useful framework for evaluating the success or failure of particular learning environments, and emphasizes noncognitive dimen-

sions of any instructional situation. She stresses that intentionality and motivation play an important role in learning, in this case learning from online environments, and her argument finds support in recent research on learning and alternative educational technologies (Najjar, 1998). Certainly, there is some evidence to suggest that providing learners with external motivation to learn only moderately improves learning (Anderson, 1994), so anticipating and supporting intrinsically motivated learners may be our most attainable goal.

Martinez’s focus on intentional learning can also serve as a provocative addition to evolving taxonomies of learner types. Rather than challenging research on learning styles, Martinez’s framework can also be viewed as complementing “traditional” cognitive perspectives towards learner types. Thus, it seems appropriate and intriguing to imagine tracking intentional learner types against, for example, learning style dimensions. We might find that active versus reflective, visual versus verbal, sensing versus intuitive, or sequential versus global learners exhibit more or less intentionality in learning (cf., Felder and Silverman, 1988; Felder and Solomon, 1998).

Of course a matrix of learning styles and intentionality types further complicates rather than simplifies discussions of learner interactions with media, instructional content, learning tasks, and other learner typographies, but perhaps this ought to be our ultimate goal. Martinez’s study can be viewed then as adding to a database of learner variables that we need to keep in mind whenever we design alternative learning environments.

It is notable that Martinez also varies the level of access that her participants have to parts of her learning environment. The basic learning materials, an eight-lesson introduction to the World Wide Web, are divided into three user groups. The

experimental group has access to introductory materials and extra guidance such as a center for managing performance or mapping progress and “specific intentional learning performance strategies.” The first control group has access to the same tools and environment as the experimental group, without the introductory guidance and intentional learning overview. And the second control group experienced only the eight-lesson instructional materials, without the intentional learning materials or tools.

Without actually using the learning environment described in the study, it is difficult to map it onto existing findings about the interaction between learner types and learning environments. But Najjar (1998) has pointed to the paucity of research that currently exists on learner types and their interactions with different media types and so, as we further develop our understanding of this relationship, we need to be as specific about describing the media and tools we are employing as possible.

Finally, Martinez collected data on several learner outcomes: time per learning task, paths taken, achievement, satisfaction, self-perceived learner efficiency, and frequency of use of the online intentional learning resources. Though Martinez’s findings did not reveal significant overall achievement differences, it is notable that she did observe an interaction between intentional learner types and the environment that she had developed for them. It is also notable that she resisted the tendency to focus primarily on achievement scores only to define “educational success.”

Affective and Social Dimensions of Learning

Gardner (1985) asserts the following about the role of affective and contextual factors influencing learning:

Though mainstream cognitive scientists do not necessarily bear any animus against the affective realm, against the context that surrounds any action or thought, or against historical or cultural analyses, in practice they attempt to factor out these elements to the maximum extent possible.... This may

be a question of practicality: if one were to take into account these individualizing and phenomenistic elements, cognitive science might become impossible. In an effort to explain everything, one ends up explaining nothing. And so, at least provisionally, most cognitive scientists attempt to so define and investigate problems that an adequate account can be given without resorting to these murky concepts (pp. 41-42).

Petraglia (1998) traces the emotional-cognitive fissure exhibited in existing research carefully, noting that “Although most rhetorical theorists have rarely been comfortable with the importance of affect in shaping argument, they have never successfully denied the centrality of emotion to the practice of being rhetorical while psychologists have traditionally succeeded in excising affect from cognition” (p. 130). The concepts that Gardner (1985) and Martinez are most interested in fleshing out all fall within the fuzzy or murky dimension of emotional-cognitive-social learning.

The findings regarding motivation and its interaction with performance are, for example, not as encouraging as we might hope. Martinez’s intentionally-motivated learners scored significantly higher on satisfaction and self-perceived learning efficiency, but their achievement levels did not differ significantly from less intentional learners. This finding is in line with Pane, Corbett, and John’s provocative (1996) finding that dynamic multimedia presentations of declarative information (versus simple online text and graphics) did not significantly enhance student understanding or satisfaction; and Najjar (1998) provides convincing evidence that graphics and multimedia only marginally influence learner recall as well.

The failure of participants to show marked improvements in achievement scores may well be a factor of another, frequently overlooked emotional learning construct: authenticity. According to Collins and colleagues (Collins, Brown, and Newman, 1989; Collins, 1996), authentic learning goals involve preparing learners for “the kinds of complex tasks that occur in life” and demand answers to the question, “What are the potential uses for the knowledge?” (1996, p. 348). Savery’s (1998) notion of ownership adds another layer to the repertoire

of emotions that learners can bring to learning situations. He found that learners identified as having high ownership for learning frequently demonstrated higher intrinsic motivation and an increased desire to set personally meaningful goals, to interact more with peers, and to demonstrate positive attitudes towards their learning situation. And Spiro, Feltovich, Jacobson, and Coulson (1991) advocate that authentic learning and ownership can be enhanced by exposing learners to multiple interpretations that help learners develop rich understandings of the issues being studied.

At the intersection between intentionality, ownership, and authenticity, we have much to learn about how learners manage the cognitive, metacognitive, social, and individual differences in given learning situations.

And this is not even to begin addressing how nonstrategic emotional and cognitive factors influence and alter learning abilities. Hartman et al. (1991), for example, found that students who exhibited anxiety about writing or computers tended to interact less both with their instructors and with other students. These sorts of inhibiting emotional perceptions are difficult to uncover in traditional empirical studies, but they are at the heart of any thoughtful examination of how emotions influence or alter learner performance and behaviors.

Mapping the Five Dimensions of Instructional Situations

Although Martinez is not very specific about the actual learning tasks that her subjects engage in, she does address many of the variables that we need to keep in mind when reviewing “typical” learning situations [see *The Journal of Computer Documentation*, 23 (2) for a complementary focus on learners-as-users, learning-by-doing, and learning collaboratively]. Research has tended to focus on the following five dimensions when describing typical or alternative approaches to teaching:

- **Learner Background and Knowledge.** Primarily cognitive in its focus, this category emphasizes knowledge we have about learners involving their ability to apply skills, to learn and explore technology, to take standardized tests and to succeed in predictable ways educationally.

Factors such as life experience, age, gender, intellectual abilities, attitude, and motivation factor into these attributes (Hartman, et al., 1991; Najjar, 1998).

- **Learner Tasks.** These involve the actions we ask students to engage in, including actions with learning materials, exercises, goals, processes, and so on, for example, reading to learn, reading to learn to do, reading to analyze, reading to compare, confirm, or correct. Though our interest in tasks is driven by a profound belief that processes develop metacognitive awareness, we frequently observe and evaluate end-products more than in-process activities (Mehlenbacher, Miller, Covington, and Larsen, in preparation).
- **Social Dynamics.** Less often integrated strategically into instructional settings, social dynamics involve interactions between the instructor and peers and between students, and include responsiveness, social abilities, personal style, strategies for scheduling and task-orientedness, group management and self-assessment (Bonk and Reynolds, 1997; Savery, 1998).
- **Instructional Methods and Objectives.** Referred to in the literature as “materials covered,” this category involves both the products and the processes of learning that govern instructional situations. Thus, any procedure or process that involves communication of content, setting objectives, exchanging information and requirements, topic pacing, sequencing, adaptation to audience, methods of evaluation, and strategies for topic elaboration characterize instructional goals and methods (Kirkley, Savery, and Grabner-Hagen, 1998).
- **Learning Environment and Tools.** A dimension of instructional situations that is gaining increased interest with the movement away from traditional “walled” classroom teaching, this category focuses on, for example, reading and writing tools and technologies, whether documents are individual or shared, how materials are viewed and disseminated, and less tangible constructs such as atmosphere (promoting discussion, open exchange, or one-way information dissemination) and

feedback that facilitates alternative modes of communication (Gilbert and Moore, 1998; Meshner, 1999).

This list of dimensions is preliminary of course but can serve as a useful map for identifying the focus and goals of the research we encounter on traditional and online learning.

Moving Beyond Assessment Models of Learner Achievement

Unfortunately, our tendency to develop controlled studies in educational research also inadvertently supports our tendency to introduce “treatments” to our learner-subjects and then to assess the influence of those treatments on perceived satisfaction and progress, and observed achievement via traditional testing. This is in part a function of any experimental design and a necessary step in developing a richer understanding of the variables that come into play in learning situations. However, research emerging from human-computer interaction provides us with alternative models for our research-practice-design goals (cf., Kaufer, Neuwirth, Chandhok, and Morris, 1992).

One model for producing educational environments is scenario-based design that Carroll, Kellogg, and Rosson (1991) define as “a task-oriented technique for envisioning an artifact in use before it is built” (p. 81). Scenario-based design involves designers empirically gathering data and observing prospective users and then, importantly, folding the findings into their design prototypes; scenarios, then, ideally anticipate users, their tasks, and their contexts of use, and can be incorporated into design specifications, an artifact’s task-oriented instructions and support materials, and the plans established for testing the artifact for its usefulness and overall usability. To date, however, building usability into the design of instructional environments during the design process rather than after is rare, in part because assessment models in education have tended historically to favor summative rather than formative assessment methods (Ravitz, 1997). Scenario-based design and other user-centered approaches can help designers begin to address opportunities and problems encountered by users while they attempt to interpret instructional materi-

als (Tomasi and Mehlenbacher, 1999).

Martinez’s focus on intentionality in learning highlights the importance of learners-as-users and this emphasis should not be overlooked because inherent in this perspective is a perspective shared by most usability specialists—that users frequently encounter difficulties using the tools and environments that we build for them. As Landauer (1995) has asserted, educational uses of technology have produced few success stories. This is in part because many educational technologists are guilty of promising to make learning easy. Nothing could be further from the truth. Learning is difficult and it demands engagement and, though we do not often acknowledge it, learning requires a host of other affective personal variables that can include intentionality, time, energy, and dissonance. Learning about learners invites a similar research commitment.

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