

Psychological Type and Asynchronous Written Dialogue in Adult Learning

LIN LIN

Teachers College, Columbia University

PATRICIA CRANTON

Saint Frances Xavier University

BEATRICE BRIDGLALL

Teachers College, Columbia University

This study explores how adults learn from asynchronous written dialogue through the lens of psychological type preferences. We asked participants to discover their dominant and auxiliary psychological preferences using the Personal Empowerment through Type inventory. Participants then completed an open-ended survey in which they described their experiences with learning through asynchronous written dialogue. The study shows that participants differed in their responses to online learning as reflected in their sense of enjoyment and their participation in the environment and in the quality of their learning experience. We observed that these differences were associated with psychological type preferences, along with the perceived interactions with the instructors and peers in the learning community. The connections between psychological type and asynchronous written dialogue are discussed.

In this article, we explore the phenomenon of online learning and in particular how learner psychological type differences influence the breadth and depth of the participants' engagements in asynchronous written dialogue. We examine the phenomenon against the background of communication, instructional technology, psychology, and adult learning theories. The particular adult learning framework we use includes individual learners' psychological preferences based on the work of Carl Jung (1921/1971) and the research of Cranton and Knoop (1995). Psychological type theory provides a powerful way to help explain how people learn, communicate, and interact with each other.

For our purposes, asynchronous written dialogue refers to a newer form of dialogue, written on an illuminated screen, made possible by the shortened cycle times of advancing computer-mediated communication technologies. The purpose of the inquiry is to discover the benefits and drawbacks of asynchronous written dialogue for different learners. The asynchronous written dialogue in this context took place in online courses that used the discussion board embedded in a course management system as one of the main venues for communications between the professors and the graduate students, among the students, and for the exchange of ideas about the subject matter.

The study is powerful in that the individual learners describe their own preferences, characterize their own activities, and prioritize their chosen ways of learning. These proclamations, when taken into the framework of Jungian theory, help us recognize important themes that will have significant implications for online teaching and learning. We also anticipate that the study will spur further research concerning how adults adapt to new ways of learning and to changing media technologies.

CONCEPTUAL FRAMEWORK

ADULT EDUCATION

Since the idea of adult education as a professional field of practice emerged in the 1920s, how adults learn has continued to occupy the attention of scholars and practitioners (Merriam, 2001). Over the years, various theories, ideas, and frameworks that enable us to view adult learning from different perspectives have tried to capture the complexity of adult learning. These perspectives include self-directed learning, feminist pedagogy, situated cognition, critical theory, and transformative learning, as well as new approaches having to do with emotions, consciousness, shadow, and the body. Each facet of adult learning theory helps contribute to our understanding of how adults learn in different contexts. New developments in adult learning have led to descriptions that are more holistic than ever before. Instead of a cognitive machine processing information, the learner is seen as coming with a mind, memories, conscious and subconscious worlds, emotions, imagination, and a physical body, all of which interact with new learning. The learning process is perceived as more than the systematic acquisition and storage of information. Adults try to make sense of their lives, transform not just what they learn but also the way they learn, and absorb, imagine, feel, and learn informally with others. Clearly, the context in which learning occurs has taken on greater importance. Not only do we see learning as situated in a particular context, but we also examine

whether and how individual differences such as race, class, gender, power, and personality shape the context in the first place and subsequently the learning that occurs.

In this study, we focus on the individual adult learners' psychological type preferences, and through this angle, we examine learners' self-reported communication and learning in a special context, the online learning environment. By doing so, we hope to understand better how adults adjust to the ever-changing technology, media, and new ways of learning.

SELF-DIRECTED LEARNING

Self-directed learning has been a cornerstone of adult education for more than 3 decades. In 1971, Tough began the exploration of how adults engage in independent learning projects throughout their lifetime. He provided the first comprehensive description of self-directed learning based on a study of 66 individuals' learning patterns. Malcolm Knowles, in his now classic *Self-Directed Learning* (1975), gave adult educators and learners a guide for learning independently and autonomously. Since that time, many scholars and practitioners have worked to elaborate on models of self-directed learning and to implement self-directed learning programs.

Merriam and Caffarella (1999) reviewed the field and concluded that the various philosophical positions on self-directed learning have three major goals: (a) to enhance the ability of adult learners to be self-directed, (b) to foster transformative learning, and (c) to promote emancipatory learning and social change. The greatest area of confusion related to self-directed learning has been that it is viewed as a process (becoming self-directed), a method (teaching in a way that promotes self-direction), and a characteristic of learners (the extent to which people are autonomous). Whenever the term is used, it can mean any one of these three ideas.

Of the many models of self-directed learning, Candy's (1991) model may still be the most useful, especially as it incorporates a variety of theoretical and practical approaches. Based on a thorough review of the research literature, Candy delineated four facets of self-directed learning: self-management, learner control, autodidaxy, and autonomy. *Self-management* occurs when individuals make choices about their educational experiences: which program to take, what courses will be useful, and what professional development activities might be relevant to their work. *Learner control* is the facet of self-direction in which learners have the opportunity to make decisions about their learning experiences within a formal course structure; that is, they may make choices related to objectives, strategies for acquiring knowledge, resources, and evaluation procedures. *Autodidaxy* is the phenomenon Tough (1971) introduced: learners engaging in individual, independent learning projects outside of the formal educational system. And finally,

autonomy is the facet of self-direction that refers to a person's tendency or ability to be an independent learner.

In online learning, self-direction is, or can be, a major attribute of the learning experience (Derrick, 2003). Participants choose when and where they will engage with the course materials. They have the opportunity to reflect on and spend varying amounts of time with their learning. Ideally, learners have considerable choice about the projects they do, the nature of the discussions, and perhaps the topics of study. At the very least, when there is no class meeting time, online participants must organize their own time and plan their own learning experiences. In addition, each individual learner manages time and engages learning differently from the others.

PSYCHOLOGICAL TYPE PREFERENCES

Jung's (1921/1971) model of psychological type provides a powerful and comprehensive way of understanding individual differences. He describes people as having two attitudes toward the world (introversion and extraversion) and four functions of living (thinking, feeling, intuition, and sensing). Introversion is an orientation to the self or inner world, whereas extraversion is a preference for the world external to the self. The two attitudes form a continuum; that is, any one person can be more introverted, more extraverted, or somewhere in between. Jung defines two judgmental or rational functions: thinking and feeling. The thinking function uses a logical, analytical process for making judgments, and the feeling function relies on value-based reactions of acceptance or rejection. In addition to judging, we also perceive the world around us, and Jung describes two opposing strategies for that process: intuition and sensing. With intuition, a person follows hunches, images, and possibilities rather than focusing on concrete reality; with sensing, a person uses the five senses to gather information about the world. The four functions of living, when combined with the two attitudes, form eight patterns of personality or psychological preferences, namely, introverted thinking (IT), introverted feeling (IF), introverted intuition (IN), introverted sensing (IS), extraverted thinking (ET), extraverted feeling (EF), extraverted intuition (EN), and extraverted sensing (ES).

The eight types exist in varying degrees and manifest themselves in different ways in each person. Most people have a dominant function, their preferred or natural way of being in the world, but this does not mean that they are unable to use other functions. Most people also have an auxiliary function, which is complementary to the dominant function. If someone's dominant function is judgmental (thinking or feeling), then his or her auxiliary function will be perceptive (sensing or intuition). Not everyone has clearly differentiated psychological type preferences. When a person has an

undifferentiated profile, he or she will experience conflict in making judgments or in perceiving the world in a consistent manner.

Our psychological preferences play an important role in what we like or dislike and what we are or are not willing to change (Cranton, 1994). The online learning environment, a learning context that differs from the traditional face-to-face classroom setting, may appeal to some adults while being disconcerting to others. Meanwhile, when we encounter a different learning context, our habitual expectations or preferred ways of being and learning are brought into question. In any case, we have to rethink our “comfort zone” or habit of learning and are challenged to make changes in order to best facilitate learning with our chosen method. Transformative learning occurs when we question a problematic or previously uncritically assimilated frame of reference and make it more dependable in our life by generating opinions and interpretations that are better justified (Cranton, 1994; Mezirow, 2000). At the same time, it is important for an educator to become aware of individual learning differences and pay attention to the roles that the psychological preferences play in teaching and learning. Subsequent teaching decisions could be geared to encouraging learners to take full advantage of their capabilities and to challenging them to develop new intellectual and social competencies.

DIALOGUE

Dialogue with others helps us open up our frame of reference, discard habits of mind, see alternatives, and behave differently in the world (Mezirow, 2000). Dialogue can be carried out either orally or in written form and in real time or in an asynchronous manner. For instance, a face-to-face meeting is a traditional way to conduct real-time spoken dialogue; leaving a voice message on a machine allows one to communicate orally through an asynchronous medium; various discussion forums help participants to carry on dialogue asynchronously and at their convenience; and chat programs such as an instant messenger or a virtual classroom allow people to communicate in real time verbally or in written texts.

Dialogue was characterized as the “flow of meaning” by Bohm (1996, p. 6) and the “co-creating of a new existential reality” by Freire (1970, p. 97). When dialogue occurs between people, a flow of thought emerges. In order to conduct a true dialogue, Bohm said that three things must be present: (a) the dialogue must be facilitated, (b) all participants must treat one another as equals, and (c) basic assumptions must be suspended. Freire (1970) also believed that without all participants being treated as equals, dialogue cannot continue. Treating each other as equals requires that the participants relate to each other as human beings, not objects. Buber (1958) pointed out that no man can know another simply as he knows objects. Real knowledge

of another person requires openness, participation, and empathy. I-thou (instead of I-it) relationship involves a “real encounter and genuine mutuality” (Buber, 1958, p. 50). In a true dialogue, all participants come to a new understanding of their knowledge, beliefs, values, feelings, and judgment (Freire, 1970).

The philosophy and pedagogy advocated for genuine human conditions and true dialogues, which transform people’s learning and life experiences, have significant implications for dialogues that are mediated by new media and technologies such as those take place in the online discussion boards.

WRITING AND LEARNING

It occurred to us that asynchronous written dialogue is just as rich and as evolved a communication art form as verbal discourse, which was analyzed by Goffman (1967) and Gumperz (1982) in detail from a sociological perspective. The notion that written interactive dialogue can be an effective learning opportunity for adults is supported by the hypothesis of Davydov (1990), who proposed that conceptualization must come before visualization in human thought and meaning making, and by Vygotsky (1978), who suggested that conceptualization comes better through writing than speaking. A simple example of such a conceptualization process can be seen in our daily lives. Sometimes when we want to concentrate on our thoughts and try to articulate accurately what we really think, we lower our head or break our eye contact from others because the visual eye contact becomes a distraction rather than stimulation of an attentive thought. Only when we have completed forming the thought do we feel the satisfaction of the eye contact in the dialogue. This hypothesis is also intriguing because oftentimes, we try to concretize and visualize a subject matter to help people learn. Yet we are also familiar with instances when concrete or visual objects limit our imaginations, and we sometimes must distance ourselves from them in order to acquire a more flexible and in-depth understanding of the subject matter.

In addition, Vygotsky (1962) pointed out that one of the difficulties that a learner has in writing is that he or she addresses “an absent or an imaginary person or no one in particular” and thus has no motivation or feels no need to write, whereas in oral conversation “every sentence is prompted by a motive” (p. 99). We can probably all recall a difficult experience writing an essay or book report in school. However, the writing is different in the online learning environment. The writing is usually intended for a finite number of participants and with particular purposes; the writing becomes a tool for exchanging information, interacting with the others, and challenging opinions among a group of learners.

The dialectic and complex relationships between visualization and conceptualization, between spoken and written languages discussed by Davydov

and Vygotsky provide us with food for thought when we look into how adults learn through online asynchronous written dialogue.

As we become accustomed to the use of many different channels for communication (such as face-to-face, regular mail, phone, cell phone, video-conference, email, blog, wiki, and chat), the paradigm becomes not necessarily one of obvious downgrading of preferences, but rather one of availability, convenience, and effectiveness, as long as both parties are equipped with the tools. As a result, we flex to the channel that is available or often open two or more channels at once: simultaneously surf online, chat through instant messenger, and talk on the phone. In these formats, learners do not currently enjoy many of the basic characteristics of copresence such as being able to see body language or facial expressions or hear the intonations in the voice, as highlighted by Boden and Molotch's "compulsion of proximity" (1994, p. 258). However, there are distinct advantages of communicating through asynchronous written dialogue (Lin & Cranton, 2004; Yoon, 2003). Some include:

- Allowing the writer to clarify thoughts before stating his or her points
- Allowing participants to review previous dialogues, examine what has been said, make new discoveries, and share their meanings in a deeper and clearer way
- Allowing time for participants to support a point of view with new or compelling information through various resources including the Internet
- Allowing for reflection

Although these points highlight only a few benefits of learning through asynchronous written dialogue, they invite reflection on how the online environment influences traditional practices. When moving from a physical to a virtual space, the learners are subject to a change in context as well as a change in the principles and premises of being and acting.

TECHNOLOGY, MEDIA, AND ONLINE LEARNING

Distance learning in various forms has been around for a long time, but not until the past few years was it feasible to offer online distance courses to large numbers of individuals. Statistics indicate that increasing numbers of adult learners choose online distance learning as a way to obtain new knowledge, to keep up with the changing world around them, or to continue their lifelong learning (National Center for Education Statistics, 2002). There are various reasons for the trend towards online learning, and one is the rapid advancement of technology that makes learning and communication possible at any time or place. The flexibility and convenience that the new media

provide are far more significant than expected. New media, especially digital technologies such as an Internet-based learning environment, transform the constraints of time and space. The 24/7/365 interactive learning environment provides adult learners with a rich experience of engagement, intelligence, and communication (McClintock, 1999).

Online course management systems have populated higher education institutions and emerged as virtual learning environments for face-to-face and distance learning courses. According to a study by the Sloan Consortium, 81% of all higher education institutions use course management systems and offer at least one fully online or blended courses (Allen & Seaman, 2003). Another study by the EDUCAUSE Center for Applied Research (Morgan, 2003) on faculty use of course management systems indicates that once faculty start to use course management systems, their use of the technology tends to grow. Nearly two thirds of the faculty surveyed reported more extensive or intensive use of course management systems at the time of the survey than they did when they first started using the technology.

Based on their research findings, many experienced online instructors and practitioners recommend that the main indicator of success in online teaching and learning is a well-designed course that fosters interactivity through the creation of a virtual learning community (Bender, 2003; Collison, Haavind, & Tinker, 2000; Moore & Anderson, 2003; Palloff & Pratt, 2001; Preece, 2000; Salmon, 2001). That is, the active communication, interaction, online presence, moderated discussions, and formation of an online learning community are the key elements for high-quality online education. Swan (2003) reviewed the literature and research on the learning effectiveness of asynchronous online environment over the past years. She highlighted interactivity as a feature of online environments that matters or is made to matter in learning. She also provided suggestions for organizing interactivity in five areas: the learners' interactions with course content, the learners' interactions with instructors, the interactions among the classmates, the learners' interactions with computer and course interfaces, and the learners' virtual interactions.

We situate our study in this growing literature and research, but rather than providing general guidelines, we depict a holistic picture of how individuals with different psychological preferences respond and learn through asynchronous written dialogue.

THE STUDY

We conducted our study in nine online courses at a major graduate school of education. We asked the participants to respond to two survey instruments: the online Personal Empowerment through Type (P.E.T.) inventory

and an online survey. The P.E.T. inventory consists of 80 items (10 items for each of the eight psychological types, measured on a 5-point yes-no scale). This instrument was developed in a three-stage process over a period of 5 years. Reliability and validity data were reported by Cranton and Knoop (1995). The survey created for this study consists of 21 questions, including 5 questions obtaining demographic information. Most of the survey questions are open-ended, since we sought to explore learners' perceptions of their experience with asynchronous written dialogue. For instance, we asked the participants to explain to what extent they enjoyed using the discussion board for communication and learning, why they found it easier or more difficult to write their opinions on the discussion board than to speak up in a face-to-face class, and if they felt anything was missing or gained in their online communication and why. In addition to having the participants inform us of their P.E.T. results, we also asked the participants to describe the major characteristics of their personalities so as to allow them the final say of their own style preferences. We made this decision because we are aware that not everyone may have clear type preferences and that the original eight types may not exclusively describe every individual person. We also wanted to respect any participants who preferred to talk about their learning experiences without exposing their type preferences.

Ninety-two of 221 students from the nine online courses volunteered to participate in the study. Seventeen were male and 73 were female (2 participants did not indicate their gender or age). Half of the participants (46 students) were between the ages of 20 and 29; 28 were between 30 and 39; 12 between 40 and 49; and 4 between 50 and 59. Most participants had a full-time or part-time job besides being a graduate student. About half of the participants indicated that they were educators; the others indicated that they were administrators, managers, or specialists at organizations. Three fourths of the participants were native English speakers. Other native languages spoken included Chinese (10 people), Korean (6 people), Japanese (3 people), Spanish (3 people), Russian, Hebrew, Italian, German, Hindi, and Greek. About two thirds of the participants had taken one or more other online courses before they were in the current online courses and participated in this study.

Eighty-eight of the 92 participants provided their psychological preferences in the survey. Of these, 27 participants had EN as their dominant preference, 23 had EF, 6 had ES, 4 had ET, 16 had IT, 5 had IF, 5 had IS, and 1 had IN as dominant.

Table 1 shows a breakdown of the number of dominant functions of our participants' psychological type preferences. In the general population, ES is the most frequently found preference (Myers & Myers, 1995), and in populations of educators, EN is the most common (Cormier, 2003). Given

Table 1. Type preferences of participants

Extraverted Intuition (EN)	Extraverted Feeling (EF)	Extraverted Sensing (ES)	Extraverted Thinking (ET)
27 (31%)	23 (26%)	6 (7%)	4 (5%)
Introverted Intuition (IN)	Introverted Feeling (IF)	Introverted Sensing (IS)	Introverted Thinking (IT)
1 (1%)	5 (6%)	5 (6%)	16 (18%)

Note. $N = 88$.

that our participants were engaged in graduate studies in education, it might be reasonable to expect that their tendencies toward intuition would be stronger. Similar to the proportion of the general population (Cormier, 2003; Keirsey & Bates, 1984; Myers & Myers, 1995), IF, IS, and IN types form a small component of the group of participants.

The responses were recorded in server memory, to which only the lead author had access. After the participants' names and other identifiers were deleted and replaced with numerical codes, the data were then shared with the coauthors.

We did a descriptive quantitative analysis focusing on two of the survey questions (questions 9 and 10): One was asking the participants to choose the most important benefits of asynchronous written dialogue for their learning; the other was asking about factors that would encourage their participation in online dialogue. We cross-tabulated the number of choices by psychological type preferences. We interpreted the remaining responses to the open-ended questions using qualitative methods. Each author assessed separate and overlapping segments of the data with a view to determining emerging themes. Both intuitive and systematic approaches were used to highlight and examine the emerging themes. The themes were then condensed and the results synthesized.

DESCRIPTIVE QUANTITATIVE RESULTS

In the following, we present two figures. Given that there are unequal numbers of participants in the psychological type preference groups, the graphs in these figures should not be used to compare responses across groups, but only within each of the psychological type groups. In our analyses, we did not project causal models for two reasons. First, no one has only one psychological type preference, and to categorize someone in but one category would oversimplify and stereotype his or her learning characteristics. Second, we had great variation of psychological preference types among the participants, and we did not have adequate numbers of

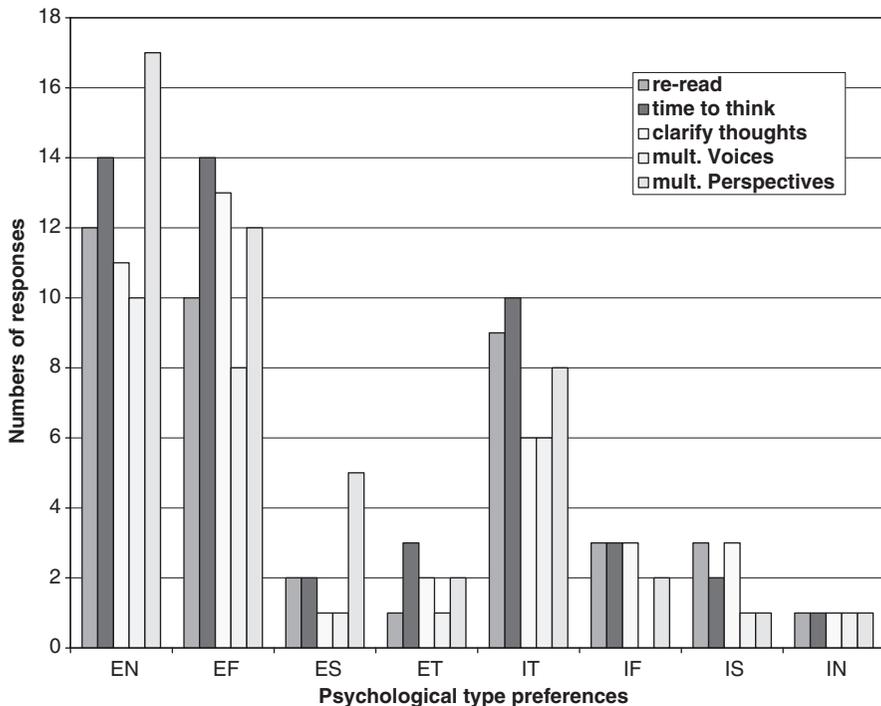


Figure 1. Benefits of Discussion Forums by Psychological Type

participants in some of the dominant type preferences to draw any meaningful statistical results. Therefore, these quantitative results are meant to add a layer of descriptions and interpretations rather than drawing causal conclusions from the data.

In Figure 1, we show the number of people from each dominant psychological type preference who selected each of the five benefits of discussion forums. Participants were asked to indicate which of the following was most important for their learning: allowing time for rereading of a conversation, allowing time to think when posting, clarifying thoughts through writing, allowing multiple voices, or viewing multiple perspectives.

The data indicate that the EN participants appreciated the opportunity to view multiple perspectives. They also enjoyed the time to think before posting. Since intuitive individuals enjoy diversity and opportunities for development, it is not surprising that they saw these benefits in distance learning. The individuals who have EF as their dominant function expressed a great appreciation for time to think and the opportunity to clarify their thoughts before posting their comments. The limited data for

ES types suggested that they valued the multiple perspectives highly. This group also seemed to pay more attention to rereading (resensing) the dialogue and needed time to think. Only four individuals showed a preference for ET. They appreciated time to think before posting and the opportunity to view multiple perspectives and to clarify their thoughts.

On the introverted side, the individuals who preferred thinking overwhelmingly indicated that they enjoyed the benefit of time to think before posting. They also appreciated the opportunity to reread a conversation and to read others' perspectives. Among the introverted participants, this is the group that showed a great interest in multiple perspectives and in clarifying thoughts. Given the reflective and analytical nature of IT, this is to be expected. Those that preferred IS rated the opportunity to reread and to clarify thoughts as the highest benefits. Less important for them was time to think. Only one person was concerned with multiple perspectives. The small number of introverted feelers indicated they appreciated the opportunity to reread the conversations, to have time to think, and to be able to clarify their thoughts before posting. None of these respondents chose "hearing" multiple voices as a benefit. The one IN person gave equal weight to all five benefits.

In Figure 2, we provide the number of participants of each dominant psychological type preference who chose as motivations for participating in the online discussions understanding the subject better through writing, sharing ideas with others, receiving feedback from the professor, receiving feedback from peers, facilitating some discussions, or fulfilling the requirements for regular postings.

The EN participants were encouraged by feedback from professors and colleagues. At the same time, they also seemed to be more interested in control of the direction of the conversation by facilitating the discussions. The EN participants brought up other issues such as immediate response, flexibility, personal interest in the topic, copresence, and debate as factors that would encourage their participation in the discussions as well. Merely fulfilling requirements of a course seemed not of interest to some, but others specified that they needed the structure of requirements to participate more. People with a preference for EF indicated that they would be most encouraged to participate from the professor's feedback. Feedback from colleagues and sharing ideas were also important motivators. Since the feeling function seeks interaction and harmony with others, it is understandable that these factors would encourage participation from this group. For the small number of participants who had ES as a dominant function, sharing ideas was a motivational factor that would encourage them to participate in discussion. And for the four people who were ET, sharing ideas was motivating. Understanding the subject matter through discussions seems to be an important factor for this group too.

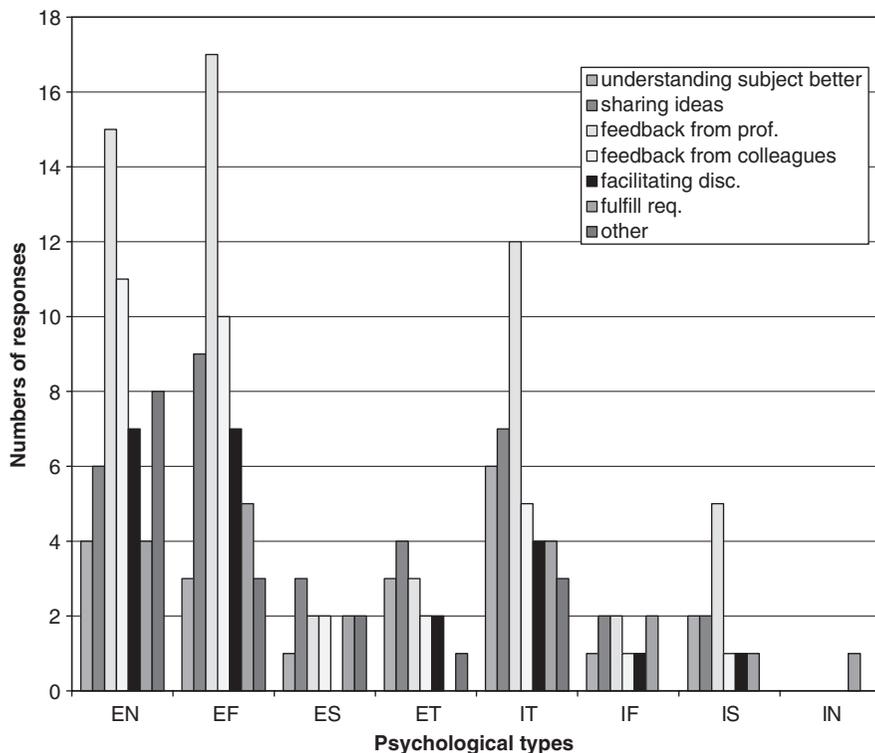


Figure 2. Factors Encouraging Participation by Types

Learners with a preference for IT rated feedback from professors high. Sharing ideas came up as second motivation. Another important motivation for participating in a discussion forum was to share ideas with others in order to understand the subject matter better. All five IS participants responded to the importance of receiving feedback from the professor. For the five introverted feelers, sharing ideas and receiving feedback from the professor rated equally as high as fulfilling requirements as a motivating factor. The one person who preferred IN mentioned fulfilling requirements, structure, and immediacy as encouragement for participating in the discussions.

EMERGING QUALITATIVE THEMES

Several themes emerged from the qualitative data. We focused on the connections between psychological type preferences and adult learning through asynchronous written dialogue in the online context. We discovered

that there were close connections between the participants' enjoyment of learning through asynchronous written dialogue and their psychological preferences. First, we discuss themes directly related to psychological type preferences. We then address the other emerging themes such as virtual teaching presence, facilitation and feedback, self-direction, copresence, interaction, networking, and learning community and relate each of these themes to psychological type preferences. Illustrative quotes are given for each theme with a notation of the participants' dominant and auxiliary preferences. For instance, a notation of (IF/ES) means that the participant has IF as her dominant preference and ES as her auxiliary preference.

Introversion and Extraversion

There was a tendency for students who were introverted to appreciate having the time to think things through carefully, to reflect, to reread messages, and to be "heard" in a way in which they may not be heard in face-to-face classes. The more introverted participants commented that the asynchronous discussion forum provided a consistent space for them to present their understanding of the materials and to respond to their colleagues with thoughtful comments without time or space constraints or without feeling dominated by more extraverted peers. They also valued the opportunity to be more in touch with their inner feelings through writing and appreciated the relative anonymous nature of the forum.

I valued using the discussion board . . . because it would give me a consistent forum to reflect on my understanding of class topics. It was a place where I could answer class questions with thoughtful responses based on careful consideration of the issues at stake. It provided a place where many more issues related to class were discussed because it did not have the constraints of classroom discussion [time, space and dominance of more extraverted students of the conversation]. (IF/ES)

I clarify my thoughts through writing and become more in touch with my inner most feelings when I sit down and record my feelings. I learn about others in a similar manner . . . and again I think that with the time with process and articulate feelings I may learn more about others because they are having perhaps more awareness into who they are as individuals. (IT/EN)

On the other hand, there was a tendency for the more extraverted students to appreciate the additional opportunities to interact with the outside world and to view the perspectives that were unavailable to them before. Some appreciated the diverse backgrounds of other students and enjoyed access

to professors at the top of the field who were not otherwise accessible. Some felt that they had continued access to the professor and peers and that they always had something to think about:

I think you are accessible to the professor and fellow classmates all the time. It's not like going home and not seeing anyone for a week then try to go to class and catch up. You're in constant communication and that helps in learning the subject matter. (EN/IT)

Using the discussion board, we do get a lot of precious things from different perspectives and from people all over the world, even those from remote places. (EF/ES)

Intuition and Imagination

The students who were high in intuition were drawn to the many threads and possibilities in written dialogue. For example, they commented that the asynchronous written forum allowed them to integrate learning into their overall lifestyle and allowed them to interact with their colleagues at any time and place. In addition to enjoying diverse perspectives, students were also enthusiastic about the many opportunities new media offered and the various ways they could express themselves.

The following quotes illustrate these perspectives:

Education and training can be more timely, more relevant, more here and now. People can participate when they want and integrate their learning into their overall lifestyle. They can access information on every conceivable topic from a computer at home and interact with others to make that information applicable to their lives. (EN/EF)

Discussion board does not put you on the spot or you do not feel impelled to speak. It gives you the flexibility to express yourself at your own time. In a face-to-face class, you may not feel comfortable or there's someone that's always answering the question or commenting on something so you may not feel like you have the opportunity to say what you want. Sometimes in a face-to-face class, the teacher moves on to another idea before you can comment on it, whereas in a discussion board, even if it's 1 week or 2 weeks later, you can still go back and make your comments. (EN/EF)

However, there was also a tendency for the intuitive participants to get bored fairly easily and sometimes to feel frustrated by the limitations of the medium, for instance, not getting responses right away. There was a

dilemma between appreciation of flexibility and frustration over lack of immediacy and spontaneity.

I find using the discussion board to be a much-slowed process [because of the delayed time response] that interferes with fluid conversation. Also, it simply takes much longer to type and read than it would to cover the same material in an ordinary classroom conversation. (EN/EF)

I still find it easier to speak out in class because I like the spontaneous nature of thinking, reacting and voicing opinions that achieve immediate feedback and reactions from others. If I am wrong I can obtain the arguments against my opinions immediately and revise my thinking quicker and easier. This can not be duplicated in the on-line discussion board. (EN/EF)

Sensing, Physical Presence, and Practical Reality

People who tended to “live in the moment” and who had an interest in practical issues expressed difficulty in writing things down and having to wait for others’ responses. There was a tendency for people with a preference for sensing to worry about missing the dynamics of interacting with real people because of a lack of copresent cues such as body language, facial expressions, and gestures. They also expressed a sense of isolation or frustration over not seeing or feeling others’ reactions.

Talking to people [in face-to-face] is easier because you see their reaction and can modify your speech according to it. On-line explanations are directed to no one. Talking to nobody isn’t my favorite occupation. (IS/IF)

In class I can be in the moment and relate more easily to other’s comments. When I have to write something, it’s hard to connect it to other’s thoughts and I get too worried about the writing and making sure it reads well. (ES/IT)

I felt that I was missing the dynamics of interacting with real people. I think that there are many ways of interacting with people in face-to-face situations, such as body language, tone of voice, nonverbal cues, smiles, etc. that do not get expressed in an online course. Written communication is largely monotone, in my opinion. Shades of meaning are not communicated very well in writing. Sometimes it is difficult for me to picture that I am writing to real people, since I have never seen or heard them. (EF/IS)

The above examples indicate that seeing, hearing, and face-to-face contact are important for the participants whose senses dominate their psychological preferences. As commented by the participants, without the opportunity to use the senses, they could not express their thinking or feeling well. The experience of an online dialogue became isolating and frustrating. Comparing these comments to those of an individual who prefers the feeling and intuition functions, we see how differently people experience online dialogue:

I have thoroughly enjoyed all of my discussion board communications throughout the online learning process. I feel I can speak my mind more because there are no faces to the words. I feel that writing and reading the communications afford me better comprehension of what others are trying to express. (IF/IN)

In the latter situation, not seeing another person's face becomes an advantage rather than a disadvantage, because "not seeing" allows the learner to focus on ideas.

Thinking and Feeling

As would be expected, those students with a preference for thinking (especially IT) expressed enjoyment of the reflection time available in asynchronous written dialogue. They also commented on the structure, the organization, and the way they could think things through in the process of writing:

The advantage of the discussion board for me, really, was that I was allowed to take time to process what others had said and formulate my own responses carefully (clearly) before sharing them . . . In a face to face class I have to listen carefully or I'll lose track of the discussion. Sadly for me, if I want to make a comment I also know myself well enough that it better be planned and clear. So, I start to formulate that question in my head and at the same time lose out on the conversation, which is continuing around me. (IT/EN)

I really liked the discussion board and enjoyed bantering with ideas. Occasionally, I would find someone whom I found challenging and together we enjoyed getting into topics. (ET/EN)

The participants with a preference for feeling also expressed great appreciation for time to think and the opportunity to clarify their thoughts before posting their comments, although the reasons for their likes were different from the reasons described by participants with thinking preferences.

The participants whose psychological preferences lean towards feeling indicated that asynchronous writing dialogue allowed them to clarify their thoughts so that they could avoid running into conflicts with others and that this form of communication allowed them to worry less about hurting or confronting people because they were not face-to-face with others.

There is no fear of feeling silly for something you write—if someone agrees fine if not you can defend your opinion without ever feeling the pressure of interpersonal confrontation. (EF/EN)

I never felt I was missing anything. Face-to-face classes usually consist in doing some readings and engaging in discussions in class. Online discussions provide that. The fact that you see people face to face doesn't necessarily mean that you will have a better relationship or even one over the course of the semester. Online classmates' relationships can be as good. People can form communities even though there is physical distance. The value of the learning experience relies on the ability of the creation of such community regardless of the environment. (IF/ES)

Virtual Teaching Presence, Facilitation, and Feedback

Regardless of psychological type preferences, the participants appraised the virtual teaching presence, facilitation, and feedback from the professor positively. They commented on the need to hear from the professor and to maintain a continuous dialogue rather than merely posting essays on the board. When the professor was absent, students felt discouraged:

I have had two online courses here. One was facilitated very well, and I feel like I gained more by taking it online than I would have in class. The second class, however, was terrible. I felt like there was absolutely NO communication. It was difficult to find out what the week's topics were, what I should be learning, etc. I felt completely lost and out of the loop the entire semester. There was never any sense of continuity. The discussion boards were simply posting our thoughts on that week's reading. I felt like the professor was never on the scene, as if she didn't do any actual teaching. This class would have been much better in class, simply because the professor had NO IDEA how to teach, manage, or facilitate an online course. (ET/EN)

[I missed the] professor's opinion and knowledge. This course was great in terms of readings—loved some of the books—but not that great in terms of finding out something from our professor. Students

need the professor to learn something they can't read in books. Otherwise why have professors at all? (IS/IF)

Although the quotes given here refer to specific professors, it is obvious that the visible virtual presence of the professor/teacher is an important part of the students' online learning experiences.

Self-Direction

People who preferred to be self-directed (often those with intuitive and thinking preferences) appreciated the control they had over the learning experience. Being able to learn when and how they chose and to express their ideas outside of the structure of a regular class was appealing for these individuals.

Learning is personalized. I need to make sure I learn so I take an extra step to make sure that happens versus waiting that the teacher makes it happen. (IN/IT)

For certain topics, I do think the discussion forum is advantageous for learning because words are so much more powerful in print than when said orally. You can read the same sentence over and over again until you have a good grasp of the understanding. You are not able to do this when someone is speaking. You can ask for clarification, but others in the class may already understand whereas in a discussion forum, you control your own learning pace. (EN/EF)

Copresence, Interaction, Networking, and Learning Community

There was a tendency for people who preferred sensing or people who were more extraverted to miss copresence in written dialogue. Some participants commented that they missed knowing the people or their personalities better; missed nonverbal interactions such as body language, tones of voice, smiles, facial expressions, and visual and audible cues; or missed emotional interactions with their peers. Many participants spoke of copresence, interaction, and networking as part of a learning community. They did not view an online community as having the richness of a traditional learning environment with its informal sharing of knowledge, networking, or ease of collaboration.

[I missed] the interaction with other students and the professor. Even though it is inconvenient for me to travel, I like the face-to-face class because it allows for open dialogue and the chance to meet classmates.

People then begin to network and tend to work together on projects and papers, etc. (IS/ET)

[I missed] human interaction. From their facial expressions, tone of voice, or their reaction to others while listening, I gather data about their personalities. Personalities are exhibited very differently over postings. (IT/EN)

I really prefer the interaction with other students in a face-to-face setting. I just feel that even if I were in a face-to-face class and not being vocal, I can be perceived as participating via my interest, and body language. These things are really hard to gain from an online discussion board. I really liked how [the instructor] mixed the synchronous chats with the asynchronous discussion boards. Even though I didn't like the discussion board part, the synchronous chats helped me to get a feel for the personalities of some of my fellow classmates in ways that the discussion boards don't. (EN/EF)

The only thing that I missed is actually speaking to peers after class. I used to walk home with friends after an evening class and always enjoyed that informal discussion. I did not know the usual protocol or "manner" for establishing off-line discussions with peers, although I was sometimes tempted to write a personal response to a comment someone made. I did not do that though, as I thought emails (personal) were to be for more business purposes. I do remember wondering if two students were okay, or had dropped, after they disappeared from discussions for a couple of weeks. I missed reading their responses. Gladly, they returned. (IT/EN)

It seems, however, that an enhanced multimedia environment can make up for lack of copresence at certain levels. One participant stated it this way:

I felt like the personal information website, especially when they contained pictures of self, family, locale, etc., helped immensely to make up for lack of co-presence. (ET/EN)

Since asynchronous written dialogue is different from the traditional face-to-face classroom communication, there is much to explore and improve before both the technology and the users can adapt and nurture a rich learning experience.

LIMITATIONS

As with any research, there are certain limitations that can negatively or positively influence the efficacy of the study. In this study, for instance,

participants were adult graduate students from one institution, so the population may not be representative of student bodies at other institutions. In addition, the P.E.T. and the online survey were both self-report instruments. Items in a self-report instrument can be susceptible “to misinterpretation, and responses to dishonesty or faking by respondents, all of which threaten the validity of inferences made from results” (Chatterji, 2003, p. 459). Moreover, the participants were from nine online courses with seven different professors. Variables such as subject areas and different professors’ teaching or facilitating styles may influence students’ perceived satisfaction of their learning other than asynchronous written dialogue as a concept for communication and learning. Future studies could be done to focus on students’ experiences with one professor, to compare asynchronous written dialogue with the face-to-face dialogue facilitated by the same professor, or to involve more courses and professors. Finally, two thirds of the participants had extraverted dominant psychological type preferences. Of the participants who were more introverted, most of them were introverted thinkers. The majority of participants were EN, EF, and IT types. Therefore, voices from some adult learners who have psychological preferences such as IN and ES are not well represented in this study. It is possible that the field of education attracts certain types of people more than others; it is possible that the course subject matter attracts certain types more than others; it is possible that the way of learning, the online asynchronous written dialogue, appeals to certain types more than others to begin with; and it is possible that certain types are more interested than others in participating in a study that looks at psychological type differences. All of these variables may be interesting areas for additional studies. However, it is worth noting that the general population also contains proportions of psychological type preferences that are approximately similar to those in our participant group.

DISCUSSION AND CONCLUSION

In our research, we found interesting and meaningful connections between personality type preferences and individual differences in learning through asynchronous written dialogue. Different personality types are drawn to different attributes of asynchronous written discussions. For instance, more introverted learners find the time to think and reflect before sharing their thoughts most beneficial, whereas more extraverted learners find viewing perspectives otherwise unavailable most satisfying for their online learning experiences. Individuals tend to interact with the online media in ways that are consistent with their ways of interacting with their traditional face-to-face learning environments. The virtual worlds of learning that the

individuals engage, for their own integrity and continuity, need to complement their ways of being in the world and their winning formulas. To a certain degree, such a balanced winning formula is constructed from the values impressed upon the individual by the “requirements established in the ritual organization of social encounters” (Goffman, 1967, p. 45).

What is equally important is what we should do with this information once we have an awareness of individual differences in response to asynchronous written dialogue. How will this knowledge help to improve the evolving media such as discussion boards and course management systems? How will this knowledge help professors improve their teaching and help individual learners improve their learning experiences? The growing popularity of blended or hybrid learning environments where part of a course is offered online and part of it is offered in a face-to-face mode, if done well, may provide an integrative approach in which each of the psychological type preferences can be honored.

The evolving technology continuously favors some learners and disfavors others (as does traditional, verbal-based, face-to-face environment). Pelto (1987) points out that “new technology brings new requirements in human skills and training, and usually results in social change as some types of persons are favored and others are handicapped by the new skills/knowledge requirements” (p. 207). The discussion board in its current state favors learners who are comfortable learning through written texts over those who enjoy learning through other formats such as audio, oral, or imagery presentations. To prevent unintended external technology control over personal destiny and to enhance one’s autonomy, we not only need to be aware of the benefits and drawbacks of the new technology for different users but also need to discover our personal blind spots and expand our capabilities. An understanding of Jung’s eight psychological types provides a window for different individual learners to view the possible missing pieces.

The use of any personality type tool may create the danger of stereotyping or “profiling” individuals into one predestined group of characteristics or offer the individual a convenient way of rationalizing his or her own behavior with no intention to change. Even in conducting this research and discussing this with friends and colleagues we have noticed a sort of Hawthorne effect that had participants saying things like “I am an intuitive person and I have little tolerance for boring details,” or “I tested out as a sensor, so I need to see in order to learn,” or words to those effects. However, our purpose is not to suggest or reinforce any type of determinant attributes in a person or to suggest that an individual person somehow has less of a choice. On the contrary, the true value of considering psychological type preferences is that it provides a way for an individual to look at his or her habitual framework, to observe his or her particular pattern of interaction with the world, and to examine the possible advantages and

disadvantages of consistently being that way. With every personality preference there are distinct benefits and drawbacks to engaging in online dialogue. The problem is not that we choose one way of being. The problem may be that we never deviate from that path and do not see the missing pieces or access our blind spots.

As suggested by the literature and echoed by the participants in this study, adult learning is holistic. Not only our brains, but also our emotions, imaginations, and physical bodies, interact with new learning. In addition to systematic acquisition of new knowledge, we try to make sense of our lives and transform what we learn as well as the way we learn. The way that this occurs, as we show here, varies depending on psychological type preferences. Some participants in this study indicated that by taking online courses, they missed the opportunity to walk home with their colleagues and thus missed the opportunity to share ideas outside the classroom or missed the opportunity to “see” emotions involved in the learning environment. With the current online learning platform, which is heavily text-based, it is natural for the learners to feel and see the computer as an indirect way of communication between themselves and their colleagues. Therefore, the participants, both the professors and the students, need to actively create an atmosphere where various elements that enhance different individuals’ learning styles can be practically, creatively, and imaginatively incorporated.

We heard about the advantages of asynchronous written dialogue from almost all students who took online courses. Some indicated that the dialogues were more thoughtful and precise because there were no time or distance constraints; some indicated that the dialogues were more candid, less intimidating, and covered a much wider range of discussions than could ever be imagined in a traditional classroom. People who are more introverted and those who prefer using the thinking function fall naturally into the demands of asynchronous discussion forums. They have time to think and do not have people “in their face” waiting for a response. Meanwhile, people who see themselves as more active than reflective also find it beneficial to have time to formulate thoughts and present them in a more organized fashion than they could do on the spot in a face-to-face discussion.

This leads us back to the issue of how writing helps one’s thought process and enhances one’s learning. Some people know that writing helps their thinking, while others feel that talking with colleagues face-to-face helps expand their scope of thinking. One assumption we might make is that some people (most likely those with introversion as their preference) use writing to help their thinking and thus prefer to process their thinking through writing; on the contrary, people with extraverted preferences may enjoy generating ideas while interacting with others. Instead of worrying

about clarity or consistency of thoughts, extraverted people may be open to and energized by new ideas coming out of a spontaneous conversation and thus consider alternative perspectives as new learning. Again, individual adult learners decide what methods are most conducive to their own learning and what is important for their learning.

Using a research approach that takes psychological type preferences into account has allowed us to highlight different factors that the learners themselves consider important to their learning. Our study makes it clear that people with certain preferences naturally gravitate towards these types of representations and interactions. Asynchronous written dialogue, at least for some learners, creates a bridge that spans the gap between conceptualization and visual communicative realization. Further, their own writings become the objective evidence, a type of artifact of their own learning and transformation, and a motivational springboard for further learning and development. The other themes that emerged from the study, including teaching presence, facilitation, feedback, copresence, interaction, and an enriching learning community, have also helped us further reflect and study how adults learn in online as well as face-to-face learning environments. Understanding why and how asynchronous written dialogue helps adults learn is important in an era when we are increasingly involved in computer-mediated communication, hybrid media and online learning.

References

- Allen, I., & Seaman, J. (2003). *Sizing the opportunity: The quality and extent of online education in the United States, 2002 and 2003*. Needham, MA: Sloan Consortium.
- Bender, T. (2003). *Discussion-based online teaching to enhance student learning: Theory, practice and assessment*. Sterling, VA: Stylus.
- Boden, D., & Molotch, H. (1994). Compulsion of proximity. In R. Friedland & D. Boden (Eds.), *NowHere: Space, time and modernity* (pp. 258–286). Berkeley and Los Angeles: University of California Press.
- Bohm, D. (1996). *On dialogue*. London: Routledge.
- Buber, M. (1958). *I and thou* (2nd ed.). New York: Scribner.
- Candy, P. C. (1991). *Self-directed learning*. San Francisco: Jossey-Bass.
- Chatterji, M. (2003). *Designing and using tools for educational assessment*. Boston: Allyn and Bacon.
- Collison, G., Haavind, S., & Tinker, R. (2000). *Facilitating online learning: Effective strategies for moderators*. Madison, WI: Atwood.
- Cormier, M. (2003). *P.E.T. summary report*. Miramichi, New Brunswick, Canada: Vital Knowledge Software.
- Cranton, P. (1994). *Understanding and promoting transformative learning: A guide for educators of adults*. San Francisco: Jossey-Bass.
- Cranton, P., & Knoop, R. (1995). Assessing psychological type: The P.E.T. type check. *Social, Genetic, and General Psychology Monographs*, 121(2), 247–274.
- Davydov, V. V. (1990). *Types of generalization in instruction: Logical and psychological problems in structuring of school curriculum*. Reston, VA: National Council of Teachers of Mathematics.
- Derrick, M. G. (2003). Creating environments conducive for lifelong learning. In S. Aragon (Ed.), *Facilitating learning in online environments* (pp. 5–18). San Francisco: Jossey-Bass.

- Freire, P. (1970). *Pedagogy of the oppressed*. New York: Seabury Press.
- Goffman, E. (1967). *Interaction ritual: Essays on face-to-face behavior*. Chicago: Aldine.
- Gumperz, J. (1982). *Discourse strategies*. Cambridge, UK: Cambridge University Press.
- Jung, C. (1971). *Psychological types*. Princeton NJ: Princeton University Press. (Original work published 1921).
- Lin, L., & Cranton, P. (2004). Dancing to different drummers: Individual differences in online learning. *Creative College Teaching Journal*, 1(1), 30–40.
- Keirsey, D., & Bates, M. (1984). *Please understand me: Character and temperament types*. Del Mar, CA: Prometheus Nemesis.
- Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers*. Englewood Cliffs, NJ: Prentice Hall/Cambridge.
- McClintock, R. (1999). *The education manifesto: Renewing the progressive bond with posterity through the social construction of digital learning communities*. Retrieved January 22, 2005, from <http://www.ilt.columbia.edu/publications/manifesto/contents.html>
- Merriam, S. B. (2001). *The new update on adult learning theory*. San Francisco: Jossey-Bass.
- Merriam, S. B., & Caffarella, R. S. (1999). *Learning in adulthood: A comprehensive guide* (2nd ed.). San Francisco: Jossey-Bass.
- Mezirow, J. (2000). *Learning as transformation: Critical perspectives on a theory in progress* (1st ed.). San Francisco: Jossey-Bass.
- Moore, M., & Anderson, W. (2003). *Handbook of distance education*. Mahwah, NJ: Erlbaum.
- Morgan, G. (2003, May). *Key findings: Faculty use of course management systems (Vol. 2)*. Washington, DC: EDUCAUSE Center for Applied Research.
- Myers, I., & Myers, P. (1995). *Gifts differing: Understanding personality type*. Mountain View, CA: Consulting Psychologists Press.
- National Center for Education Statistics. (2002). *The condition of education 2002: Student participation in distance education*. Retrieved February 24, 2005, from <http://nces.ed.gov/programs/coe/2002/section5/indicator38.asp>
- Palloff, R. M., & Pratt, K. (2001). *Lessons from the cyberspace classroom: The realities of online teaching*. San Francisco: Jossey-Bass.
- Pelto, P. J. (1987). Snowmobiles: Technological revolution in the arctic. In H. R. Bernard & P. J. Pelto (Eds.), *Technology and social change* (pp. 207–243). Long Grove, IL: Waveland Press.
- Preece, J. (2000). *Online communities: Designing usability and supporting sociability*. Hoboken, NJ: Wiley.
- Salmon, G. (2001). *E-moderating: The key to teaching and learning online*. London: Kogan Page.
- Swan, K. (2003). Learning effectiveness: What the research tells us. In J. Bourne & J. C. Moore (Eds.), *Elements of quality online education: Practice and direction* (pp. 13–45). Needham, MA: Sloan Center for Online Education.
- Tough, A. (1971). *The adult's learning projects: A fresh approach to theory and practice in adult learning*. Toronto: Ontario Institute for Studies in Education.
- Vygotsky, L. S. (1962). *Thought and language*. Cambridge, MA: MIT Press.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Yoon, S. W. (2003). In search of meaningful online experiences. In S. Aragon (Ed.), *Facilitating learning in online environment* (pp. 19–30). San Francisco: Jossey-Bass.

LIN LIN's research interests include communication, instructional technology, and adult and online learning. She is manager of faculty support for distance learning and instructional design at Teachers College, Columbia University. Lin has presented and published several papers in the above

areas, the most recent of which is “From Scholarship Student to Responsible Scholar: A Transformative Process in Higher Education” (*Teaching in Higher Education*).

PATRICIA CRANTON’s research interests are in the areas of transformative learning and authenticity. She has published 11 books, most recently, *Finding Our Way: A Guide for Adult Educators*. Patricia is an independent educator and writer. She recently completed a contract at the University of New Brunswick and is now a visiting professor at Saint Francis Xavier University.

BEATRICE L. BRIDGLALL is currently an assistant research scientist at the College Board and an editor and assistant director at the Institute for Urban and Minority Education (IUME), Teachers College, Columbia University. She is coeditor of both the recently published *Supplementary Education: The Hidden Curriculum of High Achievement* (2005) and *The Affirmative Development of Academic Ability* (in preparation).

Copyright of Teachers College Record is the property of Blackwell Publishing Limited. The copyright in an individual article may be maintained by the author in certain cases. Content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

In a written work, dialogue is one way that a writer can utilize the writing skill that is showing instead of merely telling. Allowing the reader or audience to learn about a character through his/her own words, will provide more information and a deeper understanding of the character at hand. When it comes to writing stories, dialogue is an effective tool – not only for character development, but also plot movement and theme conception. When writing, be careful not to overuse dialogue in order to provide background information for the reader. Of course, this can be done well just not overdone. Get a subscription to a library of online courses and digital learning tools for your organization with Udemý for Business. Request a demo. Teach the World Online.