Dancing to Different Drummers: Individual Differences and Online Learning

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In this paper, we explore how students’ individual differences can be considered in the construction of meaningful online learning experiences. In a research project conducted with ninety-two participants in nine courses, we investigated how psychological type preferences explained people’s perspectives on their involvement in online dialogue. Our research led us to a number of practical recommendations for educators working with students in this unique environment.

Background

As background to our study, we discuss the nature of dialogue in general. We then provide a description of the characteristics of the online environment especially in relation to how it influences dialogue. Finally, we give an overview of psychological type theory, which is the framework we use to interpret individual differences in this research.

The nature of dialogue

Dialogue has been an important aspect of teaching and learning since the time of Socrates and Plato. The dialogic methods have been used historically to facilitate the democratic education process and to foster emancipatory learning (Freire 1970; Mezirow 2003). The Platonic dialogues, presented with the carefully-crafted dramas between the stirring character of Socrates and his interlocutors, richly portrayed the interpersonal and intra-personal encounters, confrontations, and transformations. The dialogues not only carried with them rational and cognitive implications but also emotional and psychological transformations (Higgins 1994).

Plato’s Meno is an example. Through actively frustrating Meno and putting him on the defensive, Socrates helped Meno recognize that despite pretensions to the contrary, Meno in fact does not know all that he claims. Acquiring this type of self-knowledge opens Meno to the possibility of genuine learning.

The strategies used in Platonic dialogues are not all advocated by contemporary educators. Rice and Burbules (1993) argue that dialogue which is truly educative exhibits a number of virtues: “patience, tolerance for alternative points of view, respect for differences, the willingness and ability to listen thoughtfully and attentively, an openness to giving and receiving criticism, and honest and sincere self-expression” (p. 35). Without these virtues, Rice and Burbules contend, “it is impossible to pursue new knowledge or to embody a moral character that is sensitive to the needs and desires of disparate others” (p. 35). Bohm (1996) advocates that three preconditions must exist for a true dialogue to take place. First, the dialogue must be facilitated; second, all participants must treat one another as equals; and third, basic assumptions must be suspended.

In Freire’s Pedagogy of the Oppressed (1970), the facilitator and learners are co-creators of the discussion topics through which the learning transpires. Freire believes that without all participants being treated as equals, dialogue cannot continue. If a participant feels superior or does not trust the other participants, he or she will not concentrate on the topic but on the underlying issues of trust and agenda-making. Freire (1970) speaks to the importance of an abiding sense of humility and points out that it is not enough to realize others’ worth; one must also come to grips with one’s own imperfection. As Freire explains, we can only get a complete picture of reality by seeing our situatedness through multiple perspectives, not merely our own lens. In a true dialogue, all participants come to a new understanding of their knowledge, beliefs, values, feelings, and judgments. To ensure the relevancy and authentic flow of the dialogue, every participant must be involved in determining the nature of the pedagogy (Bohm 1996; Freire 1970).

Platonic dialogues focus on the individual dialoguer and use skeptical arguments, while contemporary educators emphasize group dynamics and respect for all participants. The objectives, however, are similar. In both dialogical situations, the purpose is to move to a higher level of knowledge, to question existing assumptions, and to stimulate genuine learning and inquiry.

The online environment

The constructivist approach represented by Dewey, Piaget, Vygotsky, and many others manifests itself in adult learning as self-direction, active inquiry, independence, and co-construction of knowledge (Merriam & Caffarella 1999). It is common practice for adult educators to conduct their courses in a discussion or dialogue. When courses are online, the discussion boards become the default channels for discussions.

Clearly, discussions in virtual space are not the same as discussions in physical classrooms. In virtual space, discussions

• are mostly written instead of spoken and read rather than listened to
• are mostly asynchronous rather than synchronous (real-time), meaning, there is a lag time between the “speaking” and the response
• do not usually allow for participants to see each other’s facial expressions, gestures, body movements, or to hear tones of voices
• are automatically recorded for re-read and retrieval
• are usually not constrained by time or space; the discussants can “speak” at any time and place, at different times or all at the same time, and as fast, as slowly, as much, or as little as they want
• allow for expanded tools and resources (pictures, audio, videos, or web links) to use in making points or arguments

Although these points do not represent the full scope of the differences between online written and face-to-face discussions, they invite reflection about how the online environment may influence existing 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. A reflective distance is created in online dialogue through the new media. Additionally, online dialogue
differs from other forms of written expression such as creating an essay or writing informal letters. As such, dialogue through discussion board immediately presents learners with new opportunities and constraints, and, when we consider individual differences, what is an opportunity for one person may be a constraint for another. For instance, people who are articulate in face-to-face or verbal conversations may find expressing themselves through writing difficult and vice versa.

The following questions become important: what are the opportunities and constraints of technology-mediated dialogue for different learners? How can we as educators and learners take advantage of the opportunities while overcoming the constraints?

**Psychological type preferences**

Jung’s ([1921] 1971) model of psychological type provides a powerful way of understanding individual learning differences. Jung describes people as having two different attitudes towards the world: introverted and extraverted, and four functions of living: thinking, feeling, intuition and sensing functions. The introverted attitude focuses on the inner self, and the extraverted attitude focuses on the world outside of the self. When people use the thinking function they make judgments based on logic and analysis; when they use the feeling function, they make judgments based on values. When the sensing function is used, people perceive the world through their five senses, but when the intuitive function is used, individuals rely on hunches, imagination, and possibilities in their perceptions. The four functions, when combined with the two attitudes, form eight patterns of 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).

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The eight types exist in varying degrees and manifest themselves in different ways in each person. A person can be more introverted, more extraverted, or somewhere in between. 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. Not everyone has clearly differentiated psychological type preferences. An individual’s psychological preferences may also change over time with experience or context.

Obviously, our psychological type preferences, as our differences in gender, ethnicity, culture and experience, make us each a unique person and affect our ways of being and learning. With a good understanding of our psychological preferences and the differences among individuals, we can live and work with each other in a way that does not diminish our own personal power nor that of others.

**The Study**

We conducted a study with nine graduate online courses offered in three departments: Cognition and Human Development, Organization and Leadership, and Mathematics, Science and Technology. We accessed discussion boards and asked the participants to respond to two survey instruments: the online P.E.T. inventory (Craniti & Knoop 1995) and an online open-ended survey.

The P.E.T. Type Check is based on Jung’s ([1921] 1971) psychological theory. It consists of eight items and yields a profile of preferences. The online survey included fifteen open-ended questions and was designed to explore the learners’ experiences, satisfaction, or frustrations with online dialogue.

Ninety-two students volunteered to participate in the study. Eighty-eight of the 92 participants provided us with their psychological preferences. Of these, 27 participants had extraverted intuition (EN) as their dominant preference, 23 had extraverted feeling (EF), 6 had extraverted sensing (ES), 4 had extraverted thinking (ET), 16 had introverted thinking (IT), 5 had introverted feeling (IF), 5 had introverted sensing (IS), and 1 had introverted intuition (IN) as dominant. Seventeen were male and 73 were female (2 participants did not indicate their gender and 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 years of age. 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), and Russian, Hebrew, Italian, German, Hindi and Greek. About one third of the participants were taking online courses for the first time, and the rest had taken one or more online courses before.

Participants’ responses were recorded with their names and other identifiers deleted and replaced with numerical codes. Two researchers independently assessed the data to identify emerging themes. The themes were condensed and the results synthesized.

**Findings**

We discovered that participants’ perspectives on online dialogue were closely related to their psychological type preferences. To present a holistic picture, we explain our findings using comments from the participants, together with a notation of their dominant and auxiliary preferences. For example, a notation of (IF/ES) means that the participant has introverted feeling (IF) as her dominant preference and extraverted sensing (ES) as her auxiliary preference.

Students who were introverted tended to comment that online dialogue allowed them time to think things through carefully, to reflect, to reread conversations, and to be “heard” in a way they were not heard in traditional face-to-face class discussions. They observed that the discussion forum provided a consistent space for them to present their understanding of the materials and to respond to colleagues with thoughtful comments without being constrained by time or space, or
feeling dominated by more extroverted peers. They also valued the opportunity to be more in touch with their inner feelings through writing and appreciated the relative anonymity of the forum, "without faces staring at you," as one person commented.

More introverted students tended to appreciate dialoguing with colleagues from diverse backgrounds, having access to professors who were inaccessible before, having continued contact with their professors and peers, and always having something to think about. These perspectives existed regardless of which function was dominant.

The students with a preference for thinking (especially introverted thinking) expressed enjoyment of the reflection time available through online written dialogue. They also commented on the structure, 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)

Participants with a preference for feeling also expressed great appreciation for the time to think before posting their comments, although their reasons were different. Online written dialogue allowed them time to clarify their thoughts so that they could avoid running into conflicts, hurting or confronting people.

"I definitely think it's easier for me to post my opinions than speaking face to face in class. In a traditional classroom there is limited time and opportunity for students to truly dialogue about the class material. There are also faces staring at you - when those faces are in disagreement to what you are saying it can quickly interrupt your train of thought, or limit what you might say." (IF/IN)

"... 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)

The students who were high in intuition were drawn to the many threads and possibilities in written dialogue. They commented that the online written forum allowed them to integrate learning into their overall lifestyle and to interact with their colleagues any time and place. In addition to enjoying diverse perspectives, participants expressed enthusiasm about the many opportunities the new media offered and the various ways they could articulate themselves.

"...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)

"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 manner." (EN/IT)

"... I was able to know people based on a more 'true' essence of them. This moves us beyond the usual superficial and/or status distractions that happen in face-to-face classes. No one can interrupt you in online education..." (EN/EF)

The intuitive participants also seemed 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 conflict between participants' appreciation of flexibility and their frustration over the lack of immediacy and spontaneity.

"I find using the discussion board to be a much-slower 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)

There was a tendency for people with a preference for sensing to worry about missing the dynamics of interacting with real people and missing the body language, facial expressions, tones of voices, 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. Without the opportunity to use the senses, the participants commented 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/N)

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.

Practical Implications

Those who provide guidelines on how to construct and teach online courses provide us with useful, but general suggestions. We are told, among other things, to be organized, caring, practical, and creative (Palloff & Pratt, 2001; Salmon, 2001). We are told that student grades should be tied to their course participation and postings so that students are motivated to interact with each other online (Bender, 2003). Rarely, however, do we consider the ways students with different learning preferences respond to the online environment. Our research has shown that we need to go beyond generalized principles for effective instruction and look for ways in which we can consider individual differences in our course design and instruction. Our research focused on learners' reactions to online dialogue, so in our suggestions here, we pay particular attention to those aspects of course design and facilitation that are relevant to the role of dialogue.

Role of dialogue

Through dialogue, learners exchange experiences, cooperate to complete tasks, and construct new knowledge. In order for individuals of each psychological preference to benefit from online dialogue, we need to take advantage of as many of the technological capabilities as possible. For the learner who is more introverted or prefers thinking, asynchronous dialogue provides the opportunity for reflection, careful formulation of ideas, and the elimination of the distracting presence of others' faces. However, for individuals who need things and people to be "real" so they can use their senses to perceive information, this is not as satisfactory. Where possible, the incorporation of video technology, the integration of face-to-face meetings or audio conferencing would help. Learners who prefer intuition may become bored waiting for others' responses and miss the spontaneity of live conversation: video or audio conferencing, face-to-face meetings, and synchronous chats would be helpful.

Participation

Learners should be encouraged to experience various technologies and discover or expand their capabilities for learning. It is of little benefit however, to require the introverted or reflective learner to participate in synchronous dialogue if he or she prefers not to be involved. Based on our research, we recommend that participation in any aspect of online dialogue be the choice of the learner. What characterizes a collaborative environment is an open, mindful, and free discussion, where argumentation in itself is considered as an important learning activity (Salmon, 2000). Participants should always be encouraged to alternate between the individual learning perspective and the collective one. Salmon points out that a basic condition for real collaboration is the genuine interdependence of the participants (Salmon, 2000). This means an interdependence that is not created by participants being forced to collaborate, but through participants' awareness of their complementary competences. It becomes clear in a well-facilitated online learning experience that the group as a whole benefits from participation. Participants develop a sense of common ownership of the ongoing dialogue and it becomes genuine rather than required. The contributions of those required to "post something twice a week" will never be as meaningful as the contributions of individuals who are excited about what the group is doing and realize how they can add to that process.

Along these lines, we would encourage educators not to include the amount of participation—number of postings or number of times the course site was accessed—as a component of the evaluation of student learning. This simply rewards the learners who excel in written dialogue and puts those who prefer other ways of learning in the position of making contributions for the sake of points. The collective nature of the group and the creation of group knowledge can be destroyed by this strategy. For individual learning to occur, the instructor and the students need to work together to co-create their knowledge through authentic dialogue.

Role of instructor as facilitator

The instructor's role, then, becomes crucial. At the early stages of the course, each participant needs to feel wanted and needed. His or her contributions have to be valued. The group will soon take over this role, but initially, it is up to the instructor to take on the facilitation role and to ensure that the interdependency of the group members occurs.

As the dialogue progresses and the group forms, the instructor carefully orchestrates the dialogue, but withdraws from being the center of all conversations. He or she still pays close attention to what is happening for each participant, but this facilitation role may be invisible or alternated with the student participants.

Online dialogue can be considered as a meeting spot where the participants encounter differences in values, kinds of knowledge, experiences, and points of view. We know from our research that individuals who prefer intuition thrive on these
differences, and those who are more reflective enjoy exchanging and critiquing the ideas of others. The tensions created by these differences serve as the principal factor in the struggle for a collective development of knowledge. The instructor helps the students reach their level of potential development and also keeps track of the level of competence required by the curriculum. The role of the facilitator is central to creating an environment where meaningful and interesting online dialogue can take place.

Connecting with learners

Dialogue is, of course, communication among people, and as such it requires people to establish relationships with each other. If the teacher stays within a traditional teacher role—presenting material, telling others what to do, rewarding “correct” answers, and asking leading questions—there will be little genuine connection. The facilitator of online dialogue needs to have a good understanding of individual differences. Sometimes, it is appropriate to actually administer a learning styles inventory, as we did in our research project, but other times, this may not seem practical. Much can be learned by asking a few questions and really “listening” to the responses: “tell us about yourself,” “what do you like to do?” “what are your interests and hobbies?” “what do you think of online learning?”

A facilitator needs to recognize when someone needs time to reflect and think through or when more activity or interaction is needed. In a classroom, this is hard. In the online environment, it is easier. The facilitator can respond to each of the learning needs without denying another student the space or the response needed. Since online teaching and learning has very elastic time boundaries, it is possible to do much more.

Letting learners be

It is one thing to understand individual differences, but it is another to let students be as they are and create a space in which they are respected and valued. In our research, participants who worked with teachers who “heard” them commented on how much that benefited their learning. Since this was the case regardless of psychological type preferences, we suspect it may be the case that participants felt it was their individual preferences that were “heard.”

Valuing individual differences and letting learners be can be done through a careful responsiveness to online dialogue, but it can also be facilitated through a variety of other simple means. For example, we can set up groups based either on interest in various course topics or on similarities in learning preferences. Learners should not remain exclusively in such groups, but it gives them the opportunity to be heard and valued within a smaller circle. A “coffee shop” or a “chat area” can be set up for those individuals who like to hold informal conversations about things not necessarily related to the course (in the same way that there are always students in a face-to-face class who like to congregate after class and visit). Encouraging students to lead a discussion forum based on an area of their own interest or based on experiences they share with some others in the group also creates an online space where they feel valued.

Student decision-making

Learners need choice if we are to fully utilize the gifts brought by people with different learning preferences. There is little point in bowing to individual learning difference as a concept and simultaneously forcing people to do things from which they will learn little. Students can and should, whenever possible, be involved in decision-making regarding the content of the course and the strategies used to promote learning. This is more feasible in some courses than in others. In an open-ended, graduate level course, for example, learners can make many of the decisions about which topics the group pursues. In this way, they take into account their own preferences and the instructor does not need to second-guess what those might be.

In other contexts, this is less practical. If students do not know enough about the subject area to know what topics are available, we can still provide choice by listing and describing the possibilities. And in the most rigid of curricula, there is always room for some student decision-making, even if it only consists of a choice between one or two topics.

In terms of the teaching strategies, incorporating student decision-making into the selection of activities, media, and learning projects has the important advantage of encouraging learners to select strategies from which they can best learn. Student decision-making about both content and strategy can be incorporated. For example, if a learner expresses a strong interest in a topic that was not originally part of the curriculum, the facilitator can offer that learner the opportunity to lead a discussion forum on the topic. For the more extroverted individual, and perhaps especially for a person who prefers extroverted intuition, this will spark great enthusiasm.

Being aware of power

In all of this, the instructor needs to be aware of how he or she exercises power. The position of educator comes with a certain amount of power automatically. We are usually the ones to decide on many aspects of the course and we often hold the power to not only agree with or accept students’ contributions, but to evaluate them. Brookfield (2000), based on his interpretation of Foucault’s work, urges educators to distinguish cases where power is wielded arbitrarily from instances where power is exercised reflectively and with justification. It is one of our responsibilities, Brookfield suggests, to help students see how they are also agents of power. The online environment provides a good place for this to happen. If we value individual differences and the diversity of voices among our students, we are showing them where their power lies.

Conclusion

Our research has led us to articulate a number of ways in which online dialogue and meaningful learning experiences can be encouraged through a consideration of individual learning differences and a constructive approach. An awareness of how individuals approach learning in widely different ways allows us to: 1) promote multiple perspectives, representations, and strategies; 2) become sensitive to each learner's perspective, context and need, thereby providing for...
engagement in the types of activities that are valued by the learners; 3) help learners modify and develop an understanding of objectives based on their own interest, needs and methods; 4) facilitate the active learning process of each person, and 5) provide opportunities for learners to articulate their newly acquired knowledge through the methods that they believe are best suited for their learning. When differences are respected and all voices valued, no one is excluded from the construction of knowledge. Such opportunities encourage articulation, abstraction, and commitment on the part of the learner, which positively enhances learning for all.

References

Using Technology to Achieve Consolidation and Analysis
Michael J. Dailey

Introduction

The introductory course in many areas provides students with an overview of the subject matter. The new approach is to compress material. The intent is to facilitate analysis, and use information for decisions. (Albrecht 2002). Bunching topics, moving at an accelerated pace, and then switching the focus raises critical pedagogical issues. Is there sufficient time to develop topics and link them to new topics? While the course may target consolidation, i.e. seeing how the principles cohere and are used, plus encoding that information in memory, introductory courses are often deficient in ways for the student to achieve this.

In addition to lack of consolidation opportunities, students may not perceive the courses as valuable. (Albrecht 2002). Faculty want students to see the "role" their course plays, a noble goal, thereby recognizing the importance of their area as a field of study. Students register another perspective. The most frequent criticism of that first course is too much information, too fast, too much detail, too many procedures, etc. While recognizing a significant portion of this derives from inattentive study habits, it also reflects a salient point critical to the learning process and attracting quality students to a profession. That point is consolidation, the slow and fundamental process of bringing together information to form a coherent whole. Forming that coherent whole is critical if students are to "see" the role of the first course and find the field/profession attractive. Technology can assist the consolidation process and make the field/profession move attractive.

Research and Theory

Pedagogical problems in consolidation may inhibit selection of a major. For example, in a paper listed and shared on the National Teaching and Learning Forum Newsletter, Craig Nelson of Indiana University addresses the issue of content versus meaning. He notes the struggle in teaching more than can be learned, thereby losing students in the detail while they fail to grasp the larger picture. (Nelson 2001). In querying good students of accounting (the author’s discipline) who achieved better grades and chose other majors, typical responses are "too much information, too fast," "not enough time," make this two courses," "too much detail," "too many numbers, procedures." Follow-up inquiries reveal frustration with the pace at which students must master the information. They see it as essentially a "blitz" of information. The linkage of transactions > procedures > outcome is not made.

To deepen understanding of these problems, the author reviewed research on learning, educational psychology, and the neurosciences. Those resources reveal that to achieve consolidation two themes predominate: timing and linkage. Studies in the neurosciences support the idea that consolidation of new memory into long term memory is time-dependant. Processes underlying new memory initially persist in a fragile state and consolidate over time. (MacGaugh 2000). While not surprising