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Identity presence and knowledge building: Joint emergence in online learning environments?

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Abstract This study examined the presence of identity in diverse online courses and explored how presence of identity correlated with content and students' participation in online discussion and hence knowledge building in online educational spaces. Epistemic and participation data regarding online interaction and knowledge building were collected from a diverse group of students enrolled in seven multi-disciplinary online courses. Both qualitative and quantitative findings of the study suggested that online discussions with identity presence were associated with more follow-up participation and reinforced a more dialogic online interaction. Identity presence was also correlated with online interactions of knowledge sharing and egocentric elaboration.

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Educational practitioners and theorists have long recognized that students' identities – the ways in which they view the world and their perceptions of themselves within the world – play a major part in their learning and construction of knowledge (Brown et al. 1989; Crichton and Kinsel 2003; Wenger 1998). Psychological research suggests that understanding different

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facets of identity will assist educational practitioners to more effectively examine the aspects of learning motivation, learning styles, and learner participation (Freeman and Bamford 2004). Sociocultural perspectives contend that learning only takes place when a learner has opportunities to express his/her identity within the social space of the learning group (Crichton and Kinsel 2003; Nichani 2000; Tu and McIsaac 2002). When learning is viewed as a social participation or collaborative learning within a specific community, the construction of identity is a central aspect of learning (Lave and Wenger 1991; Packer and Goicoechea 2000). Empirical research of online learning suggests that identity closely links to students' participation and collaboration within an online learning situation and hence influences the construction of knowledge (Crichton and Kinsel 2003; Gunawardena and Zittle 1997; Nichani 2000; Pallof and Pratt 1999; Tu and McIsaac 2002).

Although identity is a key learning variable, limited work has been done to examine how identity is expressed within diverse online course contexts and how identity presence relates to the knowledge building processes within the online educational space. In online learning environments, students exist not as physical beings but rather as expressed identities in virtual space, which has given rise to the critical role of identity presence in the online learning process. Crichton and Kinsel (2003) proposed that the question for online educators is how to nurture the development of positive identity presence that is conducive to learning achievement. Hughes (2007) argued that it is critical for online educators to create identity congruence – students' identity presence being consistent with the patterns of online knowledge building. Therefore, this study examines identity presence in diverse online course contexts and explores whether and how it is positively associated with students' participation and knowledge building within online discussions.

Theoretical framework

Facets of identity and identity presence

Traditional conceptions identify an individual within perceivable social identity groups such as those based on age, gender, ethnicity, socio-economic status, class, nationality, disability, and religion (Abrams and Hogg 1990; Turner and Haslam 2001). Identity can also be defined by *self-categorization* of educational background, work or professional experience or differences in language and culture (Turner et al. 1987). The aforementioned attributes of social identity and self-categorization have provided a meaningful lens for our coding and interpretation of the data on identity presence in this study.

Recently, scholars have suggested that identity is fluid and performed or constructed according to the context (Butler 1990; Duff and Uchida 1997; Hughes 2007). As Wenger (1998) asserted, identity is a lived experience and by the ways (e.g., language and discourse) we represent ourselves. Ivanic (1998) and Hyland (2002) argued that identities are "constructed in the possibilities for self-hood available in the sociocultural contexts of writing" (p. 1093). They claimed that learners could represent themselves in academic discourses or writings from three aspects: (a) *autobiographical self,* or the writer's life-history, (b) *discourse self,* or the image the writer projects in a text, and (c) *authorial self*, manifested in the extent to which a writer claims responsibility for the text's content (Hyland 2002). In the case of an online learning entity, the discourses in various online discussion forums are written by learners not only as ways of communicating about content topics, but also as ways of presenting identity by communicating who they are and how they perceive others.

As such, identity presence is examined in this study as a sociocultural position or self-categorization trajectory expressed or revealed by students in online discourses. Identity presence comprises the references to diverse identities that the participants take up in the discourse to comprehend and clarify the subject of discussion. These diverse identities represent multiple discourse groups of people whose backgrounds, values, knowledge, and beliefs define these identities.

Presence of identity in online learning environments

Although identity presence in online learning is an emerging field of research, there have been some initial studies into this variable of learning (Burkhalter 1999; Chester and O'Hara 2007; Crichton and Kinsel 2003; Freeman and Bamford 2004; Hirano 2009; Hughes 2007). These studies suggest that in an online learning environment, students perceive and present identities of themselves and others by means of interaction with artifacts that they leave in the environment, such as their personal profiles, or uploaded file system, or computer-mediated communications (e.g., online discussions). These interaction artifacts, along with the artifacts' accessibility, the potential reactions of the readers to the artifacts, the quality of work contributed, and the timeliness/frequency of replies, shape online students' identity presence. In this way, perceiving and expressing identity is first and foremost about performing online interactions.

However, research is not conclusive as to whether students in online courses will be active or sophisticated enough to conduct online interactions to present their identities (Hunt 1999). On the one hand, scholars contend that asynchronicity and anonymity of an online forum enable greater reflection about and flexible access to role responses and hence promote the richer presence of fluid, negotiated identities (Burkhalter 1999; Freeman and Capper 1999; Wenger 1998). On the other, studies report the lack of social presence and identity as a critical issue of online courses; they further suggest that substituting a telepresence for a physical presence makes it difficult for certain learner groups (online novices, learners of high-context culture) to express and read identities online, especially when they have to acquire a new exclusive academic language (Gunawardena and Zittle 1997; Hughes 2007; Marx 1999; Tu and McIsaac 2002).

The research on social presence in online environments has suggested that identity presence needs to be reinforced through integrating social ability in learning environment design (Laffey et al. 2006) and/or designing an activity structure that reinforce sense of belonging within online groups (Michinov et al. 2004). In summary, research on identity presence in online learning needs to take account of diverse online entity contexts in examining online discourses that frame identity presence. Research should also illuminate why learners in certain contexts tend to engage in more identity-present interactions.

Identity presence and online knowledge building

Crichton and Kinsel (2003) contend that the development of well-articulated identities in online learning situations can actually build a greater sociology of learning and is conducive to achievement of more knowledge acquisition and retention. This argument is congruent with Wenger's (1998) assertion about the critical role that identity plays in learning, especially for the development of a sense of trust and relationship among people in online learning communities. In their study, Freeman and Bamford (2004) examined student choice of identity presence in online learning discussion forums. The study indicated that the lack of identity presence disrupted learning in an online environment. It

suggested that in order to transform information into valuable knowledge within online learning environments, educators should adequately evaluate the full learning implications of identity presence in encouraging, socializing, and motivating student engagement. This finding was supported by several other studies (Chester and O'Hara 2007; Hirano 2009) that also examined the role of identity presence in the learning process. These studies supported Nichani's (2000) claim that in an online learning environment, learning only takes place when students have expressed identities.

Although some work has explored or theorized about the impact of identity presence on learning, research is still limited in providing a clear picture of the interaction between the identity presence and the participation in knowledge building in the online learning environment. For example, how is trust or relationship shaped by identity presence during online interactions? Will identity presence correlate with active participation in online interactions for learning, especially for collaborative knowledge building? A study is warranted that examines students' identity presence within diverse online course contexts.

Examining presence of identity and knowledge building in online discourses

To understand how identity is presented online, we need to examine how identity is discursively presented. Paltridge (2006) contends that identity plays as important a role in written discourse as it plays in spoken discourse. As Rose and McClafferty (2001) remark, "Writing is one of the primary sites where scholarly identity is formed and displayed" (p. 30).

Existing studies of online discussions are either from the field of education or intercultural communication. Education scholars have conducted research on examining the relationship between the dynamics of online class discussion and knowledge reinforcement (Anderson et al. 2001; Garrison et al. 2001; Henri 1992; Gunawardena et al. 1997; Ke 2010; Ke and Xie 2009; Marra et al. 2006; Rourke et al. 1999; Fischer and Weinberger **Q2/Q3** 2005). Communication scholars have researched the correlation between the presence of social identity and content of online communication from a sociolinguistic perspective (Scollon 2004; Kress 2009; Meyer 2010) and from a social semiotic perspective (Hodge and Kress 1988; O'Neill and O'Neill 2008; Reese et al. 2003). There is a lack of communication between these two fields. It is critical to merge these two perspectives by examining online discussion dynamics and knowledge building through in-depth online discourse analysis.

Therefore, we examine identity presence and knowledge building in online learning environments from the following converging perspectives. The sociolinguistic perspective (i.e., theory of dialogism in this study) provides a theoretical lens for us to examine the virtual identity presence or expression in written discourses. Using sociocultural and social constructivism perspectives on learning, we then focus on the content, function, instances of shared understanding of online discussions to further analyze the presence of a social and cultural identity of online students, the process of knowledge building in online discussions, and the relationship between online identity presence and knowledge building (Mercer and Hall 2010).

Theory of dialogism

The theoretical construct of *dialogism*, as defined by Bakhtin (1986), denotes "the quality of an instance of discourse that explicitly acknowledges that it is defined by its relationship to other instances, both past, to which it responds, and future, whose response it anticipates" (Shepherd 2009). According to Bakhtin (1993), the "self" is only able to know itself (its identity) through its encounter with an "other," and hence the self can only be

constituted through its discursive interaction with the other. Through communicative or discursive endeavour, individuals will find ways of expressing their identities.

In the Philosophy of Literary Forms (1940), Burke claimed that the creation of knowledge and the co-participation in the creation of it, is not a unique linear process, but is embedded in a complex system of dialogue where dialogism allows new participants to become an important part of discursive practices where knowledge is created, shared, and further developed. As Bakhtin (1984) asserted, dialogue in its many forms and media is always embedded in a continuum of meaning that is created and re-created by individuals in a particular discourse community. Language creates the opportunity for the creation and exchange of knowledge at any historical moment in time.

Taking the perspective of dialogism, we believe that dialogue and knowledge are social symbolic acts in any context or environment in which they take place. By *symbolic*, Burke (1940) stated that without words, or a system of signs that carry meaning, discourse is less likely to take place and knowledge cannot find a form and content to be socially and culturally disseminated. Dialogue and knowledge present a direct correlation in a Bakhtin framework, where knowledge is constructed and maintained at the very moment of discursive practices. The theoretical framework of Bakhtin (1986) hence can guide research efforts to examine identity presence and knowledge construction via the medium of written discourses in online environments.

Sociocultural and social constructive perspectives on learning

Sociocultural researchers are generally affiliated with the work of Vygotsky (1978), emphasizing that language and hence dialogue are cultural and psychological tools which link the *intermental* and *intramental* psychological functions and have an important influence on the development of understanding and knowledge (Mercer and Hall 2010; Mercer & Littleton, 2007). Learning, like written texts, is *interactionally* accomplished by members of a social group, situated in particular contexts of practice, and "to a large extent, discursive in nature" (Gee and Green 1998, p. 148). The body of sociocultural learning research will study discursive activity within learning settings to provide "insights into the complex and dynamic relationships among discourse, social practices, and learning" (Gee and Green 1998, p. 119). Howe and Tolmie (1999), for example, conducted a series of studies to identify the relationship between group discussion and individual cognition. They did pre- and post-tests on learners' (school children or undergraduate students) conception and prediction performance related to the covered science topics. They then performed discourse analysis of online group discussions to examine correlational evidence between the interactive features and pre- to post-test change. The results indicated that computer-facilitated group interaction played a direct role in science learning. The elements of productive interaction comprised discussion of peers' conceptions of the material in hand, coordination of ideas generated from the conception discussions, and then the application of the resulting product to the problem being dealt with. Howe and Tolmie's finding (1999) on the relation between group interaction and individual cognition is consistent with Piaget's notion (1985) that conceptual growth depends on the experience of conflicting ideas via discussions and the negotiation of conceptions which are then internalized.

Similar to the sociocultural research, social constructivist perspectives on learning argue that education is an interactive or transactional process and learning is situated in social contexts and practices (Brown et al. 1989; Dewey 1938; Laffey et al. 2006). Research influenced by social constructivist perspectives has used mixed methods, including qualitative thematic analysis and quantitative coding of discourse scripts, to illustrate

collaborative knowledge building and situated individual development in discursive texts. 208
For example, Gee and Green (1998) developed an ethnographically grounded approach to 209
discourse analysis – the MASS system (*material, activity, semiotic, and sociocultural* 210
aspects of discourse), which can guide the analysis of classroom interactions and the 211
examination of the relationships among discourse, social practices, and learning. 212
Gunawardena et al. (1997) developed an interaction analysis model based on social 213 **Q4**
constructivist theory and tested it on the discussion scripts of a multi-week, open-ended 214
online debate. The model classified the process of social knowledge building within the 215
discursive texts of online debate or argument into five phases: a) sharing and comparing of 216
information, b) discovery and exploration of dissonance or inconsistency among 217
participants, c) negotiation of meaning of knowledge co-construction, d) testing and 218
modification, and e) phrasing of agreement and applications of newly constructed 219
meaning. It should be noted that Gunawardena and her colleagues' interaction analysis 220
model was developed and later used more for group discussions rather than class 221
discussions. The discussions coded via Gunawardena's model were mostly open-ended 222
and argument-natured, focusing on *collective development and meaningful thinking* 223
rather than contextualized individual cognition and content acquisition (Gee and Green 224
1998; Marra et al. 2006). 225 **Q5**

Grounded in the aforementioned theoretical lenses, this study investigates how identity 226
is presented within online interactions and whether identity presence impacts the dynamics 227
of the interactions. Finally, we explore the relationship between identity presence and the 228
construction of knowledge in online environments. This study aims to address two research 229
questions: (a) How is identity presented in diverse online interaction contexts, and (b) what 230
is the relationship between the identity presence, the dynamics of online discussion, and 231
knowledge building during on-line interactions? 232

Method 233

The study used a mixed-method, *descriptive* case study approach (Stake 1995; Yin 2009; 234
Ellinger, Watkins, & Marsick, 2010) to examine the phenomenon of identity presence 235
within diverse online course contexts and form hypotheses of the cause-effect relationship 236
between identity presence and students' online knowledge building processes. Data was 237
collected and coded via both qualitative and quantitative methods. This included discourse 238
analysis of online interaction transcripts, online interaction context analysis of each online 239
course site, and individual interviews with students and instructors. Online interaction 240
transcripts, mainly transcripts of threaded discussions, were archived and analyzed 241
regarding learner identity, the nature of online interactions for knowledge building, and 242
potential correlations between the identity presence and knowledge-constructive interactions. 243
Each online course site was analyzed for online interaction contexts, including pedagogical 244
philosophy and interaction design features. Interviews were recorded and notes were taken to 245
maximize nuances in responses. 246

Sites and participants 247

Seven WebCT-based (WebCT Vista), full-semester online courses of a major university in 248
the Southwest United States were purposely selected as individual cases based on the 249
following criteria: (a) courses (3 graduate and 3 undergraduate) were of different content 250
disciplines, including education, nursing, communication, psychology, and religion; (b) 251

courses differed in online interaction contexts (e.g., different levels of presence and   252
facilitation by the instructor, different online discussion tasks); and (c) a diverse study body   253
in terms of ethnic status and age. Discussion activities in these courses were all structured   254
based on course units and served to assist content comprehension and/or desired value   255
development (e.g., valuing diversity in nursing practices). Moreover, the instructors of these   256
seven online courses had an average of 3 years of online teaching experience. In these   257
courses, students' participation in online interactions was required and counted for more   258
than 20% of the final grade.   259

Students enrolled in the seven online courses ($n=147$) were studied as an embedded unit   260
of analysis (Yin 2009). Students' demographic data, including age, gender, and ethnic   261
status, was collected prior to the study. The ages of student participants ranged from 19 to   262
64 years old, with the mean being 38 and 30% being 50 and above. Sixty-three percent of   263
the student participants worked full-time and took courses part-time, and 27% lived in a   264
rural area. Minority students made up 39% of participants including Latino, Native   265
American, and Asian ethnicities, and a small number of international students.   266

Data collection and analysis   267

Discourse analysis   268

Transcripts of online class discussions throughout the entire school semester were exported   269
from WebCT along with all meta-information (e.g., timestamps). For analysis, six weeks of   270
discussion transcripts were gathered and coded for each course (two at the second and third   271
school week, two at the mid-term, and two at the end of the school term). The sample time   272
frames were selected to represent the beginning, middle, and the end phases of a course and   273
enable an over-time analysis of online discussions occurring during a school semester.   274
Additionally, virtual observations were recorded in field notes on a weekly basis. All   275
compelling findings from online documents and virtual observations stimulated new   276
questions for interviews.   277

In this study, the discourse analysis of the online discussion transcripts included two   278
dimensions – epistemic and participation. For the epistemic dimension, we focused on the   279
content of students' contribution by analyzing the purpose of the contribution, evidence of   280
knowledge building, and the expression of identity. For the participation dimension, we   281
examined the quantity of students' participation and contributions, including the number of   282
initiated posts, responses, and reciprocal replies. We also explored the potential   283
heterogeneity of participation among students by conducting a cross-case analysis with   284
students of diverse characteristics.   285

Coding identity presence Grounded in dialogism and sociocultural perspectives, all   286
discursive forms of communication reflect and construe self, society, and strategic action   287
(Coutu 2000). Through investigating students' discussions, we gained greater understand-   288
ing of their identity presence by examining culturally distinctive forms of vocabularies   289
revealed in their written discourse (Coutu 2000). By examining communicative references,   290
including belief, society, value, and experience in students' discourse, we gained a deeper   291
sense of their identity presence.   292

Scholars (Alexander et al. 1987; Fairclough 1992; Knorr-Cetina and Cicourel 1981)   293
distinguish between macro and micro-level discourse analysis. At the micro-level of   294
discourse analysis, attention is paid to language and word usage in speech and   295
interpretation is more grounded in a sociolinguistic (i.e., dialogism) approach. At the   296

macro-level, power, inequality and relation between social groups frame interpretation of text, which is consistent with prior sociocultural research. In this study, we paid attention to both the micro and macro levels of discourse. Macro-level discourse is framed by students' identity presence that is manifested at the micro-level of textual interaction and writing style (Hughes 2007).

Coding online knowledge building This study utilized an online interaction analysis scheme that integrates sociocultural and social constructivist perspectives on *individual cognition* and *collective development* within students' online interactions (Gee and Green 1998). Specifically, *Online Learning Interaction Model* (OLIM, Ke and Xie 2009) is a synthesis of two representative content analysis schemes in the distance education literature: Henri's work (1992), which examines the quality of online postings with a focus on individual conceptual growth or cognition situated in dialogues, and the framework of Gunawardena et al. (1997), which examines mainly the evidence of collective knowledge development in an open-ended online debate forum. The OLIM has been field-tested in prior online learning studies (Ke and Xie 2009; Ke 2010). The unit of interaction analysis in this study was *thematic unit* or *unit of meaning* (Henri 1992). The analysis focused on a consistent theme or idea that was associated with a syntactic unit (i.e., a post in this study) (Rourke et al. 1999). Each unit was classified into one of the eight analytic categories of online interaction purpose/content. The coding framework is outlined in Table 1.

Coding process Three raters coded the online discussion transcripts. After reaching 100% agreement on coding two sample weeks' transcripts, all raters double-blindly coded the remaining transcripts. The average inter-rater reliability is .92. The three raters also discussed the differences in their codes and reached an agreement at 100%. The final revised codes were used for later analyses.

Analysis with the coded transcripts A chi square analysis was conducted with the coded discussion transcripts to examine the relationship between the identity presence and the level of knowledge building within online discussions. The analysis result was then complemented and extended by qualitative observation and interview findings.

Artifact analysis of online course contexts

An artifact analysis was conducted with the virtual observation notes and course documents to generate a description of online interaction contexts. To develop a *thick description* (Lincoln and Guba 1985) and gain a deep sense of online courses as learning environments, we first utilized thematic analysis (Miles and Huberman 1994) to categorize the design elements of the sampled online course sites and students' discussion experiences. Second, we followed a systematic coding method (Marshall and Rossman 2006) to analyze and reduce data according to the themes found and search for outlying and subtler themes. The patterns of the online course contexts that emerged from the artifact analysis are outlined in Table 2.

Thematic analysis of interviews

Interviews were conducted with all seven instructors of the online courses and a group of purposefully sampled students. All interviews followed the same semi-structured protocol.

Table 1 Coding framework for online interactions

Code	Category		Definition & Examples
S	Social Interaction		• Having the indicators of greetings, giving credit, deciding (e.g., "I agree with you"), and emotional expressions.
			• Sharing personal life experiences that do not contribute to knowledge sharing or construction
K1	Knowledge sharing & construction	Knowledge sharing:	
		• Information	• Sharing facts or information without interpretation or evaluation
		• Idea	• Sharing opinions without elaboration or explanation
		• Question	• Fact-seeking or clarification question
K2		Egocentric elaboration:	Elaborating one's own arguments/concepts/problem solutions, citing one's own experience/observation (e.g., "From my experiences…", "I remember when I was in physics…") or citing books, reading materials, and knowledge learned before (e.g., "As the book says…", "According to X theory…");
		• Information	
		• Idea	
K3		Allocentric elaboration:	Interpreting and evaluating peers' perspectives with elaboration, including:
		• Information	• Interpreting and/or evaluation: e.g., "I agree with you… because", "I have to disagree with Karen…due to", "Let me take this a step further"
		• Idea	
		• Question	• Alternative-view-seeking or explanation-seeking question: e.g., "Most of you have only discussed positive aspects, I want to know if you have had negative experiences"
K4		Knowledge creation:	
		• Information	• Synthesis
		• Idea	• Rise-above
			• Application: planning application of new knowledge
M1	Management	Environment management	Questioning and clarification on:
			• Technological environment
			• Course requirement e.g., "Anyone knows how to quote a message?"
M2		Coordination	Planning and coordination of collaborative projects and inquiries
			e.g., "Tom, can you do task 1 and I will do task 2?"
M3		Reflection & Self-regulation	Reflection and self-evaluation on interaction, project, and other learning processes:
			e.g., "I could have use X to help me to learn."

Each interview was face-to-face, and lasted 45–60 min. Instructor interviews collected instructors' course design decisions and their perceptions of students' discussion performance. Student interviews focused on students' general online discussion perceptions and their awareness of learner identities. Eighteen adult students were purposely selected for an end-of-term interview. These interviewees represented the sampled courses and diverse groups of age, gender, ethnic status, and prior online course experiences.

Table 2 Course interaction contexts of the seven online courses

Course & Domain	Online discussion				Presence of the instructor
	Task	Structure	Evaluation	Degree	Role
C&J4xx (culture-related content)	Topic discussion	Unit-based class discussion	Graded (30% of total)	No	Monitor
NUR5xx	Topic discussion	Unit-based class discussion with a protocol of speaker and listener	Graded (15% of total)	Low	Facilitator
EDU5xx	Case-based, close-ended questions*	Unit-based group discussion	Graded (15% of total)	Low	Evaluator
EDU5xx	Topic discussion	Unit-based class discussion	Graded (15% of total)	High	Leader
DEU5xx (culture related)	Topic discussion	Unit-based group discussion	Graded (>=30% of total)	Medium	Wrapper**
PSY3xx	Topic discussion and close-ended questions	Unit-based class discussion	Graded (30% of total)	No	Monitor
RELG2xx (culture-related domain)	Topic discussion	Unit-based class discussion	Graded (30% of total)	Low	Monitor

* There is usually only one correct answer.

** Wrapper: one who wraps up the discussions with a summary

We employed a qualitative thematic analysis with the interview responses to develop the narratives on each course's interaction context, identity presence, and knowledge building within online discussions from participants' perspective. These qualitative narratives were complemented and consolidated by the findings of discourse and artifact analysis.

Findings

Presence of identity in online discussions

The identity presence in online discussion posts revealed students' social, cultural, and life-stage-related experiences and was usually associated with their opinion expression and elaboration during online discussions. A consolidated list of forms of identity presence emerged from the online discussion data and was described with discourse examples in the following section.

Associated with personal experience of critical life events

Students actively contributed to online discussions that were associated with their personal life experiences, especially those of critical incidents. When the discussion connected to real life, students tended to be more empathic and attached.

For example, one of the most intensive, actively responded discussions occurred in a psychology course where students were requested to express opinions about critical-incident-related topics, such as "suicide", "sexual abuse", and "substance abuse." Students having personal experiences with these topics were the outspoken leaders who enabled the occurrence of an in-depth and engaged discussion. As observed, the longest posts were usually written by the students who went through the incidents, had a friend or

relative who went through the incidents, had worked with victims of the incidents (e.g., at a school, hospital, or rehab facility), or belonged to a social group that was most connected to the incidents (e.g., parents). 366 367 368

"*This is a very hard topic*," student AM, a mother, wrote as she started to share a sad story about her stepdaughter being a sexual abuse victim. Others who were also mothers echoed her post. They expressed sympathy (e.g., "*What a sad story*"), a sense of connection and belonging (e.g., "*AM, as parents **We** need to …*" "*That's a good thing that we are on the same page*"), or inspired sharing of similar stories or experiences (e.g., "*Your story reminded me of a tenant that once rented from me. She had two young children…*"). 369 370 371 372 373 374

It seemed that exposure of personal experiences in online posts helped to build up a small discussion community or "clique" among learners sharing similar experiences or feelings. It also created a trusted, secure environment for others to vent their own stories, deeper thoughts, and self-reflective opinions. For example, in the discussion sessions on "substance abuse" and "suicide", quite a few posts opened like this: "*Just like most of you I too have been affected by someone close to me committing suicide*" or "*"Okay, so based on what has been said so far in this discussion we can assume one out of three has contemplated suicide. One being me*." They then demonstrated reflective, analytical thoughts: "*Dating R definitely affected me. When you date an addict you definitely don't walk away from the situation the same way you went into it*." 375 376 377 378 379 380 381 382 383 384

As observed, online students who didn't own first hand experiences with the discussion topics generally expressed their appreciation of the experience-intertwined posts: 385 386

> *After reading AM, DB, JD and SP, I felt and saw a lot of what seemed to me to be maternal instinct? All of the ladies had great points and all unfortunately had personal knowledge of stories that they choose to share. Thanks to all of you who had stories to share with the rest of us.* 387 389 390 391

> *Thanks for sharing that story about R. Point well taken about how drug use affects everyone around the abuser.* 393 394

> *DB, I appreciate your comments, and I think you have a lot of insights, especially since you have the perspective of a parent.* 396 397

As these discourses illustrated, inexperienced learners recognized the *maternal* identity presented in their peers' posts and deemed experienced peers as experts who have valid insights and tips to offer. Some of them even sought opinions or thoughts specifically from those experienced peers: "*So JD as well as everyone else in class, here is a question (especially JD seeing how you have had first hand experience)*." 398 399 400 401 402

On the other hand, some online students felt a little overshadowed by experience-related identity presence in others' posts and were conscious about how their own posts might be different or lacking. They would modestly state, "*I have not had a lot of experience dealing with the topic of suicide, but would like to contribute my two cents*." Or they would simply shy away from the discussions. A young psychology student explained why he did not participate in online discussions, "*I feel like I have nothing real to contribute. All of them seem so experienced*." Some students turned to their families to borrow experiences and bring stories back to the online discussion, "*You know, I was talking to my mom about focusing more on talking to children about the realities of sexual abuse because she teaches second grade. She told me that…*" It was obvious that these students were aware of the presence of experience-based identity and were trying to immerse themselves into the discourse community. 403 404 405 406 407 408 409 410 411 412 413 414

Associated with insights on ethnic- and culture-related diversity 415

A typical example was set by students in a communication course, who had a debate on ways of 416
living in the Amish community. In this particular discussion, the presence of identity was 417
different between the groups who were more sensitive to cultural diversity, and who were more 418
ego-centered. Although Amish ways of living are very different from modern American life, 419
most students expressed their respect for an Amish's choice of life. For instance, 420

> *I ultimately believe it is their decision the way they live and because I do not know* 422
> *their beliefs I don't want to try to justify their way of life* 423
>
> *I completely agree that we should live them (Amish) alone. We need not judge anyone* 425
> *but ourselves.* 426
>
> *I think they (Amish) are keeping a culture alive. While I'm sure they know they get* 428
> *gawked at, they are used to it because it's their way of life.* 429
>
> *While the Native Americans used the travois for everyday life, they did take* 430
> *something they saw and used it in a really good way for them. While they may be* 432
> *laggards or non-adopters, they are embracing a heritage that has kept them going for* 433
> *hundreds of years.* 434
> 435

This group of students used "our" and "their" in the posts to identify their own modern 436
American mainstream culture and differentiate their own culture from the Amish community. 437
However, they echoed their peers' opinions that they shouldn't judge "others" based on their 438
"own" culture, and they believed that each culture should preserve their own way of living. 439
A few other students expressed different standpoints in their perceptions about Amish 440
culture. 441

> *Their belief system holds strongly to traditional values and isolates their thinking.* 443
> *Amish do lag behind the current times and because of this, they are looked upon as* 444
> *bad.* 445
>
> *It is a lifestyle choice.* 447
>
> *...because they choose not to partake in modern devices. This is the main reason or* 449
> *do you see it different...* 450

The posts used "tradition," "lag behind," and "bad" to express the writers' perceptions of 451
the Amish culture, which carried the superior value of their own modern American culture. 452
As observed, students participating in the discussions demonstrated three types of 453
identity presence, being more culturally sensitive, being more ego-centered, and being 454
neutral. The record of online discussions indicated that students with more cultural 455
sensitivity were likely to contribute more in-depth discussions and expand on the discussion 456
threads. 457
Some students framed online discussions with their own cultural backgrounds. For 458
instance, a Native American student related her own cultural heritage to the Amish 459
community: 460

> *I am native and growing up heard many stories about the horses from my parents,* 462
> *grandparents, and spiritual people...I am glad that they have the belief of living life* 463
> *simple, but then again, I am worried about them falling to far behind.* 464

Agreed. Your insights into your culture are fascinating…but at the same time, you're here - partaking in modern innovation.

The Native American student identified her culture to be similar to the Amish culture while comparing it to American mainstream culture. She expressed her struggle between preserving her heritage and surviving in the modern world. Her personal cultural insights gained empathy from students of the American mainstream culture and enriched the discussion.

Associated with age-related, intergenerational views

Other online discussions with presence of identity were related to the use of technology. In the sampled online courses, students were from a range of age groups and interested in discussing the change of communication tools and educational models along their life span. They expressed diverse views about these changes in society, and many others echoed their insights. For example, in arguing against the view of Amish as laggards, a participant wrote,

My parents grew up in the Depression, so just be grateful it's not any worse. When microwaves, cell phones, computers, and VCRs first came out, they were astronomically expensive and to me, unnecessary: I had an oven and a landline, and couldn't afford the computer or VCR. I didn't have a VCR when I grew up so you watched the shows when they were on or you missed them - tough luck. Who knew that we'd have VCR and could watch all those shows again. I don't think they are laggards, I think they are non-adopters in terms of most of today's innovations and technology.

Associated with national cultural beliefs and social values

In a graduate nursing course, online discussions on issues of national health plans and migrant nurses revealed more extensive expressions of beliefs and values grounded in students' national backgrounds. For example, American students defined the "United States" as "one of the wealthiest countries," "the most civilized country," "industrialized nation," etc. A Caucasian student identified herself as "future oriented", and her Caucasian American culture made her family aware of saving money for social security. Another student claimed that her "Mexican" heritage justified her criticisms of illegal immigrants. A student pointed out that the African American population had the highest percentage of "Diabetes, HTN, LBW babies, premise," and complained about the challenge of communicating with our "refugees" from Africa, Iran, and Cuba.

In their online posts, these students expressed their discontent about the idea of a "universal" national health plan. Students against the "universal" national health plan associated the national health plan with "socialism" or "communism." They determined that countries with "socialism" or "communism" are less developed countries that tend to "export" more nurses to the US to have a "better life." When describing a better health system, they only used examples from the western countries, such as Canada, Germany, Great Britain, Netherlands and Switzerland.

Students with or without overseas experience seemed to express different social values. A student's post claimed to represent the majority of American social value: "*This country is supposed to be about working your way up and earning money and having the freedom*

to keep your money and spend it as you like. 'Taking a piece of the pie' from me and giving it to someone else negates the entire basis of this country.*" Based on this viewpoint, he considered national health care as a socialist reaction. Instead, students with overseas experience argued that the deficit of a national health care system in the US was "shameful."

When a Chinese national student expressed her Chinese value in online discussions, her peers who were more sensitive to cultural diversity were interested in her viewpoint.

> I grew up in a totally different cultural environment in China. American culture is so different than Chinese culture including people, ethical believes. I have both Chinese friends and American friends. Where there is an ethical conflict, Chinese make completely different ethical decisions than Americans.

> Would you feel comfortable giving us examples of how American and Chinese ethics are different; if not that is okay, I am just curious.

> In my undergraduate study in this country, I was taught: Take care of yourself. Do not hurt yourself for taking care of patients. People in China may think this is selfish. The values are so different.

> If the people in China would think are selfish to take care of yourself, is it the belief, that others are more important than self. My grandmother used to tell me that and she was German.

> I was taught "other people first" when I was a child in school. I believe everybody was taught that way.

In this particular thread, the Chinese student informed her American student that "others first" played a role in the Chinese culture. Interestingly, the American student related her German grandmother to the Chinese student's viewpoint of self-other even without first-hand experience of the cultural value of either Chinese or German.

Comparison of identity presence across course contexts

When interviewed, most student participants struggled to make connections between their sociocultural background and online interaction or learning. Correspondingly, their online discussions demonstrated a lack of identity presence. Out of 1817 discussion posts coded from the seven online courses, only 15.6% (n=284) contained the aforementioned forms of identity presence.

A chi square analysis was conducted to examine whether the degree of identity presence within online discussions (a total of 1817 online posts) differed across the seven online courses. The result indicated that the identity presence significantly related to online course contexts, χ^2(6, N=1817)=247.09, p<.001. Online courses that focused on open-ended topic discussions and topics on sociocultural phenomena (e.g., topic discussions on diffusion of innovation in social practices or global e-learning issues) had a higher chance of containing identity cues. They had a large effect (V>.3) to the identity presence in students' online discussion.

The chi-square finding was supported by our qualitative observation and interview results. As observed, a lot less posts involved either personal experiences or sociocultural views in the online courses of which discussions were designed to assist reading

comprehension and knowledge memorization (e.g., focusing on the question of *what*) rather than knowledge creation and critical thinking (e.g., the question of *why*). In a sampled nursing course, the discussion task was designed as question answering. Students reported that they believed only "academic writing" was appropriate, and hence most of them excluded informal stories and only quoted references from academic readings to elaborate their opinions/answers.

There was no significant evidence suggesting that presence or active participation of instructors in online discussions would predict the identity presence within online discussions. However, an instructor's reactions toward the different types of online posts seemed to influence written communication in online contexts. In two online courses from the same content domain, one instructor rarely commented personal-experience-oriented posts, while explicitly praising the posts that carried "statistics and numbers." By comparison, the other instructor actively shared her own experiences on the discussion topics and even probed students to contextualize their discussions within sociocultural perspectives. Thus, a lot more posts were observed as containing identity presence in the latter course.

The relationship between identity presence and content/participation of online discussions

A chi-square test of the total of 1817 online posts indicated that being initiative posts or not was a factor that affected the chance of identity presence in a post, $\chi^2(1, N=1817)=4.38$, p = .04. Initiative posts had a better chance of containing identity expression. However, being an initiative post only had a small relationship (V=0.1) to the presence of identity.

A *t*-test indicated that there was a significant effect of identity presence within a post in eliciting replies, t(1815) = −2.378, *p*<.01. Posts with identity presence elicited significantly more replies than posts without identity presence. A chi-square test was conducted to examine the relationship between a post with the identity presence (especially age-related cultural expressions) and the post eliciting a response or not. The result indicated a significant association, $\chi^2(1, N=1817)=11.62$, p=.001. A post with identity presence had a better chance of receiving more responses with a moderate effect of V=.2.

A chi-square test was conducted to examine whether the presence of identity differed between posts for social interaction and other posts. The result was significant, $\chi^2(1, N=1817)=20.12$, *p*<.001. Interestingly, posts containing identity presence had less of a chance of interacting only at the social level (coded as S), with a medium effect of V=.2.

A series of chi-square tests were also conducted to examine the relationship between identity presence and interaction purpose/content within online discussions. The results indicated that there was a significant relationship between the presence of identity in an online post and the post being a knowledge-relevant interaction or not (i.e., either K1, K2, K4, or K4), $\chi^2(1, N=1817)=11.91$, p=.001. Posts containing identity presence had a better chance of being a knowledge-relevant interaction, but with a small effect (V=.1). More specifically, among the coded 1817 online posts, there was a significant relationship between the identity presence in an online post and the post being a knowledge-sharing interaction (K1), $\chi^2(1, N=1817)=28.8$, *p*<.001; and a significant relationship between the identity presence in an online post and the post being an egocentric-elaboration interaction (K2), $\chi^2(1, N=1817)=61.77$, *p*<.001. Posts containing identity presence had a better chance of being either K1 or K2 interactions, with a large effect (V>.3). However, there was no significant relationship between the identity presence in an online post and the post being an allocentric interaction (K3). There was no significant association

between a post with the identity presence and the post being knowledge-creation interaction 606
(K4) either. 607

Identity presence and followership 608

Qualitative observation and interview data supported the quantitative finding that online 609
posts with identity presence elicited more replies. Several features of the posts with identity 610
presence may have contributed to the posts' followership. First, a post with identity 611
presence tended to contain strong and emotional language that stimulated a quick echo 612
response or rejection among peers: 613

(MF, admitted that she had contemplated suicide before): *Thinking of Suicide is rare.* 615
Nonsense! Absolute Nonsense! I honestly have never met someone that has NEVER 616
thought of suicide. We all hit some kind of low in our lives at some time, that we think 617
is the end or close to it and have no idea how to handle it. 618
(EA, in response): *Your last point is a little too broad for me. I'm not sure if everyone* 620
has thought of suicide. I've dealt with suicide in my family, so clearly I've thought 621
about the topic of suicide, but not contemplating taking my own life. I think seriously 622
planning suicide is not a normal part of life. In our culture many people joke or make 623
casual comments about suicide, but I would doubt that most of those people have 624
considered suicide as an option. 625
(MD, in response): *Okay, so based on what has been said so far in this discussion we* 627
can assume one out of three has contemplated suicide. (One being me) Even that is 628
one too many. 629
630

As this written discourse indicated, MF used strong words such as "nonsense" and "never", 631
which, based on the interviews with EA and MD, caught the readers' attention immediately 632
and prompted them to respond in either agreement or disagreement. 633

Second, posts with identity presence, especially exposure of personal privacy, helped to 634
create a climate of trust and shelter among peers. An interesting observation was that if writings 635
with identity presence were posted at the beginning of a discussion thread, they would set a tone 636
or climate of identity-present communication for the rest of the thread. Typically, a peer 637
commented in the response, "*A touchy subject for me. I am really surprised (impressed) how* 638
open everyone is about this topic." 639

Third, both observations and interviews indicated that posts that discussed the issues 640
within multicultural perspectives greatly appealed to students from minority cultural 641
backgrounds. They reported that online discussions with an acknowledgement of 642
multicultural views were most satisfactory. Others from the dominant cultural background 643
also appreciated cross-cultural discussions, reporting they were able to acquire new 644
information and gain new experiences. 645

It seemed that learners in an online learning space were still actively seeking common 646
identity memberships among peers, which explained why posts with identity expressions 647
elicited more replies. However, without a clear, explicit guideline or protocol on written 648
discussions, online learners would deem it inappropriate to express identity in online 649
learning interactions, unless identity-present discourses became an implicitly agreed-upon 650
practice among peers. Another interesting observation of online discussions was that active, 651
dialogic discourses usually took place at the earlier stage of the discussions. Messages 652
posted at the later stage of the discussions, whether identity expressed or not, were lack of 653
peer comments. 654

Intelligent writer—A perceived identity presence and its followership   655

Rather than expressing an identity via opinions or thoughts within online posts, some   656
students were tagged by their peers as an "elite group" by consistently presenting a high-   657
quality intelligent writing. Although intelligent writing was not coded as a form of   658
sociocultural identity presence in our discourse analysis, the interview results indicated that   659
it was a frequently mentioned, online-specific form of identity presence. Online posts with   660
the presence of intelligent writing gained followership due to the following values: (a) a clean   661
organization of points presented (e.g., using bulleted or numbered paragraphs with sub-   662
headings); (b) citing external references (e.g., statistics); and most importantly (c) offering a   663
rise-above that enabled out-of-the-box thinking or deepened prior discussions (e.g., a probing   664
question that pinpointed the blindside of existing views).   665

For example, at one point during the discussion on sexual abuse, when almost all   666
students claimed harsh punishment as the critical intervention against the issue, a student   667
presented a probing question, "*Should we also need to gain more understanding of what*   668
causes these predators to act the way that they do?" He then supported this unique   669
perspective with a powerful case publicized in the local media and cited relative statistics.   670
The point was well supported and presented in a polite but persuasive way. As reported by   671
his peers during interviewing, it felt like communicating to "*an intelligent, trustworthy*   672
friend" when they read such a post. It was no wonder that one of his peers wrote, "I *always*   673
respond to your postings, mostly because they are the ones that teach most." Another   674
student expressed the desire to meet him face-to-face, "*I would really like to bring him to*   675
coffee, if it's possible."   676

As observed, students who were perceived as intelligent writers occupied a central role   677
in the discussion group. Their posts, in comparison to others', contributed to numerically   678
more discourse-like conversations that were both rich (indexed by the number of replies   679
elicited) and deep (indexed by the level of reciprocal replies).   680

Heterogeneity of participation among learners of varied age and ethnic status   681

The discourse results did not indicate a significant relationship between age, ethnic status   682
and the frequency of reading and checking posts. The correlation analysis did not indicate a   683
significant correlation between students' ages and the total amount of online posts.   684
However, there was a significant correlation between age and the amount of K1 interactions   685
(Pearson $r=-.39$, $p<.01$, df=43), and between age and the amount of K2 interactions   686
(Pearson $r=-.39$, $p<.01$, df=43). The findings indicated that older adult students were   687
less likely to perform information-sharing interactions (K1) or egocentric-elaboration   688
interactions (K2).   689

Conclusions and discussions   690

Encouraging identity presence   691

As Paltridge (2006) contends, identity plays an important role in written discourse, as it   692
does in spoken discourse. Our discourse analysis of discussion transcripts from the seven   693
online courses indicates that identity presence, across content disciplines and course   694
contexts, is associated with knowledge-relevant interaction, response-elicitation, and   695
followership in on-line discussions. Qualitative observation and interview data in this   696

study suggest that online discussions with identity presence are associated with more   697
follow-up participation in discussions. In other words, discussion threads with identity   698
presence tend to be more dialogic.   699

Discourse analysis with online discussions indicates that students in online learning   700
space are capable of expressing diverse identities that reveal their life experiences and   701
sociocultural insights. However, the identity presence is not prevalent in all discussion   702
posts. This finding has confirmed the reports of prior research that in spite of the potential   703
of online forums for facilitating learner identity development, online learners are not active   704
about expressing identity and hence social presence is lacking in online courses   705
(Gunawardena and Zittle 1997; Hughes 2007; Tu and McIsaac 2002). A critical reason   706
for this phenomenon, as informed by qualitative interviews and observation, is that learners   707
are not assured that a post with identity presence is right and proper within certain online   708
course settings. Identity presence was low in online courses in which discussion tasks were   709
not connected to social and cultural experiences/views, or instructors did not explicitly   710
encourage experience-oriented knowledge building. These findings are consistent with the   711
arguments by scholars that identity is expressed or constructed according to the context   712
(Butler 1990; Duff and Uchida 1997; Hughes 2007).   713

Online educators should explicitly encourage and guide identity expression within   714
online interactions. A solution is to create a communication protocol on how to perform   715
interactions that are both knowledge relevant and identity present. Instructors can also   716
reward or highlight meaningful online discussion threads that contain identity presence.   717
Another potential solution is to increase the social and identity presence of online   718
instructors (rather than their academic presence as evaluator or wrapper) in online   719
discussions. A recent study on effective online teaching presence (Ke 2010) reported that   720
the social and identity presence of online instructors (e.g., through sharing stories,   721
background information, or personal experiences) significantly predicts perceived learning   722
success and satisfaction of adult students, especially those who are older or minority.   723

Online instructors should also design an activity structure that reinforces identity presence.   724
For example, Michinov, Michinov, and Toczek-Capelle's study (2004) suggest that a well-   725
designed group activity structure, such as a categorization of learners in one group and the   726
intergroup comparison, can enhance sense of belonging and hence identity presence in online   727
learning settings. Laffey et al. (2006) argue that *social ability* (i.e., social presence and social   728
navigation) should be constructed and evaluated as a key interface dimension in the online   729
learning environment design to create a supportive climate for identity presence.   730

Identity presence in social learning interactions, not social interactions   731

In this study, posts with identity presence elicit more responses and have a better chance to   732
be knowledge-relevant in nature. These findings support the assertion that well-represented   733
identities in an online learning situation are conducive to learning processes by motivating   734
student engagement and reinforcing the sense of trust and connection among learners   735
(Bandura 1997; Chester and O'Hara 2007; Freeman and Bamford 2004; Hirano 2009;   736
Wenger 1998). However, identity presence is not significantly correlated with social   737
interaction in this study, which fails to acknowledge that identity presence encourages   738
socializing. Our findings suggest that identity presence emerges with relationship-based   739
learning interactions rather than interactions solely for the purpose of socializing (coded as   740
S). Interactions for the purpose of socializing do not encourage the development of well-   741
articulated identity presence. Relationship-based learning interactions, on the other hand,   742
can be facilitated in ways that encourage deep sharing of values, experiences, and opinions.   743

Hence it is more likely that learners will include aspects of identity and compare and 744
contrast epistemologies and worldviews around knowledge building. This observation is 745
congruent with Michinov, Michinov and Toczek-Capelle's finding (2004) that identity 746
salience is associated with more task-relevant interaction patterns. A related pedagogical 747
suggestion for online instructors is to emphasize the integration of the social (e.g., identity 748
expression) and cognitive presence (e.g., critical thinking) in facilitating and evaluating 749
written discourses in online learning settings. 750

Identity presence for higher-level, collaborative knowledge building? 751

There is not enough evidence suggesting that identity presence is associated with 752
collaborative, higher-level knowledge constructive interactions. Most experience-753
intertwined posts focus on lower-level information sharing or egocentric elaboration. They 754
are not oriented toward summarizing multiple perspectives to provide a higher-level idea or 755
new knowledge, which is categorized as the higher-level knowledge building (coded as K3 756
and K4 in this study). It seems that online students are more concerned with expressing 757
their own views and beliefs (i.e., self-identity) rather than interpreting peers' identities. In 758
other terms, there is no significant effort contributed by students to negotiate a shared 759
identity and then develop new or altered conceptions and practices, as suggested by 760
Wenger's (1998) notion of identity development in a learning community. 761

It is critical for instructors and educational researchers to design online interaction 762
contexts to support identity presence in a manner that promotes high-level knowledge 763
construction rather than simply sharing experiences and individual insights. Wenger (1998) 764
and Giddens (1991) argue that the negotiated process of identity through collaborative 765
participation in learning is a highly reflexive process. Online learners should be encouraged 766
to formally stand back and critically review not only their own but also their peers' 767
communications and identity expressions. The analysis of the online courses in this study 768
indicates that only a few online instructors have designed interaction tasks or topics that 769
enable the expression of students' diverse experiences, views, and hence identities; even 770
fewer of them have purposefully facilitated a negotiated, reflexive process in online 771
discussions to encourage students to connect their self-concepts in relation to the desired 772
conception or practice in a course-based online learning community. A potential design 773
strategy that connects identity presence with collaborative knowledge building is the 774
specification of clear roles or responsibility expectations for the learner-communicators in 775
online discussions. For example, we can assign learners into the roles of speaker, listener, 776
starter, and *wrappe*r during online discussions and encourage them to shift the roles and 777
perspectives to perform collaborative, higher-level thinking processes (Hara et al. 2000). 778

Future of research 779

Extended from the above findings, a speculation is that online students may need to not 780
only express self-identities but also co-construct a congruent, collective/community identity 781
to achieve collaborative knowledge building. This speculation is grounded in the views of 782
Wenger (1998) and Hughes (2007) who state that a community identity should be created in 783
an online learning situation and learners should align their identity presence and patterns of 784
interaction with the community identity. Future research, therefore, should examine whether 785
and how identity congruence can be achieved among diverse identity groups within an 786
online course. Additional research should examine whether a congruent identity will predict 787
collaborative, higher-level knowledge building. 788

The study findings shed light on the role of pedagogical contexts of online interaction in mediating learners' identity presence. Another potential mediator variable of online identity presence is the technological contexts of online courses. Prior research has suggested that computer-supported communication and collaboration tools or media that support context awareness or nonverbal language can reinforce identity presence (Amelung 2007; Paulemon 2008). A future study should focus on analyzing the role of online communication media used by online courses in mediating the presence of identity.

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