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# No One Ever Steps in the Same Discussion Twice: The Relationship Between Identities and Meaning

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**Abstract:** The concept of identification is a relational construct; that is, identities are not static but rather negotiated based on available material and symbolic resources. However, we know relatively little about how identities play a dual role when students collaborate. The aim of this paper is to explore this process through multiple case studies: we aim to explore how identities are enacted and used in making personal sense and understand the content knowledge, while at the same time we are interested in how this process can take a form of renewing process in the sense that the identities enacted are themselves changed, transformed or re-negotiated. Our results show that due to its dual role, identities mediate collaborative learning not only because knowledge is constructed in relation to identities but because online selves are articulated and constructed in relation to knowledge construction.

**Keywords:** identification, identity, I-position, online learning

## Introduction

Learning is simultaneously an individual and social process (Brown, Collins, & Duguid, 1989; Cole, 1996). It is the material, symbolic, and intellectual reconstruction of self; a process of discovering and articulating oneself in relation to others. In other words, it is a process of knowing the self through mediation between self and others. What mediates between the self and the others – between the individual and social – is referred to as identification. Thus, the process of education is the process of constructing and shaping individuals' identification (Holland, Lachicotte Jr, Skinner, & Cain, 1998).

The concept of identification (or identities-in-practice) is a relational construct; that is, identities are not static but rather negotiated based on available material and symbolic resources. It is through these negotiations that individuals identify themselves or are identified with various cultural categories within particular situations (Buckingham, 2008; Hall, 1996). In this sense, identification has both individual and social aspects by which individuals perceive, categorize, situate, and understand themselves and those around them. Such an understanding is particularly important since it “reconceptualizes learning from an in-the-head phenomenon to a matter of engagement, participation, and membership in a community” (Nasir & Cooks, 2009, p. 49). Indeed, much learning sciences research has long demonstrated that sense-making has profound impact on collaborative learning practices (Holland et al., 1998; Stahl, 2006). Despite its significance for group work, however, we know relatively little about how identities play a dual role when students collaborate. In particular, we do not exactly know how identities are utilized for sense-making, and in return how the sense-making process leads to re-negotiations of identities. The aim of this paper is to explore this process.

## Background and rationale

This research is nestled at the intersection of three related theoretical frameworks: sociocultural learning theories, Dialogical Self theory, and the concept of identification. At the center of this intersection is the idea that each individual has a unique perspective through which they make sense of the world around them and create their own narrative (Cole, 1996; Ochs & Capps, 1996; Wortham, 2001). These narratives, then, constitute “boundary structures” for learning since they influence the way people understand and act in the world. Similar accounts can be found in more recent studies. For example, Rajala and Sannino (2015) use the notion of “personal sense” which allows conceptualizing task interpretation within the wider perspective of the students' life and interests. According to the research reported in their work, it is important that task resonates with the reality of the student's own life; otherwise, it is likely that students interpret the task as uninteresting or irrelevant, which can create discrepancy between sense and meaning. Their study concludes that for a subject, meanings exist only in relation to personal sense. Such a relationship between meaning and sense also provides possibilities for the re-negotiation of one's identities and “being, thinking and doing” (Akkerman, Admiraal, & Simons, 2012). Indeed, our previous works have already illustrated that drawing on personal experience (i.e. professional background or personal interests) to make sense of the subject-matter provides opportunities for individuals to advance personal and collective understanding (Öztok, 2013, 2014; Arvaja, 2015).

Dialogical Self theory (Hermans, 2003) is associated with Bakhtin's (1984) concept of voice, especially multivoicedness. It provides a tool for understanding how different perspectives manifested in identities (or I-positions) are embedded in the person's self. An "I-position" of a person, according to this theory, "is a particular voice that has been internalised in one's self-presentation" (Akkerman et al., 2012, p. 230). Consequently, the self is diverse in the sense of *multiple* I-positions that can be used in expressing oneself (e.g., I-position or identity of a professional, student, mother or hard worker). The concept of multiplicity can help with understanding peoples' varying positions and identities. For example, in addition to a voice or identification of a student, students' also have more personal voices, inner voices, containing personal and intimate experiences, such as an assertive voice or passive voice that also shapes their sense making as a student (Worham, 2001). Consequently, when people are talking or thinking, they often integrate, contrast, and move between different I-positions (Hermans, 2003).

The concept of identities-in-practice implies an interrelationship with the broader collective or social group (Buckingham, 2008; Holland et al., 1998). In particular, identity is something that is unique to each individual due to unique personal biography (Buckingham, 2008; Linell, 2009) while at the same time, it refers to a collective sense due to a sense of belonging (Hall, 1996; Wenger, 1998). Research has illustrated that individuals often speak the words of the groups or society to which they belong; therefore, the social world has an important role in the construction of self: it mediates the voice of traditions, generalized others, institutions, groups, communities, colleagues, relatives and friends through the dialogical participants (Hermans & Kempen, 1993; Linell, 2009). In this way the voices of others become woven into what one says and as part of one's thinking, reasoning and acting, as part of one's different identities or I-positions. According to Worham (2001) "speaking with a certain voice means using words that index some social position(s) because these words are characteristically used by members of certain group(s)" (p. 38). Therefore, the self is not a pure intra-psychological process but a relational process that includes the social environment (Akkerman & Meijer, 2011).

The concept of identities-in-practice also connotes discontinuity in its nature; that is, different identities, identifications, or I-positions changes according to the people and type of situations one encounters (Akkerman & Meijer, 2011; Hermans, 2003). This is what Goffman (1959, 1983) calls impression management: the ways in which people represent themselves and engage with others is a socially situated process. The concept of impression management suggests that particular situations evoke particular parts of the self and that identities enacted in the situation depend upon the presence of others in the context. Therefore, the content of what is said does not only reflect person's attitude towards the object at hand but also person's attitude towards preceding and succeeding actions and identities of others (Akkerman & Meijer, 2011). Even though, the presence of 'real' others influence identities evoked in the situation, dialogical approach also stresses the importance of generalized others, "virtual" others, or different third parties evoked by a situation, and their influence on the identities enacted (Linell, 2009). In a Bakhtinian sense, the *other* is pervasive even though the person is alone (Hermans, 2003). Indeed, our previous work has demonstrated how contextual, symbolical and material aspects have an influence on the identities represented and enacted (Oztok, 2014). For example, a text used as a learning material can be regarded as a third party, a voice, that evokes enacting different identities relating to one's professional, personal, national or political self or identification (Arvaja, 2015). These identities, in turn, are used for making sense of the text or related discussion (Oztok, 2013) or the texts are used in making sense of one's identities (Arvaja, 2015). Texts may invite different aspects of the self into dialogue within the self (internal dialogue) or with others (external dialogue).

Our ultimate aim is to study a two-way process: we aim to explore how identities are enacted and used in making personal sense and understand the content knowledge, while at the same time we are interested in how this process can take a form of renewing process in the sense that the identities enacted are themselves changed, transformed or re-negotiated. In this two-way process not only knowledge is co-constructed through different identities but also identities are negotiated, and therefore, a change may also occur at the level of one's perspective of the world and of the self.

## Current research

We demonstrate our conceptual approach through multiple case studies (Creswell, 2006). Two purposefully selected cases (named hereafter Case 1 and Case 2) comprise data from two different online courses that took place in different universities, and provide an in-depth exploration of a certain phenomenon in a given context. Each case focuses on the different aspects of the phenomenon at question while keeping the concept of identity at the center of analysis; Case 1 probes how identities are enacted in making personal sense whereas the Case 2 exemplifies how this process enables identities to be renegotiated. Next we describe the contexts, subjects, data, and analytical approaches used in the studies.

Case 1 is based on a fully-online graduate level education course offered at a large Canadian research university. Typically, these graduate courses have students from diverse historical and cultural backgrounds, from

different geographical locations, and of various ages and professions. The course comprised twelve modules, each corresponding to one week. Students were asked to introduce themselves (create their profile pages) and meet with their peers (read and comment on others' profile pages) in the first week and submit their final paper in the last week. In each module, one or two students acted as moderators: they facilitated discussion throughout the week, kept discussions on track, and offered a summary of the week's issues; they provided opportunities for sustained discourse, increased interaction, and rich discussions. The online discussion occurred asynchronously; the environment does allow synchronous communication through instant messaging, but such activity was not mandatory (nor was it a major communication tool) in this course. 14 students enrolled in the course and worked together as a single group throughout.

In order to illustrate the variety of identification traits individuals manifest, participants' profile pages (personal pages in which students create their online existence by introducing themselves with their own words and a picture or avatar) were analyzed. An online persona is created for each participant to materialize the salient identification traits in their profile pages. Considerable attention is paid to choosing individuals who use a variety of identities and selected four individuals who maximize the exploration of the phenomenon. Then, the research team analyzed the notes in these threads semantically (Fairclough, 2001) with three different lenses: (1) the use of identification, (2) the process of knowledge construction, and (3) the relationship between the two. The use of identification is analyzed simply with probing "who says what" in language-in-use. The analysis of language-in-use reveals how identification traits are manifest in ways of saying, doing, and being: "to understand anything fully, you need to know who is saying it and what the person saying it is trying to do" (Gee, 2011, p. 2). Since the language-in-use is linked with the role that identification traits play in mediating experiences among individuals, "who says what" is critical for understanding the otherwise hidden intersections between identification, situated meaning-making, and knowledge construction in online learning environments.

Case 2 is based on a three-month online science philosophy course for health science students and professionals at a university in Finland (see Arvaja, 2015). The course consisted of six learning tasks, all of which dealt with historical approaches in the philosophy of science. Each task was a reasoning task where the students were first supposed to read a given text (or texts) dealing with a particular approach within the philosophy of science. In reasoning about the task, the students were asked to use their prior experiences or conceptions about their own field of science or work as resources in interpreting the texts. Based on these tasks, each of the students was first supposed to write an individual reasoning text. In the next phase, the students posted their individual writings onto a shared web-based (asynchronous) discussion forum, and their task was first to read each other's writings and finally to have a shared discussion based on these.

For the purposes of this study one student, Aino, was selected for the analysis to exemplify a change in her I-positioning. The analysis leaned on dialogical approach to narrative self-construction (Wortham, 2001). According to this view the self is constructed through relationships with others and emerges through constant interactional positioning with respect to others in daily life. Hence, according to Wortham (2001), the self (and different I-positions within) is narratively constructed through positioning different voices in the social world in relation to each other, and by positioning oneself with respect to these voices. Data consisted of Aino's individual writings and asynchronous discussion postings. From Aino's discourse, two layers of positioning, that is, voicing and evaluating (ventriloquation), were analyzed. The process of voicing (i.e. characterizing oneself and others) draws on positions and ideologies from the larger social world, as the others described come to speak like recognizable types of people with their related characteristics, viewpoints or ideologies (Wortham, 2001). In ventriloquation (Bakhtin, 1984) one evaluates the other voices by differentiating or identifying and/or by distancing or standing closer (e.g. taking a critical or supportive stance) with these voices.

## Findings

### Case 1: Identifications enacted for making personal sense and co-constructing knowledge

The thread being analyzed here is a slice from an online asynchronous discussion among a cohort of students. While each student in this cohort is included in the analysis, the excerpt below focuses on how four purposefully-selected individuals (as explained above) utilize their identities when they collaborate.

Three students articulated their perspectives before Judith joined the discussion. The third note is worth quoting at large as it sparked an exchange of ideas around the issue of cultural diversity. Enacting her professional identity, a student wrote:

... I read [the weekly reading] differently. Here is why. I have worked with students from different cultures, students who are first generation Canadians whose parents have migrated

here; students whose parents are asylum seekers; students with a range of learning difficulties. I am convinced that teachers and educators have negative assumptions about these students – as if they know what's needed for them. I am not sure if diversity can ever lend itself to equality in classrooms because teachers don't know what they are dealing with. Do you think students expect that teachers will understand their cultural differences and requirements?

The rhetorical question at the end of this note became a focal point from which others departed by articulating their perspectives and experiences. Judith was the first to react; she acknowledged that teachers' beliefs about cultural differences are important:

I agree, [anonymous student 1], that teachers have assumptions about students. ... In my experience, it is very difficult to change other teachers' beliefs about cultural differences. It is because the term 'cultural diversity' is often misused (especially by stakeholders) – as though it is more important that teachers, educators, school principals, the director of education, etc. say that they have well thought out “cultural diversity” ... than they actually understand it. ... This is the reason why teachers have misconceptions about their students' cultural needs. In my experience, teachers are just worried about ticking the boxes off in official reports when it comes to cultural diversity.

Similar to the student in the previous note, Judith enacted her professional identity. However, while she agreed with the issues identified in the previous note, she also provided an alternative perspective. As a teacher, Judith believed that cultural diversity means more than addressing teachers' negative assumptions. As she continued articulating her understanding, Judith started enacting her maternal identity, explaining that an authentic learning context requires active dialogue between parents and teachers:

... I think that it is not only the responsibility of the teacher but also the parent to help establish an equal learning environment for all students. As stated in previous posts by others and you, as parents we want to make sure nobody is being left out, we want to make sure we are being inclusive and doing our best to help teachers to better accommodate our kids' needs. How does a teacher provide authenticity just by herself? How does a parent expect teachers to do everything?

Enacting both her professional and maternal identity, Judith identified a source of disagreement based on her experience. It is through this type of identification that she was able to provide a counterargument; that is, the tension between diversity and equality is not only about teachers' attitudes but also requires parents' active involvement. Manu responded to this message, also enacting her maternal identity along with her teacher identity. She built on Judith's perspective by further elaborating her experience:

I totally agree with you both – though you have different points on teachers. I appreciate the usefulness of taxonomies in general, but think human nature is too messy to be classified. ... [F]or managers and principles inclusivity is about numbers, but teachers have nothing to do with that. Diversity is not about numbers ... As a teacher, when I think of diversity what comes to my mind is students who not only have different learning needs but also [students] who come from diverse social backgrounds. Learning diversity encompasses diverse learners with different academic needs, such as students with disabilities and English language learners – such as my kids. But then, I see a big mismatch between the articles and my kids' schooling. I wonder if the authors of these articles have any kids or ever taught at schools. Judith is right in a way, how can a teacher do it all?

Manu acknowledged both sides' perspectives on diversity and the capacity of teachers to recognize and appreciate diversity in the classroom. By so doing, she attempted to clarify differences between Judith and Anonymous Student 1, and tried to link the points of disagreement between the two. She then incorporated her understanding of diversity based on her experience as a teacher and a mother. Manu continued:

Maybe a different approach would be to clarify to what extent learning differs by calling it culture. Although we can call on a number of stock words – nationality, race, gender, ethnic group, social-class, sexual orientation, etc, etc, etc – how they impact on learning is not

straightforward. One thing is for certain; students differ in one way or another, but is it enough to make claims on learning? Whether it be race, class, gender or language this thing we know as culture helps give students identity. That's all. Let's agree on that.

Tackling the relationship between culture and learning, Manu suggested a new lens for understanding the disagreement and started to develop her own hypothesis in order to unite strands of consensus. Then, she continued:

But [the weekly readings] argue that it has an impact on performance, learning styles and learning rates, learning experience and expectations, attitudes and achievements. Isn't it downright wrong? How could you categorize people so easily based on the ideals of culture? This is an open-ended question for you all; can you simply categorize people in your daily life just like that? Let me tell you; [the weekly readings] assume culture [to be] monolithic. Like the principles and managers you mentioned above, and the ones that I've been working with so far, I believe [the authors] try to ensure they 'deal with' the diversity. They just idealize it; it is far from real-life situations. Simple is that...

Manu tested her own hypothesis by providing rhetorical answers to her own questions based on her experience as a teacher. She suggested that the weekly readings, perhaps, offer an idealized understanding of diversity and thus do not reflect real-life situations.

Two other students replied and agreed with Manu, enacting their professional identities. Ken was the third replying back to Manu. He enacted his ethnic and professional identity, and picked up on Manu's new proposal of the lack of congruence between idealizations and real-life situations in learning and teaching. He tried to reconcile differences among them by suggesting that as a teacher, he believes readings are “just idealized scenarios” and that there are “unavoidable power tensions between cultural groups”. Ken continued enacting his professional identity:

I'd agree, culture is difficult to quantify, in addition, students differ so much within their respective cultures so it is not unified. The whole aspect of the impact of culture on teaching and learning, how we accept, accommodate and celebrate student diversity is a fascinating element of our day-to-day job as teachers. This is what we all agree so far.

Ken's cohesive view of disparate ideas led others to build on agreed facts, transitioning from debating to knowledge construction. Chun-Li was the second one to reply. She enacted her ethnic identity and further discussed “the idealized scenarios” by providing examples from her learning experience:

I did my MA in UK and I felt more Chinese than[sic] ever. ... But it doesn't mean that I was quiet or shy. Idealized scenarios? Yes! But then you are also right Ken that all of my teachers, lecturers, instructors, professors – what ever you call them – accommodated differences. But how do they accommodate? I think we have to understand what we mean by difference. Difference or diversity is not about where we were born or what kind of skin color we have. Diversity or difference is not about geographical location. Where I was born, where I studied, and where I am right now are completely different locations. So, where do I fall into?

Chun-Li built on Ken's summary and exemplified the current understanding based on her experience, testing the proposed synthesis. She continued:

... again, how do teachers accommodate these differences? Maybe [reading 1] offers an answer for dealing with different cultural groups: an ‘inclusive’ approach, which not only incorporates cultural perspectives from minority groups but also challenges the dominant model. I think this explains what I faced when I was in UK. I found that the lecturers were good at allowing individuals to express themselves. In my experience this allowed inclusivity because cultural practices are often shaped by individuals and their own dynamic. I look forward to future discussion.

Chun-Li was able to draw from Ken's summary, and bring together her experience and the readings to construct knowledge. According to Chun-Li, “if diversity is thought of as a matter of individuality, then the issue of the

inclusion or exclusion can be better understood". Ken enacted his student identity in his response and noted the importance of a learning community:

As classmates we want to make sure nobody is being left out from the discussion, we want to make sure we are being inclusive in all our discussions and activities and doing our best. Therefore effort also needs to be made on the students part, on our part. Perhaps, we can consider trying what [reading 1] suggests and help each other, especially those who are excluded. In sum, I think the key is being aware of any exclusiveness and making the effort to establish a community.

This particular note from Ken received great attention from his peers (indeed, this is the most *replied-to* note throughout the course according to the automated-log data) and constituted a point of agreement for the whole class.

Summarizing the weekly discussion and affirming Ken, Manu synthesized that "educators should teach their students ways to foster diversity in all its forms (ethnic, sexual, gender, learning styles, etc.) and create a sense of community to create inclusive educational contexts". Judith built on this and summarized that "most of us have the best of intentions as teachers and parents, but as all of you put it so well, life... happens!".

## Case 2: Identities re-negotiated through the process of making personal sense

This case demonstrates another aspect on the role of identification and identities in learning. It demonstrates a situation when I-positioning itself is re-negotiated as a result of engaging in online discussions and reading of course material. Examples analyzed here are drawn from one student, Aino, who is studying part-time in the online course while also working full-time as a physiotherapist. Next example demonstrates how encountering a different voice or perspective in contrast to Aino's own leads to internal dialogue (Linell, 2009):

Aino: "In this week I've been reading texts from web and on paper, and frankly speaking I feel that my head is somewhat overloaded. One doesn't really know anymore what to think of what issue, and now one is questioning one's own work and science and research and whatever it was and I cannot make any sense of this, there are simply too many ideas. So I decided to look once more at this 'what is science' issue, on the basis of Niiniluoto's article, because it bears most relevance to me personally. I have always considered myself a type very much oriented to science and especially to natural science, and being somehow schematic and mathematical. For this reason it feels somehow overwhelming to question everything now. Admittedly at the same time really interesting, too. What's hard for me is that one can keep elaborating the idea endlessly and never reach a solution."

While voices are drawn from the complex social world, they get engaged in a dialogue that involves multiple perspectives and often conflicting positions (Wortham, 2001). A double-voiced discourse often involves "a conflict". This is what happens in the example above. Aino's inner tension and confusion she is facing when reading the philosophical course material is explicitly expressed in her discourse: "I feel that my head is somewhat overloaded. One doesn't really know anymore what to think of what issue... it feels overwhelming to question everything now". This results in "questioning one's own work, science and research". Aino voices and characterizes herself as "a type oriented to natural science", and it seems that from that position she is facing a challenge when being introduced with fundamental questions of the essence of science. Encountering a different view challenges Aino's current way of seeing and understanding. It seems that her orientation to natural science (according to her constant characterizing and identification) represents a dominant voice adopted from authorities in her working and study environment. According to Linell (2009), an authoritarian voice is often like cultural assumptions that the individual does not question and once the ideas of this voice are internalized it often becomes a kind of self-discipline. However, it seems that when Aino is introduced with texts that offer different perspectives or alternative conceptions (i.e., different ontological and epistemological voices of science) her beliefs pertaining to her "natural science oriented" position becomes questioned. This becomes more explicit as the course proceeds. Aino starts questioning the dominant authoritative voice behind her thinking in her discourse with other students:

Aino: Yes, indeed, this is precisely the way I see it in physiotherapy and for my own work. The problem just lies specifically in that, for example, at work people have too high regard for the views of natural science. One has to measure mobility and muscular strength etc. and compare

the results and assess effectiveness in that way. [...] Another issue I face at work is compilation of statistics. If I spend time at the ward discussing with a patient, talking about goals and motivation, listening to the person and evaluating her emotional state, without performing actual physiotherapy i.e. muscular or mobility or functional exercises, so can I then record the visit as a physiotherapeutic visit? As I didn't actually perform any therapy, but as much time was spent and after the discussion the patient is likely to be more motivated to engage in rehabilitation and more cooperative when we start actual training. [...] There's only the problem that I can't really mark on my daily nursing record sheet just that 'discussed about therapy'. Then one will cheat and take say a stretching or a quick inspection in the end. That's how it is; the emphasis is too much on natural science. :)"

While in the beginning of the course Aino has voiced herself as "considered myself a type very much oriented to science and especially to natural science, and being somehow schematic and mathematical" repeatedly, in this example from the end of the course we can see that she distances herself from that I-position. In her discourse she places this natural-science oriented voice more to an external voice than as a voice of her own e.g., "at work people have too high regard for the views of natural science". In this process of positioning (Wortham, 2001) Aino distances and differentiates her voice from the authoritative voice in the workplace and the values and ideologies it represents. Aino argues against the dominance of the natural sciences and describe work practices that reflect and support this dominance. Her redefined I-position as a physiotherapist is in conflict with the prevailing practices such as compilation of statistics. Aino's internal dialogue reveals a struggle between her professional/personal voice and the authoritative voice in her work community. In other words, Aino is engaged in a double-voiced discourse (Wortham, 2001) between her own I-position which makes personal sense (Rajala & Sannino, 2015) and the authoritative voice she recognizes in her work and related science practices. Her redefined professional I-position as a physiotherapist does not fit with the practices in the workplace and ideologies behind these practices. Through her redefined professional position Aino interprets her experiences in a new light through a new frame of reference which acknowledges the patient as a whole: not only the body; anatomy and physiology but also the mind; feelings, motives, and values in inter-personal interactions. A change in Aino's I-position is also explicitly stated in her last writing:

Aino: "At least for me this course has taught a quite different way of thinking for doing research and broadened my approach to science in general. It seems that I started from Sharply positivistic notions and ended up in a fairly broad and open view on the importance of qualitative research and human sciences, for example. It's good to stop and reflect on things and their meanings every now and then. At work one is often measuring just for the fun of it and it bears no significance, after all, to the patient let alone for science. Actually it may have been the most important lesson for me in this course; to consider what really significant science is. It is by no means about angle degrees and gauges but consideration of causal relationships more broadly and consideration of humans and interaction. Although it sometimes feels that thinking was really tangled, in the end one must say that this has been a good process."

Aino's statement clearly demonstrates how the things discussed, read and written in the course had an impact on her changed I-position. Aino implicitly states that what I think now in relation to science is different of what I thought before, therefore indicating also a re-negotiation of a scientific I-position. Scientific paradigms can be seen as collective voices which function as social positions in the self (Hermans, 2003). Such positions or voices are expressions of historically situated selves that are constantly involved in dialogical relationships with other voices. At the same time they are constantly subjected to differences in power as in this case where the dominant natural science position in the workplace is in contrast with more holistic position (minor position). It seems that exposure to the diversity and even opposed voices through the different approaches and perspectives in science challenges and changes Aino's scientific I-position. This change is further applied in seeing and thinking as a physiotherapist i.e., change in Aino's professional I-position.

## Discussion and conclusion

This paper aimed to demonstrate the dual role identities play in (collaborative) learning. The underlying argument was that individuals construct, position, and understand themselves and those around them in relation to their identifications or I-positionings (Hall, 1996; Wortham, 2001). When we foregrounded identities-in-practice for analyzing and interpreting collaborative learning, the dual role of identities became clear: (1) identities are enacted and used in sense-making and understanding the content knowledge, and (2) this sense-making process can take



a form of renewing process since the identities enacted are themselves redefined and changed. Identities are of paramount importance for collaboration when learning is regarded as both social and individual process; as a matter of engagement and participation in a community. Our results show that due to its dual role, identities mediate collaborative learning not only because knowledge is constructed in relation to identities but because online selves are articulated and constructed in relation to knowledge construction.

## References

- Akkerman, S. F., Admiraal, W., & Simons, R. J. (2012). Unity and diversity in a collaborative research project. *Culture & Psychology, 18*(2), 227–252. <http://doi.org/10.1177/1354067X11434835>
- Akkerman, S. F., & Meijer, P. C. (2011). A dialogical approach to conceptualizing teacher identity. *Teaching and Teacher Education, 27*(2), 308–319. <http://doi.org/10.1016/j.tate.2010.08.013>
- Arvaja, M. (2015). Experiences in sense making: Health science students' I-positioning in an online philosophy of science course. *Journal of the Learning Sciences, 24*(1), 137-175.
- Bakhtin, M. M. M. (1984). *Problems of Dostoevsky's poetics*. (C. Emerson, Trans.). University of Minnesota Press.
- Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–42.
- Buckingham, D. (2008). Introducing Identity. In D. Buckingham (Ed.), *Youth, Identity, and Digital Media* (pp. 1–22). Cambridge, MA: MIT Press Journals.
- Cole, M. (1996). *Cultural Psychology: A once and Future Discipline*. Cambridge, MA: Harvard University Press.
- Creswell, J. W. (2006). *Qualitative Inquiry and Research Design: Choosing among Five Approaches* (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- Fairclough, N. (2001). *Language and Power* (2nd ed.). London, UK: Longman.
- Gee, J. P. (2011). *An Introduction to Discourse Analysis: Theory and Method* (3rd ed.). New York, NY: Routledge.
- Goffman, E. (1959). *The Presentation of Self in Everyday Life*. New York: Anchor.
- Goffman, E. (1983). The Interaction Order: American Sociological Association, 1982 Presidential Address. *American Sociological Review, 48*(1), 1–17. <http://doi.org/10.2307/2095141>
- Hall, S. (1996). Who Needs “Identity”? In P. du Gay & S. Hall (Eds.), *Questions of Cultural Identity* (pp. 1–17). Thousand Oaks, CA: SAGE Publications.
- Hermans, H. J. M. (2003). The Construction and Reconstruction of a Dialogical Self. *Journal of Constructivist Psychology, 16*(2), 89–130. <http://doi.org/10.1080/10720530390117902>
- Hermans, H. J. M., & Kempen, H. J. G. (1993). *The dialogical self: Meaning as movement*. San Diego, CA, US: Academic Press.
- Holland, D., Lachicotte Jr, W., Skinner, D., & Cain, C. (1998). *Identity and Agency in Cultural Worlds*. Cambridge, MA: Harvard University Press.
- Linell, P. (2009). *Rethinking language, mind, and world dialogically: Interactional and contextual theories of human sense-making*. Charlotte, NC: Information Age Publishing.
- Merriam, S. B. (2009). *Qualitative Research: A Guide to Design and Implementation* (3rd ed.). San Francisco, CA: Jossey-Bass.
- Nasir, N. S., & Cooks, J. (2009). Becoming a Hurdler: How Learning Settings Afford Identities. *Anthropology & Education Quarterly, 40*(1), 41–61. <http://doi.org/10.1111/j.1548-1492.2009.01027.x>
- Ochs, E., & Capps, L. (1996). Narrating the Self. *Annual Review of Anthropology, 25*, 19–43.
- Oztok, M. (2013). Tacit knowledge in online learning: community, identity, and social capital. *Technology, Pedagogy and Education, 22*(1), 21–36. <http://doi.org/10.1080/1475939X.2012.720414>
- Oztok, M. (2014). Social presence and social absence: socio-cultural production of self in online learning environments. Presented at the The 15th Annual Meeting of the Association of Internet Researchers, Daegu, Korea.
- Rajala, A., & Sannino, A. (2015). Students' deviations from a learning task: An activity-theoretical analysis. *International Journal of Educational Research, 70*, 31–46. <http://doi.org/10.1016/j.ijer.2014.11.003>
- Stahl, G. (2006). *Group Cognition: Computer Support for Building Collaborative Knowledge*. Cambridge, MA: The MIT Press.
- Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity*. Cambridge, UK: Cambridge University Press.
- Wortham, S. E. F. (2001). *Narratives in action: A strategy for research and analysis*. New York, NY: Teachers College Press. New York, NY: Teachers College Press.