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Co-development patterns of knowledge, experience, and self in humanistic knowledge building communities

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Abstract
This study attends the learning sciences to the work of Carl Rogers and his person-centered therapy and education. Building on claims that knowledge building communities are idea-centered, as well as recent research in this area that has looked at learning holistically, we examine the notion of a 'humanistic knowledge building community' as an integration of idea-centered classroom knowledge building communities with Rogerian person-centeredness. We investigated an innovative course for graduate students in an educational technologies program that both inspired and informed this conceptualization. Our grounded theoretical approach combined with a microanalysis of one student revealed five patterns that knowledge, experience, and self can co-develop in a humanistic knowledge building community.

Keywords Humanistic education · Idea-centered · Knowledge building communities · Person-centered · Sociocultural

Introduction

The classroom learning community approach has been one of the most significant contemporary developments in educational instruction (Adams Becker et al. 2016; Scardamalia and Bereiter 2014). Over the past several decades, considerable knowledge has accumulated and continues to grow as to the ways that these classroom learning communities should be designed (Hod et al. this issue). Knowledge building communities, an exemplary model of classroom learning communities, have been idea-centered, with a focus on having participants learn as they take responsibility over advancing their collective knowledge (Bielaczyc et al. 2013; Scardamalia 2002). In recent years, research has begun to look at the interplay between students' knowledge, the activities they engage in, and their identities (e.g., Heyd-Metzuyanim and Sfard 2012; Herrenkohl and Mertl 2010). With an eye on contributing to research on knowledge building communities in this direction, in this

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article we draw on data from a unique classroom knowledge building community that introduces person-centered activities—rooted in the work of Carl Rogers—to its design. The purpose of this article is threefold: First, to draw out the differences between idea- and person-centeredness based on their unique academic lineages; second, to show how their integration is without precedent even though several lines of research address different aspects of it; and third, to elucidate how their integration leads to a phenomenon we call a 'humanistic knowledge building community', which we subsequently instantiate in a case study of a learner.

Idea- and person-centeredness

This article explores the phenomenon we call a 'humanistic knowledge building community'. The type of learning found in such learning communities involves the integration of idea- and person-centeredness. In this section, we first elaborate upon these two approaches to show their relatively distinct academic lineages, their theorized learning mechanisms, their commitment to different goals, and their typical activities designed to draw out these goals. Based on these, we propose a conceptual framework that shows different ways that the co-development of knowledge, experience, and self within a humanistic knowledge building community can occur.

Idea-centeredness

For a large part of the twentieth century, American education was broadly described as falling into two categories: student-centered or teacher-centered (Chall 2000). The teacher-centered category consisted of traditional or instructionist pedagogies; the student-centered category was associated with progressive, open, and constructivist education. This was based on the belief in the good individual seeking to reach his or her potential.

In the late 1980s, in the midst of a "sociocultural turn" of research on learning, a third way was being articulated. In comparison to viewing learning based on a transmission of knowledge (teacher-centered) or knowledge acquisition (student-centered) metaphor, learning became conceptualized as a process of transforming participation (Rogoff 1994; Sfard 1998). Rooted in Vygotsky's mediational view of human–environment interaction (Vygotsky 1978), a number of related perspectives were being advanced, such as mind-as-action (Wertsch 1998), distributed or socially shared cognition (Resnick et al. 1991; Salomon 1993), and socially situated learning (Lave and Wenger 1991).

While learning communities were not a new concept, the term having been used by Carl Rogers (1969) and in a wide range of contexts (e.g., Heron 1974; Hill 1985), modern socioculturalists interested in education and learning offered this new conception of the school (e.g., Rogoff et al. 2001), classroom (e.g., Brown and Campione 1994; Langer-Osuna 2015; Scardamalia and Bereiter 2014; Slotta and Acosta 2017), and more recently in informal and online settings (e.g., Kafai et al. 2013; Resnick et al. 2009). By and large, the socioculturally-minded thinking behind these learning communities was informed by the notion of providing students with learning experiences that approximate the authentic cultures of an intended domain (Brown et al. 1989). To foster students' enculturation of these authentic communities, learning communities simulate (through tools, activities, discourse, etc.) and/or give direct access to the members of the practicing communities (Radinsky et al. 2001).

Knowledge building communities, one of the diverse models of classroom learning communities that came out of modern sociocultural approaches, have been at the forefront of this effort to rethink education (Bielaczyc and Collins 1999). While in many ways similar to other classroom learning community models, knowledge building communities differ in their emphasis on 'knowledge work' over 'learning'. Stated differently, knowledge building communities foster learning in its participants, but as a by-product of engaging in the enterprise of progressively advancing knowledge (Scardamalia and Bereiter 2014). Idea-centeredness, therefore, refers to *a commitment of advancing the collective knowledge of an organization*.

The implications of being idea-centered can be seen in various aspects of the classroom, such as the types of activities that are designed and the technologies used to support them. For example, learning communities may involve sharing and whole-group discussions so that students can learn from each other. In knowledge building communities, participants must take *collective cognitive responsibility* by being aware of others' contributions, making complementary contributions, and engaging in varied roles necessary to achieve the collective knowledge goals (Scardamalia 2002; Zhang et al. 2009). In terms of technology, learning communities offer mechanisms for students to exchange and build on each other's ideas. For example, in the online Scratch community, features like remixing allow users to see other users' codes and adapt them for their own use (Resnick et al. 2009, p. 66). In knowledge building communities, technologies such as Knowledge Forum focus students to relate their contributions to those that the community have already developed. Features of the technology point out what community ideas each participant has read by changing the colors of the notes from blue to red. Likewise, when participants post notes, they mark the relationship of their ideas (e.g., new information, build-on, rise-above) to the growing database of knowledge within their community.

This view of idea-centeredness does not mean that knowledge building communities are the only classroom learning communities that are exclusively idea-centered. In a review of several socioculturally-minded classroom learning communities, Bielaczyc et al. (2013) explain that "putting students' ideas at the *center* of the community work communicates to students that their ideas matter to others and that they have a position of responsibility in contributing to the community's advancement" (p. 4). Learning communities are idea-centered in so far that the knowledge is public and advancing it is a collective responsibility of its participants. By being explicitly idea-centered (Scardamalia 2002), knowledge building communities are an exemplary model of idea-centeredness.

Person-centeredness

The modern humanistic movement[1] was institutionalized in the early 1960s, when humanistic psychology conferences and journals were formed under the leadership of Abraham Maslow (DeCarvalho 1990). Basic tenets included seeing the person as whole, and being concerned with questions of existence and the human condition (Lundin 1985; Schneider et al. 2001). Over time, the movement branched out extensively in both therapeutic and educational domains, from contemporary group psychotherapy (Yalom and Leszcz 2005), counseling (Hansen et al. 2014), and Deweyan forms of process-oriented education

[1] Humanistic psychology and education are both rooted within the modern humanistic movement, with many of the same proponents, goals and activities in each.

(Schmuck and Schmuck 1975) like affective, open, progressive, character, and democratic education (Aloni 2013; Biesta 2015; Robinson et al. 2000). Perhaps more than any other scholar, Carl Rogers laid out some of the most influential theories and practices of the modern humanistic movement. After being stigmatized as anti-Christian due to a misperceived association with 'secular humanism', Rogers was part of an effort to rebrand his work as person-centered therapy and education (Lyon 2014).

Central in the Rogerian perspective is that human life has an inherent motivation to expand and develop (Rogers 1959). So inherent was this belief that therapists and educators didn't need to inspire self-fulfillment in patients or students, but rather served the purpose of removing the obstacles that blocked personal growth (Rogers 1969). Free from interpersonal, societal, and cultural restrictions, people could fully-function or actualize themselves in an ongoing process of self-discovery. So far reaching were the implications of these ideas, they spread into nearly every form of modern organization (Rogers 1970). This included organizational development (Boot and Reynolds 1997) as well as the scientific establishment, which increasingly accepted post-positivistic perspectives and methodologies, such as those of Piaget's naturalistic observations of children (Rogers 1985). By and large, the person-centered approach has proven to be effective. Research has included over 100 studies reporting pre-post results, with about the same number of studies against untreated control groups or other approaches. A meta-analysis showed that the person-centered approach has a large effect on personal change in ways that are stable (Elliot 2007).

Although individual therapy and counseling was the focus of the early part of Rogers's career, he was deeply interested in intensive group experiences for a large part of his later career. Influenced by Gestalt Psychology and Kurt Lewin, who opened the Research Center for Group Dynamics at MIT in the 1940s (Webb and Palincsar 1996), Rogers championed the encounter group (Rogers 1970), which he considered to be "perhaps the most significant social invention of this [20th] century" (Rogers 1968, p. 265). There have been various forms of such groups, such as sensitivity training (or T-), human relations, or personal growth groups, and they have been applied in therapeutic, personal (i.e., normative populations seeking to understand their existence more deeply), professional, and educational settings. These all shared the common goals of seeking personal change through non-directed human interactions in groups (Lieberman et al. 1973).

The commitment of person-centeredness towards human growth, largely influenced by the psychoanalyst Otto Rank, was relational (Barrett-Lennard 2007). The mechanisms of change in encounter groups are based on the same relational foundations as individual therapy, yet are amplified by the multiple members of the group. The mechanisms that were theorized by Rogers as leading to changing one's *self* begins with unconditional positive regard, or prizing, toward the other (Rogers 1967). Provided with such care and support, people are free to remove their facades and act authentically (Bugental 1981), or in congruence between their actual experience and their self-picture (Rogers 1957). Over time, the relationship patterns that people play a part in forming in their everyday lives appear in the life of the group—what is today known as the social microcosm (Yalom and Leszcz 2005). While a whole range of these patterns are expressed, some of them are maladaptive and impede personal growth (Kiesler 1996). The encounter group is tasked with exploring these impediments in the context of people's relationships, so that each participant can learn what feelings their behaviors evoke in others and what responsibility they have in changing their relations. In contrast to conversations that deal with depersonalized knowledge, this relational focus between members of an encounter group is known as the process-focus in the *here-and-now* of the group (Yalom and Leszcz 2005). The feedback that participants get about their increasingly close relationships to others "appears to be one

Table 1 Differences between person- and idea-centeredness

	Idea-centered designs	Person-centered designs
Commitment and purposes	Advancement of collective knowledge	Personal growth of the participants
Learning mechanisms	Enculturation through participation	Self-change through participation and reflection
Activities	Knowledge building communities	Encounter groups

of the most central, intense, and change-producing aspects of group experience" (Rogers 1970, p. 33). The changes that people make within the group are later applied to their everyday lives. In this way, the encounter group focuses on shared experiences as a way for people to learn about and intentionally transform themselves.

Rogers applied these process-oriented concepts of encounter groups in educational settings, too. He articulated these same principles to person-centered education, where he sought to turn classrooms into a "community of learners" (Rogers 1969, p. 105). He was very explicit about the encounter group approach as a way to conduct teacher professional development. For younger students, the same principles of (1) the inherent motivation to expand and develop, (2) unconditional positive regard, and (3) a focus on the here-and-now, is evident in his writing:

> First of all is a transparent realness in the facilitator [teacher], a willingness to be a person, to be and live the feelings and thoughts of the moment (3). When this realness includes a prizing, a caring, a trust and respect of the learner (2), the climate for learning is enhanced. When it includes a sensitive and accurate empathic listening (2), then indeed a freeing climate, stimulative of self-initiated learning and growth, exists (1). The student is trusted to develop (1). (Rogers 1969, p. 126)

It is clear there are numerous variations to Rogerian thought and practice that can be considered person-centered, that his ideas were a continuation of those before him, and that those following him built upon his insights (Warner 2000). Yet, as a preeminent figure in the humanistic movement and without dismissing other important contributors, we safely argue that the contemporary framework presented here is based on the relational, encounter group mechanisms that Carl Rogers championed. In summary, the goal of person-centeredness is self-actualization (Bohart 2007)—a *way of being* marked by "flexibility, away from static living toward process living, away from dependence towards autonomy, away from defensiveness toward self-acceptance, away from being predictable toward an unpredictable creativity" (Rogers 1980, p. 44). Encounter groups, an exemplary social activity designed to realize this goal, give people the opportunity to remove the impediments to growth as they intentionally transform themselves through engagement in shared activities, reflection, and interpersonal feedback.

Integrating idea- and person-centeredness: the KES framework

As we have shown in the previous sections, person- and idea-centeredness differ on their commitments and purpose, theorized mechanisms of learning, and activities used to foster the intended goals (Table 1).

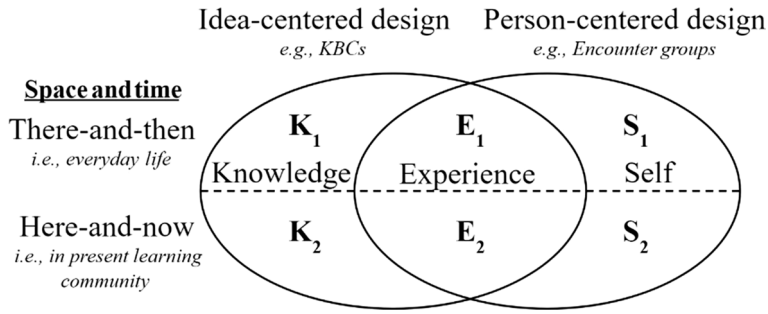

Fig. 1 The KES framework

When participants enter into an idea- or person-centered group or community, they focus on two of the following three dimensions: knowledge (K), experiences (E), and self (S). Idea-centeredness focuses on advancing community knowledge as participants share the experiences of working together. The participants' selves may be important, but in practice the designs only passively attend to them. In contrast, person-centeredness focuses upon self by getting participants to reflect on their experiences and who they are in the ongoing activities. While knowledge may be important, it is only a secondary concern of the design. Thus, having a design that integrates idea- and person-centeredness serves two complementary goals that are linked by the shared experiences of the members in the learning community.

The KES framework (Fig. 1) shows the relationship between knowledge, experience, and self, spanning the *here-and-now* of the humanistic knowledge building community or from the past and outside of it (*there-and-then*). There-and-then knowledge refers to content previously known (K_1), past or present experiences from students' everyday lives (E_1), or descriptions of a person's self outside of the community (S_1). Here-and-now knowledge refers to new content the students are advancing (K_2); current learning experiences (E_2); or a person's self within the community (S_2).

Idea- and person-centeredness: a hidden conceptualization?

The mechanisms by which knowledge, experience, and self complement one another in their co-development are undertheorized and hidden in many contemporary conceptualizations of learning. Still, it is ever-present in contemporary educational research, both outside and inside literature on learning communities. Schön's work on the reflective practitioner shows an integration of people's past and present learning experiences ($E_{1,2}$) with new disciplinary ideas learned in the classroom (K_2):

> If the entire experience is long enough to allow free time for reflection on course work, if simulated practice occurs when students are equipped to use it to try out ideas and methods they have learned in the classroom (E_2), and if we create opportunities for students to connect classroom knowledge to their prior experience (K_2E_1), then we may be able to combine faculty-generated ideas about what students need to learn with students' active management of their own learning (Schön 1987, p. 342).

There are many other examples of this integration in more current lines of research, too, such as in the work of Erstad and Sefton-Green (2013) on learning lives in the

digital age and Tobin (2012) on group emotions. One example where knowledge, experience, and self are explicitly integrated comes from a "broad view of learning", a 15-year effort based on the work of Herrenkohl and Mertl (2010) to articulate the theoretical basis for how students come to be (S), know (K), and do (E). Identity research is another example where researchers have tried to integrate knowledge and self. In 2012, Heyd-Metzuyanim and Sfard built on a discursive view of learning (commognition) in an effort to show the interplay between mathematizing (K) and identifying (S). The examples above show that the integration of knowledge, experience, and self is an existing conceptualization found in a wide range of contemporary inquiry on learning. But, our purpose in showing these goes further than that. In each of the examples, the activities of the learning environment did not include exemplary forms of idea- and person-centeredness. We therefore ask, *what can happen if students engage in encounter group activities in addition to those where they have to advance their collective knowledge?*

Methods and analysis

To elucidate the way that learning in a humanistic knowledge building community occurs, we investigated a graduate course in an educational technologies program that had been running for the past decade and whose design explicitly drew upon idea- and person-centered activities. The design was based on the lead instructor's (second author of this article) unique background in both knowledge building communities (idea-centered) and sensitivity training groups (person-centered). Specifically, the course, "Challenges and Approaches to Technology-Enhanced Learning and Teaching" (CATELT) had the triple aim of, first, introducing the participants to knowledge about human learning (K); second, having the students experience the myriad challenges and approaches of technology-enhanced collaborative learning (E); and third, for students to consider and reflect on themselves as learners (S).

Over the years, CATELT had become a popular course within the graduate program, prompting an ongoing research effort that has included questions about collaborative and epistemic norms (Hod and Ben-Zvi 2015; Hod et al. 2018), enculturation (Hod and Ben-Zvi 2014), dialogic-reflective discourse (Hagani and Ben-Zvi 2014), group metacognition (Gofer and Ben-Zvi 2014), and computer supported collaborative learning (Novik et al. 2014). Evidence, both empirical and anecdotal, from participants and departmental faculty over the years attested to several exemplary features of this course, including (a) unusually robust student motivation and effort; (b) regular references by individual students to the course as being both unique and life-changing (Hod and Ben-Zvi 2014); (c) norms that emphasized respect for individual differences, careful listening, and learning for understanding (Hod and Ben-Zvi 2015); and (d) cohesiveness among members despite a highly heterogeneous population. In light of the abundance of evidence for the promise of CATELT's design, and in wishing to provide tools to recreate meaningful learning like this in other contexts, the next step was to anchor it within a conceptual framework. We therefore took a grounded theoretical approach that focused on the research questions: *How can students' knowledge, experiences, and self co-develop in humanistic knowledge building communities?*

Design of CATELT

CATELT was structured as a blended course, where weekly 210 min face-to-face meetings alternated with ongoing activities for the remainder of the week in a wiki environment. Activities were generally designed to promote knowledge advancement through collaborative experiences (idea-centered) or focus on people's experiences and selves (person-centered). Even though each activity had a different focus, person- and idea-centered artifacts and dialogue occurred both in face-to-face discussions and on the wiki. The continual building-on of previous material between the different spaces as well as over time led to a fluidity of learning that had to do with knowledge, experience, and self over the different activities (Table 2).

Despite slight variations between annual course iterations, the time spent on each type of activity had been consistent throughout its 10-year existence. Face-to-face meetings had a roughly equal breakdown of time invested in idea- and person-centered activities (Fig. 2).

The online aspect of the course was relatively equally divided as well. The predominant platform used was a wiki environment, although at times different collaborative software, such as Cacoo or Knowledge Forum (Scardamalia and Bereiter 2014), had been introduced for limited activities. The wiki was a fitting idea-centered platform, allowing the students to gain awareness of each other's contributions, make complementary contributions through editing or linking, and engage in distributed roles to advance collective knowledge (Novik et al. 2014). After each face-to-face meeting, the instructors made a posting to the students on the assignments space of the wiki which included their summary and interpretation of important events from the meeting, a request for students to write a reflective diary entry as well as read and discuss others' entries in corresponding discussion pages, and to create or edit wiki pages collaboratively based on some relevant reading. Figure 3 shows the fixed navigation bar of the wiki, focusing on the predominant online spaces used by the community.

The process of the course (the way learning activities were designed) and the course contents (what they studied) had large similarities, providing students with many opportunities both to consider ideas through the personal prism of their learning experiences, as well as to shape the way they interpreted these experiences. The canonical knowledge of the course was the theoretical and conceptual notions of learning that were being actively negotiated within the learning sciences community, including texts, online resources, and materials that the moderator presented. Table 3 lists the formal content that was studied within the 2011/2 course iteration.

The person-centeredness of the course was meant to provide students with opportunities to participate in the community. This relates to the Rogerian notion of congruence, where people can act authentically because they have accurate, relatively undistorted pictures of themselves (Rogers 1969). The foundation of an encounter group is to foster congruence through giving unconditional positive regard, so that people feel accepted and can 'bring themselves in fully' to the community, without the need of facades such as looking smart or trying to please the moderator. The person-centered activities created such an environment of trust, care, and empathy among participants. In a typical remark, instead of scolding a student that entered late, the moderator stopped the meeting to greet the student, asserting that they brought in a link to a chain that was broken without their presence. Or, when a group of students reported that their collaboration on the wiki was great the previous week, the moderator gently elicited the challenges and difficulties that they did not report, thus legitimizing conflict and hardships. Not only were students given the freedom

Table 2 Repetitive person- and idea-centered activities in CATELT

Center (designed)	Activity name	Example	Space
Person	Group reflection sessions (GRS)	Students sit in a circle and take turns taking part in moderated sharing of their experiences, with a focus on the here-and-now of the course as well as reflection on their emotions and social interactions. Moderation follows typical protocols of encounter group facilitation (Corey et al. 2013), but modified to focus on the student as a learner.	Ftf
	Personal reflective diaries	Students write, once per week, a diary entry in their personal space in the wiki, which is open to the course community to read, comment, and discuss	Wiki
	Group norms discussions	Students can negotiate their norms on a dedicated space in the wiki, and (when they request) use time during face-to-face meeting to further discuss them	Ftf, Wiki
	Interpersonal familiarization activities	Students engage in whole group activities aimed at helping them get to know each other. For example, during a "carousel" activity students meet with different peers for about five minutes at a time and talk about personal questions, such as "my biggest fear is…".	Ftf
Idea	Interactive discussions	Students engage in whole group discussions based on topics that the moderator leads in presenting.	Ftf
	Collaborative editing of wiki content	Students are assigned to read an article and, during the week, edit one or more related wiki pages based on their reading. The group decides for themselves if and how to organize themselves for the editing task.	Wiki

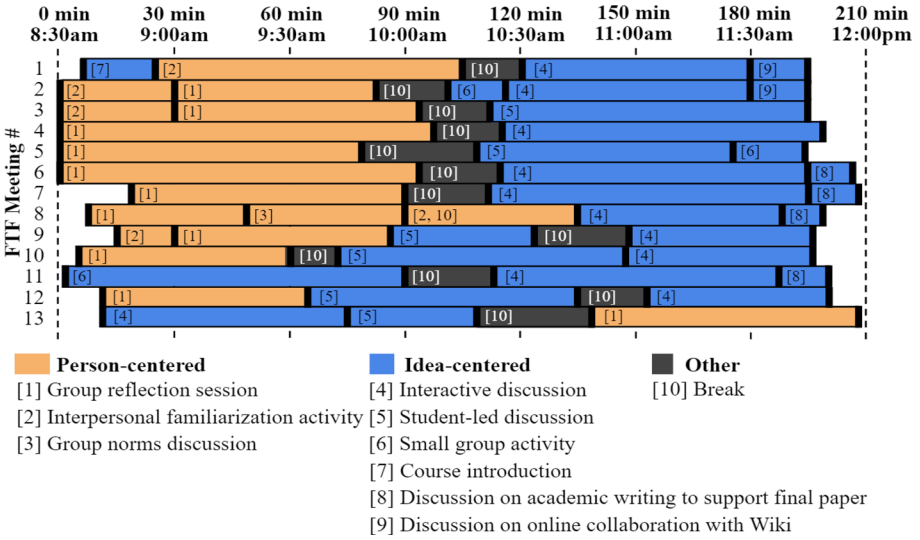

Fig. 2 Idea- and person-centered activities during face-to-face meetings in CATELT (2011/2012) (During week 11, there was a large traffic jam, leading about half the students to trickle in significantly late. In place of the group reflection sessions, the students were given an opportunity to continue their small group collaboration which they started online the previous week. During week 13, the order of the person- and idea-centered activities were swapped so that the course could end with a group reflection session.)

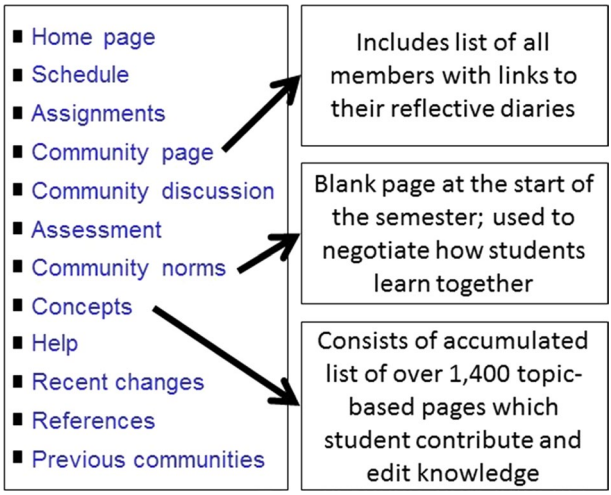

Fig. 3 Wiki navigation bar (translated to English) highlighting several key spaces used

to be themselves, they were guided to reveal more in supportive, but inquisitive, person-centered activities.

Data collection and analysis

Our data corpus was drawn from a full 13-week semester of CATELT (2011–2012), which included an entire group of 14 students, an instructor (moderator, also the second author

Table 3 Articles and chapters about learning as part of the course content

Focus		Topic	Week(s)	Reading
The individual learner		Introduction to the learning sciences	1	Chapter 1 of Bransford et al. (2000)
		Novices and experts	2	Chapter 2 of Bransford et al. (2000)
		Learning and transfer	3–4	Chapter 3 of Bransford et al. (2000)
		How children learn	5	Chapter 4 of Bransford et al. (2000)
Learning in communities		Situated cognition	6–7	Brown et al. (1989)
		Communities of learners	8–9	Brown and Campione (1994)
	Learning with technology	Knowledge-building communities	10–11	Scardamalia and Bereiter (1994)
		Design of learning environments	12	Chapter 6 of Bransford et al. (2000)

of this article), a teacher's assistant (TA), and a lead researcher (first author of this article). The 14 students in the course included a mix of ages (26–55), genders (ten female; four male), ethnicity [(six identified groups, anonymous in this version to not reveal location of study)], and professions (teachers, educational technologists in the hi-tech and educational sectors, and school administrators). The general interactional approach of the lead researcher was of minimal intervention, just enough to develop trust and rapport with the students so they would feel comfortable talking freely around him.

We followed all ethical protocols and received permission from the institutional ethical review board to carry out this study. To avoid ethical issues related to the moderator's dual role as researcher and formal instructor, the moderator did not engage in data collection or analysis until all the final grades after the semester were submitted. So that there was no coercive pressure on the students to participate in the research, participants were made aware of the informed consent process, signed consent forms, and all data (including whether students opted to, or not to, participate in the study) were kept private from the moderator until after final grades were submitted.

Throughout the semester, we collected audio and video recordings of every face-to-face meeting as well as online artifacts created on the wiki by the students. The lead researcher conducted open interviews at opportune times, either during breaks, or on the phone, when something interesting occurred and he wanted to know more about it. The voluminous data were collected into a specially designed database to ease the analysis process. The data we collected, found within a rich setting that we were eager to understand better, called for a grounded theoretical analysis (Strauss 1987; Creswell 2012). We engaged in four activities of theory development, based on Charmaz (2008). These activities (generally following a linear path, with many steps backwards and forwards) included line-by-line coding of data, memo writing, theoretical sampling, and theoretical saturation.

The first step, openly coding the different utterances that the students were making, involved identifying parts of the data based on our observations of what was going on in the contextually-rich setting. This involved trying to keep as close as possible to the intended meaning of what the students said or wrote. We began memo writing early in this process to record our interpretations and make them explicit. This provided a second layer on the data that we could work with to develop our tentative and emerging ideas. During these early analysis phases, we did not have any high level themes organizing the utterances that we were coding.

As we continued to examine our emerging codes and our memos, we began to identity patterns that were connected to the bigger ideas of knowledge, experience, and self. In parallel, we noticed that often we could differentiate between the students' learning outside of the learning community and within it. These insights evolved into an abductive process of 'theoretical sampling', whereby we checked our emerging categories with ideas that we knew from related scholarship. In particular, we recognized the relation of our categories to both person-centered and idea-centered perspectives, as we described in the background section. Our learning community setting, which integrated both perspectives, confirmed the appropriateness of the emergent KES framework as illustrated in Fig. 1.

As part of our effort to check and refine our emerging framework, we worked with two learning experts (a doctoral student and postdoctoral research fellow) who were not involved in the course implementation or data collection/analysis processes. After training them to use the coding scheme we developed (Table 4), the researchers coded the data, with an acceptable inter-rater reliability (Cohen's kappa = 0.90).

At this point, we reached 'theoretical saturation' where any new data that we had yet to consider confirmed our conceptualization. With the establishment of the KES framework,

Table 4 Operationalization of the KES framework

	Idea-centered design *(e.g., KBCs)*		**Person-centered design** *(E.g., Encounter groups)*
	Knowledge	**Experience**	**Self**
Then-and-there	(K_1) Things that people say explicitly, or can be implied from what they say, that reflect the conceptual framework of learning that they had before the learning community (e.g., learning as transmission, individual learning, etc.)	(E_1) Things that people say explicitly about their experiences in life before and outside the learning community or about the context itself (e.g., situations they found themselves in, a characterization of the situation/setting, etc.)	(S_1) Things that people say explicitly about themselves, or can be implied from their words or practices as being about who they are prior to the learning community and outside of the learning community.
Here-and-now	(K_2) Things that people say explicitly, or can be implied from what they say, that reflect the changing conceptual framework related to the domain that they gained from the learning community	(E_2) Things that people say explicitly about their experience in the learning community or about the learning community itself (e.g., we had a card activity, this is what happened when we…)	(S_2) Things that people say explicitly about themselves, or can be implied from their words

we then set out to better understand at a fine-level of detail how this can help us explain different ways that students' knowledge, experience, and self co-develop. To do this, we focused on an exemplary case of one student (Abby) who we suspected a priori had gone through significant transformative learning (based on her descriptions of learning and what we learned about her throughout the semester). Our focus on one person was important so we could explore and highlight some of the key issues involved in this type of learning. Such microanalyses are typical in case studies in order to understand and report on the rich, nuanced, and multi-layered learning that goes on in a way that can be meaningful given the full context of a learners' life (Tobin 2006). To ensure that the inferences and the interpretations about the patterns we identified were accurate, we conducted micro-analysis meetings (Chinn and Sherin 2014; Schoenfeld et al. 1993) with a team of five researchers who were all familiar with the environment. We triangulated multiple sources of evidence and discussed our inferences until we reached a consensus on our interpretation (Schoenfeld 2007).

A case study elucidating co-developing patterns of knowledge, experience, and self

In the following section, we use the KES framework to present a rich account of the co-development of Abby's knowledge, experience, and self when she participated in CATELT. Specifically, we found the following five shapes—which we call *patterns* due to their discernibility within the framework—that help untangle the complex ways that Abby's knowledge, experience, and self interacted between the there-and-then and here-and-now (Fig. 4).

Pattern 1: exploring prior knowledge, experience, and self

Pattern 1 points to the importance of allowing full participation in a community in such a way that allows students to bring in a wide range of aspects of their lives—not just their

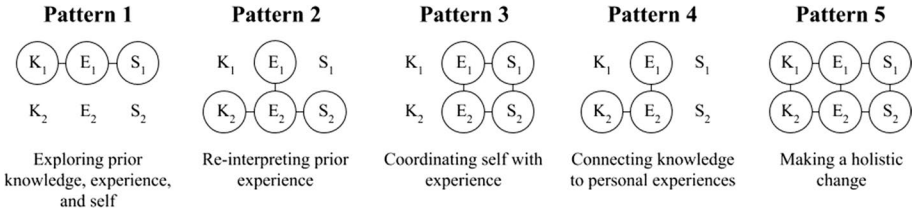

Fig. 4 Patterns of knowledge, experience, and self co-development

prior knowledge, but also their past experiences and selves. Through unconditional positive regard, activities designed to elicit prior experiences and self (e.g., familiarization activities, group reflection, reflective diaries), and empathic listening, Abby was able to create a foundation upon which she could continually develop holistically throughout the semester. These activities were not just designed for the start of the semester or relegated to 'reflection time' at the end of an activity, but were given prominence throughout, as can be seen in Figs. 2 and 3. This ongoing exploration of her experience and self in relation to the knowledge she was contributing proved to be vital material that Abby continually cycled back to in each of the remaining patterns through her transformational change (see "Pattern 5: making a holistic change").

Abby, a 52-year-old wife and mother of three, entered CATELT with a strong resume of professional experience suggesting she was an intelligent, hard-working, and resourceful learner. Specifically, having earned an M.A. in Chemistry many years before, she had a successful career working as an educational software developer, a project manager at a hi-tech company, and recently as a developer of school-based digital curricular materials in chemistry. She succeeded in what she described as a stressful work environment, where she preferred "logical things, mathematical equations and objective reality" to "wordy theories" (S_1). Moreover, Abby was "used to working individually and not as a team" (E_1); and she had the perception that she was expected to cover "as much content in the topic that is being studied" (K_1). Abby saw learning very much as a depersonalized process, being measured by efficiency and quality, in what can overall be described as a product-orientation.

In this context Abby had the opportunity to share and explore her prior knowledge, experience, and self as they manifested within the course. These were evident nearly from the beginning. Calling CATELT a "180-degree switch" from her work experiences, Abby showed a great deal of reluctance from the start of the semester about the types of learning activities the community engaged in, as well as about the ideas they were discussing. During the first person-centered activity of the course, pairs of students were asked to draw and discuss themselves as learners both now, and in the future, before presenting their partner's drawing to the whole group. When Sara came to present Abby, she [Abby] immediately interjected about herself:

Ftf 01 GRS I think I [Abby] am the only one that didn't draw, but wrote… I have to say that the thing that I most hated (S_1) in teacher discussions with parents was when they told us to draw about ourselves and draw about our children. For us, only my son draws, and that's it (E_1)

In addition to showing her proclivity towards "formulas and logical thinking" (S_1), Abby related this type of reflective exercise to her professional colleagues in her subsequent

reflective diary: "They have group-building days… but they are competitive games. I am sure they would really laugh if they saw this" (E_1). Likewise, she described the product-orientation of her work experiences:

Ftf 02 GRS There are rules when I meet my boss every week… He was told to dedicate a personal conversation for about five or ten minutes, but this is a rule he followed, it does not genuinely interest him. What interests him more is the product, how much I progressed (E_1)

During the first week's introductory presentation about the learning sciences, the moderator discussed traditional models of education that emphasized frontal teaching, coverage, and knowledge transmission. Abby showed her skepticism towards knowledge from the learning sciences by defending traditional school practices:

Ftf 01 GRS I am assuming that the University is full of researchers who learned in the paradigm of transmission of knowledge. We reached very nice and large achievements. You can't completely dismiss this (K_1)

Likewise, Abby remained critical of learning community and collaborative approaches to learning over the first several weeks of the CATELT, showing how her work experiences shaped her knowledge of the current experience she was going through. For example, she claimed:

Ftf 04 GRS In a workplace… the work is very important at the end of the day. And when I think about the things, I say this [the collaborative learning in CATELT] is actually an island, what is happening here is an island. And even if later this is implemented in schools, this is not real life (K_1E_1)

To sum, the activities embedded in the course design seemed to have promoted the manifestation and exploration of Abby's prior knowledge, experience, and self ($K_1E_1S_1$) within the course. These provided a rich foundation upon which Abby could continually build throughout the semester.

Pattern 2: re-interpreting prior experience

Pattern 2 shows the subtle way that the new knowledge, experiences, and self gained from participating in a learning community can be applied back into a person's life, leading them to re-interpret their past experiences. In Abby's case, only after she had explored her new knowledge, experiences, and self in the learning community did she begin to bring up past relevant material from her life that she had hitherto left out. Her ability to do this appeared to be a breakthrough for her, now being able to 'fit in' what she had experienced in the then-and-there with her new knowledge, experiences, and self.

During the 3rd week, Jihan, an [ethnicity hidden to not reveal location of this study] student, was the center of a group reflection session. The conversation focused on the challenges she faced of having to read, write, and speak in a non-native language ([language hidden]) as part of the course. Abby, a native [language hidden] speaker, appeared to show great empathy towards Jihan and the other [ethnicity hidden] students as part of the discussion:

Ftf 03 GRS First of all, wow, great job. It needed a lot of courage to say what you said right now… We take it for granted that [ethnicity omitted] come to learn in our language, and it is a very important fact that we need to consider… If we are going to be a community, to work together, then we need not just get to know how many children we all have, so I think this is a very important point (E_2)

Abby related this present experience to her knowledge of learning and the implications this had on herself as an educator. She related this to the new knowledge that she gained recently on the idea that 'all knowledge builds on prior knowledge', which the students had been reading and discussing from *How People Learn*. She also considered how this new knowledge affected her role as an educator:

Ftf 04 GRS Let's say a teacher works with students… here we get into the issue of previous knowledge (K_2). They [students] bring something from home, it doesn't matter from where, they have something that sits in their head. One of our assignments [as teachers] (S_2) is to enter their head and to understand why they think that way. It is harder than telling them, 'put this on the side and forget what you know, and now I will teach you something'

Having now explored her new knowledge, experience, and self in a way that was consistent with one another, Abby began applying this idea to different aspects of her everyday life. First, she introduced aspects of her work experiences that were not so product-oriented and formulaic, but focused on previous experiences that included humanistic aspects; second, she related this to her experiences in her daughter's school:

Ftf 04 Int Dis When I worked in a previous job, there was a review every year. They did a personal review of each worker. This review is composed of… first of all you write about yourself. There are about ten sections, and you write about how you work, how you communicate with people, what are your strategies, how you are developing, what are you working on. Once you finish writing all these things… you pass it to your manager… then you sit and discuss together… It is a process that everyone goes through (E_1)

In my daughter's school, in their report at the end of the semester they allow the students to write, in every subject… connected to life. They write real text, not just a, b, c. In every subject they really explain what they think, and what they know, and what they don't know, and how they learn, and all this, and the teacher writes also next to this. This is amazing (E_1).

It appears that Abby's exploration of new knowledge, experience, and self opened up an opportunity for her to look at her experiences in the there-and-then and re-interpret them. Specifically, up until this point in the course, Abby had described her prior experiences as product-oriented. Now having developed a new framework in the here-and-now, she could look outside of the course and make meaning out of experiences (at her workplace as well as within her daughter's school) that she had hitherto not paid attention to or had not seen the relevance of.

Pattern 3: coordinating self with experience

Pattern 3 shows aspects of the way the 'self' is coordinated between different experiences in the there-and-then and here-and-now. Specifically, it demonstrates the potential for dissonance and confusion that can arise as part of this complex coordination.

During the week-6 group reflection session (GRS), Abby became the focus of discussion. Consistent with Abby's product-orientation, she had been experiencing growing discomfort with the unending and expansive activities involved in the way learning was organized in CATELT. She described how these activities related to her personal experiences and self as a learner in the community:

Ftf 06 GRS I always have the feeling that we are not going in depth into the issues… I feel a type of fluttering on all of the things (E_2). I don't know, for me personally this is hard because I'm usually very fundamental. I like to go into something, to dive, to understand it until the end, and to feel at the end of the course that I really acquired knowledge… (S_1). And I had this feeling after I saw everything that I needed to do, that I will simply lift up my hands and not do anything (E_2)

The moderator continued to inquire about Abby's statement by asking her to further explore the connection between her current experiences and self with her experiences and self outside the learning community. To do this, the moderator used a metaphor that Abby had stated earlier, of knowledge as flowers in a field:

Mod Do you know situations like this where you are in a field and you don't have time to get to all the flowers? Does this resemble other situations in life?

Abby I am trying to think. Obviously I got stuck in situations where there were many things and I had to prioritize (E_1). But here I wanted to get to everything, and there wasn't anything where I said, 'okay here I don't have an interest and I don't want them'. Here I wanted to do all the things, but simply I couldn't do them all (E_2). This was a disappointment with myself, but no, I know that my time is [trails off] (S_2)

Class [silence for 15 s]

Abby Maybe also losing control (E_2). Meaning, not losing control. I usually plan, and I do the things, and I do everything (E_1S_1). And here I didn't get to everything (E_2)

The 15 s silence signified that Abby was in the process of Following the sixth face-touring out something important about herself that she still had difficulty articulating. The issue at-hand was that Abby had a product-orientation regarding learning that was consistent with her work activities. In both, she could prioritize her activities—or be efficient—so that she could get to "the end" and "be fundamental". In the current learning community, learning was an unending process. Assignments on the wiki, for example, were open-ended whereby students had to decide for themselves where to stop editing or building on the knowledge base. Moreover, the knowledge base in the wiki as well as in the resources (mainly academic articles) were expansive and never-ending, reflecting the nature of knowledge building. Thus, Abby struggled to reconcile her prior experiences and self in her work place with those in the current learning community. In the current episode, Abby appeared to be at a meaningful juncture where she identified this dissonance and her need to coordinate

her "self" between the two. However, the coordination was a complex and confusing process, as it required her to deal with issues that she raised like her disappointment with herself or feelings of losing control.

Pattern 4: connecting knowledge to personal experiences

Pattern 4 demonstrates how knowledge can be intertwined with personal experience in the here-and-now and there-and-then. Specifically, in the following episode, Abby expressed multiple connections between her knowledge and experiences around the idea of learning as a process.

Following the sixth face-to-face meeting, Abby took the lead in creating an elaborate concept map with a peer (Fig. 5). The map attempted to show the relation of many of the key ideas from the week's reading on situated cognition (Brown et al. 1989), along with some other knowledge from previous readings that Abby brought in (e.g., motivation to learn and learning orientation: Bransford et al. 2000, p. 61). Abby volunteered to present the concept map during the seventh face-to-face meeting.

In Abby's reflective diary following the presentation, she wrote enthusiastically about knowledge about learning that she was now making sense of. She made multiple connections to her experiences between CATELT and the then-and-there:

07 Online diary In class I presented the concept map that I built because I wanted to get detailed feedback (E_2). One comment that I got: The central idea is not clear. You are right. An additional comment: There is a process here (K_2). Obviously! As someone who worked with chemistry and science, as someone who managed many projects—it is obvious that there is a process… we always start at a certain point, we go through a process, and we get to a new point that is a result of the process that we went through. There are always people that respond, and produce, and the products are dependent upon the direction and the conditions (E_1). When I read the summary of the article where it was written 'that knowledge is the result of authentic activity that is done in a cultural context' (K_2) immediately I saw across my eyes the appropriate concept map to describe the process ($E_{1,2}$): there is a result that is the product, and if there is a product, then there is a process and there is a start (K_2)

After pointing out the process by which she received feedback (E_2), Abby mentioned there was a "process here", referring specifically to her knowledge about what the concept map showed (K_2). Her use of the exclamation point suggested that this was a large insight for her. Abby then went on to relate this to her personal experiences of working with chemistry and science (E_1). Her description of the process starting at a certain point and continuing to evolve was a further elaboration that integrated the idea of "learning as a process" and her personal experiences. The quote that she chose from the text, "that knowledge is the result of authentic activity that is done in a cultural context", showed that she was making connections between her knowledge and experiences. This was particularly evident in the following sentence, where she described the process by which she understood its meaning ("immediately I saw across my eyes the appropriate concept map…"). Although she did not specify whether she was referring to her past or current experiences, based on the previous statements we can infer that she could have been referring to either one. She ended

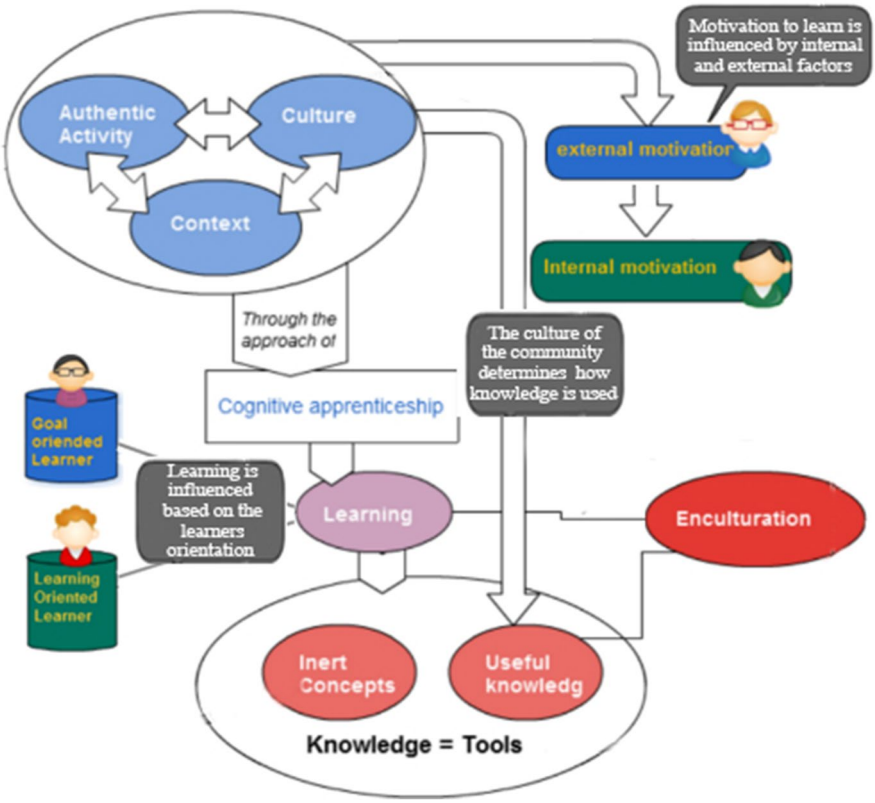

Fig. 5 Abby's concept map on situated cognition (translated where appropriate and modified to fit on page)

with a clear articulation of the main knowledge that she took away when connecting it to her experiences.

Taking a purely knowledge perspective could easily lead to thinking that Abby learned little—just a few concepts—over 13 weeks. Likewise, it could lead to criticism of Abby that her interpretation of situated cognition largely missed the point. By understanding how Abby's new knowledge was tied to her experiences, the insight that Abby made could be valued for how truly transformative it was for her. It is possible to appreciate how a person can miss the canonical points about a topic (in this case situated cognition, which is saying much more than just that learning is a process), yet what she did take from the topic was still highly important and significant when considering her knowledge and experience together.

Pattern 5: making a holistic change

Pattern 5 showed how Abby's transformation within the humanistic knowledge building community was deeply related to her co-developments in knowledge, experience, and self.

While the course was only 13 weeks, it ultimately helped Abby make a holistic transformation despite her initial reluctance.

There were three direct signs that Abby make a holistic transformation in a way that was directly tied to CATELT. First, she was deeply involved in participating in the learning community, despite her initial resistance and skepticism. Second, on her own volition, she attended a conference on collaboration immediately following the conclusion of the course, a fact that she excitedly pointed out to the researcher and which continued regularly after the semester concluded. Finally, following the course, Abby went on to complete her Master's thesis, and thereafter enrolled in the Educational Technologies PhD program, examining related learning phenomena as part of her research.

In a post course interview 8 weeks after the course concluded, Abby was asked if she changed during the course, and if so, to elaborate on how. Her response showed an integration of her knowledge, experience, and self spanning both the past and present:

Ftf-Int …when I come [to this course], I talk, and I say what I feel, and I say what is on my heart, and this is the thing that is new for me (E_2S_2). Usually I come to a place of work, and I need to work [pounding fist of table], and nobody really cares what I really feel—what is going over me, if I changed or didn't change. What they want from me is usually a product. The process is less important, exactly the opposite from here ($E_{1,2}$). I now agree that knowledge is built collaboratively (K_2). I agree that what is important is the process and not the product itself ($K_{1,2}$). I agree that you need to strengthen everyone. That you need to pay attention to everyone (K_2S_2). To talk about myself, okay, to talk about feelings, to talk about thoughts, to talk about how I learn, how I work, all the metacognition, all of this analysis (E_2)—these are things that I didn't have, this is one thing ($S_{1,2}$). The second thing that really [with emphasis] changed for me is to understand the contribution of the community in the shared learning (K_2). I didn't think this was important at all (K_1). And today I am found with a feeling that there is a lot to it (K_2)

Abby discussed her experiences in the community in relation to herself as a learner. She then connected this to her experiences outside the course (E_2S_2), drawing a comparison between her work experiences and CATELT ($E_{1,2}$). Abby connected this to the ideas studied during the semester, such as knowledge and collaboration (K_2). Inserting her own beliefs ("I agree with") and values ("you need to…") showed that these were not just abstract concepts, but had relevance to the way these ideas applied to herself (K_2S_2). Finally, she integrated this knowledge and experience with herself when discussing her transformation: "things that I didn't have"/"thing that really changed in me"/"today I am found with a feeling" ($S_{1,2}$), by describing her current self as a learner using new ideas about learning (e.g., metacognition, community, shared learning) that she admitted not having before ($K_{1,2}$).

Discussion

Our main goal in this article was to explore how knowledge, experience, and self can co-develop in humanistic knowledge building communities. In our analysis of Abby, we found five different patterns whereby these co-developments occur, each situated in different

activities, but all connected to each other. The claim that knowledge, experience, and self are inseparable is not new. Sociocultural theory sees the person and activity as irreducible, such that ideas are always situated and must be viewed holistically (Herrenkohl and Mertl 2010; Lave and Wenger 1991). This study moves the conversation forward by showing how idea- and person-centered designs, each linked to a different academic heritage, gives attention to different aspects of this holistic learning, and how these span the *there-and-then* with the *here-and-now*. Our main assumption is that integrating these two approaches within one design can foster a unique type of learning, not exactly like idea-centered learning communities, but also different from person-centered encounter groups. The patterns found in this study provide different insights into the unique ways this happens.

By considering these patterns together, we are able to see the importance of both the idea- and person-centered aspects of the design, and the way they support one another. Had CATELT not allowed students to discuss their knowledge, experiences, and self in an ongoing, intensive, and deliberate way throughout the semester, it is likely that Abby would not have made such a holistic transformation. Indeed, we argue that *because of* the integration of the two approaches, she had opportunities to sort out these complex ideas as they were relevant to her life. For example, the climate fostered through person-centeredness (care, prizing, empathic understanding) allowed Abby to draw out her prior knowledge, experiences, and self (pattern 1) that allowed her to reinterpret some of her prior experiences (pattern 2). Abby's reinterpretation opened up new opportunities for her to coordinate her experience and self between the there-and-then and here-and-now (pattern 3), which later shaped her knowledge about learning (pattern 4). Together, these led Abby to re-assess some of her lifelong learning practices as well as knowledge about them, ultimately contributing to a transformation where the process, and not just the product, of learning was important (pattern 5). The mutuality of the patterns suggests a view of learning that is much less linear, and much more like pieces of a puzzle fitting together. Even in this analysis, the borders that we draw between the patterns are somewhat arbitrary: They do represent significant episodes of learning within CATELT, but they are accumulative and touch on the broader narrative of Abby's life and transformation holistically. To sum, our analysis of Abby suggests that knowledge, experience, and self are all interrelated between the there-and-then and here-and-now. When provided with sufficient opportunities and support to explore these, as humanistic knowledge building communities aim to do, the related domains of knowledge, experience, and self can co-develop and ultimately lead to transformational change.

Conceptual, methodological, and practical contributions to the learning sciences

This study makes conceptual, methodological, and practice-based contributions to several lines of ongoing scholarship in the learning sciences. Conceptually, our framework contributes to lines of contemporary research that consider the development of identity and knowledge, such as in networked learning (Goodyear et al. 2006) or in identity research proper (Heyd-Metzuyanim and Sfard 2012; Sfard and Prusak 2005). In the latter case, in analyzing the learning of mathematics, the authors found an interplay of two unique discourses: mathematizing (K), and subjectifying (S). For example, this interplay is shown in the case of a student, Mira, who was involved in a calculation: "3000 minus 1000 is 2000 (K_2) …I have to think now (E_2) …2000 minus 200 is 1800 (K_2) …My brain is so slow (S_2)" (Ben-Yehuda et al. 2005, p. 226). While these studies seem to be showing a

similar interplay between knowledge and self as we have found, our integration of experience within this process adds new light into these holistic views of learning.

Related to considering the role of experience as a factor in knowledge- and self-development, we have introduced a conceptualization that looks across the there-and-then and here-and-now. Specifically, by building on person-centered theories like the social microcosm, we can examine some of the relationships between a person's functioning in different spaces (there, here) and times (then, now). We saw this in the different ways Abby negotiated her knowledge, experience, and self mainly by going back and forth between her previous workplace community and the learning community where she was currently learning. To date, research from person-centered perspectives is not active in the learning sciences. They may have trickled in, such as in the way the principle of creating a failure-safe learning community (Bielaczyc and Collins 1999) is akin to Rogers' ideas of unconditional positive regard. As we have tried to show here, the learning sciences can benefit from considering these ideas of the person within contemporary inquiry.

Methodologically, the KES framework operationalizes the co-developments of knowledge, experience, and self. As we have described in the background, broad views of learning have generated a great deal of recent interest in the learning sciences. The operationalization that we offer provides new ways for these researchers to analyze their findings and reach new insights. For example, based on a complex instructional model in a New England elementary school, Herrenkohl and Mertl (2010) carefully traced the holistic transformations of four students throughout a unit of study. In an analysis of Rich, they showed how his "at risk" behavioral issues (S_1) changed into highly nuanced academic practices within their classroom (E_2), such as respectfully challenging others (S_2) as he built on his prior knowledge of balance and building (K_2). Or, in an analysis of Denise, they described how her arrogant behavior at the start of the study (S_1), where she offered to explain things *for* her peers, transformed into her role as a junior teacher (E_2) where she facilitated opportunities for others to present their own ideas (S_2). The methods we have developed provide a detailed, systematic and well-organized means of describing and understanding the ways that knowledge, experience, and self interact between the there-and-then and here-and-now.

On a practical level, our conception contributes to idea-centered theories of learning, namely 'knowledge building communities'. In fact, the combination of idea- and person-centeredness, while conceptualized differently, is consistent with other well-known approaches in different fields. For example, Tosey and Marshall (2017) describe the 40-year history of inquiry-based human resource development programs in the UK that seek to bridge "intellectual knowledge" and "self-understanding" (p. 4). We offer the term '*humanistic knowledge building community*' to make the contribution to ongoing discourse in the learning sciences clear. Specifically, the highly influential knowledge building community model puts learners' ideas in the center with an intention of developing autonomous learners and thinkers (Scardamalia 2002). By making idea-centeredness an explicit principle, the many complex and inter-related aspects of these learners, far beyond just their knowledge, are unintentionally left out of the picture. The notion of idea-improvement is emphasized, whereby the notion of self-improvement is not. As we have demonstrated in this study, idea- and self-improvement can be complementary aspects of personal growth. We have introduced evidence that by integrating the principle of person-centeredness into the design of knowledge building communities, this type of learning can be achieved.

The key implication of this research for knowledge building communities is in the time and prominence given to encounter-group types of activities within the course design, as shown in Fig. 2. The purpose of giving so much time for person-centeredness is based on our serious belief in the educational principles of Carl Rogers, where the person is

accepted unconditionally and is given a fertile space to grow through their exploration of self through the other. As is evident from the chronology and ratio of activities, person-centeredness is not just something that occurs towards the start of the semester, or at the end of a course meeting when there is time left to reflect on thinking. Person-centeredness is given prominence throughout the semester, with activities designed to both maintain and continue deepening students' relationships and trust, through the very end.

Limitations and challenges for future research

CATELT is hardly an ordinary classroom. In addition to being part of a long-term design experiment, there are two moderators, a researcher, a relatively small number of graduate students (14–20), and inconspicuous but visible cameras in a room. Like any such research setting, we therefore cannot separate the real effects of our design with the many confounding factors. Yet, after many years of seeing similar results and with a growing body of research, we can say with increasing confidence that the integration of idea- and person-centered activities are an important, if not the major part of the story here.

Although we have been able to, in part, untangle the complex trio of knowledge, experience, and self, our conceptualization and methods are still in development and open many questions. For one, we have focused our inquiry on Abby's understanding of ideas in a way that is separate from the collective knowledge advances of the community. Our analysis does not elucidate how the community and Abby co-constituted one another, as sociocultural analyses of learning often focus on (Nathan and Sawyer 2014). We are working towards that goal, and think that this research represents an important step towards it. Future work that would be helpful in this area would be micro-genetic studies that traverse these levels of analysis to show what part students play in the collective advancements of the community (both knowledge and social norms) and how this mediates the personal growth of the participants.

A second and related limitation of this research has to do with our operationalization. By comparing what students report about themselves in the there-and-then and comparing this with how it manifests in the here-and-now, we have new tools to successfully capture some of the major transformations that students make. However, our codes currently are not able to differentiate situations when learners make changes upon changes. Productive further research in this area could work to codify the continued, ongoing changes after the student has already made initial shifts in knowledge, experience, and self from the there-and-then.

Another limitation and area for further study has to do with the unique nature of the course content we are examining here. As the students are studying *learning*, are *experiencing learning* in a community, and are exploring *themselves as learners*, there exists what we describe as a *content-process near* situation. An open question remains as to what would happen in *content-process far* situations, such as if the students were studying science or mathematics. Surely, the knowledge around topics like linear equations are far less related to the students' experiences and selves. While we understand this challenge and do not claim any generalizability outside of the domain of learning in this study, we have both good reasons and promising signs to suspect these ideas are still relevant. We use the following anecdote to illustrate our point: The lead author of this article interviewed a fifth grade student studying the human body in an inquiry-based learning environment. The student chose to inquire about the digestive system and was busy exploring the mechanics (inputs, outputs, connections) of the system. The interview questions focused on the

student's experiences and interests outside the classroom. The student reported that at home, he frequently built rockets with his father—who was an engineer. Likewise, the student described how he built elaborate contraptions to keep his dog inside a designated area in his home. For example, he would push the couch up against a coffee table, supported by a broom, so the dog couldn't push his way out. By exploring his knowledge, experience, and self in the there-and-then, connections with the students' "mechanical view" of the digestive system became evident. Had the person-centered approach been integrated into this learning environment, there would have been opportunities during class for this student to explore these connections, potentially opening him up to other perspectives or providing new insights into the different ways the human body could be investigated. Building on this anecdote, we currently have several ongoing research projects in settings that are *content-process far*. We hope to further explore this claim in those studies.

Finally, while designing and implementing a humanistic knowledge building community is a highly attainable goal, this comes with risks and the need for highly skilled, professional moderation. Making time for person-centeredness means allowing for unanticipated issues that the students raise, such as resistances towards the moderator, dealing with interpersonal conflicts, and other issues long described in psychological literature (e.g., Bion 1959). It is completely understandable why teachers prefer to put aside these social and emotional matters, or deal with them individually and not as a group-level process which they nurture. Moderating encounter groups often requires licensing (Tudor 2007), and the risks of running these groups can potentially disrupt students' lives if not treated with the professional sensitivities necessary. In general, we think that there are ethical considerations that must be taken into account for anyone leading a humanistic knowledge building community. With that said, we do believe that fostering transformational change requires learning environments that are sensitive to the student as a whole.

Conclusion

The motivation for this article comes from several sources. First, while scholarship on learning communities has been strongly influenced by humanistic education, attention—particularly from designs that are driven by sociocultural ideas—has not been paid to Carl Rogers and ideas of encounter groups. Though researchers frequently cite Piaget, Dewey and Vygotsky, Rogers certainly stands among these twentieth century giants that impacted education. Second, we hope to contribute to what we view as a recent interest and resurgence in considering the knowledge, experience, and self in learning, such as with the examples of a broad view of learning and ongoing identity research. Considering idea- and person-centeredness as two foci with different goals and activities adds new clarity to these issues, and shows the relation between what may appear to be otherwise fragmented lines of research. Finally, we have been engaged in a long-term design experiment, and although we have published different aspects of it, this is our first offering of an overarching framework to explain a great deal of our efforts. Our research has now matured to the point where we want to share our own conceptualization and findings with the broader educational community. Mainly, we seek to show how the integration of idea- and person-centeredness—embodied in what we call '*humanistic knowledge building communities*'—can inform the theory and practice of learning communities. The impact of this research has the potential to start a conversation between two academic communities, defined by idea- and person-centeredness, that have yet to converge.

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