

# **From lurkers to networkers: Cultural and epistemic dimensions of developing professional learning networks in online graduate education**

Vanessa P. Dennen, Instructional Systems & Learning Technologies, Florida State University,  
[vdennen@fsu.edu](mailto:vdennen@fsu.edu)

## **Abstract**

*Professional learning networks (PLNs) are topically-focused networks comprised of people, spaces, and tools. They offer an opportunity for professional growth and lifelong learning by fostering ongoing connections that offer resources and interactions. They are inherently unique to each individual, and their development is an ongoing and iterative process. While PLNs are often developed organically by professionals, the concept can be taught to students to prepare them for ongoing learning within their eventual careers.*

*This study explores how graduate students in an online course experience the development of professional learning networks (PLNs) through cultural and epistemic lenses. Students were asked to engage in PLN development on the topic of their choice, whether personal or professional. There were no requirements for the PLN or the extent of its development. Drawing on student reflections about their PLN-building process, the study employs two theoretical frames. First, a cultural network perspective is used to examine the interplay of the individual, their network, and culture. Second, to gain an epistemic perspective, the Networked Knowledge Activities (NKA) framework is used to consider how students engage with knowledge within their developing PLNs.*

*Findings show that PLN development focused on finding relevant resources and identifying and joining pre-existing groups. Additionally, connections to prominent thought leaders on social media platforms occurred. The course space served as a model for engaging in networked knowledge activities, some of which students deployed in their developing PLNs. Of the NKAs, collecting and curating were the entry behaviors, providing immediate content rewards and offering a way to learn about group and space norms. From there, sharing and brokering were likely to occur once individuals began to feel more comfortable. Some students ventured into negotiating knowledge, while few created and shared unique knowledge objects, although more indicated plans to do so in the future. This progression of activities shows the evolution toward more intentional engagement in a professional networked learning setting.*

*Findings show that PLN development is shaped by both internal motivations and external cultural forces. Students made deliberate choices about where to engage, which communities to join, and how to manage their digital identities. Epistemically, they grappled with questions of knowledge legitimacy, relevance, and organization, often developing strategies to manage information overload and align their networks with their learning goals. Overall, the findings suggest that PLN development is not simply a networking task, but requires cultural and epistemic support to facilitate a shift from observation to contribution in professionally consequential online spaces.*

## **Keywords**

*Higher education, networked culture, networked knowledge activities, professional learning network*

## **Introduction**

Higher education occupies the space between compulsory learning and career for many people. In this space, educators can support learners in not only mastering course objectives, but also in developing themselves as lifelong learners who will be able to engage in self-directed learning via learning networks in the future. Online courses in particular offer fertile environments for fostering rich exploration of networked learning opportunities beyond the classroom and within professions.

Networked learning sits at the intersection of humans, technology, and collaborative engagement (NLEC, 2020). While networked learning may take place within a formal class setting, it also can be found in much broader

contexts, among people who share professional interests and contexts, or personal interests and hobbies. Networked learning is reliant on constructs such as self-determination and trust, reflecting the underlying labor to connect with others and share in a technology-mediated environment (Hodgson et al., 2012). Notably, connection alone is not sufficient for networked learning to occur; matters of culture and fluidity will shape the learning outcomes (Tickner and Bozkurt, in NLEC, 2021).

The professional dimension of networked learning has been of particular interest among educators, whose needs for professional development, camaraderie, and support often can be addressed across institutions just as well as within institutions. As the Internet developed, online teacher professional learning networks (PLNs) developed. PLNs are comprised of three elements: people, spaces, and tools (Krutka et al., 2016). These elements combine to support professional growth. They were originally identified as networks that were developed organically by teachers who seek more than just the professional development offered to them locally and recognize the wealth of information and camaraderie available online (Trust, 2012). Their value among teachers is evident through the rapid growth of teacher online communities (Lantz-Andersson et al., 2018). In addition to education, networked professional development has been heavily studied in healthcare setting (Bruguera et al., 2019), although in practice professional networks exist across many professions.

While PLNs historically have been developed out of a professional's knowledge needs, their development may be facilitated by knowledge and skills that can be addressed within formal degree programs. It may feel logical to assume that contemporary students, who spend substantial time online, would develop and use PLNs organically. However, prior research suggests that university students are frequently passive in this realm and may lack skills that enhance PLN establishment (Dennen & He, 2026; Dennen et al., 2023). Shaped by earlier messages about social media use in school settings being inappropriate (Dennen, Rutledge, et al., 2020; Rutledge et al., 2019), many students approach online spaces cautiously and may not recognize their potential as professional learning sites. This hesitancy is consistent with broader findings that younger adults use digital tools effectively in personal contexts but require explicit support to develop broader digital literacy skills (Buchan et al., 2024) and to learn to collaborate in online environments (Kwiatkowska & Wiśniewska-Nogaj, 2022).

Passivity alone is not problematic, given that lurking has been long established as a viable means of learning (Dennen, 2008). However, it often is considered alongside active behaviors in the context of social learning (Li et al., 2023), with the implication that active behaviors are ideal and that passive participation reflects skill limitations or uncertainty (Choi & Hur, 2023). Additionally, learners may need to learn to connect (Carvalho, in NLEC, 2021). PLNs can be developed intentionally within university coursework, but care must be taken to ensure the resulting network represents the student's authentic goals and is not just modelled after a template or example provided in class (Dennen, Bagdy, et al., 2020). More research is needed to fully understand the processes that occur as PLNs are developed along with the outcomes that they yield (Poortman et al., 2021), particularly in terms of cultural and epistemic dimensions. This study offers a step forward in examining the process dimension in higher education, where PLNs may be both unfamiliar and professionally consequential.

## Purpose and Research Questions

While PLNs have been widely discussed in professional development literature, less attention has been paid to how learners experience their formation. The purpose of this study is to examine how graduate students who are encouraged to develop a PLN within an online course experience the process from cultural and epistemic dimensions. Within the course, one goal was to have the students experience networked learning beyond the classroom walls, as described withing the Networked Learning community by Hodgson and McConnell (2020) and consistent with the notion of a PLN as defined by Krutka et al. (2016). To assess student understanding of how to develop and interact within PLNs, a reflection paper was assigned in which students were asked to recount their experiences and relate it to networked learning concepts covered within their class.

The research questions guiding this study are:

- 1 How do graduate students describe the development of their PLNs, from initial engagement to active contribution?
- 2 How do students engage with knowledge and culture while developing PLNs?
- 3 How do PLN development choices reflect cultural and identity structures?
- 4 What challenges do students encounter and foresee as part of ongoing PLN development and management?

These questions are anchored within a cultural and epistemic context that is unique to this group of learners, collectively and individually. By looking closely at the experiences of these students who share a common course experience yet build PLNs that are as different as the individuals creating them, the rich nature of PLN development is illuminated.

## Theoretical Frameworks

Two theoretical frameworks guide this inquiry. First, elements of McLean’s (2017) cultural network perspective are used to help understand the varied ways that culture intersects with networked learning environments (see Table 1). McLean explores how culture is inherently relational and ever shifting, shaped by people, identity, power, and platforms. He frames culture as something that runs through networks and is produced from networks whilst also noting that networks may be born out of culture. These concepts provide a lens for analyzing how students’ PLNs are cultural systems where identity, belonging, and meaning-making are continuously negotiated.

**Table 1: Elements of Culture in Networks**

Networked Culture	Brief Description	How it Supports Networked Learning
Culture through Networks	Culture flows within networks, diffused among the participants	Learners access new ideas, materials, and philosophies
Culture from Networks	Culture is produced through network interactions	Learners contribute to and experience collaborative norms, identities, and culture
Networks from Culture	Networks are shaped by their participants’ cultures	Learners develop PLNs based on their interests and preferences for diversity, inclusivity, and sustainability

Bringing in the epistemic perspective, this study uses the Networked Knowledge Activity (NKA) framework (Dennen, 2024; Dennen, Word, et al., 2020), which conceptualizes networked learning as an act fostered by a variety of intentional, distributed actions, often undertaken within PLNs. These activities reflect learners’ agency and persistence in constructing and navigating their own learning ecologies, often across multiple platforms and communities. As they engage in the NKAs, learners must make determinations such as what counts as knowledge, what kinds of knowledge interaction they and others seek, which sources of knowledge are trustworthy, and which ones warrant collaborative interrogation or exploration. From the PLN perspective, the NKAs (summarized in Table 2) are tools that help people find meaningful engagement in a networked learning environment.

The intersection of these frameworks allows for a nuanced understanding of how graduate students’ PLNs function as both cultural and epistemic systems, shaped by relational practices, platform affordances, and the socio-cultural contexts in which they are embedded. While enacting a networked knowledge activity or experiencing the culture of a network does not automatically make one a networked learner (a person could simply go online, search for a few resources, and collect them), it would be difficult to experience networked learning without epistemic and cultural elements.

**Table 2: Overview of Networked Knowledge Activities as Tools**

Networked Knowledge Activity	Tool Process	How it Supports Networked Learning
Collect	To identify and save knowledge objects	Enables learners to discover and gather information, often motivating them to form a PLN to continue the discovery process
Curate	To evaluate, organize, and annotate a meaningful group of knowledge objects	Encourages critical thinking and intentional learning by helping learners manage information overload and align resources with specific topics and goals

Share	To make knowledge objects available to others	Fosters reciprocity and community engagement, allowing learners to contribute to collective knowledge
Broker	To pass knowledge objects from one person or space to another person or space	Connects communities and ideas, enabling learners to act as bridges across disciplines, platforms, or cultures
Negotiate	To engage in dialogue about the meaning, quality, accuracy, and use of knowledge objects	Supports collaborative meaning-making and the co-construction of knowledge
Create	To generate new knowledge objects or remix existing ones in a unique way	Promotes active learning, expertise development, and identity formation as learners contribute original content to their networks
Network	To build connections between people and across spaces	The overarching activity that shifts the other NKAs from being isolated acts to ones that engage and respond to a broader cultural context.

## Method

This study is a qualitative content analysis of student reflections on their experiences with personal learning networks in an online, graduate level course. This study was approved by the researcher's Institutional Research Board. The data set consists of 21 reflection papers, ranging in length from 3-5 pages, written by students at the end of a semester. Within their course, which focused on learning and collaborating in online networks, one of the topics covered was professional learning networks. Students were encouraged to engage in their own network development by exploring, engaging, collaborating, and reflecting on whatever topic suited them, whether professional or personal. There were no requirements for the PLN's focus or the extent of its development. Students could earn full points even if they failed to develop a PLN as long as they were able to articulate the barriers to PLN creation and demonstrate a mastery of the concept at a cognitive level.

All data was de-identified prior to analysis, removing not only student names but also names of other people, groups, spaces, and experiences within their PLNs. Only general references to platforms, like Facebook, were left in the de-identified dataset because their use is so ubiquitous as to not render a person and their experiences identifiable. Then the data were coded using an *a priori* codebook consisting of cultural perspective (see Table 1), networked knowledge activities (see Table 2), and PLN elements (i.e., people, spaces, tools). In the analysis, the PLN elements indicated who students connected to, where they engaged, and the platforms and resources that mediated this engagement. Additional open coding was done to help identify development processes and challenges. Coding was done using MAXQDA. Synthetic memos were written for each code and illustrative quotes were identified to help address the research questions.

## Findings

In this study, the learners experienced two overlapping learning ecosystems, each with its own implications for networked learning (see Table 3). Within their class, learners were operating in a largely closed system with defined network possibilities. The instructor worked to foster a sense of trust and interdependence within the class, relying on tools that both provided privacy (learning management system) and a platform for exploring one's voice (blogs). Despite the public nature of blogs, these course blogs were not engaged with by people outside the class. To engage in beyond class collaborations, learners had to make self-directed choices about where, how, and with whom to participate.

**Table 3: Comparison of networked learning ecosystems within and beyond class**

Networked Learning Component	Within Class	Beyond Class (Developing PLN)
Human Engagement	With classmates and instructor	With people accessible via online communities and platforms
Technology	Learning management system that provides common space for interaction as designed by instructor Blogs that allow students to lead with their voice	Self-chosen online spaces and platforms based on personal preferences, comfort, affordances, and interests
Collaborative Engagement	In pursuit of course learning objectives Minimum levels required for grade Self-directed exploration and engagement encouraged	Self-directed exploration and contribution to communities, driven by intrinsic motivation, curiosity, and personal learning goals Engagement levels varied based on personal comfort, available time, and visible opportunities

### PLN Development

Students shared experiences of organic origins and intentional cultivation alongside their narratives of the course as a formal trigger to engage a PLN. Many students echoed the sentiment expressed succinctly by one of them, “I now realize that I have been creating a PLN for a while, but I did not have a term or definition for my actions.” Stories of organic development typically referenced a person’s interest, whether career or hobby-related, which led to an online search for information and eventually resulted in finding spaces where people interact around that topic. Students reporting a more intentional path toward PLN cultivation often cited work pressures to build a network, and starting with LinkedIn and professional organizations. While a course or job context might create a formal need to seek information, use a particular online platform, or create a network, informally students reported being driven by forces ranging from idle curiosity or encouragement of others.

In terms of people and spaces, most students gravitated toward making connections through pre-existing group spaces. As one student commented, “In my observation, a strong sense of community has been established in the group since more than one group members have expressed their feeling of belonging.” Additionally, spaces like LinkedIn and topic-specific platforms were identified as ways to connect with experts and like-minded peers.

Most students reported starting with a lurker phase, observing others, making connections, and “simply consuming the material.” The transition to interaction was often articulated as an intentionally set goal, often motivated by a desire to be present and acknowledge the labor of content creators. One student suggested this act would “help contribute to even more knowledge sharing.” It involved taking simple steps, such as liking, resharing, and offering comments or positive feedback. Not all students felt prepared for more active contribution by the end of the course, although they all shared their creations and negotiated knowledge within the shared course space. In that sense, the course space served as a playground for developing PLN engagement skills and confidence.

### Engagement with Knowledge

Collecting knowledge was the epistemic entry point for most students, who reported finding resources that were personally and professional meaningful. In order to collect knowledge, students reported varied strategies, such as following feeds of relevant people and groups, skimming and saving, and searching social media. s time done concurrently with observing different spaces to learn their norms and determine whether to incorporate them into a network and contribute to that network. Collecting quickly led to curation, as students realized they needed a way to streamline and organize the knowledge they found and the people that they followed. Again, strategies varied, including use of bookmarking tools, Pinterest, and downloading items to a personal computer.

Most of the sharing that occurred within PLNs was at the level of resharing items created by others or providing brief comments within discussions. Brokering was fairly common, with students joining multiple groups and encountering knowledge in one group that they knew would be of value to people in another group. About half of the students reported plans for sharing their own creations in the future, but most were not feeling ready to do that yet. The few students who indicated they had already shared personal creations to their PLNs had pre-existing creations that they were proud of and felt ready to share with a wider audience.

Knowledge negotiation was commonly referenced among students who joined active, pre-existing groups focused on narrow topics or providing support. These types of groups offered a “healthy amount of knowledge negotiation” and hosted discussions where “deeper thoughts and brainstorming take place.” One student was delighted to find that when they asked a for others’ opinions on a topic, they received dozens of replies. Knowledge negotiation appeared to be an easier entry point for active engagement beyond sharing and brokering when compared to creation.

### **Engagement with Culture**

As students engaged with communities across platforms, they encountered and participated in distinct cultural groups shaped by shared norms, values, and practices. These groups influenced how students interacted and formed relationships. One student shared how the PLN development path led her to join two groups of people on different platforms, both offering an opportunity to engage with likeminded people having similar life experiences and aspirations:

The [Community A] and [Community B] groups are people I’ve never seen face-to-face, but they teach me something almost every day and have built a sense of comradery within their groups that feels personally and professionally fulfilling.

Joining pre-existing groups such as these was considered by many students as a quick way to grow one’s PLN, and an approach that was comfortable because of how many groups were explicit about their norms and group cultures.

The students began to recognize the niche nature of some knowledge and its applications as manifest through cultural elements of group sharing. More homogenous groups were able to have deep discussions without much background explanation.

This aspect of my PLN is where highly specialized, genre-specific knowledge about [disciplinary] techniques and conventions is gained and shared because these individuals and I have a shared language and shared reference points to give context to our conversations about particular types of [disciplinary work].

In contrast, another student told a story about a mixed-background community they joined, noting that while there was a shared interest in a discipline, there were two distinct work contexts that merged within the group. They reflected, “While the mixing of these two groups enriches the conversation, there is also an inherent need to explain paradigms and define terms.”

For some, online modes of interaction opened up new pathways to connecting with people. A student attended an online conference, not thinking about local connections, when they found themselves interacting in a shared space with practitioners in the same field from a different local organization. They knew these people already, but found the online space to be more conducive to interacting with them. They shared, “I am honestly not sure if we would have connected otherwise face-to-face because some of the [local organization practitioners] in particular did not seem as talkative in person!” This experience offered insights into how spaces can have their own culture and shape the nature of interactions and relationships that occur within them. A conversation may not occur when face-to-face environments allow people to isolate with their work peers, whereas a distributed chat environment might encourage people to see, hear, and speak with unfamiliar people.

Students also discussed increased exposure to local and global culture. During the initial stages of PLN development students tended to leverage within class spaces and relationships while they tentatively considered their actions beyond the class. In these moments, two key things happened. First, students were united in their common experience and began to share openly with each other about their interests, anxieties, and strategies for venturing beyond the class. These moments helped develop a strong culture of sharing within the class and, per two of the students who were new to the university, helped them feel connected to the local culture. Second, as students built confidence and made new connections, they reported back to the class which was deemed motivational. An example is a situation where one student started contributing in a space and then was formally recognized as their ‘new member of week.’ In terms of global culture, some students expressed surprise at having made international connections. One student discovered a pocket of people in another continent with shared interests. When embarking on their network development process, they had not thought much about encountering people from geographic places that felt far away. Another student expressed joy at the exposure to international customs and traditions that they experienced by interacting with others in their network. Across all experiences,

local, global, or between, were comments demonstrating a rich awareness of how homogeneity and heterogeneity can be a matter of one’s perspective.

Elements of culture in networks were apparent throughout the papers (see Table 4). One student commented on how important it is to share in networks, stating, by sharing information we become active. I can have a vast knowledge base, but if I don’t share it or apply it somehow then it is completely passive and goes nowhere.”

**Table 4: Networked Culture in the Student PLN Experience**

Networked Culture	Student PLN Experiences
Culture through Networks	Collecting and negotiating knowledge fostered a sense of network culture; group norms could readily be adopted
Culture from Networks	The brief duration of the class did not leave much time for this element to be present, but as students made or planned the shift from lurker to active participant they became increasingly likely to contribute to the cultural development of their network
Networks from Culture	Network development was intentional, with people and spaces selected or avoided based on interest and comfort. Each student’s network was made of connections that were culturally relevant.

### PLN Challenges

Four main challenges were evident across the dataset: time, information overload, personal discomfort, and privacy. Students were aware of the time commitment necessary to maintain a robust PLN. One student stated, “I have to exercise time management skills in order to ensure I am responding to individuals and community members in a timely manner that supports continued conversation and learning.” Not all felt they had the ability to devote time to the task. One student referred to time as “my biggest enemy.” Others shared strategies they had devised to keep their networking efforts manageable, including making connection that “don’t require frequent stimulation” and setting aside weekly time for the effort. One even pledged to do at least one act of creating, sharing or connecting each week to maintain their PLN without a substantial time commitment.

Some students found themselves overloaded with the volume and speed with which information is presented in a PLN. While they found it valuable and wanted the information to be accessible to them, they had more information than they could possibly consume. Like time issues, this offered the opportunity for developing management strategies. One student shared that they were purging connections, finding that a smaller, more focused network was more manageable. Another student also advocated for smaller networks, suggesting that the experience of a large network is “watered down.” Students had a largely goal-oriented focus toward their PLNs, and thus having it optimized for the information that they wanted, describing their process of getting to that point as one of vetting content or being a network architect.

Interacting in their PLNs was not always comfortable for students. Partly this reflected the newness of the activity for some students, at least as an intentional act, and partly it reflected self-doubt or lack of confidence. Students feared sharing in online spaces because they worried they did not have the experience, gravitas, or writing skills to be effective and well-respected contributors. A student felt “genuinely sure that my posting or contribution is inconsequential.” Recognizing their own discomfort in the shift from lurking to actively engaging, one student offered, “I hope that I can ease this anxiety in others.”

Privacy concerns reflected matters such as protecting one’s personal and professional identity along with careful consideration of what one’s employer might consider inappropriate sharing. Students discussed taking deliberate steps to manage their online identity and creating boundaries to feel safe or comfortable. Specific strategies included setting up new accounts for exclusive use professionally, avoiding platforms that felt unsafe or negative, using pseudonyms, and providing limited information in account profiles.

### Discussion

The findings indicate that PLN development is not merely a technical or procedural task, but a deeply relational and cultural process. Students had agency, and many situated themselves in the liminal space between the closed system of the class and the open Internet at large. This liminal space, referred to by as a threshold (Ryan, 2020), allowed them to experiment with networked learning behaviors while still anchored in a supportive academic

context. This notion of experimenting in a liminal space is important; many of these students would soon be entering liminal spaces of greater consequence as they graduated and transitioned to new careers.

The transition from lurker to networker was a central theme, reflecting both epistemic growth and cultural negotiation. Like students in other studies (e.g., Dennen et al., 2024), these students used online spaces for active social engagement more than active knowledge engagement prior to the course. Students began by collecting and curating knowledge, often in solitary ways, before gradually engaging in sharing, brokering, and negotiating meaning. These actions demonstrate how students used networked knowledge activities as tools while serving as active agents constructing their own networks.

Culturally, students encountered varied norms, values, and practices across platforms and communities. Their reflections highlighted how networked culture is not monolithic but shaped by the microcultures of specific groups. Some students found comfort in homogenous communities with shared language and reference points, while others embraced the richness and challenges of heterogeneous spaces that required translation and explanation. The class space was one of those homogenous spaces, especially when viewing it through a lens of shared expertise. Participating in the more diverse spaces beyond the class sometimes led to feelings of discomfort or even imposter syndrome, but also promised some of the greatest network outcomes.

Students exercised agency in shaping their PLNs, making deliberate choices about where to engage, what to share, and how to protect their identities. The challenges they faced, including time constraints, information overload, discomfort, and privacy concerns, underscore the need for intentional design and support in fostering sustainable PLN practices. Additionally, challenges like time and confidence have been found to be important elements of a PLN in other studies (Trust & Prestridge, 2021).

This study has several limitations. It is situated in a specific course context with a small sample by design. Caution should be taken before applying these findings to other contexts. The analysis is retrospective, based on student reflection, and lacks the same richness as direct observation of the PLN development process over time. Further, the instructor's prompts and framing of PLNs undoubtedly influenced the way students approached the reflection task, and likely also the PLN development task. Finally, the abbreviated time frame in which students developed their PLNs before reflecting on them limits the ability to comment on issues like long-term sustainability.

## **Implications**

These findings suggest that educators should not only encourage PLN development but also scaffold it intentionally, recognizing the cultural and epistemic dimensions that shape learners' experiences. Support should include opportunities for reflection, guidance on navigating diverse communities, and strategies for managing digital identity and well-being. By fostering awareness of cultural norms and epistemic practices, educators can help students build sustainable, meaningful PLNs that extend beyond the classroom and into their professional lives.

Online communities can benefit from these insights by designing spaces that are welcoming to newcomers, transparent about norms, and supportive of gradual engagement. Recognizing the lurker-to-contributor trajectory, community moderators and designers might consider onboarding strategies that reduce anxiety and promote inclusive participation, especially for learners navigating new cultural or disciplinary terrains. Professional development programs should consider integrating PLN cultivation as a core component, not just as a technical skill but as a reflective practice. Facilitators can help participants explore their epistemic preferences, identify culturally resonant communities, and develop strategies for sustained engagement. Doing so supports not only individual growth but also the development of vibrant, cross-institutional learning ecosystems.

## **Conclusion**

This study has highlighted the nuanced and personal nature of PLN development within a graduate course, showing how students were able to take initial steps toward connecting with people and spaces in pursuit of knowledge using NKAs as knowledge interaction tools. Future research might expand on this work, looking longitudinally at how course-developed PLNs are managed and whether they are sustained over time. Additionally, future work might seek to document the personally and professionally meaningful outcomes that students experience because of their PLN development and interaction. This type of research, focused on individuals and the networks they build, might then be analyzed considering the research on online communities, looking for points of cultural flow among individual networks and the community groups they contain. Such research would expand our understanding of sharing and brokering practices and help identify how knowledge

and practices are developed and disseminated throughout professions. Additionally, research on individual networks can be used to help better support the newcomer experience in online communities, identifying ways to support newcomer inclusion and epistemic engagement.

## References

- Bruguera, C., Guitert, M., & Romeu, T. (2019). Social media and professional development: A systematic review. *Research in Learning Technology*, 27(0). <https://doi.org/10.25304/rlt.v27.2286>
- Buchan, M. C., Bhawra, J., & Katapally, T. R. (2024). Navigating the digital world: Development of an evidence-based digital literacy program and assessment tool for youth. *Smart Learning Environments*, 11(1). <https://doi.org/10.1186/s40561-024-00293-x>
- Choi, H., & Hur, J. (2023). Passive participation in collaborative online learning activities: A scoping review of research in formal school learning settings. *Online Learning*, 27(1), 127-157. <https://doi.org/10.24059/olj.v27i1.3414>
- Dennen, V. P. (2008). Pedagogical lurking: Student engagement in non-posting discussion behavior. *Computers in Human Behavior*, 24(4), 1624-1633. <https://doi.org/10.1016/j.chb.2007.06.003>
- Dennen, V. P. (2024). Social media and instructional design. In R. A. Reiser, A. A. Carr-Chellman, & J. V. Dempsey (Eds.), *Trends and issues in instructional design and technology* (5th ed., pp. 498-509). Routledge.
- Dennen, V. P., Bagdy, L. M., & Ayan Karabatman, H. (2024). Navigating the high school to university transition with social media: Intensity of use, sense of belonging, and meaningful change. *Information and Learning Science*, 125(10), 831-849. <https://doi.org/10.1108/ILS-12-2023-0208>
- Dennen, V. P., Bagdy, L. M., & Park, Y. (2020). Preparing preservice teachers for PLN development and use: Evaluating a learning unit. SITE Interactive Conference,
- Dennen, V. P., & He, D. (2026). University students and networked learning on social media: Approaches to networked knowledge activities across contexts. In N. Dohn, M. Cutajar, C. Borg, T. Ryberg, & M. de Laat (Eds.), *Narratives of hope in times of change: Networked learning for futures of possibility* (pp. 61-81). Springer Nature Switzerland.
- Dennen, V. P., He, D., Shi, H., & Adolfson, D. (2023). College students, networked knowledge activities, and digital competence: Implications for online instructors. *Online Learning*, 27(4). <https://doi.org/10.24059/olj.v27i4.4046>
- Dennen, V. P., Rutledge, S. A., & Bagdy, L. M. (2020). (Dis)connected: The role of social networking sites in the high school setting. *American Journal of Education*, 127(1), 107-136. <https://doi.org/10.1086/711016>
- Dennen, V. P., Word, K., Adolfson, D., Arechavaleta, V., He, D., Hsu, C.-W., Hur, J., Jung, D., Kent, H., Russell, A., & Toth, K. (2020). Using the networked knowledge activities framework to examine learning on social networking sites. In P. Kommers & G. C. Peng (Eds.), *Proceedings of the international conference on Web-based Communities and Social Media 2020* (pp. 165-172). IADIS Press.
- Hodgson, V., & McConnell, D. (2020). Becoming a knowledge community: The epistemic practice of networked learning. In N. B. Dohn, P. Jandric, T. Ryberg, & M. de Laat (Eds.), *Mobility, data and learner agency in networked learning* (pp. 1-16). Springer.
- Hodgson, V., McConnell, D., & Dirckinck-Holmfeld, L. (2012). The theory, practice and pedagogy of networked learning. In L. Dirckinck-Holmfeld, V. Hodgson, & D. McConnell (Eds.), *Exploring the Theory, Pedagogy and Practice of Networked Learning* (pp. 291-305). Springer New York. [https://doi.org/10.1007/978-1-4614-0496-5\\_17](https://doi.org/10.1007/978-1-4614-0496-5_17)
- Krutka, D. G., Carpenter, J. P., & Trust, T. (2016). Enriching professional learning networks: A framework for identification, reflection, and intention. *TechTrends*, 61(3), 246-252. <https://doi.org/10.1007/s11528-016-0141-5>
- Kwiatkowska, W., & Wiśniewska-Nogaj, L. (2022). Digital skills and online collaborative learning: The study report. *The Electronic Journal of e-Learning*, 20(5), 510-522.
- Lantz-Andersson, A., Lundin, M., & Selwyn, N. (2018). Twenty years of online teacher communities: A systematic review of formally-organized and informally-developed professional learning groups. *Teaching and Teacher Education*, 75, 302-315. <https://doi.org/https://doi.org/10.1016/j.tate.2018.07.008>
- Li, S., Hong, Y.-C., & Craig, S. D. (2023). A systematic literature review of social learning theory in online learning environments. *Educational Psychology Review*, 35(4), Article 108. <https://doi.org/10.1007/s10648-023-09827-0>
- McLean, P. (2017). *Culture in Networks*. Polity Press.
- NLEC. (2020). Networked learning: Inviting redefinition. *Postdigital Science and Education*, 3(2), 312-325. <https://doi.org/10.1007/s42438-020-00167-8>

- NLEC. (2021). Networked learning in 2021: A community definition. *Postdigital Science and Education*, 3(2), 326-369. <https://doi.org/10.1007/s42438-021-00222-y>
- Poortman, C. L., Brown, C., & Schildkamp, K. (2021). Professional learning networks: A conceptual model and research opportunities. *Educational Research*, 64(1), 95-112. <https://doi.org/10.1080/00131881.2021.1985398>
- Rutledge, S. A., Dennen, V. P., Bagdy, L. M., Rowlett, J. T., & Burnick, S. (2019). Exploring adolescent social media use in a high school: Tweeting teens in a bell schedule world. *Teachers College Record Yearbook*, 121(14).
- Ryan, P. (2020). Open sesame! And then? Connection, connectivity, and liminal thinking. In D. Conrad & P. Prinsloo (Eds.), *Open(ing) education* (pp. 47-71). Brill.
- Trust, T. (2012). Professional learning networks designed for teacher learning. *Journal of Digital Learning in Teacher Education*, 28(4), 133-138. <https://doi.org/10.1080/21532974.2012.10784693>
- Trust, T., & Prestridge, S. (2021). The interplay of five elements of influence on educators' PLN actions. *Teaching and Teacher Education*, 97. <https://doi.org/10.1016/j.tate.2020.103195>