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CONVERGENT TRANSPARENCY FOR TRANSFORMATIONAL LEARNING: ENHANCING THE COMMUNITY OF PRACTICE COMPONENT OF VIRTUAL ANDRAGOGY

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**Convergent Transparency for Transformational Learning: Enhancing the
Community of Practice Component of Virtual Andragogy**

Synopsis:

Virtual Andragogy (VA) (Greene & Larsen, 2015 & 2017) offers instructional designers and distance educators a shared paradigm to holistically address the complexity of online learning for adults to develop transferable "affective, behavioral, and cognitive growth" (p. 6). This study explores the synergy of a key VA concept, Community of Practice, with Convergent Transparency, to support learner engagement in creating understanding that is personal, meaningful and transformational.

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Abstract

The share of fully online college course enrollments has increased steadily over the past 10 years (Xu & Jaggars, 2013). Correspondingly, the proportion of non-traditional students, those who are balancing multiple outside responsibilities or are returning to school as adult learners has also increased (Radford, Cominole, & Skomsvold, 2015). Studies of online student outcomes tend to indicate decreased student academic performance in online settings (e.g., Hart, Friedmann, & Hill, 2016; Johnson & Mejia, 2014; Xu & Jaggars, 2013, 2014), suggesting the need for improved instructional approaches in online settings. Virtual Andragogy (Greene & Larsen, 2015, 2017) provides an instructional framework to address the complexities of online learning construction on constructivist and Community of Practice foundations. In this paper we explore the use of both prongs of convergent transparency, design and instructional, to support the *need to know* element of Virtual Andragogy. We use a course revision process as an opportunity to provide students with multifaceted understanding and insight into the why behind instructional design choices to promote a deeper awareness of the whole of the learning process. We argue that a richer, broader, multimodal understanding of course design elements strongly promotes the achievement of course learning objectives by building meaningful bridges between learning tasks and content knowledge within a virtual Community of Practice (Lave & Wenger, 1991).

Keywords: Community of Practice, Transformational, Instructional Design

Convergent Transparency:

An Online Course Design Framework for Adult Learners

The share of higher education students enrolled in distance education – specifically in online courses – has steadily increased over the past 10 years (Xu & Jaggars, 2013). Empirical studies investigating the outcomes of students in online classes have consistently associated online course-taking with a number of decreased academic outcomes including course completion and course grades (e.g., Hart, Friedmann, & Hill, 2016; Johnson & Mejia, 2014; Xu & Jaggars, 2013, 2014). However, none of the current literature presents compelling evidence to support why online students tend to have lower outcomes. Virtual Andragogy (Greene & Larsen, 2015, 2017) provides an instructional framework to address the complexities of online learning construction on transformational Community of Practice (CoP) foundations.

The research and concepts presented in this paper reflect the efforts of two higher education faculty with backgrounds in instructional design to better serve the learning needs of *today's* Master of Arts in Education: Instructional Technology students, in an informed, exploratory attempt to empower them to afford more meaningful learning for their students *tomorrow*. Within the degree program, candidates create their own online courses using a Learning Management System (LMS). A design update to the LMS forced the faculty to step back and revisit all that had gone into the crafting of the course learning outcomes and the crafting of the final two courses. This inspired a decision to modify both the curriculum design and related facilitation for the learners into something that more blatantly paralleled the

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philosophy of the program- more reflective, mindful, adaptable to the needs and desires of the individual learners, and authentically rich with the modeling of best practices for a student-centered learning experience.

Literature Review

The foundation of the work being examined in this paper is multifaceted and draws upon theories, research, and relevant literature from several different fields of study. Andragogy serves as the primary base upon which the rest of the scaffold and frame work stands. Thus, this review offers an examination that not only digs down into that core component, but also explores the relevant concepts of transformational learning, online instructional design, and transparency. The review concludes with the convergence of that information as it relates to the proposed paradigm of Convergent Transparency.

Andragogy

While the term *pedagogy* can be used to refer to the over-arching paradigm of teaching and learning (Dictionary.com), the traditional use of the word has been focused on all that goes into educating children and adolescents (Holmes & Abington-Cooper, 2000). In the 1960's, a call arose from those teaching adults for a more relevant conceptual framework, one that enabled them to better serve their older students (Holmes & Abington-Cooper, 2000). It was amidst this that, in 1968, Malcolm Knowles began sharing his "model of assumptions" (Merriam, Caffarella, & Baumgartner, 2007, p. 43) that came to be the core of *andragogy, the art and science of teaching adults* (Blackley & Sheffield, 2015; Reischmann, 2004; Terehoff, 2002).

Knowles acknowledged parallels between pedagogy and andragogy, but was clear on what he viewed as key, primary differences, such as how adult learners are "self-directed and

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autonomous” (Reischmann, 2004, p. 3) and that the role of the instructor is one of facilitating the attainment and construction of knowledge where previous experience is part of the learning rather than dissemination with the expectation of replication. While andragogy is often referred to as a theory, Knowles’ preferred that the construct be considered more of a guiding model (Blackley & Sheffield, 2015; Terehoff, 2002). Even so, andragogy is often cited as being foundational for educators seeking to design and support transformational adult learning (Arghode, Brieger, & McLean, 2017; Giannoukos, Besas, Galiropoulos, & Hioctour, 2015; Huang, 2002).

Transformational Learning

The terms *transformational* and *transformative* are often interchanged in the literature when discussing “learning that involves reflectively transforming the beliefs, attitudes, opinions, and emotional reactions that constitute our meaning schemes” (Mezirow, 1991, p. 223). Whichever term is specifically applied, the overarching focus is on shifting habits of the mind through personal experience and critical reflection (Cranton & Kasl, 2012; Erickson, 2007; Mezirow, 1991 & 1998; Taylor, 2007). For the purposes of this work, all that both *transformational* and *transformative* learning represent are included in the use of only the word *transformational* for the sake of clarity.

Whether through thought, through writing, through discourse, or through action, transformational learning is dependent on active self-engagement with a topic or an idea in a fashion that promotes an authentic shift in knowledge, a shift in attitude, or a shift in perspective by the individual rather than being dictated by an outside force or influence (Culatta, 2018; Jones, 2009; White & Nitkin, 2014).

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Whereas Merriam, Caffarella, and Baumgartner (2007) note that adult transformational learning can be a singular, revelatory experience where a sudden recognition alters a previously accepted belief or truism, it is often an incremental series of events that slowly work together to afford an individual's recognition of a revelatory change in understanding. Thus, reflection serves as the vehicle for the journey toward reaching the tipping point where the individual recognizes that the earlier schemata or paradigm is now incorrect or overly simplistic to be considered *the truth* (Jones, 2009; Mezirow, 2000). Transformational learning alters not simply the *what* is known in the mind of the individual, but it also modifies the, "*how we know*" (Kegan, 2000, p. 49, emphasis in original).

In keeping with this understanding, the work of Mezirow (1991, 1997, & 2000) offers two specific foci on transformational learning:

instrumental and communicative learning. Instrumental learning focuses on learning through task-oriented problem solving and determination of cause and effect relationships. Communicative learning involves how individuals communicate their feelings, needs and desires. (Culatta, 2018, para 1)

Thus, one hallmark of transformational learning is that cognitive engagement of the individual goes beyond the general accumulation of facts into the deeper realm of understanding that supports integration across subject-specific areas of study and application (Baumgartner, 2001; Calleja, 2014; Mezirow, 1997 & 2000). Yet, for transformational learning to be authentic, an individual cannot engage solely with his/her cognitive domain, one's affective and behavioral, domains must be involved in the reflection and identification of shifts of perception and understanding (Jones, 2009; White & Nitkin, 2014). This idea was initially disregarded by Merzirow (1997) with his focus solely on the cognitive. However, after multiple additional

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researchers in the early 1990's focused on the critical nature of all three domains, Mezirow modified his initial position and publicly supported the understanding (Baumgartner, 2001; Calleja, 2014). This connection of the *whole learner* to transformational learning is a key element to the construct of Convergent Transparency and will be examined in that section of this literature review.

Online Instructional Design

The general history of online instruction has consistently favored behaviorist constructs (Jones, 2009). While multiple frameworks, formats, and theoretical scaffolds have come and gone as evolving technologies afforded more interaction for the learner from an experiential perspective, the introduction and on-going use of Learning Management Systems (LMSs) to disseminate information and then collect student data (work) has created an ongoing struggle between those favor more constructivist theories of learning where student engagement in the creation of understanding is the crux of a successful learning experience and those who prefer a more traditional curriculum where content is pushed to the student and then used to pass quizzes, tests, and write papers to demonstrate attainment of the desired knowledge (Azimi & Fazelian, 2013).

The behaviorist paradigm of online learning has been challenged not only by educational theorists and researchers such as Lave and Wenger (1991) and Riel and Polin (2014), but also by professional instructional designers who struggle to help the teachers and faculty members they serve create online learning that is relevant to today's engaged, media-savvy students (Intentional Futures, 2016). Today's instructional designers report difficulties working with faculty to ensure that online classes are vehicles for authentic engagement rather than simple

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delivery devices for students to upload assignments and wait for a grade in return (Beirne, & Romanoski, 2018).

Communities of Practice

The issues previously noted underscore the lack of connection between the behaviorist model of online design and learning and the potential of transformational learning. One well-regarded paradigm for bringing the potential of transformational learning into the online educational environment is that of a *Community of Practice* (CoP), which initially first garnered attention in 1991 with Jean Lave and Etienne Wenger's book, *Situated Learning: Legitimate peripheral participation*. Only seven years after the initial concept was introduced, Wenger alone published the seminal text on this concept, *Communities of Practice: Learning, Meaning, and Identity*. By 2016, the theory became so highly regarded that it had been cited in some 3500 books and journal articles (Farnsworth, Kleanthous, & Wenger-Trayner, 2016). As an outgrowth of situated learning, the core understanding of Community of Practice (CoP) is that the "social engagements provide the proper context for learning to take place" (Lave & Wenger, 1991, p. 14). Additionally, the theory clarifies that an individual "acquires the skill to perform by actually engaging in the process, under the attenuated conditions of legitimate peripheral participation" (Lave & Wenger, 1991, p. 14).

Communities of practice are formed by people who engage in a process of collective learning in a shared domain of human endeavor: a tribe learning to survive, a band of artists seeking new forms of expression, a group of engineers working on similar problems, a clique of pupils defining their identity in the school, a network of surgeons exploring novel techniques, a gathering of first-time managers helping each other cope. (Wenger-Trayner & Wenger-Trayner, 2015, p. 1)

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Additionally, within a CoP:

students are encouraged to actively engage in learning: to discuss, argue, negotiate ideas, and to collaboratively solve problems... Because of their rich life and employment experience, the social, situated nature of learning through practices appears particularly authentic and appropriate for adult learners. (Ruey, 2010, p. 9)

Virtual Andragogy

Virtual Andragogy (Greene & Larsen 2015, 2017) builds upon the CoP model in that it identifies the learning process as one that is continuously moving and active in the very nature of the engagement of the student along multiple continuums.

Each adult learner enters the course as a novice in that specific Community of Practice, the subject, field, or discipline. It is only through mindfully engaging in authentic processes, multiple micro, scaffolded experiences, that the individual is able to mature in knowledge, skill, and understanding to become an authentic a member of those who do, understand, and know the subject, field, or discipline. In short, the journey from outsider to insider of the Community of Practice is a continuously moving target rather than a recipe of step-by-step procedures. (2017, p. 6)

The learner and his/her journey from neophyte to engaged, fluid practitioner is at the core of the design, in contrast to the content being the primary focal point for the design of both the curriculum itself and the learning experience. Mezirow's transformational learning concepts of engagement and reflection (2000) are continuously intertwined with activities and outcomes throughout the entirety of the learning process (Greene & Larsen, 2017).

Transparency

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In her 2009 article, *Transformational learners: Transformational teachers*, Jones offers multiple visual paradigms for conceptualizing the issues facing teacher educators in how to best support newer teachers in applying their content knowledge and pedagogical understandings to the reality of classrooms with multiple students and all of their individual needs. One particular area she returns to throughout the paper is how empowering it is for the teacher educators to be transparent with their charges, to serve in more of a mentorship role via greater transparency in their choices and the advice they offer rather than simply noting what the neophyte is doing well or where more focus is necessary. It is thus, in both mentoring the younger teacher in the thinking process that goes into the feedback being shared in both designing the learning and facilitating or teaching it that Jones identifies the empowerment that affords the type of transformational growth that supports a genuine elevation of one's professional practice.

Convergent Transparency

Convergent Transparency, a term coined by the authors of this paper, is truly the convergence Virtual Andragogy's focus on the power of CoP's to open up a learning experience in an authentic fashion and Mezirow's focus on engagement and reflection. In 1997, Mezirow wrote:

Transformative learning requires a form of education very different from that commonly associated with children. New information is only a resource in the adult learning process. To become meaningful, learning requires that new information be incorporated by the learner into an already well-developed symbolic frame of reference, an active process involving thought, feelings, and disposition. The learner may also have to be helped to transform his or her frame of reference to fully understand the experience. (p. 10)

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This aligns with the goal of Convergent Transparency, to open up the learner's thinking in a fashion that empowers him/her to be reflective and mindful about not just what they are doing as they make decisions about building out their own courses, but to support their transformational growth in understanding what all they could potentially do with both the design and the facilitation of their online courses.

This is afforded by an authentic change in the creation of the learning materials for the students. Rather than the current model of crafting a video to show students the steps they must take to put together the online tools that work in concert inside an LMS to form a coherent online class, the goal is for each instructional video to be a genuine CoP; two designers/instructors offer their different ideas for how to put together a specific element, such as an online threaded discussion or a collaborative wiki-based activity, and these peers debate their preferences and justify their thinking until they reach consensus. This offers an authentic CoP engagement experience; the students are able to see and hear two experts negotiating the positives and negatives of doing the same task in alternative ways.

Academic Setting

Dr. Kimberly Greene and Michael Hill are both faculty for the School of Education of Brandman University, a non-profit institution serving adult learners in California and Washington that has 25 physical campuses, as well as a thriving fully online campus.

The University was originally a school within Orange, California's Chapman University. It was designed to serve military learners and thus the original campuses were all on bases, but over time and as the student population grew, the campuses eventually moved off of the various military installations and into the local communities. As the institution grew, it never lost its focus on serving the unique needs of adult learners.

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Brandman University's Center for Instructional Innovation (CII) supports faculty in working with its proprietary "iDEAL" model of blended and online course design and facilitation (Greene & Murphy, 2013, slide 5). Developed by faculty and instructional designers in 2009 (Greene & Murphy, slide 6), iDEAL stands for "instructional Design for Engaged Adult Learners" (Greene & Murphy, slide 5). iDEAL has two parallel configurations, one for blended learning and the other for fully online design and facilitation (Greene & Murphy, slide 41); both forms are a purposeful synthesis of Bloom's Revised Taxonomy (Greene & Murphy, slide 37) and andragogy (slide 36).

Design Example

The goal of Convergent Transparency is to provide students with an authentic opportunity to engage and reflect on the intention behind learning simultaneously with the experience of learning itself. Traditional classroom limitations of space and time make it impractical for students to be present during course design and assessment development. However, technology provides the opportunity to asynchronously engage students using purposefully designed videos that discuss and demonstrate the design of activities in an active way. Unlike providing a static example of an end-product, video provides an active opportunity for engagement and reflection.

To demonstrate this principle, we used the redesign of a project that takes place over the full 8-week term of the course. In the project, students are expected to develop a course shell within a Learning Management System (LMS) that meets certain key design requirements and demonstrates Universal Design for Learning (UDL) and Wiggins and McTighe's 2009 *Understanding by Design* (UBD) principles covered in the course. When the course was originally designed, students were expected to use Blackboard's CourseSites to complete the

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shell. However, design and policy changes implemented in CourseSites made the use impractical, forcing a shift to the free educator version of Canvas. The operational differences in these two LMSs necessitated a revision to the procedures and intended outcomes of the involved activity.

Over the two-month design period, the rebuilding team met virtually in AdobeConnect to work through the revisions. Rather than simply assigning parts to each member of the design team for individual work, the recorded AdobeConnect sessions captured the collaboration involved in the rewrite and the essence of the Community of Practice that existed during the process. Using a member of the design team who had limited experience with Canvas, the team developed models of the intended activities that both demonstrated the procedural and cognitive steps involved in completion, as well as openly discussing and narrating the choices made by the team at each step of the process. Occasionally, both design and facilitation perspectives amongst team members clashed; rather than edit these differences in perspective out of the videos, the team purposefully left them in to role-model the authentic ebb and flow of an active Community of Practice.

Conclusions

Convergent Transparency is a term coined by the authors to reflect the authentic engagement and interaction achieved when students are allowed to experience the reflective process that goes into developing curriculum, activities, and assessments. By providing students with transparency in course design as well as transparency in the learning process, Convergent Transparency achieves a level of legitimacy that may be difficult to achieve through traditional approaches. The process involved in Convergent Transparency also has the potential to strengthen the Community of Practice of those involved in the design work itself. The team

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found the experience encouraged collaboration and creative thinking around design goals and forced team members to re-evaluate the instructional design from the learner perspective as well as the faculty perspective.

The authors believe that Convergent Transparency can be used on a broader scale to achieve the same level of authenticity it promotes at not merely an individual class level, but also up to a programmatic one. The potential for students to engage, peripherally, in the dynamic nature of reflection practice captured in the videos, supports the constructs of Mezirow's guiding principles of transformational learning. Additionally, in alignment with the precepts of *Understanding by Design* (Wiggins & McTighe, 2009), Convergent Transparency scaffolds active backwards mapping to ensure that the structure and progression of the instructional materials parallels the chunked out process of creating an online course that has a logical build and flow for the students.

References

- Azimi, S., & Fazelian. (2013). New trends and approaches in instructional design and technology. World Conference on Psychology and Sociology 2012. *Procedia - Social and Behavioral Sciences*, 82(3), 525-528. Retrieved from <https://doi.org/10.1016/j.sbspro.2013.06.303>
- Blackley, S., & Sheffield, S. (2015). Digital andragogy: A richer blend of initial teacher education in the 21st century. *Issues in Educational Research*, 25(4). Retrieved from ERIC.

CONVERGENT TRANSPARENCY

- Baumgartner, L. M. (2001). An update on transformational learning. *New Directions for Adult and Continuing Education*, 2001(89). doi: 10.1002/ace.4
- Beirne, E., & Romanoski, M. P. (2018). Instructional Design in higher education: Defining an evolving field [White paper]. *OLC Research Center for Digital Learning & Leadership*. Retrieved from <https://onlinelearningconsortium.org/read/instructional-design-in-higher-education-defining-an-evolving-field/>
- Calleja, C. (2014). Jack Mezirow's conceptualization of adult transformative learning: A review. *Journal of Adult and Continuing Education* 20(1), 117-136. Retrieved from <https://doi-org.libproxy.chapman.edu/10.7227/JACE.20.1.8>
- Culatta, R. (2018). Transformative learning (Jack Mezirow). Retrieved from <https://www.instructionaldesign.org/theories/transformative-learning/>
- Dictionary.com. (2018). *Pedagogy*. Retrieved from <https://www.dictionary.com/browse/pedagogy>
- Farnsworth, V., Kleanthous, I., & Wenger-Trayner, E. (2016). Communities of practice as a social theory of learning: A conversation with Etienne Wenger. *British Journal of Educational Studies*, 64(2), 139-160. doi: 10.1080/00071005.2015.113379
- Greene, K., & Larsen, L. (2015). Virtual Andragogy in a standards-based environment: A case study of instructor presence in a prebuilt online course [Presentation]. *21st Annual Online Learning Consortium International Conference*. Retrieved from <https://secure.onlinelearningconsortium.org/conference/2015/aln/virtual-andragogy-standards-based-environment-case-study-instructor-presence-pre>
- Greene, K., & Larsen, L. (2017). Virtual Andragogy: An innovative, grounded design framework that guides the art and science of designing and facilitating

CONVERGENT TRANSPARENCY

- transformational online learning for adult students [Conference proceedings]. *London International Conference on Education 2017*. Retrieved from <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiwOKvkpbfAhWSI3wKHf0TAe8QFjAAegQIABAC&url=https%3A%2F%2Firis.univr.it%2Fretrieve%2Fhandle%2F11562%2F984854%2F110108%2FWCSNE-LICE-2017-Proceedings.pdf&usg=AOvVaw2zRf2-jH3buSo-1jiSwIMZ>
- Greene, K., & Murphy, J. (2013) *iDEAL & the adult learner: Brandman University* [Prezi]. Retrieved December 3, 2017, from http://prezi.com/ehcdeh0rzcdl/?utm_campaign=share&utm_medium=copy&rc=ex0share
- Hart, C. M. D., Friedmann, E. & Hill, M. (2016). Online course-taking and student outcomes in California Community Colleges. Retrieved from http://r.search.yahoo.com/_ylt=AwrC30912A5cWCEAWegPxQt.;_ylu=X3oDMTByOHZyb21tBGNvbG8DYmYxBHBvcwMxBHZ0aWQDBHNIYwNzcg--/RV=2/RE=1544505589/RO=10/RU=http%3a%2f%2feducation.ucdavis.edu%2fsites%2fmain%2ffiles%2fhart_friedmann_hill_03232016_0.pdf/RK=2/RS=5PcxVygBJIHEO9gpUBBRW1v11PA-
- Hollowell, G. P., Brooks, R. M., & Anderson, Y. B. (2017). Course design, Quality Matters training, and student outcomes. *American Journal of Distance Education, 31*(3). doi: 10.1080/08923647.2017.1301144
- Holmes, G., & Abington-Cooper, M. (2000). Pedagogy vs. andragogy: A false dichotomy? *JOTS, 26*(2). Retrieved from <https://scholar.lib.vt.edu/ejournals/JOTS/Summer-Fall-2000/holmes.html>

CONVERGENT TRANSPARENCY

Intentional Futures (2016). Instructional design in higher education: A report on the role, workflow, and experience of instructional designers. *Intentional Futures*. Retrieved from <https://intentionalfutures.com>.

Johnson, H., & Mejia, M. C. (2014). Online learning and student outcomes in California's community colleges. *Public Policy Institute of California*. Retrieved from https://www.ppic.org/content/pubs/report/R_514HJR.pdf

Jones, D. (2009). *A history of technology--- mediated learning*. Retrieved from <http://davidtjones.wordpress.com/2009/04/17/a--- history--- of--- technology--- mediated--- -- learning/>

Jones, M. (2009). Transformational learners: Transformational teachers. *Australian Journal of Teacher Education*, 34(2), 15-27. Retrieved from ERIC.

Kegan, R. (2000). What 'form' transforms? A constructive-developmental perspective on transformational learning. In J. Mezirow and Associates (Eds.), *Learning as transformation: Critical perspectives on a theory in progress* (pp. 35-69). San Francisco: Jossey-Bass.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco: Jossey-Bass.

Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult and Continuing Education*, 1997(74), 5-12. doi: 10.1002/ace.7401

Mezirow, J. (2000). *Learning as transformation: Critical perspectives on a theory in progress*. San Francisco: Jossey Bass.

Moberg, E. (2006). *Pedagogy is for kids: Andragogy is for adults*. Retrieved from ERIC.

CONVERGENT TRANSPARENCY

- Radford, A.W., Cominole, M., & Skomsvold, P. (2015). Web Tables—Demographic and Enrollment Characteristics of Nontraditional Undergraduates: 2011–12 (NCES 2015-025). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2015025>.
- Reischmann, J. (2004, September). *Andragogy. History, meaning, context, function*. Retrieved from <http://www.andragogy.net>
- Riel, M., & Polin, L. (2004). Designing for virtual communities in the service of learning. In R. Barab Kling & J. H. Gray (Eds.), *Online learning communities: Common ground and critical differences in designing technical environments* (pp. 6–50). Cambridge: Cambridge University Press.
- Ruey, S. (2010). A case study of constructivist instructional strategies for adult online learning. *British Journal of Educational Technology* 41(5), 706-720. doi: 10.1111/j.1467-8535.2009.00965.x
- Terehoff, I. I. (2002). Elements of adult learning in teacher professional development. *NASSP Bulletin*, 86(632), 65-77. Retrieved from ERIC.
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge, UK: Cambridge University Press.
- Wenger-Trayner, E., & Wenger-Trayner, B. (2015). *Communities of practice: A brief introduction*. Retrieved from <http://wenger-trayner.com/wp-content/uploads/2015/04/07-Brief-introduction-to-communities-of-practice.pdf>
- White, S. K., & Nitkin, M. R. (2014). *International Journal for the Scholarship of Teaching and Learning*, 8(2). doi: 10.20429/ijsotl.2014.080203
- Wiggins, G., & McTighe, J. (2009). *Understanding by design*. Alexandria: VA. ASCD.

CONVERGENT TRANSPARENCY

Xu, D., & Jaggars, S. S. (2013). *Adaptability to online learning: Differences across types of students and academic subject areas (CCRC Working Paper No. 54)*. New York, NY: Columbia University, Teachers College, Community College Research Center. Retrieved from ERIC.