

Online Professional Development for Process Educators

Steve Beyerlein¹, Kathleen Burke², Phillip M. Mutisya³, Daniel Cordon¹

Abstract

Ever since the formation of the Academy of Process Educators, there has been interest in augmenting the annual conference with professional development outreach to members across the country and in campus sections through an online mechanism. At the 2014 mid-year meeting at Valparaiso University, board members outlined plans for a series of monthly sessions in conjunction with a class about educational leadership at North Carolina A&T. Four goals were laid out for this pilot: (1) utilize expertise in Process Education (PE) practices possessed by contributors to the Faculty Guidebook, (2) engage new educators and others unfamiliar with Process Education, (3) elevate skills in computer mediated communication within the Process Education community, including use of the Academy Forum (accessed through the Members Area on the Academy website), and (4) establish an event structure that can be used in programs at local sections of the Academy. Through the innovative structure of these outreach sessions the Academy seeks to provide year-round community building amongst process educators that supports continuous improvement in process-oriented teaching/learning as well as scholarly activity on Process Education itself.

Introduction

The Academy of Process Educators is comprised of over 250 members located on over 40 different campuses in more than a dozen different states. Since its inception in 2006, programmatic activities have primarily surrounded an annual conference that attracts 50-100 people and a yearly publication of the peer-reviewed *International Journal of Process Education (IJPE)* that usually contains a half-dozen scholarly articles about different aspects of process-oriented teaching/learning. The *IJPE* has been an effective vehicle for capturing innovations featured in previous conferences and also for growing educational research skills amongst a subset of conference attendees. From the beginning, membership in the Academy was bestowed by registration for the annual conference or through annual dues if one was not able to attend the annual conference. In 2010, institutional membership was created for campuses where there was a critical mass of process educators, but only a fraction of which could attend the annual conference. Currently, there are a half-dozen such institutional members.

With the growth of these institutional memberships, the desire for local professional development opportunities has grown. The innovation described in this article responds to this need and seeks to provide year-round community building amongst process educators that supports continuous improvement in process-oriented teaching/learning as well as scholarly activity on Process

Education itself. Process Education (PE) principles and methodologies were the driving force behind the design and facilitation of the online outreach sessions. The prospect of combining seasoned PE practitioners with others new to PE in an online professional development experience expands the horizons of the Academy in new and exciting ways.

Best Practices for Online Professional Development

Much of the research focusing on faculty development examines teacher preparation for the incorporation of technology in the classroom for blended learning or for teaching completely online courses. Facilitating professional development in an online environment was found to require both effective pedagogical principles and thoughtful infusion of technological tools (Lee, 2005). Furthermore, professional development was perceived as most successful when active learning strategies were incorporated (Clary & Wandersee, 2009; Spiceland & Hawkins, 2002). Faculty should be viewed as adult learners, and successful faculty development should incorporate strategies for adult learning (Lackey, 2011; McQuiggan, 2007; Gallant, 2000). Lawler and King (2000) outlined six adult learning principles that should be followed when designing any form of professional development: (1) ensure that a climate of respect is created at the beginning of the session, (2) encourage active participation, (3) build

¹University of Idaho

²State University of New York at Cortland

³North Carolina Central University and North Carolina A&T

on experience, (4) employ collaborative inquiry, (5) learn for action, and (6) empower the individual.

Vavasseur and MacGregor (2008) found that creating effective online professional development communities required: (1) understanding the needs of the participants, (2) having someone with authority on the subject to introduce the group to the experience, (3) having an online facilitator to provide necessary prompts, and (4) utilizing effective online communication to allow reflection by the participants. Similarly, Gallant (2000) indicates that an online professional development program should: (1) be responsive to the needs of the participants, (2) provide continuity in the training, which should be ongoing and incremental, (3) create a community amongst the participants, and (4) incorporate constructive activities.

The Adult Learning Model for Faculty Development described by Lawler contains four stages (McQuiggan, 2007). The first stage, *preplanning*, identifies both the purpose of the faculty development activity and the resources that are available. The second stage is *planning*, during which the activities are designed accounting for the needs of the faculty, the facilitation team is identified, and promotional materials are disseminated. Stage three is *delivery* which includes all aspects of the participant experience. The final stage, *follow-up*, includes supporting the participants in the implementation of the new skills learned in the session as well as the means to provide reflection on the activities that occurred.

The outreach model described in this work incorporates the best practices discussed in the literature about online professional development and was created based on the following specifications:

Preplanning

- Session topics derived from interests expressed by previous participants, but designed around a self-contained learning experience
- Announcement of session to general membership with RSVP required to attend

Planning

- Advance receipt of session materials and posting of pre-session work by all participants
- Inventorying and responding to desired personal outcomes related to each session

Delivery

- Clearly defined roles for a session facilitator, a guest consultant, and session participants

- Simultaneous use of Internet meeting software, an Internet discussion board/archive, and phone technology as part of the session
- Opportunity to receive feedback on pre-session work from an expert on the session topic
- Opportunity for small-group processing of key questions
- Opportunity for large-group reporting, discussion, and sharing of resources

Post-Session

- Post-session assessment of individual growth as well as the effectiveness of the session

Outreach Session Model

The structure of the online outreach session also mirrors the flipped classroom (Kenney & Newcombe, 2011; Allen, Seaman, & Garret, 2007). This structure was intended to ensure deeper preparation and engagement of participants in the session and to increase the opportunity for value added by collaboration during the session. PE best practices were utilized when designing the professional development session including the use of three methodologies: activity design (Hanson, 2007), facilitation (Smith, & Apple, 2007), and assessment (Apple, & Baehr, 2007). The use of computer-mediated communication, particularly the Academy Forum, is essential to the success of the online professional development sessions.

Each session has a separate thread under the Academy Outreach Forum as displayed in Figure 1. Within each session thread are three additional threads as shown in Figure 2. The first is for the pre-session postings. As part of the flipped classroom approach, a guided-discovery activity, including readings of one or two scholarly works published in the *Faculty Guidebook* or the *IJPE*, was designed to be completed by session participants prior to the workshop. This thread concludes with an invitation to post personal responses and desired session outcomes.

The synchronous work by session participants is recorded under the Session Work thread. Cooperative learning is facilitated during the breakout work by small groups through role assignment as well as simultaneous use of two computer-mediated communication tools (a browser open with the online meeting tool and a second browser open with the Academy Forum and chat tool). Four roles include:

- **Captain** who helps the team focus on session goals and use time wisely
- **Recorder** who collects/organizes notes for posting session work on the Academy Forum

Figure 1 Organization of the Academy Forum

The Academy Forum: An interactive discussion board for Academy members

Control Panel Search Calendar New Posts Chat Logout

Forum	Posts	Topics	Last Post
PE Conference			
Academy Outreach Sessions			
★ Transformational Leadership: 4/14/14	22	3	Post-Session Work Yesterday at 12:52am by Tking124
★ Quality Learning Environment: 3/10/14	27	3	Post-Session Work 03/26 by sbeyer
★ Transformation of Education: 2/3/2014	30	3	Pre-Session Work 02/04 by sbeyer
IJPE			
Meetings & Minutes			
Academy Official			
Other/Misc.			

Chat (0)

Figure 2 Forum Materials from the 2/3/2014 Session

The Academy Forum: An interactive discussion board for Academy members

Control Panel Search Calendar New Posts Chat Logout

Forums > Transformation of Education: 2/3/2014

Search This Forum

Subject	Author	Views	Replies	Last Post
★ Post-Session Work	Denna	81	6	02/04 by Tking124
★ Session Work	Denna	97	10	02/04 by Tking124
★ Pre-Session Work	Denna	118	11	02/04 by sbeyer

Checked Topics: -- Select --

Mark Forum Read Subscribe

Quick Navigation: Select a Forum

- **Spokesperson** who communicates with the facilitator during the small group activity and speaks on behalf of the small group during the large group reporting
- **Reflector** who assesses team performance as well as session facilitation
- Discussion questions for small group processing should be derived from insights and interests shared in pre-work postings as well as during the opening segment of the online session

Finally, under the post-session thread, participants are asked to assess personal/professional growth experienced as a result of the session, action plans for new pedagogical or scholarly practices, and feedback on the overall session design/delivery/impact.

To control for the logistical issues surrounding outreach, sessions were carefully observed in order to improve transparency of the instructional technology required to bring together online participants from across the country. The timeline listed in Figure 3 was adopted to ensure a successful online event. Session designers included an online facilitator, a local facilitator, an expert consultant, and a webmaster.

Case Study

At the January 2014 mid-year meeting at Valparaiso University, leaders in the Academy of Process Educators outlined plans for a series of monthly outreach sessions that would help sustain the best practices and scholarship of Process Education between the popular annual conferences. The inaugural session was to be held on February 3, 2014. A session invitation was extended to Academy board members and *International Journal of*

Process Education board members. Furthermore, it was decided to parallel the spring 2014 outreach sessions with a class on global leadership taught by one of the authors in the College of Education at North Carolina A&T.

After reviewing the syllabus for the North Carolina A&T course, session designers developed the first professional development activity entitled *Process Education Concept Maps as Foundations for Leadership in Teaching & Learning*. Session materials were provided to all students enrolled in the North Carolina A&T class and to those at a distance who emailed an RSVP. Two primary resources were selected which had previously generated enthusiasm and spirited discussion amongst Academy members. The first was a learning object about the 14 aspects in the Transformation of Education (www.transformation-of-education.com) (Hintze, Beyerlein, Apple, & Holmes, 2011). The second was a concept map of Process Education (www.transformation-of-education.com/conceptmaps) (Beyerlein, Burke, & Hintze, 2012).

Utilizing the flipped classroom approach, the professional development opportunity consisted of an asynchronous pre-session learning activity followed by a facilitated session that had both a face-to-face component with 11 people in a classroom at North Carolina A&T University and a virtual component with six participants attending online. Finally, as a post-session follow-up, the participants posted their reflections and assessments of the session on the Academy Forum.

The Academy Forum was used extensively in each of these pre-session, session, and post-session activities. For the pre-session activity, the participants were expected to spend approximately one hour reflecting on the prompts listed in Figure 4 and then posting their responses to a set of critical

Figure 3 Timeline for Session Organization

Lead time	Task(s)
1 month	Session topic identified
21 days	Preliminary session plan circulated amongst session designers
14 days	Session reserved with online meeting service
10 days	Webpage invitation prepared and circulated to selected Academy members
7 days	RSVP deadline; session packet emailed to confirmed participants
5 days	Conference call numbers requested for small group breakouts
3 days	Internet connection information emailed with reminder about pre-session work
1 day	Deadline for submitting pre-session work
5 hours	Pre-work reviewed by facilitators and small group discussion plan finalized
30 minutes	Internet connection tested with onsite location
5 minutes	Onsite audio established with speaker; mute

thinking questions posted on the Academy Forum that were related to the 14 aspects in the Transformation of Education.

After analyzing pre-session work posted by only half of the session participants, the facilitators integrated personal outcomes expressed by the participants. These are listed in Figure 5. Supplemental resources were also identified

for sharing at strategic times during the session. These included the methodology for creating a quality learning environment, learning-to-learn camp principles, student statements from a set of self-growth papers at the end of a learning-to-learn camp, a profile of a transformational leader, and a performance measure for leadership.

Figure 4 Pre-Session Prompts

<ul style="list-style-type: none"> Summarize your educational philosophy in 2-3 sentences Define and briefly explain your two greatest pet peeves about higher education Review the Transformation of Education learning object (given in the resource section). Identify and briefly explain two of the fourteen aspects in the 	<p>Transformation of Education of which you are most proud in your professional development.</p> <ul style="list-style-type: none"> What two questions do you most want answered regarding the interpretation of information contained in the concept maps? What personal outcomes would you like to see from the 90-minute session?
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Figure 5 Personal Outcomes Expressed for the Session

<ul style="list-style-type: none"> How does leadership fit within the concept map? How should the concept maps be interpreted? How does one create a quality learning environment? What is transformational learning? 	<ul style="list-style-type: none"> How does one shift from red to green practices? Create action plans from this session for personal use Cultivate a strategy for teaching/learning practices in professional development
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Figure 6 Session Timeline for February 3, 2014

<p>Pre-Session Technical Preparation</p> <p>5:35 online connection: GoMeetNow session initiated; A&T classroom connected</p> <p>5:45 distance participants begin to arrive</p> <p>5:55 A&T room audio debugged</p>
<p>Synchronous Session Part 1</p> <p>6:00 session start-up; welcome; Academy background & website organization</p> <p>6:05 review of session outcomes (customized based on pre-session submissions)</p> <p>6:10 discussion of concept map learning object (illustration of special interactive features)</p> <p>6:15 sharing insights about a quality learning environment & learning camp exemplar</p> <p>6:20 steps in QLE methodology identified within green map (not present in red map)</p> <p>6:25 review of small group roles & responsibilities (using session packet)</p>
<p>Synchronous Session Part 2</p> <p>6:35 small group session starts (two 4-person A&T teams and one 3-person distance team)</p> <p>6:38 audio cross-talk from A&T couldn't be suppressed; GoMeetNow session ended</p> <p>6:40 distance participants continue on Forum only</p> <p>6:50 new GoMeetNow session established and distance participants continue with audio</p> <p>7:05 A&T classroom reconnected to GoMeetNow</p>
<p>Synchronous Session Part 3</p> <p>7:08 large group report-out begins</p> <p>7:20 additional resources given for educational leadership (profile & performance criteria)</p> <p>7:25 request for post-session follow-up; audience input on theme for next session</p> <p>7:30 session sign-off</p>

The synchronous component of the professional development opportunity was 1.5 hours long, and was divided into three parts as shown in the timeline appearing in Figure 6. The first third of the meeting inventoried participant outcomes, answered questions about pre-session resources (concept maps for traditional teaching/learning versus transformational teaching/learning), and outlined roles/responsibilities associated with the group activity for the evening. The second third of the meeting was dedicated to a breakout discussion by two on-campus groups and one virtual group, all posting discoveries on the Academy Forum every 5-10 minutes throughout the discussion. Some audio difficulties were encountered associated with online discussion and a new Internet meeting session needed to be set up on the fly. The final third of the meeting was spent reporting group discoveries and served as an opportunity to address consulting questions. Small group and large group discoveries were captured on the Academy Forum.

During the breakout period, groups considered different questions prepared by session organizers. These are listed in Figure 7 and were used more as a menu of suggested starting points. One group chose to focus on the concept map for traditional teaching/learning, identified pet peeves about education that were visible in the map, and explained which aspects of this map were most evident at their institution. Another group chose to focus on differences between the concept maps, how these were reinforced by the accompanying statements included with the maps, and what forces tended to sustain the traditional map. A third group considered how the benefits of the transformational map should be communicated within educational organizations and what strategies for faculty development would likely be most successful in sustaining its benefits. Group discussion activity was documented at different levels of completeness and detail by each group. Large group reports were then delivered by spokespersons to all other participants. As shown in Figure 8, these were then framed by the session facilitators in the context of the session outcomes.

As a post-session activity, all session participants were invited to respond to the three prompts contained in Figure 9 using the Academy Forum. Prior to closure of the online session, there was near unanimous consensus that the theme for the next outreach session should revolve around *'Providing Leadership within Quality Learning Environments.'* However, only one-third of the participants completed the post-session questions.

Concluding Thoughts

The outreach session model and inaugural pilot described in this article was perceived as successful by all involved,

despite some technology difficulties in the middle which were resolved without undo disruption. The scheduled time of day and overall organization of the session minimized conflicts with other obligations and kept everyone engaged for the entire 90 minutes. The specifications outlined for the session were achieved, added value, and will be adopted for future outreach sessions. A valuable record of session preparation, deliberation, and discoveries is retained in the Academy Forum for future reference by participants as well as wider Academy membership.

Electing to use a prescheduled, upper division class to anchor the session and prescribe measurable outcomes for the session were also key elements to the success of the session. In addition, the class ensured a critical mass of participants whose performance in the session could be compared with that in other teaching/learning settings. The energy of the class helped to excite and engage the online participants.

Reciprocally, the experience of faculty online excited and engaged the students at North Carolina A&T.

Upon reflecting on the session, it was apparent that some substantive improvements could be implemented in successive sessions, the next two of which will also be paired with the North Carolina A&T class. First, an adequate level of comfort and savviness with digital technology is needed for participants to enter the dialogue. On the North Carolina A&T campus, a special mini-session is being organized dealing with how to log into the members' area on the Academy webpage, how to make Academy Forum posts, and how to edit previous posts. Students' attitudes and skills with computer-mediated communication vary substantially within the class and will be deployed by using a peer coaching model for this session. In a parallel effort, distance participants will have access to more quick reference materials on Academy Forum usage as well as some troubleshooting protocols associated with computer-mediated communication that is piggy-backed with phone technology. Use of technology during the session needs to be perceived as a delight, not a source of irritation. Achieving this affective status is a major hurdle to recruiting distance participants. An important session outcome is for participants to have an easier-than-expected experience in making an online connection and to find a sense of fellowship that exceeds that found in a typical webinar.

Second, participants should be challenged to engage in more in-depth reading of pre-session materials along with writing about their resulting understanding. This could be realized by replacing the fairly open-ended questions used in the pilot session with more directed

Figure 7 Questions Prescribed for Group Processing

1. What is the interpretation/meaning of two key propositions contained in the RED and in the GREEN maps?
2. Choose one of your pet peeves about education; explain how this statement is related to the RED map.
3. Which of the 14 aspects in the RED map represent teaching/learning at your institution?
4. What forces/conditions exist that tend to sustain a RED world of teaching/learning?
5. Which of the 14 aspects in the GREEN map represent teaching/learning at your institution?
6. What forces/conditions are needed to create/sustain a GREEN world of teaching/learning?

Figure 8 Relationship between Desired Session Outcome and Session Discoveries

Desired Outcome	Discoveries
Role of leadership within concept maps	Thoughtful and deliberate leadership is the driving force behind achieving and sustaining the green map. If you replace 'educator' with 'administrator' and 'student' with 'faculty,' the maps apply to educational organizations and institutions.
Interpretation of concept maps	There is more richness in the online interactive concept map than many participants realized. The map of transformational teaching/learning is a valuable tool for self-assessment of one's beliefs/knowledge/skills as a teacher and leader.
Realization of quality learning environments	There was considerable excitement about the learning camp model and the methodology for creating a quality learning environment that was shared during the session. It was realized that this is a complex and important issue that needs to be explored further in a future faculty development session.
Shifting from RED to GREEN practices	This is a personal choice that you can make every day within your domain (classroom or office). It is a way of being. Celebrate the journey, reflect on unexpected outcomes, and bring others along with you.
Creating action plans from this session	Ask yourself what three things you'll do differently over the next month. Challenge yourself to be dissatisfied with the status quo, identify promising opportunities, and accept risks associated with the changes you want to see in yourself. Ask yourself and others to assess your plans as well as your ensuing performance.
Implications for online professional development	Preparation is critical – Targeted, personally meaningful outcomes inspire deeper collaboration. Redundancy in communication – When things go wrong, figuring out a solution is easier if multiple tools are available (phone, email, Internet meeting window). Takeaways – A concluding consulting session based on large group reports provides satisfying closure, seeding further collaboration. Public documentation – Administrative tools within the Academy Forum can be used to reformat session materials for future reference.
How to build efficacy in leadership development	Replace the need for affirmation with self-affirmation. Use peer coaching as a catalyst for higher level self-assessment and self-efficacy.

Figure 9 Post-Session Prompts

- Reread and reflect on your educational philosophy statement in light of this session. Update your statement with new insights from the session. Explain why you made these.
- Which three aspects of the fourteen in the Transformation of Education would you like to focus on in your professional development? Why?
- Focusing on the session logistics, (1) describe the greatest strength of this session, (2) the greatest improvement for future sessions, and (3) an insight about online collaboration

questions that directly probe the session resources. For example, a better set of critical thinking questions for the pilot sessions might have been:

- What is the meaning of each of the 14 aspects in the Transformation of Education (based on exploration of <http://www.transformation-of-education.com>)?
- Which aspects have the clearest meaning? Which have the muddiest meaning?
- How do you read a concept map (i.e., form propositions from boxes and links)?
- What propositions do you see in the RED map? GREEN map?
- How do RED, YELLOW, and GREEN words in each of the 'scales' add meaning to the maps?
- What is the purpose of the RED, YELLOW, and GREEN maps? How might you use these?

Third, potential topics for group discussion should not be published ahead of time. Instead, a list of likely questions and potential resources for enrichment should be brainstormed by the facilitators, but these should be customized and disclosed at the time of the session. Ideally these should respond to personal outcomes posted on the Academy Forum as well as knowledge and viewpoints revealed in the session set-up.

Fourth, post-session work was only attempted by one-third of the participants. Immediately following the session, reorganization of postings and edits to these postings within the Academy Forum improved readability and created a compelling record that captures major discoveries and valuable teaching/learning resources. Academy board members who were not present in the outreach session itself were able to offer valuable suggestions for this article-based reading and reflection on this record. Furthermore, the opportunity to receive feedback from one of the facilitators about an action plan for personal growth was not requested by any of the participants. In subsequent sessions, post-session work will be better aligned with North Carolina A&T homework requirements

and Academy Board members will be recruited to model post-session self-assessment.

Beyond growing professional identity as a process educator and increasing familiarity with best practices in process-oriented teaching/learning, the authors also look to Academy Outreach sessions as a means for stimulating teaching/learning scholarship. The outreach sessions provide a laboratory for assessing new learning objects such as those on the Transformation of Education and the concept maps for Process Education that were examined in the case study. Sessions can also help try out and assess pedagogical tools being developed by other Academy members. Given the flipped and blended structure of the outreach session as well as the involvement of virtual and face-to-face participants, action research can also be conducted on the effectiveness of the session with different audiences. Finally, the use of the Academy Forum as a tool for public recording increases its value as a repository of Process Education know-how and will hopefully encourage more Academy members to use it for conference planning as well as in composing articles for the *International Journal of Process Education*.

As with any process, Academy Outreach is a journey that should be embraced along with attendant quality improvements. The benefits that the Academy can derive from designing, conducting, and participating in these professional development sessions far outweigh the costs. As a participant in the first session states:

Having the ability to hold a meeting and perform collaboration at a distance is a skill that the PE community should be developing. There are going to be some growing pains, but the results should be well worth the struggles that are ahead.

Readers of this article are warmly encouraged to accept the invitation to participate in a future Academy Outreach session. The authors also invite you to share topics for such sessions and collaborate with us in crafting, as well as facilitating, impactful events in which we walk the talk of Process Education.

References

- Allen, I.E., Seaman, J., & Garrett, R. (March 2007). *Blending in: The extent and promise of blended education in the United States*. Retrieved April 8, 2014, from http://sloanconsortium.org/publications/survey/pdf/Blending_In.pdf.
- Apple, D. & Baehr, M. (2007). Assessment methodology. In S. W. Beyerlein, C. Holmes, & D. K. Apple (Eds.), *Faculty guidebook: A comprehensive tool for improving faculty performance* (4th ed. pp.449-452) Lisle, IL: Pacific Crest.
- Beyerlein, S., Burke, K., & Hintze, D. (2012). Concept maps for linking aspects in the Transformation of Education. *International Journal of Process Education*, 4, 43-60.

- Clary, R. M., & Wandersee, J. H. (2009). Can teachers learn in an online environment? *Kappa Delta Pi Record*, 46(1), 34-38.
- Gallant, G. M. (2000). Professional development for web-based teaching: Overcoming innocence and resistance. *New Directions for Adult and Continuing Education*, 88, 69-78.
- Hanson, D. (2007). Designing process-oriented guided-inquiry activities. In S. W. Beyerlein, C. Holmes, & D. K. Apple, (Eds.), *Faculty guidebook: A comprehensive tool for improving faculty performance* (4th ed. pp.281-284). Lisle, IL: Pacific Crest.
- Hintze, D., Beyerlein, S., Apple, D., & Holmes, C. (2011). The transformation of education: 14 aspects. *International Journal of Process Education*, 3(1), 73-92.
- Kenney, J., & Newcombe, E. (2011). Adopting a blended learning approach: Challenges encountered and lessons learned in an action research study. *Journal of Asynchronous Learning Networks*, 15(1), 52.
- Lackey, K. (2011). Faculty development: An analysis of current and effective training strategies for preparing faculty to teach online. *Online Journal of Distance Learning Administration*, 14(5).
- Lawler, P. A., & King, K. P., (2000). *Planning for effective faculty development: Using adult learning strategies*. Malabar, FL: Krieger.
- Lee, L. (2005). Using web-based instruction to promote active learning: Learners perspectives. *CALICO Journal*, 23(1), 139-156.
- McQuiggan, C. A. (2007). The role of faculty development in online teaching's potential to question teaching beliefs and assumptions. *Online Journal of Distance Learning Administration*, 10(3).
- Smith, P., & Apple, D. (2007). Facilitation methodology. In S. W. Beyerlein, C. Holmes, & D. K. Apple (Eds.), *Faculty guidebook: A comprehensive tool for improving faculty performance* (4th ed. pp.351-354). Lisle, IL: Pacific Crest.
- Spiceland, J. D., & Hawkins, C. P. (2002). *Impact on learning of an asynchronous active learning course format*. JALN, 6(1), 68-75. Retrieved April 8, 2014, from: <http://sloanconsortium.org/jaln/v6n1/impact-learning-asynchronous-active-learning-course-format>
- Vavasseur, C. B., & MacGregor, S. K. (2008). Extending content-focused professional development through online communities of practice. *Journal of Research on Technology in Education*, 40(4), 517-536.

