

# Professional development and innovative pedagogy in an online community through the lens of activity theory

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## Abstract

The liberation of learning from time and place constrictions through digital technologies has enabled the creation of new learning environments. This paper analyzes one such model, which was developed by those engaged in Global Skills for College Completion (GSCC), through the lens of activity theory. GSCC is an on-going national research project funded by the Bill and Melinda Gates Foundation in which twenty-five faculty from sixteen U.S. community colleges created an innovative developmental education<sup>1</sup> pedagogy in an online community. Through the use of a managed digital environment consisting of an electronic portfolio, an online collaborative space called Polilogue (a customized version of the open source web-based course management system, Moodle) and various other technologies, the faculty simultaneously developed and field-tested both a professional development model and a developmental education pedagogy for community college students. The premise of GSCC is that faculty participating collaboratively in the creation of an innovative pedagogy drawn from current practice of successful faculty and utilizing social media technologies can change teaching practice and improve student success. Pass rates from these community college classes nationally, which enroll more low-income, immigrant, and black and Latino students than four-year colleges, are barely 60 percent and the goal of GSCC is to push that to an 80% pass rate. This research project, which is both evidence-based and theory-driven, is in the final semester of the first phase.

The project team includes faculty and administrators from LaGuardia Community College and consultants from Knowledge in the Public Interest. Several articles, chapters, papers and conference papers have been written and presented about GSCC (e.g. Woolis & Mellow, 2011; Woolis, Mellow, & Laurillard, 2011). A team of researchers from SRI International, an independent, nonprofit research institute, provides the research expertise for the project. The Center for Applied Research at Central Piedmont Community College collects and analyzes completion and pass rate data. This paper focuses on the professional development aspect of the project, the online pedagogy designed for the faculty themselves which incorporates dialogue, reflection, and practice. It considers three aspects of the project that are highlighted by an activity theory analysis: (1) the conjunction of the learning and knowledge creation systems, (2) the role of tags, themes and patterns in creating internal tensions and contradictions, and (3) the changed division of labor seen in the teaching/learning roles.

## Keywords

Activity theory, professional development, online learning community, digital learning environment

## Introduction

As we moved from of the period of relative stability of the middle of the last century and firmly into the Network Society (Castells, 2010) of the twenty-first century, we entered an increasingly dynamic and volatile world. As a

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<sup>1</sup> Basic skills and remedial education are other terms for developmental education.

result, our understanding of knowledge changed from something stable and acquired to “something fluid that has to be renewed over and over again” (Illeris, 2004, p. 80). With learning freed from the constraints of time and place through virtual technologies, both work and educational experiences became more collaborative and social. With that shift, more comprehensive views of learning which reflect its distributed nature are critical. Activity theory offers a way to understand these postcognitive learning approaches. This paper uses activity theory, with a consideration of the concepts of contradictions and expansive learning as developed by Engeström, as a lens to analyze the first phase of Global Skills for College Completion (GSCC), a national project funded by the Gates Foundation. Other papers (Woolis & Mellow, 2011; Mellow, Woolis, & Laurillard, 2011) document and feature the pedagogy created by these twenty-five faculty for the developmental education students and the process of creating the innovative developmental education pedagogy; this paper focuses on the activity engaged in by the faculty and the project team to advance the pedagogy of the faculty, in other words, the model developed for the GSCC project as an innovative venture in professional development, e<sup>3</sup>PD – a pedagogy that is experience-driven, evidence-based, and electronically-driven.

Activity theory, “a philosophical and cross-disciplinary framework,” is useful for “studying different forms of human practices as developmental processes” (Knutti, 1996, p. 25). In particular, activity theory has been found helpful in understanding distributed learning in a technological environment, as it brings to the fore sometimes overlooked features of the cultural and historical aspects of learning (Russell, 2002, p. 64) as well as a view of learning as an activity system. With roots in the theories of Kant, Hegel and Marx, activity theory is based on the work of Vygotsky, who proposed mediation as an additional element of the stimulus-response learning process. Second generation activity theory, with Leont’ev, took Vygotsky’s ideas one step further and pointed out that it was important to see activity systems as the unit of analysis to understand learning rather than focusing on the experiences of individual learners. Engeström’s expansive learning takes activity theory to the next level, adding the elements of division of labor, community, and rules to the basic triangle and considering “the intersection of two activity systems as its minimal unit of analysis” (Engeström, 2001, p. 133).

This paper uses the lens of activity theory to analyze the professional development model developed in the GSCC project. First, GSCC as an activity system is described, its possibilities for expansive learning are briefly considered, and then three aspects which are highlighted by the activity theory lens are explored: (1) the mutual boundaries of the learning and knowledge creation activity systems, (2) the contradictions created by the use of tags, themes, and patterns, and (3) the changing division of labor as seen in the teaching/learning roles.

## **Global Skills for College Completion (GSCC) as an Activity System**

In order to fully understand the phenomenon of learning, we must look not at the behavior or practices of individuals, but at the collective activity in which individuals are engaged. In Global Skills for College Completion (GSCC), the professional development of faculty is accomplished through the *activity* of the collaborative creation of a new developmental education pedagogy. The new pedagogy is based on actual classroom practice and the intended outcome is higher student pass rates. Learning in this context is not the “internalization of discrete information or skills by individuals,” but the “expanding involvement over time – social as well as intellectual – with other people and the tools available in their culture” (Russell, 2002, p. 65).

Twenty-five math and English developmental education faculty from sixteen community colleges across the United States, from Boston to Hawaii, were selected to participate in GSCC through an application process which identified top performing faculty. Their success was demonstrated primarily through the pass rates of students’ in their classes. These faculty members participated in an online professional-development/knowledge creation community. GSCC

was supported by a team of community college faculty and administrators from LaGuardia Community College, Queens, New York, and by online designers and community stewards from Knowledge in the Public Interest (KPI), a knowledge consulting company. A team of researchers from SRI International, an independent, nonprofit research institute, provides the research expertise for the project. The author of this paper is an online designer and community steward with KPI.

Three directions guide the work of the faculty: to develop a developmental education pedagogy, to create a model of professional development in an electronic environment and to improve their own teaching practice. The outcome at which all three are aimed is the improved pass rates of students. At the heart of the model is an online space where the faculty dialogue in various configurations (e.g. discipline groups, small support groups, rotating review groups). There is also an open community forum for issues of interest to all participants – where issues from the birth a baby to whether students need to know grammar terms or just be able to use the grammar. Faculty document and reflect on their classroom practice in individual e-portfolios.

As this paper is written, GSCC is in the final semester of a four-semester Phase I of the project. While final results are not available, there are some preliminary indications of success. Though fourth semester data are not available, data on student completion and pass rates from third semester show improved completion rates, but not improved pass rates. Also, GSCC faculty learners attest to improved pedagogy as a result of participation. One faculty commented, “I think that participating in GSCC has made me a much more reflective teacher and has given me the vocabulary and the tools to analyze what I do well already, as well as [the tools to identify] the areas in which I would like to modify my teaching.” Another said, “[In GSCC], I had to explain to my colleagues why I chose to construct each lesson so, why I timed it so, how I could tell whether my students were learning... and in doing this I was explaining myself to myself in a way that I ought to have done before. More importantly, though, I can now see much more clearly students’ progress and the reasons for it.”

In order to differentiate between the two levels of students in the classrooms on the various campuses and the faculty engaged in learning as professional development, in this paper, the term *students* is used in the former case and *learners* or *faculty learners* refers to the twenty-five faculty.

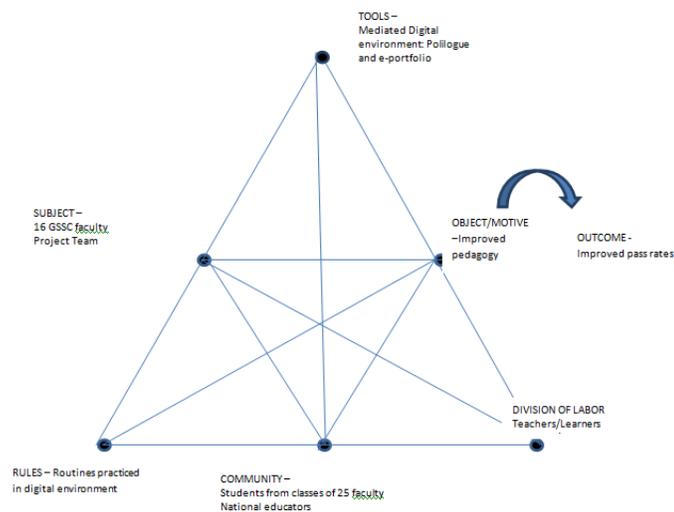


Figure 1. GSCC as Activity System

Figure 1 shows the triangle graphic commonly used by activity theorists which illustrates the current activity system. The selected faculty and the project team collaborate to develop a “breakthrough scalable pedagogy” (Woolis, Mellow, & Laurillard, 2011), the *object*, or “problem space”, which aims to improve the pass rates of developmental education students) (Russell, 2002, p. 69). The twenty-five faculty and the project team, the *subject*, utilize a managed digital environment consisting of an electronic portfolio and an online collaborative space called Polilogue, a customized version of the open source web-based course management system, Moodle, and various other technologies (e.g. a digital library, a database of their own practices called Pathfinder, webinars, virtual meeting spaces, videos, conference calling), the *tools*. GSCC refers to the design of the activities as “routines”, and these are the *rules* of the activity system. There are, of course, other tools and rules than the ones mentioned here, which are highlighted as relating to the learning aspect of the activity system. The *community* includes the educators and administrators on the various campuses on which the faculty are teaching developmental education, as well as the broader international community of developmental educators and the people in the partner organizations. Community also includes those concerned with education at the Bill and Melinda Gates foundation. Over 800 of these community members participated in a three-day jam, or online dialogue, in which they advanced the thinking about the themes of developmental education that were identified in the classroom practices of the GSCC faculty. The *division of labor* is unique and of particular interest and will be addressed later in this paper.

Activities evolve and change as they move forward in time and the past is embedded in many aspects of the present evolution of the activity. Knutti (1996) points out that the development is “not linear or straightforward, but uneven and discontinuous” (p. 26). Jonassen (2000) observes, “From an activity theory perspective, the process of instructional design, aggregate planning, or any activity, can only be understood by analyzing its historical development” (p. 109). In this context, GSCC needs to be considered against the history of adult developmental education in this country, especially related to the open admissions era of the 1960s, during which community colleges originated. This opened the door to many who had not previously been admitted to post-secondary education and who were under-prepared for the current demands of college work. Additional aspects of historicity related to GSCC, within the component of tools and instruments, link to the development of Web 2.0 capabilities. Their development made possible the dialogue of distributed faculty in the online learning community of Polilogue, afforded the possibility of documenting and changing classroom practice as it was happening in the classroom, and allowed faculty to act as researchers of their own practice.

It is still too early to predict how new models of professional development in digitally mediated environments will evolve and what their impact will be. The model presented by GSCC offers just one example, but it presents an opportunity to consider some of the contradictions that could develop. The inherent contradictions in each of the constituent components of the current model may lead, in conjunction perhaps with other digitally mediated models, to more revolutionary changes in professional development for adult education faculty. The emerging contradictions include (1) a contradiction within the *subject* between the teacher as learner in a traditional classroom (online or face-to-face) and the teacher as learner/researcher in a socially networked environment; (2) a contradiction in the *tools and instruments* between those of the traditional classroom and those of a digital mediated environment; (3) a tension in the *rules* between those of the learner who follows the lead of the expert in adopting new pedagogical models and those of the self-directed, autonomous learner in a networked environment; (4) a change in the *community* between a “bureaucratic and professional hierarchy vs. cross-professional collaboration” (Engeström, 1990, p. 93); and, finally, (5) a contradiction in the division of labor from professionals as experts teaching the faculty to faculty as peer learners and researchers. In speaking about changes in the activity of learning, Engeström notes, “Whether this will mean a breakthrough...remains to be seen.” The same could be said for the activity of professional development in this new learning environment, as the initial phase is still in progress. At the present

time, however, the lens of activity theory also allows us to see GSCC in its current iteration and to consider particular elements of the learning model that can inform its ongoing development.

## **The mutual boundaries of the learning and knowledge creation activity systems**

Activity theory incorporates a practice-based approach in that the activity is situated in a social and historical context and it is typically a “joint labor activity,” performed in conjunction with others who are pursuing the same object. In this instance, there are two joint labor activities that are coextensive, the development of an innovative pedagogy for students and the development of a new model of professional development. Both lead to the same outcome of improved pass rates for students.

Leont’ev differentiated the levels of human functioning as the **activity**, the **action**, and the **operation**. In the *activity* of developing the two pedagogies, the *actions*, which are accomplished by the various members in pursuit of the object, include the improvement of teaching for the each of the faculty who are members of the current cohort of learners. The *operations* level describes how each of the individual faculty is accomplishing the action within the conditions of the individual campus (Knutti, 1996, p. 31; Jonassen, 2000, p. 104).

This is an important observation in that, as in project-based and problem-based learning programs, the goal, is not to teach concepts which are then applied, but to engage in authentic tasks that will incorporate the learning of those concepts (Barab & Duffy, 2000). GSCC takes the intertwining of learning and acting one step further in that there are no particular concepts to be taught – or learned. The learning takes place in dialogue between peers in the course of the development of the new pedagogies and in the faculty reflection on their practice. While a distinction was made earlier that this paper focuses on the professional development aspect of GSCC, as differentiated from the activity of developing a new pedagogy for students, it is only possible to separate the two actions as a way to describe the perspectives through which they are viewed; in practice, they are one and the same activity. The faculty both learn/improve their own teaching and create the new pedagogies through the use of the same tools, employing the same rules, within the same community. As in the now-classic young girl/old woman illusion drawing, depending on how one looks at the activity, one sees either the generation of new knowledge or the learning experience of the faculty.

## **The contradictions created by the use of tags, themes and patterns**

Engeström’s expansive learning theory describes “structural tensions within and between activity systems” as the source of change and development in an activity system (Engeström, 2009, p. 57). These tensions create disturbances in the system, making way for new forms of teaching practice to emerge. Viewed from the perspective of the activity system of each individual faculty learner, the changes in their teaching practice emerged partly as a result of the contradictions generated as they held up their practice to the evolving new pedagogy for their students. This comparison was accomplished through the use of tags, themes and patterns.

The intent of GSCC was to articulate, evolve and improve the already successful pedagogies practiced by these high-performing faculty learners. At the beginning of the project, the faculty presented their personal values and descriptions of their individual pedagogies. Throughout the first semester of the four-semester research project, the faculty documented their current classroom practice in their e-portfolios in the form of description, explication and reflection on their practice. The design team reviewed the data and identified nearly forty themes (e.g. contextualization, comfort, scaffolding) that characterized their work. The faculty then confirmed and refined these

themes during the second semester of the project and subsequently noted the use of these themes through a process of tagging their classroom practice in their e-portfolios.

The patterns that faculty generated, based on their self-identified use of themes, was depicted for them in a graph that acted as a mirror. These patterns allowed them to see how their conceptions of their teaching practice was different from their actual practice and from other faculty practice, as well as to the overall themes that had been identified in the collective practices of the group. Differences became evident. In the third and fourth semesters, faculty deepened themes in their own practice and themes that were not as prevalent in their practice, but which they believed could enhance their teaching. For example, a faculty whose patterns evidenced many supportive themes (e.g. comfort, caring, inclusiveness), but less of other themes (e.g. structure, scaffolding, higher order thinking) evident in other faculty patterns, expanded their work in those less visible themes.

The inherent tensions and contradictions presented an invitation to - and options for - change. Based on Bateson's third level of learning, which Engeström identifies as underlying expansive learning, a double bind was created (Engeström, 2009, p. 58), an acknowledgement that these other themes that were in use by successful faculty were not in evidence, or were less in evidence, in their own practice. As Engeström suggests, "A crucial triggering action in the expansive learning process... is the conflictual *questioning* of the existing standard practice (Engeström, 2009, p.69). The disparities between their own concepts of their teaching and those of other (respected) faculty, as well as the inconsistency between their own conceptions of their teaching and the actual ones in use, offered a source of change.

The design team continuously reinforced the concept that although the patterns that each used were dissimilar, faculty had been selected for the project because of their teaching success. In other words, faculty were not given a model to emulate or new theories to learn and implement, as might happen in more traditional professional development, where teachers are shown the new way and then are left to implement it in their individual classrooms, often without support. In GSCC, there was no pattern that was inherently better than other patterns. Faculty were asked, however, to improve their already unique style of teaching by selecting three themes for which they wanted to create a stronger presence in their teaching patterns. They were to intentionally focus on deepening those themes as a way to improve their practice, utilizing the social resources available. While these were miniature or mid-level systems changes, it is the contention of the team that these are part of a larger transformational process that is being created – both in the pedagogy to be taught in developmental education classrooms and in the professional development model that is emerging in the digital mediated environment, of which the model developed in GSCC is one iteration.

## **The changing division of labor**

A third element of the professional development model being created in GSCC can be seen in the constituent element of the division of labor. As has been noted, in GSCC, there are no teachers or tutors in the traditional sense of the words. The team members (who in a traditional learning setting might have been the instructors) and the faculty (in this case, the learners) engage together in the outcome – the design of an innovative developmental education pedagogy. The participants understand and participate in the activity from their respective campuses and offices and bring with them the contexts of those situations and their own past experiences.

The faculty participants play the multiple roles of data gatherers, researchers, creators of new knowledge, and learners. The data that they bring is their experiences in the classroom, through written descriptions and video tapes of their classroom teaching, and through the resources and student artifacts. These are posted in their e-portfolios,

where they tag and reflect on and investigate their practice. They discuss their progress in creating the new pedagogies and their own evolving practices in their online discussion forums and in the face-to-face events which occurred three times during the pilot phase. The project teams' role is to design and "hold the virtual space" (Kaulback & Bergtholdt, 2008, p. 25) for the learning to take place in the online community. The faculty, in a cultural and historical sense, bring their voices and the voices of their students from the practice of their classrooms to the activity of improving adult developmental education pedagogy. They bring the perspectives of their immediate and past work with students as well as their previous individual professional development activities. The faculty, from their respective disciplines and campuses, bring "multiple points of view, traditions, and interests" to the activity (Engeström, 2009, p. 56).

The team oversees the accomplishment of the research, plans face-to-face and online events, procures funding, and provides other administrative functions. The interventions in the dialogue from the project team are minimal. They design the infrastructure and engage in community-wide events as partners with the faculty learners. They create the container for the work, remind faculty of the vision, and perform perfunctory tasks – as in the reminders to faculty to post in their e-portfolios or contribute to the dialogue. Both the faculty and the project team read the classroom practice postings and reflections and the large and small group dialogue, but the faculty comment directly on each others' practices and the project team uses their review to frame the work of the community. The project team, most often the project manager, will respond to procedural questions. But the division of labor most commonly present in a learning environment, that of teacher/learner, is not present. The members of the design team bring their perspectives from their collaborative team work, from their own practices of developing online learning environments or from their roles as administrators, obtaining funding, acting as online librarians, or maintaining satisfactory progress in relationship to funders' expectations.

This is similar to the problem-oriented project studies and other project-based and problem-based learning (PBL) environments, in which the students identify the problem, formulate an initial design, make decisions about process (how small groups will be organized) – the elements of study processes of how to plan, manage and evaluate projects (Danielson & Nielsen, 2010, p. 559). In GSCC, the members of the project team perform these labor functions, leaving the faculty learners free to focus on the activity, albeit in an "active, self-regulated, constructive, cumulative, and goal-oriented learning process" as in the PBL process (Danielson & Nielsen, 2010, p. 559). The project team members, although they are not experts, all have experience in the developmental education field. This is an example of the phenomenon which Engeström (2009) describes, "In important transformations of our personal lived and organizational practices, we must learn new forms of activity which are not yet there. They are literally learned as they are being created. There is no competent teacher" (p. 58). The faculty learners have the expertise in the classroom and their experiences comprise the foundation from which the new knowledge is constructed.

There has been speculation about the changing/disappearing role for faculty in the networked environment (Natriello, 2005) and this is certainly true in the learning environment of GSCC. In this vein, Pea recounts the story of Seymour Papert, the designer of the Logo program in which children can build and control Legos with the Logo software. Papert, at a meeting of the National Science Foundation Officers in 1987, is exclaiming on how the children can design marvelous machines with "very little 'intervention'" from teacher instruction and advocating for this approach as a way to move away from instructor-centered learning (Pea, 1993, p. 64). Pea points out, however, that Papert has overlooked the "considerable intelligence" that the designers have built into the "interlockable component parts of LEGO machines or ... the Logo primitive commands for controlling these machines" (Pea, 1993, 64-65). The division of labor in GSCC with regard to the instructor role is similar – and more of instructional designer than teacher. Here, we conceptualize the role of the GSCC project team as designers of the learning

environment and also as holding the space that has been created within which faculty can accomplish both the task and the learning that will meet the ultimate goal of improving the success of students in their classes.

## **Conclusion**

Networked learning changes the learning process as it moves learning out of the classroom and into dynamic learning environments online. This paper uses activity theory to understand one model of professional development that has been created as a result of the new affordances, the model developed for Global Skills for College Completion (GSCC). GSCC offers to community college faculty a professional development opportunity which uses the new tools of a networked learning environment.

One of the major limitations of this analysis is that it is too early to evaluate the impact of GSCC on professional development models or even on the professional development of the current faculty. GSCC is one approach to professional development in a digital mediated environment, among many that are being developed. It is an example of changes that may be expected, but it is only one example. Furthermore, GSCC is just completing its first phase, which is a two-year development phase during which the first iteration of this new model of professional development was created. While it is too early to assess the impact on student pass rates, faculty do testify to a shift in personal pedagogy and a new relationship to their work. While faculty attest to fundamental changes in their pedagogy as a result of their participation, they are only the first generation of participants. Subsequent cohorts will be participating in a learning model based on the model in use, but with refinements based on the feedback from current participants. While it is too early to assess the impact, the lens of activity theory has been used to highlight three innovative aspects of a developing model of professional development.

This paper has focused on three aspects of GSCC that have been illuminated through this analysis: (1) The learners are engaged in an activity which serves the dual purpose of knowledge creation in the form of creating two new pedagogies and professional development in terms of their individual practice. (2) The contradictions that are the foundation for expansive learning can be seen through the use of tags and themes which identify current classroom practices of excellent faculty. The patterns formed by the use of these themes act as a mirror for faculty learners and encourage changes in their pedagogy. Finally, (3) a look at the division of labor of the activity system that is GSCC evidences a tectonic shift in the historic teacher/student relationship. This movement is away from the roles of expert, facilitator, supervisor, instructor to one in which the project team takes on the task of overall design of process and infrastructure and of holding the space for the faculty learners to accomplish their dual tasks of learning and knowledge creation.

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