Models of Professional Development: A Literature Review Kristina R. Weimer, Ph.D. Candidate (ABD), Penn State 250 Music Building I, University Park, PA, 16802 krw216@psu.edu

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Effective professional development helps teachers continue advancing knowledge and skills, and is essential to the goal of high standards for student learning (Cano, 2006). The purpose of this literature review was to examine professional development (PD) in all academic subjects, to describe models of professional development, and discuss essential components and limitations of professional development programs. Essential components of PD include focus on learning communities, instructional practices, student achievement, and developing content knowledge (Cano, 2006; van Hover, 2008). It is sustained, considers the needs of teachers, and provides opportunities for analysis of teaching, reflection, sharing ideas, and forming relationships (Chubbuck, Clift, Allard, & Quinlan, 2001) Effective PD also provides adequate resources (time, money, people) and clear expectations (Cano, 2006).

Arbaugh (2003) created a collaborative and comprehensive model through a study group: teachers who came together to support each other, to develop professionally, and change their practice. Teachers were supported in building relationships and community, making connections across theory and practice, curricular reform, and developing professionalism. Farmer, Gerretson, & Lassak (2003) designed PD that took into account teachers' expressed needs and supported changes teachers decide to make in instructional practices rather than prescribing them. This model included three levels of appropriation: 1. concrete activity and content (specific skill or activity that will be taught); 2. professional principles and understandings, attitudes, and beliefs; and, 3. teaching as inquiry (learning while teachingadapting concrete elements, applying principles of mathematics).

Borasi et al. (1999) developed an inquiry-based approach to math instruction that included a six-day summer institute, independent work, and supported, consistent field experiences. Participants adapted and implemented one unit at the beginning of the year and one later. They also had regular meetings with a support team, follow-up meetings to share experiences, and completed a final reflection. This program initiated process of rethinking beliefs and practices and promoted long-term process of instructional innovation.

Howe & Stubbs (1996) created a Constructivist/Sociocultural model for PD with the goals of increasing science content knowledge, infusing new knowledge into curriculum, and becoming more self-confident and collaborative professionals. The first step was to hear research presented by scientists. Teachers then formed small- groups to reflect and brainstorm ways to use that research. They then carry out activities related to topic, share their activities, incorporate them into curricula and continue to interact and support each other in formal and informal settings.

Bickmore (2013) created a Group of English Mentors (GEM) to help teachers foster a habit of PD that considers content area and educational theory, identify appropriate instructional strategies, develop strategies for reflection, discuss methods of creating and sustaining a professional development community, and develop mentoring relationships that cross school boundaries. GEM is modeled after existing PD programs with the added component to engage teachers in interactive PD throughout the school year in a collaborative community.

Junda (1994) discussed a PD program to develop music teachers' musical and instructional skills, and as a result, improve elementary general music students' musical skills. This was a four-part model that included a twosemester Kodaly-based graduate course, the development of teaching strategies and their implementation in primary- grade music classes, observation and supervision by the instructor, and a comprehensive evaluation procedure. The program improved teachers' musical skills-specifically vocal and aural skills. Instructional skills also improved in reading-readiness, sight-reading pedagogy, lesson planning, and curriculum development.

Sustained and intensive PD is more likely to have an impact than shorter PD; focusing on subject matter provides opportunities for integrated, hands-on work; duration, collective participation, and core features of PD are more important than type; and teachers' needs should be considered when planning and developing PD. Many PD structures lack meaningful content, are limited in duration, de-emphasize teachers' prior knowledge, and fail to provide processes for reflection (Stanley, Snell, & Edgar, 2014). Various models should be examined to determine which will best fit teachers' needs and school context (Wallace, Nesbit, & Miller, 1999).

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Applications

- Professional development must consider the needs of the teachers; providing opportunities for analysis, reflection, and collaboration.
- Professional development must focus on content knowledge, student achievement, instructional practices, and learning communities
- Adequate resources must be provided; this includes time, money, and people
- Professional development must be sustained rather than a "one and done" session.
- In addition to considering the points above, those who design professional development for teachers should honor the expertise and experiences of the teachers, provided meaningful content, and determine what types of PD will best fit their needs.