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Disentangling Individual, Organization, and Learning Process Factors that Drive Employee Participation

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Disentangling Individual, Organization, and Learning Process Factors that Drive
Employee Participation

Diana C. Colangelo

A thesis submitted in partial fulfillment of the requirements for the degree of Master of
Arts in Industrial/Organizational Psychology

Minnesota State University-Mankato

May 2013

Abstract

The current paper aims to understand the antecedents that predict employee participation in professional development activities. The primary objective of this study is to provide additional empirical support to the Wang and Wang (2004) theoretical model of factors that influence employee participation in learning and development activities and provide an integration of other factors from the literature. Data were collected from non-faculty staff of a large statewide college system that took part in an employee development survey assessing factors related to development, including age, level in organization, supervisor support, organizational support, policy support, and learning process factors. Results indicate that employees participate when they receive supervisor, organizational, and policy support. The results of the present study indicate several important theoretical and practical implications for organizations interested in learning more about the factors that predict employee participation.

Why People Participate: Disentangling Individual, Organizational, and Learning Process

Factors that Drive Employee Participation in Development Activities

Employee participation in learning and development activities in organizations is of great interest for HR practitioners because of its influence on employee effectiveness (Aguinis & Kraiger, 2009), career progression (Maurer, Lippstreu, & Judge, 2008) and employee satisfaction (Maurer, Weiss, & Barbeite, 2003). Organizations also recognize how critical it is to invest in employees' skill development to remain progressive, active, and competitive (Brown, 2005). The American Society for Training and Development (ASTD) has reported that \$126 billion annually have been spent by U.S. organizations on employee training and development initiatives (Aguinis & Kraiger, 2009).

An important question left to answer is to pinpoint the drivers of employee participation in training and professional development activities. Research (Brown & Charlier, 2012) has started examining crucial variables that lead to participation, yet there are still unknown pieces of information that require further investigation. Along with antecedents of participation, another important factor of interest is the context in which the learning is taking place: traditional face-to-face or e-learning mediums. Research on e-learning in organizational settings has typically been limited to comparing reactions and learning across different delivery platforms rather than participation rates (Brown, 2005). The literature thus remains fragmented and inconclusive when studying employee participation in development activities.

The present study aims to respond to calls for additional research (Brown & Charlier, 2012; Wang, 2004) and to disentangle the antecedents that predict employee

participation in professional development activities. A primary objective of this study is to provide additional empirical support to the Wang and Wang (2004) theoretical model of factors that influence employee participation in learning and development activities and to provide an integration of other factors from the literature. The present study also takes into consideration the delivery platform in which the development activities are taking place: face-to-face or e-learning. The majority of previous research in this area has taken place in educational environments. While such findings are likely to be applicable in many contexts, there are certain conditions that are worth examining further. Specifically, research is needed examining training participation, especially in an adult sample in a workplace context (DeRouin, Fritsche, & Salas, 2005). Thus, the current study will extend existing knowledge of participation such activities by including an examination of learning context to a workplace sample of non-faculty employees from a large, state-wide system of educational institutions.

By examining and understanding the various factors that can influence participation in development activities in the workplace, organizations may be able to target organizational development efforts at the drivers that are most crucial in influencing participation. A true understanding of the factors that predict involvement in learning and development activities is crucial for both theoretical and practical applications. Theoretically, researchers can gain insight into the types of people and contexts that may facilitate participation. Practitioners can use this information to direct efforts to increase the amount of participation in such activities (Maurer, Weiss, & Barbeite, 2003) and thus achieve enhanced employee performance (Wang & Wang, 2004).

This paper will use part of a conceptual framework created by Wang and Wang

(2004), which outlines individual and organizational antecedents of participation in development activities. More specifically, the current study will focus on individual factors (i.e., age, level in organization), organization factors (managerial/supervisor support, organizational support, and organizational policies), and learning process factors (face-to-face vs. e-learning delivery platforms) as predictors of participation in development activities in organizations.

Training & Development

The existing scholarly literature has multiple definitions of training but the definition provided by Aguinis and Kraiger (2009) is comprehensive: “The systematic approach to affecting individual’s knowledge, skills, and attitudes in order to improve individual, team, and organizational effectiveness” (p. 452). Development, while similar to the concept of training, has more of a personal emphasis and implication. It has been defined as, “The systematic efforts affecting individual’s knowledge or skills for purposes of personal growth or future jobs and/or roles” (Aguinis & Kraiger, p.452). Apart from definitional differences, there is also a conceptual difference between training and development: training is more focused on improving performance within an individual’s current job, while development is geared more towards preparing an individual for future leadership positions in a company, for jobs that might not yet exist, and for dealing with changes due to work re-design, technology improvement, etc. (Noe, 2008). For purposes of this paper, the focus will be on development.

Professional development is a crucial component for employees in today’s dynamic, ambiguous, and fast-paced work environment. It has become a vital component of an organization’s efforts to improve quality, to meet the challenges of global

competition, and to incorporate changes in technology and work design (Noe & Wilk, 1993). A few important characteristics of development are worth noting for purposes of the present study. First, development is future-oriented, which suggests that learning is not tied necessarily to an individual's current job (Noe, 2008). Noe (2008) also suggests that employees must take personal initiative to seek out and engage in development activities, compared to training, where participation is typically part of a formal, required process. Indeed, a critical aspect of successful human resource learning and development programs in organizations is active and continued interest in participation by employees (Maurer, 2002).

Conceptual Framework for Participation

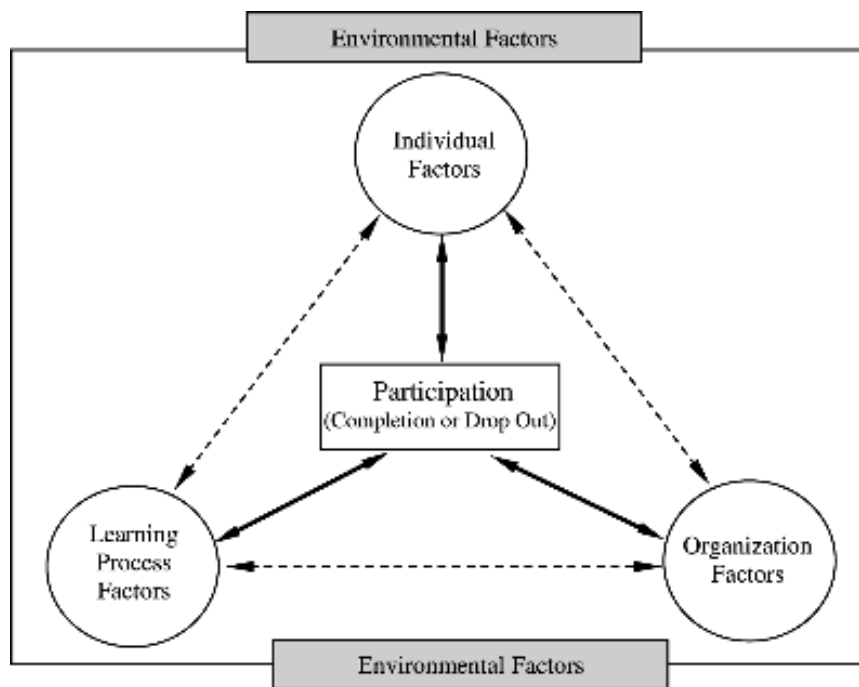


Figure 1: Conceptual Framework for Participation (Wang & Wang, 2004).

Previous theoretical models and empirical studies have treated participation in development as a multi-dimensional construct. Wang and Wang (2004) originally proposed three dimensions of variables that influence participation in learning and

development activities: individual factors, learning process factors, and organization factors. This model is illustrated in Figure 1. Individual factors include motivation, self-efficacy, organization membership, personal characteristics, learning style, perceived learning needs, perceived benefits, learning technology orientation, and individual cultural orientation. Learning process factors include needs assessment, instructional design, delivery platforms, instructor/facilitator, and technology-based environment. Organizational factors include organization context, organizational policies and regulations, and work context. For the purposes of the current study, particular individual factors (i.e., personal characteristics), particular organization factors (i.e., organizational support and organization policies and regulations) and particular learning process factors (i.e., delivery platforms) will be examined. This model, although useful in explaining antecedents and drivers of participation, does not address another relevant variable: level in organization. Therefore, this factor, although not formally part of the Wang and Wang (2004) model, is also examined within the framework of the current study. Because of the nature of organizational roles, it appears to fit within the individual factor as a sub-factor within personal characteristics.

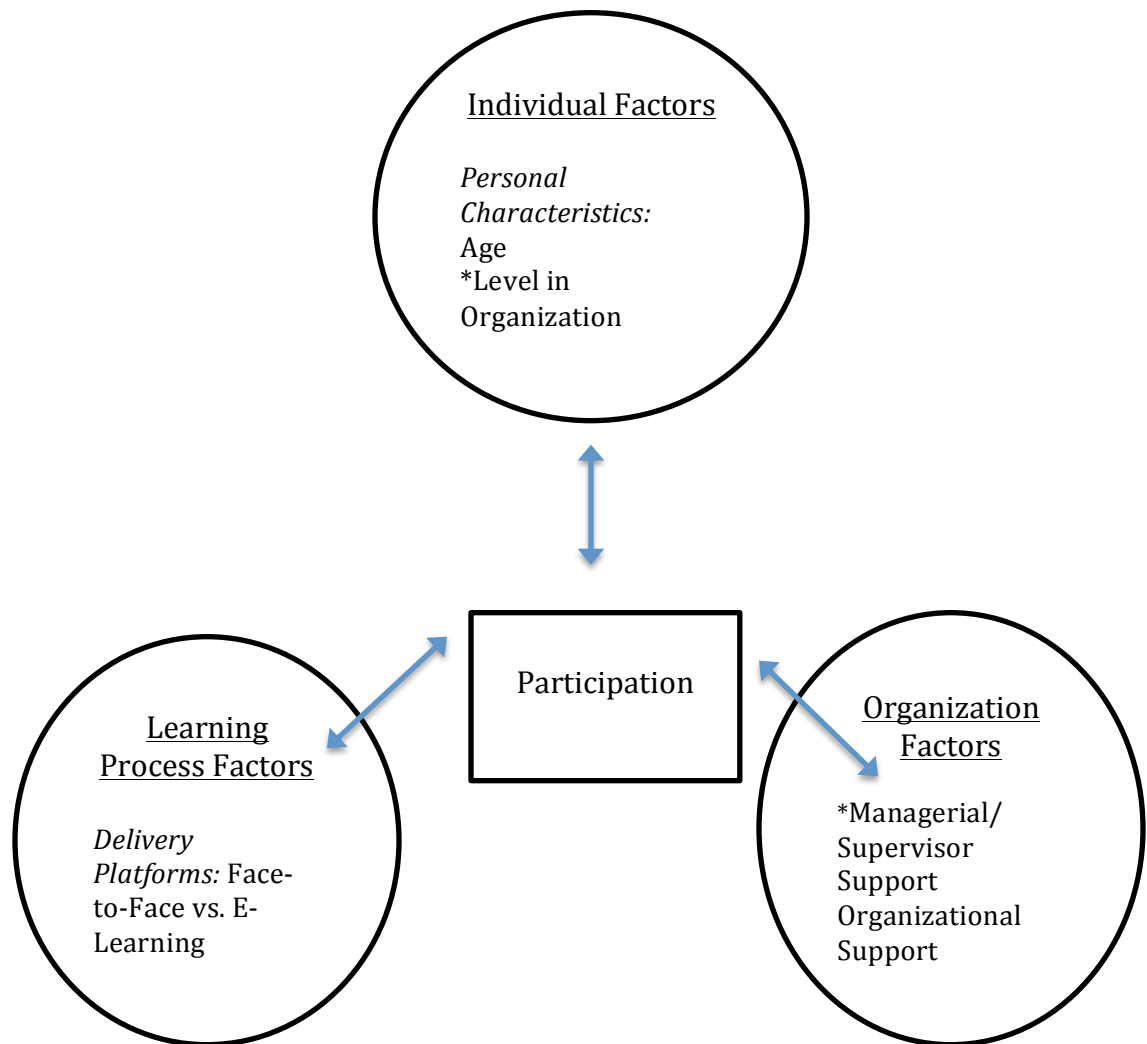


Figure 2: Current Model

*Not included in Wang and Wang (2004) model

Individual Factors

Personal Characteristics

In examining the individual factors that may influence participation in training and development activities, age and its effects appear to be a key variable (Wang & Wang, 2004). A greater understanding of how age facilitates or inhibits participation in professional development activities is vital, especially when considering the nature of the aging workforce. Despite this concern, few empirical studies have examined age in

relation to participation in development activities particularly regarding factors that may promote or inhibit involvement in development activities by older workers compared to younger workers (Maurer, Weiss, & Barbeite, 2003).

Some studies suggest that age may inhibit participation in training and development activities. Specifically, Birdi, Allan, and Warr (1997) found that as employees get older, they tend to decrease their involvement in training and development activities compared to younger employees. In addition, these researchers also found that age was significantly negatively associated with career planning and development activities (Birdi et al., 1997). Not only are older adults less likely to pursue development activities, they also tend to receive less support and encouragement from supervisors, coworkers, and other relevant persons participating in learning activities (Maurer, 2001). Hypothesis 1a: Individual factors will influence participation in learning and development activities, such that younger employees will be more likely to participate in learning and development activities compared to older employees.

Level in Organization

Missing from the Wang and Wang (2004) model is the notion of organizational level that an individual holds in an organization. More specifically, it can be speculated that whether one is an individual contributor or a manager in an organization may contribute to different rates of participation. In fact, research has suggested that this is an important individual-level factor that likely influences participation in development (Feldman, 2002; Carberry & Garavan, 2007). Managers often are expected to self-direct their own careers, seek out new developmental opportunities, and continually learn and grow within their professional roles (Carberry & Garavan, 2007). Because involvement in

development activities requires personal initiative (Noe, 2008), it can be expected that to have a managerial role in an organization means that the individual has a higher propensity to participate in development activities compared to those who do not hold a managerial role. Indeed, research suggests those who self-manage their own career are typically managers rather than individual contributors or semi-skilled employees (Mallon, 1998). In addition, research has demonstrated that managers are given more opportunities to develop and that organizations that concern themselves with providing development opportunities to high potential employees can lead to increased effectiveness (Bassini & Ok, 2005). This distinction in the level an individual holds in an organization is important to note because it suggests that having a certain position within an organization is a driver of participation.

Hypothesis 1b: An individual's level in an organization will influence participation in learning and development activities such that managers will participate in development activities more than non-managers.

Organization Factors

A number of organizational variables in the literature have been identified as being important antecedents in predicting participation in learning and development activities. Wang and Wang's (2004) model discusses organizational context, organizational policies and regulations, and work content. The factors pertinent for this study include organizational context (support), and organizational policy and regulations (support). The factor not included in the original Wang and Wang (2004) model is managerial/supervisor support, but will be included for further analysis in the current study.

Managerial/Supervisor Support

Supervisory support is critical for facilitating employee motivation toward participation in development activities. Supervisor support can be described as the extent to which supervisors support and re-enforce the use of newly acquired knowledge and skills on the job (Holton, Bates, & Ruona, 2000). Research suggests that supervisor support can play a major role in influencing employees to attend and participate in development activities and opportunities in the workplace (Kozlowski & Hults, 1987; Maurer & Tarulli, 1994; Noe & Wilk, 1993, & Tharenou, 2001). This idea is important to note. Supervisors are the most proximal to employees; if employees perceive that supervisors are not supportive or facilitative in their participation of development activities, this could affect participation levels greatly. If support is low on the part of the supervisor, employees' perceptions that participating in development activities will increase valuable knowledge and skills will be thwarted. Support can be provided by encouraging the learning process and directing employees to engage in opportunities that can help them become more effective at their job tasks (Noe, 2008). Factors that contribute to supervisory support include how much the supervisors encourage employees to attend training, asking questions regarding their training, and learning and using the material in their daily work suggest that employee's participation in training increases (Cohen, 1990). It thus appears that being involved and engaged with the employee through the development process is an important factor in employee participation in such activities.

Supervisors can also support career development of subordinates by providing useful performance appraisal and ongoing feedback (Facteau et al., 1995). Jointly setting performance objectives is one way that supervisors can provide support to employee's

participation in development programs. Research suggests that immediate supervisors “cue” participation in development programs through regular discussions throughout the year regarding performance, and by formalizing these conversations in a performance evaluation at the end of the year (Chiaburu & Tekleab, 2005). Taking this a step farther, supervisors can help employees set goals for development and encourage employees to think about how development activities relate to their current jobs and beyond (Cohen, 1990). Chiaburu & Tekleab (2005) thus suggest that an effective performance appraisal process provides the support needed to successfully participate and complete development programs. It can thus be suggested that a supervisor’s purposeful actions in making development a regular component of an employee’s work-life can facilitate more increased and engaged participation in professional development activities.

In addition, Facticeau et al., (1995) found that supervisors should monitor and support their employee’s training efforts by providing them ongoing feedback about their attempts to learn new skills, and by rewarding successful training and development activity transfers on the job. Feedback has also been suggested to contribute to an individual’s propensity to engage in self-directed learning at work (Bauer & Mulder, 2006), which has important implications for e-learning contexts since e-learning is primarily a self-directed learning and development activity. Taking this information collectively, it appears that by communicating to employees that development activities are valuable experiences, managers can have a positive influence on employees' learning attitudes and perceptions regarding the benefits that can be obtained from participation in development activities (Leibovitz, Farren, & Kaye, 1986). Thus, research indicates substantial backing for the importance of supervisors in supporting subordinates’

development efforts.

Hypothesis 2a: Managerial/supervisor support will influence participation in learning and development activities such that employees with higher managerial/supervisor support will be more likely to participate in development activities than employees with lower managerial/supervisor support.

Organizational Support

The overall culture of an organization can also influence participation rates in development activities. The environment and general attitude toward employee development in the workplace can certainly foster employee's motivations to attend and participate in training opportunities. This is a critical idea to note as it has been noted in the research literature that overall development support given by an organization is crucial in engaging and retaining valuable human capital (Kraimer, Seibert, Wayne, Liden, & Bravo, 2011). Few studies, however, have examined the influence of overall organizational support for development. According to Cohen (1990), the environment can include the following factors: internal publicity about the training and development programs administered and overall messages regarding the attendance and participation in training. The author further suggests that one must look at the organizational context to examine how it may affect employee's perceptions of the value of participating in professional development opportunities.

The work context factors that affect an employee's views on development activities are thus a part of the overall company culture; the company philosophy and emphasis on development and learning, the developmental resources provided to employees, upper management emphasis/ expectations, and coworker/supervisor support

(Maurer, 2002). Indeed, Noe & Wilk (1993) suggest that continuous learning is affected by an organization's philosophy towards development, business strategy, and the communications that ensue regarding resources and time necessary to employ strong training and development activity. Because senior leadership teams in organizations drive the expectations present in the organizational culture, it is suggested to play a vital role in emphasizing the importance of continuous learning and development within a company. The more employees understand that their organization as a whole supports participation in development activities, the value of such programs becomes more salient and important to them, thus raising their s and intentions to participate (London & Mone, 1999). It can thus be asserted that individuals who work in organizations that support development will be more likely to participate in employee development activities.

Hypothesis 2b: Organizational support will influence participation in learning and development activities such that employees who perceive greater perceptions of organizational support will be more likely to participate in learning and development activities than employees who perceive lower organizational support.

Policy Support

The policies that an organization has in place regarding participation in development activities have also been found to be a driving factor of employee participation. Policies that reward development, accept occasional failure in trying new things, and create an environment in which peers are free to be innovative are facilitative in increasing levels of employee participation in development activities (Maurer, 2002). Perceptions that the company values employee learning through the policies that are made public to employees may be significant in predicting interest and intentions for

participation (Maurer & Tarulli, 1994). For example, companies such as Motorola require employees to attend a certain number of development activities, and their subsequent performance and completion of these activities are later reviewed by managers (Wang & Wang, 2004). Positive perceptions of policies that support and facilitate active participation in development activities thus sends a message to employees that the development of employees is valuable and important to the organizations, thus suggesting to drive increased levels of participation.

Hypothesis 2c: Policies, rules, and guidelines will influence participation in learning and development activities such that employees who perceive organizational support through policy, rules, and guidelines are more likely to participate in learning and development activities than employees who perceive less organizational support.

E-Learning & Development

In recent decades, employee professional development activities have been greatly influenced by the advancement of technology. Organizations, schools, and other industries are utilizing e-learning mediums to develop their workforce, which has created cost benefits (Noe, 2008). Indeed, research indicates that 26% of companies have a separate technology-based budget for training and development activities, and 80% of companies who use web-based learning are creating the content of these programs internally (Dolazelak, 2005). A recent survey by Kim, Bonk, & Zeng (2005) found that organizational investments in e-learning in 2003 spanned between one and 60 percent of their total training budget on e-learning. Technology has thus become the new driving force in organizational training and development efforts (DeRouin, Fritzsche, & Salas, 2005).

Despite the proliferation of e-learning as a delivery platform in which to disseminate

information, utilization and participation rates in such organization-sponsored development activities may be a problem (Bell, Martin, & Clarke, 2004; Brown, 2001; Wang & Wang, 2004; Wang, 2010). Prior research is not clear about the extent to which employees make use of e-learning (Brown, 2005), but a recent report indicates that only 69% of employees participated in mandatory e-learning programs, and only 32% participated in voluntary programs (ASTD & The Masie Center, 2001). These results suggest that organizations striving to develop their high-potential human capital are facing the challenge of attracting and retaining participation in e-learning and development programs.

It is important to note that a number of terms in the literature exist to mean similar things. The exact distinctions between the meaning of e-learning, online learning, computer-based training, web-based learning, and electronically enabled distance learning are beyond the scope of the present paper (Cramer, Krasinski, Crutchfield, Sackmary, & Scalia, 2000). Noe (2008) defines web-based or e-learning as “instruction and delivery of training by computer online through the Internet or Web. Online learning can include task-based support, simulation-based training, and learning portals” (p.278). Additionally, e-learning has been defined by ASTD as “a wide set of applications and processes, such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audio- and videotape, satellite broadcast, interactive TV, and CD-ROM” (Kaplan-Leiserson, 2002, para. 85). The exact definitions differ slightly, but it will suffice to use the term e-learning as defined by the American Society of Training and Development as our working definition in the current paper. The definition is both widely used and comprehensive in nature.

Research suggests that organizations can achieve a number of positive benefits

from investing in e-learning, including more standardized, consistent forms of training, reduced time to teach material, increased convenience of participants, reduced cost, and greater ability to track progress and deadlines (Welsh, Wanberg, Brown, & Simmering, 2003). For example, learners gain increased flexibility and control over when, where, and what they would like to learn, which is a defining feature of e-learning (Brown & Charlier, 2012, Brown & Ford, 2002).

E-learning, as the delivery platform for development activities, also results in increased access to knowledge on an as-need basis. In other words, depending on personal preference, employees can choose the type of media they would like to use based on personal preference, such as videos, audio, interactive mediums, etc. Also using an e-learning delivery platform, records can be handled electronically, accomplishments can be monitored and rewarded more promptly and in real-time, can be delivered to participants in dispersed geographical locations, at different times of day, and in shorter periods of time (Noe, 2008).

A simple, albeit important piece of information should be noted: e-learning is effective, and research suggests that employees can and do learn from this medium in both educational and workplace environments (Brown & Charlier, 2012, Bramble & Martin, 1995). This is crucial to understand, as it has been empirically documented to be as effective as traditional face-to-face learning (DeRouin, Fritsche, & Salas, 2005). Research by Brown (2001) suggests that employees in a manufacturing environment greatly increased their knowledge from pre to post-test after taking an intranet-delivered course. Similarly, Smith, Smith, and Boone, (2000) found that students performed the same on teacher preparation courses on both online and traditional instructional media. Thus, e-

learning has been suggested to be an effective means of delivering information to individuals in a learning context.

Learning Process Factors

Delivery Platforms: Face-to-Face v E-Learning

It becomes imperative to consider the benefits and drawbacks that e-learning and traditional, face-to-face development activities have on organizations. Consideration of these benefits and drawbacks helps overall understanding of the factors that explain participation in one context compared to the other. Recent reviews in the literature have found that organizations can achieve numerous benefits from implementing e-learning programs, including consistency in training, reduced time between training activities, increased convenience for learners, improved tracking of accomplishments, deadlines, progress, and reduced cost (DeRouin, Fritzsche, & Salas, 2005; Burgess & Russell, 2003). There are, however, potential drawbacks to consider, including higher up-front costs, lack of trainee interaction, and organization's confusion as to how to provide information accordingly (Welsh et al., 2003).

A meta-analysis conducted by Sitzman, Kraiger, Stewart, & Wisher (2006) was one of the first large empirical studies to examine the training outcomes of web-based instruction (WBI) relative to traditional classroom instruction (CI). The results from the study indicate that WBI was 6% more effective than CI for teaching declarative knowledge, however, WBI and CI were equally effective for teaching procedural knowledge and trainees were equally satisfied with the two forms of instruction. Importantly, the effectiveness of WBI relative to CI did not differ between the student and employee sample, which indicates the generality of the results to other contexts.

While e-learning certainly has its attractive potential benefits in organizations, studies have indicated that there is a concern about a lack of interaction among trainees in e-training and development activities (Welsh et al., 2003). For example, Accenture indicated that the lack of peer-to-peer networking makes e-learning less attractive to its learners (Welsh et al., 2003). This information is important for organizations to keep in mind, as investment in e-learning programs may not fully be utilized, thus not reaching its full potential for developing employees.

Hypothesis 3: Preference for learning context (e-learning vs. face-to-face) will influence participation in learning and development activities, such that face-to-face will result in more participation in development activities.

Method

Sample

In Spring 2012, non-faculty staff of a large statewide college system took part in an employee development survey. A total of 5,153 participants were included in this study. Males made up 37% of the sample while women made up 63% of the sample. 88% of respondents were Caucasian. 24% of respondents were between the ages of 21 and 40, and 67% of respondents were above the age of 40. 9 % of respondents were 61 years of age or older. Respondents to this archival survey will serve as a sample for this study.

Procedure

The employee development survey was part of a system-wide effort to address training and development needs for all non-faculty college and university staff members, with the specific goals of examining participation in professional development activities, perceptions of available resources for development, and need for specific types of

development opportunities. The survey was administered online by a large survey provider. Participants were asked to provide answers to a variety of different development-related questions as well as demographic information including age, gender, and ethnicity.

Measures

Items were utilized that correspond with the appropriate hypotheses. Items used are dichotomous, categorical, or continuous in nature (See Table 1).

Table 1
Constructs and Sample Items

Construct	Sample Items
Personal Characteristics	“What is your age?”
Level in Organization manage system that development needs”	“Do you currently supervise or others?” “Do you currently supervise other supervisors?” “I support my staff pursuing other job opportunities within the may meet their
Managerial/Supervisor Support	“My supervisor encourages staff development opportunities” “...my supervisor helps me find the appropriate training”
Organizational Support staff institution” staff	“There is adequate attention given to development planning at my “My institution/workplace encourages development opportunities”
Policy Support policy on development funds”	“My institution/workplace has a use of professional

E-Learning
training?

“How do you prefer to receive

Results

Prior to conducting any statistical analyses, the data was cleaned and examined. Basic descriptive statistics were computed (See Table 2) and approximately 1/5th of respondents in the sample did not answer the question “What is your age?,” which can greatly affect the results of Hypothesis 1a. It is also important to note that in some questions in the dataset, “Yes” was coded as “1” and “No” was coded as “2”, which helps to understand the interpretation of the data with the logistic regression results that will be reported below. For each hypothesis tested, three separate survey questions were used as the operationalization of participation. These three dependent variables used to measure each hypothesis are: “Have you attended any professional staff development or training activities on your campus in the state-wide system in the past year?,” “How many activities have you attended in the past year?,” and “Are you likely to participate in supervisory/managerial activities?”.

Hypothesis 1a predicted that age, as an individual factor, is positively related to participation in development activities, such that younger employees would report higher rates of participation. Analyses were conducted with the survey item, “What is your age?” as the independent variable and the three dependent variables previously mentioned. When “Have you attended...” was the dependent variable, a chi-square test of independence found no significant difference. Results indicate $\chi^2(4)=2.78, p=n.s.$, that age and rate of participation rates are independent and are therefore not related. A second analysis to examine how many activities an employee participates in, a one-way analysis

of variance (ANOVA) was used. Results indicate significant group differences, $F(4,1312)=3.26, p<.05$. A Tukey's post-hoc test found that employees 61 years of age and older ($M = 3.34$) are significantly different than employees aged 21-30 ($M=2.81$) and employees aged 31-40 ($M=2.89$) (See Table 3). In contrast to the prediction, *older* employees (specifically those in the group 61 years of age and older) are more likely to participate in more activities compared to younger employees. To further examine hypothesis 1a, a chi-square test of independence was used to analyze whether there are significant differences in whether or not a supervisor participated in supervisory/managerial development activities based on age. Results yield $\chi^2(4)=11.02, p<.05$, indicating that age and participation in supervisory/managerial development activities is significant, suggesting that younger employees (aged 21-40) are more likely to participate in *supervisory/managerial activities* compared to older employees (aged 51-60). In summary, support for hypothesis 1a is mixed.

To test hypothesis 1b, that an individual's level in the organization is predictive of participation in development activities, analyses were conducted with the survey item "Are you currently a manager?" as the independent variable and the dependent variables "Have you attended..." and "How many activities...". When "Have you attended..." was the dependent variable, a chi-square test of independence found significant results, yielding $\chi^2(1)=24.39, p<.001$, supporting the hypothesis. Results thus indicate that if an employee holds a managerial position, the likelihood of such an employee participating is greater than what would be expected. In addition, the results of a point bi-serial correlational analysis further supports the hypothesis by demonstrating that being a manager leads to participation in more development activities than being a non-manager

($r_{pb} = -.11, p < .001$).

To test hypothesis 2a, which predicted that manager support should significantly predict participation, analyses utilized the following survey items served as independent variables in this analysis: “Have you received a performance evaluation in the last 12 months?”, “Do you have an individual development plan that you have discussed with your immediate supervisor?”, “My supervisor encourages staff development opportunities”, and “When I communicate a need for new skill training or knowledge, my supervisor helps me find the appropriate training”. The three aforementioned dependent variables were used in the analyses. The question “Does your supervisor encourage you to participate in regular supervisory/managerial development activities?” was included along with the aforementioned independent variables when examining the dependent variable “Are you likely to participate in supervisory/managerial activities?”

When examining the dependent variable related to whether or not employees participated in development activities, the results of logistic regression analysis indicate that two of the predictor variables were not significant in the first model and were therefore taken out. The results of a second logistic regression analysis indicate that the odds that an employee has an individual development plan, they are 1.44 times more likely to participate in development activities compared to those who do not. Additionally, the odds that an employee receives encouragement to participate, they are .67 times more likely to participate in development activities compared to those who do not (See Table 4).

When examining the dependent variable related to number of activities an employee participated in, a multiple regression analysis results indicate that the first model predicted approximately 6.6% of the variance in participation $R^2 = .066$ $F(4, 4134) = 72.56$,

$p < .001$). However, two predictor variables were not significant, and were thus removed from the second model. The second model regression analysis predicted approximately 6.4% of the variance in participation $R^2 = .064$ $F(2, 4148) = 143.205$, $p < .001$). Results further indicate that the extent to which a supervisor encourages staff development opportunities is the largest predictor of how many activities an employee will participate in ($\beta = .21$, $p < .001$). Additionally, if an individual has an individual development plan that they've discussed with their supervisor, there is a slight negative relationship to participation ($\beta = -.09$, $p < .001$) (See Table 5). The predictor variable "Does your supervisor encourage you to participate in regular supervisory/ managerial activities?" was then included to test the dependent variable "Are you likely to participate in supervisory/development activities?" in this hypothesis. This specific analysis examines the relationship between level of support that a supervisor receives from a higher-level supervisor in the organization and whether or not the supervisor participates in supervisory development activities. Two predictor variables were not significant in this first model and were removed. A second binary logistic regression analysis was conducted. Results indicate that if a higher-level supervisor encourages a lower-level supervisor to participate in managerial activities, these supervisory-level employees are 11.46 times more likely to participate in managerial activities compared to those who do not receive such help from their supervisors. If the supervisor receives a performance evaluation in the last 12 months, the supervisor is .70 times more likely to participate in managerial activities. Lastly, if the supervisor receives help after communicating a need to participate in development activities, they are 1.3 times more likely to participate in managerial activities (See Table 6). Results thus indicate that the hypothesis was

supported.

Hypothesis 2b, which predicted that perceptions of organizational support should significantly predict participation in development activities was supported. The hypothesis was tested using the following survey items as independent variables: “My institution/workplace has a clear process for sponsoring individuals for professional development”, “My institution/workplace encourages staff development opportunities”, “My campus hosts staff development or professional development days”, “There is adequate attention given to staff development planning at my institution”, “Are you familiar with the employee development philosophy above?” as the independent variables.

A binary logistic regression analysis was conducted with the “Have you attended...” dependent variable. Results from the first model indicate that two predictor variables were not significant and were therefore removed. A second binary logistic regression was conducted, and the results indicate that the three remaining organization-level factors that were predictive of participation include the extent to which a campus hosts staff professional development days (.54 times more likely), the extent to which the institution encourages staff development opportunities (.72 times more likely) and if the employee perceives that adequate attention is given to development planning at their institution (1.16 times more likely) (See Table 7). In the analysis that considers how many activities an employee participates in, the first model entered all independent variables into the regression, but there were two non-significant predictors and were thus removed from the second regression model. A second multiple regression analysis indicates that the extent to which a campus hosts staff professional development days had the most influence on how many activities individuals participated in ($\beta = .240$ $p < .001$), followed by

the extent to which the institution encourages staff development opportunities ($\beta = .11$, $p < .001$), and finally, if the employee is familiar with the system employee development philosophy ($\beta = -.04$, $p < .05$). The model explains approximately 10.2% of the variance in participation $R^2 = .102$ $F(3, 4128) = 155.56$, $p < .001$) (See Table 8). In the analysis examining participation in supervisory activities, the results from a logistic regression analysis after removing the non-significant predictors indicates that the odds that an employee who holds a supervisory position in the organization perceives that the institution encourages staff development opportunities, the supervisor is .72 times more likely a supervisor is to participate in supervisory/managerial development activities (See Table 9). The results indicate that the hypothesis was supported.

Hypothesis 2c predicted that policies, rules, and guidelines will positively influence participation in development activities. The hypothesis was tested using the independent variable "My institution/workplace has a policy on use of professional development funds". The first binary logistic regression analysis examining whether or not an employee participates in development activities, found that the employee is .67 times more likely to participate if the institution has a clear policy on use of professional development funds (See Table 10). A second regression analysis examining how many development activities an employee participated in indicates that the extent to which an institution has a clear policy on use of professional development funds significantly predicts 3.6% of the variance in participation $R^2 = .036$, ($F 1,4157 = 156.509$, $p < .001$). In addition, a supervisory-level employee is .79 times more likely to participate in supervisory/managerial development activities if there is a clear policy on use of professional development funds (See Table 11). Results from these analyses indicate that

hypothesis 2c was fully supported.

Hypothesis 3, which predicted that an employee's preference for e-learning vs face-to-face delivery platforms would influence whether or not an employee participates in development activities was partially supported. T-tests and chi-square analyses were used to examine "How do you prefer to receive training?" as the independent variable. Results from a chi-square test of independence yields $\chi^2 (1)=4.24, p<.05$ indicating that the number of employees preferring e-learning as a delivery platform in development activities is greater than what would be expected. In contrast, the number of employees who prefer face-to-face delivery platforms was less than what would be expected (See Table 12). In a second analysis examining *how many* development activities an employee participated in, however, results from a one-tailed independent t-test indicates no significant difference in scores ($t (4174)=.457, p=n.s.$). Thus, although preference for e-learning scores were higher ($M=2.84$) than the preference for face-to-face learning scores ($M=2.81$), this difference was too small to be statistically and practically significant. Additionally, a chi-square test of independence analyzing whether or not a supervisor-level employee participated in supervisory/managerial activities yields $\chi^2 (1)=2.07, p=n.s.$ Results indicate that the number of supervisor-level employees preferring e-learning vs. face-to-face methods for training delivery was not statistically significant. The mixed results indicate that this hypothesis was partially supported.

Discussion

While previous research indicates that implementing professional development programs is an effective way to build human capital in organizations, little empirical evidence supports the potential drivers of participation in development activities. Previous

research has devoted attention to understanding the conceptual antecedents of participation in employee development activities (Wang & Wang, 2004). The present study sought to provide additional empirical evidence to the Wang and Wang (2004) theoretical model of employee participation in training and development activities, as well as to analyze and integrate other key, important factors not originally included in Wang and Wang's (2004) model: level in organization. The present study contributes to a greater understanding of employee participation by using an adult workplace sample as opposed to a sample gathered in an educational context with an undergraduate student sample.

Summary of Findings

The results of the present study indicate several important practical implications for organizations interested in learning more about the factors that predict employee participation in development activities. In addition, several important findings from the present study can inform academic endeavors in further explaining the conceptual relationships among individual, organization, and learning process factors affecting participation rates in organizations.

The first finding of particular interest is that *older* employees (specifically those in the group 61 years of age and older) are more likely to participate in *more* activities compared with younger employees, while younger employees are more likely to participate in supervisory/managerial development activities compared to older employees. While these results are opposite to what was hypothesized in terms of how many activities an employee will choose to engage in, research does offer some suggestions about the current findings. Specifically, because older employees are aware that in order to sustain and remain effective at their jobs, a growing number of older

workers may be compelled to seek opportunities in which to grow in their skill development (Simpson, Greller, and Stroh, 2002). Thus, results of the present study illustrate how the current generation of aging workers are perhaps more likely to show proactive engagement in participating in development activities than what would be expected. There is another key idea to note regarding age and participation: age and level in organization are typically inter-related. Specifically, employees that hold positions of power tend to be older, which makes sense that managerial (older) employees would be participating more in development activities (perhaps of the managerial/leader development variety) compared to younger employees. In addition, the finding that younger supervisors are more likely to participate in supervisory/managerial activities compared to older supervisors is supported by previous research, which indicates that younger supervisors are more developmentally-focused compared to older supervisors (Carberry & Garavan, 2007).

The results obtained from the hypothesis examining whether holding a managerial position is predictive of increased levels of participation in development activities compared to non-managers, yielded some of the most interesting and important results from the present study. Specifically, results demonstrated that being a manager is predictive of not only whether or not an employee chooses to participate in development activities, but also *how many* activities the employee will participate in. This important factor not originally a formal part of the Wang and Wang (2004) model serves to illustrate its criticality in predicting participation rates. Findings support past research suggesting that holding a managerial position in an organization prompts the employee to think about their development and increases the likelihood that the individual will take on

opportunities that will help them increase and develop in their skills, knowledge, and abilities for their current and future work roles.

Managerial support for participation in development activities was also found to be very important. Specifically, the extent to which a supervisor encourages staff development opportunities is the most important predictor of how many activities an employee will participate in. Additionally, having an individual development plan that they have discussed with their supervisor is important. These results align with past research that indicates supervisor support is very important to an employee because it makes them believe that their development is important to their supervisor. Having an individual development plan also facilitates participation in development activities because the employee becomes aware of their strengths and developmental areas. In addition, having a plan with goals integrated in their formal work environment keeps employees accountable and heightens an employees need to seek opportunities in which they can grow and develop.

Findings from the present study also suggest that if a higher-level supervisor helps a lower-level supervisor find the appropriate training after they have communicated a need for new skill training or knowledge, the employee is 11.46 times *more* likely to participate in supervisory/managerial development activities compared to those that do not receive such help. This is very important to note: if a lower-level supervisor feels that they will receive help when they request to find the appropriate training necessary for them to develop, this greatly affects whether or not they actually participate. Managers should thus be aware of the needs of their employees, be mindful of when they ask for help, and offer to assist them in their endeavors to participate.

Four organization-level factors that were predictive of participation were the extent to which a campus hosts staff professional development days, the extent to which the institution encourages staff development opportunities, whether or not the employee is familiar with the system employee development philosophy, and whether the institution has clear policies. These results support previous research and further emphasize the role that an organization as a whole can play in driving employee participation. By having strong upper management expectations and emphasis on employee development, employees will be more likely to engage in development activities and opportunities. As stated previously, the more employees understand that their organization as a whole supports participation in development activities, the value of such programs becomes more salient and important to them, thus raising employee's motivation to participate (London & Mone, 1999). The employee therefore needs to believe that the organization's culture, norms, and values support their development.

A unique contribution of this research, training delivery platforms as a learning process factor, were also examined in the present study. An employee's e-learning preference affects whether or not they choose to participate, but preference does not significantly predict how *many* activities an employee will choose to participate in. The following can be interpreted from these results: perhaps employees will participate in e-learning activities to say that they have completed an activity with this type of delivery platform but they may not be motivated or have enough self-efficacy to participate in multiple activities with this type of platform. The unionized work environment of this particular sample may affect the employee's perceptions of participation in participation activities that are conducted using e-learning delivery platforms. Because the union

protects employees, the employee may not be motivated to try out this newer delivery platform. Unionized work environments would thus benefit from being explicitly supportive of employee participation in development activities in order to increase rates of participation.

Theoretical Considerations and Practical Implications

It is important to note the distinction between two dependent variables used in the present study: “Have you attended any professional/staff development or training activities on your campus or in the system in the past year?” and “How many activities have you attended in the past year?”. It can be argued that while these two questions are similar in content that they are asking, because the “How many activities...” question is a continuous variable, it offers richer and more detailed information. It can thus be argued that because this question provides more information, it is more important to note the results from this question compared to the former question “Have you attended...”. This is one reason why multiple dependent variables were examined in the hypotheses for the present study.

This study is one of the first comprehensive empirical studies to report on the factors that predict participation in employee professional development activities. The study provided empirical evidence to bolster the theoretical assertions of the Wang & Wang (2004) theory by demonstrating that several components from the three factors of the theory do accurately aid in predicting participation in development activities. The results, therefore, not only offers an empirical basis for understanding how the three factors predict participation, but also provides a foundation in which to integrate other individual, organization, and learning process factors in order to have a richer

understanding of this theoretical relationship. From a practical standpoint, understanding the individual, organization, and learning process factors that predict participation, we can help organizations encourage, support and promote these factors and guide individuals to obtain the greatest benefits from their professional development experiences.

Limitations and Future Directions

One should always interpret the results from a single sample in an organization with a degree of caution due to the perhaps limited generalizability to other samples and work contexts. Because the results attained are based on self-report data, this could raise the potential for biases, which could limit the validity of the present study. However, it is a benefit to this research that the sample is entirely from working adults, which serves as an advantage over lab-based research using a sample of undergraduate students because it is more relevant to work situations.

As previously mentioned it is also important to note that this sample includes individuals from a highly unionized work environment. It is likely that organizational culture norms and union culture norms may shape employees' ideas on the importance and value of participation in employee professional development activities. Perhaps because employees know their jobs are well-protected, they are perhaps less motivated to participate in development activities, compared to employees in other job contexts who feel their jobs are not as secure. While this workplace is comparable with organizations with similar age ratios and power structures, it is possible that because employees are protected by the union, they may not have the same propensity to take extra time or effort out of their workdays to participate in development activities that are not part of their formal work day.

The present study provides strong additional empirical evidence for the Wang and Wang (2004) theoretical model while also integrating new factors not previously studied in the model; specifically, an employee's level in the organization. However, this research does not capture other antecedents that further add to an understanding as to why or why not employees participate in development activities. For example, research suggests that perceived need/utility is a strong predictor of whether or not an employee chooses to engage and participate in training and development activities. It follows that if an employee does not truly believe that participating in a certain training activity will lead to increased work performance, opportunities, or rewards, the employee may be less likely to voluntarily participate in the activities, regardless if the supervisor or institution provides them with encouragement to do so (Maurer & Tarulli, 1994; Fecteau et al., 1995; Dobbins, Russell, Ladd, & Kudish, 1995). The current study did not include such a survey question, so we are unable to assess employees' perceptions of need/utility of training. Another strong predictor of whether or not an employee participates in development activities is motivation. Both motivation to learn (Birdi et al., 1997) and motivation based on expectation (Thareneau, 2001; Maurer, 2002) can help to explain participation levels in such activities. Specifically, research in this area indicates that an individual's motivation to participate in training and development activities is greater if there is an expectation that the knowledge or skills obtained from participating will be instrumental in achieving outcomes of interest. This inattention to important predictors such as this in the present study may help to explain weak or non-significant relationships. Future research examining participation could benefit from integrating additional predictors into models in order to have a more rich understanding of participation in development activities, such as

perceived need/utility and motivation. Practically speaking, a state-level sample of non-faculty staff from education institutions could benefit from integrating a question that assesses an employee's perception of perceived need and utility and motivation or even to understand what kind of people are more motivated to participate in training activities.

Another potential area for future research might examine how the individual and organization level factors in the Wang and Wang (2004) model are moderated by preference for e-learning vs. face-to-face delivery platforms. As far as examining individual factors that affect participation in an e-learning context, research suggests that learning in such a context may reduce the participation rates for older workers. London and Bassman (1989) suggested that some organizations do not see older workers as capable to learn or accept new technologies and function compared to younger workers, which has implications for reduced participation in development activities by these individuals. In addition, Brown's (2001) research also suggested that increasing age was associated with greater resistance to the idea that a computer was replacing a trainer. Organization-level factors have also been found by research to be affected by e-learning vs. face-to-face learning platforms. Colquitt et al. (2000) found that organizations with climates that encourage employee participation in development activities, may find it easier to implement learner-controlled training programs (such as e-learning activities). Because employees in these organizations are accustomed to having control over their jobs, they may respond positively to more control in training (De Rouin, Fritzsche, & Salas, 2004). While the present study assessed these delivery platforms as main effects because of the Wang and Wang (2004) model, this sample's results from hypothesis 3 were not significant. It is possible, however, that a sample from a different organization

could yield different results and could thus warrant a moderation analysis.

A third potential research question to address would be to explore why the older workers in this current sample are engaging in more development activities compared to younger workers. Because the age hypothesis was not supported, it would be fruitful to understand the reasons why this occurred. Specifically, this phenomenon could be occurring due to the training content that older workers are compelled to engage in or because of the organizational culture. An exploratory correlation analysis was conducted to understand the relationship between age and type of development activities employees choose to participate in. Results suggest that older employees (aged 61 and older) are participating in managerial core training the most (16.7%) followed by quality improvement training (16.5%). The youngest group of employees (aged 21-40) are participating in new employee orientation training (31.5%-likely because it is mandated by the organization to participate) followed by state-level conferences (17.5%) and pursuing degrees program (10.3%). This preliminary examination of type of activities that different age groups are likely to be attracted to and actually want to participate in provide us with a foundation in which to examine this question in further detail as a later research agenda question. Additionally, it would be fruitful to examine not just how to keep employees motivated for training, but who are the types of employees who would be motivated for certain kinds of training functions. For example, people who are changing roles later in their tenure in the organization may also need development because they are learning a new role.

Another final important avenue to consider for future research takes the results from the present study a step further. An interesting research question to address is how

participation in development activities actually helps employees to develop. The present study did not focus on whether or not the participation rates actually yielded effective performance or increased rewards later, but research would benefit from a longitudinal study to examine this question.

Conclusion

The present study provides empirical evidence regarding factors that affect participation levels in employee professional development activities. A few interesting questions remain regarding why employees choose to participate in development activities or not. Replicating the current study using a non-unionized work context sample would be helpful in understanding if certain relationships found in the present study are specific to the organizational culture or not. Additionally, should organizations such as this begin to identify high potentials in the organization and have a more targeted perspective on who should be participating in certain activities?

By understanding more about the individual, organization, and learning process factors that predict employee participation in professional development activities, organizations can better utilize their resources in developing and implementing training and development activities that employees will be engaged in, as well as target the individuals and organization-level factors that will effectively aid in increasing participation rates in such activities. If there is increased participation in professional development activities, bench-strength will thus be increased and a better more productive workforce will result.

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Appendix

Survey Questions

“How do you prefer to receive training?”

“Are you familiar with the employee development philosophy above?”

“If yes, how did you learn about it? (the employee development philosophy)?

“Have you received a performance evaluation in the last 12 months?”

“Do you have an individual development plan that you have discussed with your immediate supervisor?”

“My supervisor encourages staff development opportunities”

“When I communicate a need for new skill training or knowledge, my supervisor helps me find the appropriate training”

“My institution/workplace has a policy on use of professional development funds”

“My institution/workplace has a clear process for sponsoring individuals for professional development opportunities”

“My institution/workplace encourages staff development opportunities”

“My campus hosts staff development or professional development days”

“There is adequate attention given to staff development planning at my institution”

“Do you currently supervise or manage others?”

“Are you likely to participate in supervisory/managerial development activities on an annual basis?”

“Does your supervisor encourage you to participate in supervisor/managerial development activities?”

“Do you currently supervise other supervisors?”

“What is your age?”

Table 2

Descriptive Statistics and Correlations for Employee Participation Variables

	Mean	Std. Deviation	N
Have you attended	1.25	.434	4748
How many activities	2.79	1.348	4632
Participation in supervisory/managerial activities	1.35	.477	1373
Preference for Training	1.75	1.243	4189
Familiarity with Philosophy	1.62	.485	4254
Performance evaluation	1.33	.471	4240
Individual Development Plan	1.51	.500	4238
Supervisor Encourages	3.92	1.049	4194
Communicate Need	3.58	1.050	4193
Institution has Policy	3.79	.927	4171
Institution has Clear Process	3.42	1.072	4184
Institution Encourages	3.65	1.047	4186
Campus Hosts Staff Dev. Days	3.89	.966	4179
Adequate attention Given	3.18	1.137	4179
Currently Supervise Others	1.67	.471	4210
Supervisor Encourages Participation in Supervisor Activities	1.46	.498	1364
Age	4.27	1.057	1323

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 2, cont.

Institution has Policy	Institution has Clear Process	Institution Encourages	Campus Hosts Staff Dev. Days	Adequate Attention Given	Currently Supervise Others	Supervisor Encourages Participation in Supervisor Activities	Age
-.163**	-.157**	-.221**	-.293**	-.174**	.076*	.159*	-.014
.190**	.171**	.233**	.298**	.207**	-.114**	-.162**	.081**
-.106**	-.106**	-.166**	-.121**	-.112**	. ^c	.469**	.088**
.014	.019	.050**	.013	.056**	.024	-.009	.080**
-.145**	-.196**	-.208**	-.126**	-.219**	.048**	.189**	-.086**
-.088**	-.091**	-.099**	-.036*	-.088**	-.008	.094**	-.062*
-.213**	-.218**	-.248**	-.150**	-.224**	-.001	.248**	-.014
.388**	.435**	.570**	.328**	.433**	-.081**	-.431**	-.062*
.368**	.447**	.521**	.301**	.450**	-.029	-.403**	-.079**
	.705**	.548**	.403**	.469**	-.055**	-.233**	-.065*
		.675**	.416**	.598**	-.049**	-.302**	-.063*
			.481**	.680**	-.083**	-.386**	-.037
				.557**	-.074**	-.259**	-.002
					-.044**	-.337**	-.015
						. ^c	. ^c
							-.027

**Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

Table 3

Table of Means for Age Variable in Predicting Participation of Professional Development Activities

Variable	<i>N</i>	<i>Mean</i>	<i>SD</i>
Age (21-30)	86	2.81*	1.32
Age (31-40)	227	2.89*	1.35
Age (41-50)	367	3.15	1.40
Age (51-60)	518	3.08	1.35
Age (61 or older)	119	3.34*	1.37

* $p < .05$

Table 4
Summary of Logistic Regression Analysis for Manager Support Variables Predicting Participation in Development Activities

Variable	B	Wald	Exp (B)
Model 1			
Receive Perf. Eval	-.10	1.31	.91
Individual Dev. Plan	.40	21.02	1.49**
Supervisor Encourage	-.40	64.85	.67**
Communicate Need	-.02	.153	.98
Model 2			
Individual Dev. Plan	-.36	20.63	1.44**
Supervisor Encourage	-.40	128.79	.67**

* $p < .05$

** $p < .001$

Table 5

Summary of Hierarchical Regression Analysis for Manager Support Variables Predicting Employee Participation in Professional Development Activities

Variable	<i>B</i>	<i>SE</i>	β
Model 1			
Receive Perf. Eval	.03	.05	.01
Individual Dev. Plan	-.25	.05	-.09**
Supervisor Encourage	.28	.03	.22**
Communicate Need	-.01	.03	-.01
Model 2			
Individual Dev. Plan	-.24	.04	-.09**
Supervisor Encourage	.27	.02	.21**

* $p < .001$

Table 6

Summary of Logistic Regression Analysis for Manager Support Variables Predicting Participation in Supervisory/Managerial Development Activities

Variable	B	Wald	Exp (B)
Model 1			
Receive Perf. Eval	-.41	7.21	.01*
Individual Dev. Plan	.15	.97	1.16
Supervisor Encourage	.09	1.02	1.10
Communicate Need	.21	5.65	1.24*
Upper Manager Encourage	2.45	241.19	11.63**
Model 2			
Receive Perf. Eval	-.35	6.20	.70*
Communicate Need	.26	14.06	1.30**
Upper Manager Encourage	2.44	250.72	11.47**

* $p < .05$

** $p < .001$

Table 7

Summary of Logistic Regression Analysis for Organization Support Variables Predicting Participation in Professional Development Activities

Variable	B	Wald	Exp (B)
Model 1			
Knowing Philosophy	.15	3.07	1.16
Clear Sponsor Process	.03	.38	1.03
Institution Encourages	-.35	39.76	.70**
Hosts Dev. Days	-.62	171.51	.54**
Attention to Dev. Plan	.15	44.36	1.16*
Model 2			
Institution Encourages	-.33	45.27	.72**
Hosts Dev. Days	-.62	171.78	.54**
Attention to Dev. Plan	.14	127.65	1.16*

* $p < .05$

** $p < .001$

Table 8
*Summary of Hierarchical Regression Analysis for Organization Support Variables
 Predicting Employee Participation in Professional Development Activities*

Variable	<i>B</i>	<i>SE</i>	β
Model 1			
Knowing Philosophy	-.10	.04	-.03*
Clear Sponsor Process	-.02	.03	-.01
Institution Encourages	.17	.03	.13**
Hosts Dev. Days	.34	.03	.25**
Attention to Dev. Plan	-.02	.03	-.02
Model 2			
Knowing Philosophy	-1.0	.04	-.04*
Institution Encourages	.15	.02	.11**
Hosts Dev. Days	.34	.02	.24**

* $p < .05$

** $p < .001$

Table 9

Results for Logistic Regression Used to Predict Participation in Supervisor Activities)

<u>Variable</u>	<u>B</u>	<u>Wald</u>	<u>Exp(B)</u>
Model 1			
Knowing Philosophy	.02	.03	1.02
Clear Sponsor Process	.03	.20	1.03
Institution Encourages	-.30	12.93	.74**
Hosts Dev. Days	-.14	3.29	.87
Attention to Dev. Plan	.003	.002	1.00
Model 2			
Institution Encourages	-.33	35.86	.72**

* $p < .05$ ** $p < .001$

Table 10

Results for Logistic Regression Used to Predict Participation in Development Activities

<u>Variable</u>	<u>B</u>	<u>Wald</u>	<u>Exp(B)</u>
Clear Policy on Funds	-.40	106.52	.67**

****** $p < .001$

Table 11

Results for Logistic Regression Used to Predict Participation in Supervisor Activities

<i>Variable</i>	<i>B</i>	<i>Wald</i>	<i>Exp(B)</i>
Clear Policy on Funds	-.23	15.07	.79**

****** $p < .001$

Table 12

Frequency of E-Learning vs. Face-to-Face Employee Participation Rate

<u>Learning Process/Delivery Platform</u>	<u>Participated</u>	<u>Did Not Participate</u>	<u>Total</u>
1. E-Learning Observed	2324	696	3020
2. E-Learning Expected	2298.6	721.4	3020
3. Face-to-Face Observed	856	302	1158
4. Face-to-face Expected	881.4	276.6	1158