A Mediated Hierarchical Regression Analysis Of Factors Related To Career Research Productivity Of Human Resource Education And Development Postsecondary Faculty

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This study sought to determine factors that drive an HRED postsecondary faculty member to be a high producer of research. A HRED faculty career research productivity mediated model was designed and evaluated based on theory and previous literature. The model consisted of environmental variables (control variables), perceived organizational priorities (independent variables), personal interests/abilities (mediator), and research productivity (dependent variable measured by a weighted career research productivity score).

Keywords: Research Productivity; Postsecondary Faculty; Hierarchical Regression

Publications in postsecondary education have existed for some time as a standard by which individual faculty member's tenure is granted (along with teaching and service), a measure against which institutional programs are judged and rated, grant funding is obtained, and a method by which a discipline's progress is tracked (Campbell, Gaertner, & Vecchio, 1983; Cargile & Bublitz, 1986; Hasselback & Reinstein, 1995; Ingram & Petersen, 1991; Schultz, Mead, & Khurana, 1989; Vasil, 1996). Within higher education, it has been stated that faculty members with a successful publishing record and expertise in research are often admired by other faculty and students as on the cutting edge of their field and are regarded as knowledgeable about most issues in their field (Levine, 1997). In addition, these highly productive faculty members are seen as more powerful educators and often serve as a frame of reference for junior faculty members and others who are developing their own research agenda. In addition, research within a discipline is important as a conduit of thought and progress toward an understanding of phenomena within the discipline.

Problem Statement

Due to the value postsecondary institutions have and currently place on research productivity in the granting of promotion and tenure to faculty, as well as the basis of the recognition/rating of departments and/or universities for their research productivity; the ongoing growth of the HRD discipline; and the paucity of research on factors explaining research productivity specifically of HRED faculty members, a need existed to investigate what drives an HRED postsecondary faculty member to be a high producer of research. In this study HRED is composed of HRD, adult education (AE), organizational behavior (OB) disciplines.

Theoretical Base

Motivation theory, specifically drawing from cognitive motivation theory works by Theirry and Bandura, was utilized as the theoretical framework for this research. This allowed the investigation of both individual and institutional factors to be considered as potential drivers or motivational antecedents to the research productivity of HRED faculty.

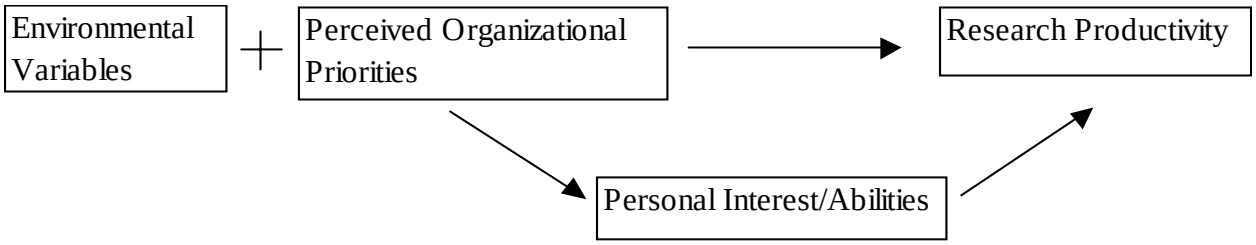
Works by Thierry and Bandura discuss the fact that educational institutions are more individualistic and have potentially different outcomes with the application of motivational theory. These authors address the individual aspect of cognitive motivation and take into account environmental factors. Thierry's (1998) focus on cognitive theory posits that when a person is actively processing information, that person will perceive signals, interpret signals, store the information in memory and retrieve the information when needed; therefore influencing some behavior. Cognitive motivation involves an individual's cognitive processing of multiple factors - including self (interests, skills, abilities, desires, and needs) and environment (verbal and nonverbal rewards and punishments).

Bandura (1977) states that cognitive theories explain behavior in terms of "central processing of direct,

vicarious and symbolic sources of information" (p. 192). People engage in behaviors when they judge their coping skills are sufficient, as well as determine the level of effort to expend and level of persistence. Therefore, it is efficacy that serves as a base of motivation, but is not the sole determinant of behavior. Component capabilities (i.e., incentives) must be present. Efficacy expectations are a major determinant of people's choice of activities, effort expended, and persistence when appropriate skills and adequate incentives are present.

Considering this theoretical background, a HRED Faculty Research Productivity Model was developed in an attempt to determine factors that drive HRED faculty members to demonstrate high research productivity. This mediated model takes into consideration information provided by cognitive motivation theorists, accounts for the altruistic environment of a university, and the uniqueness of a postsecondary faculty member. Within this model, environmental variables are controlled, perceptions of organizational priorities are considered motivational antecedents, and personal interest/abilities are assumed to mediate the relationship between the motivational antecedents and the research productivity of HRED faculty members. The model is presented in Figure 1 and variable descriptions follow the model.

Figure 1. HRED Faculty Career Research Productivity Model



HRED Faculty Career Research Productivity Model

Environmental variables were controlled for in this model. The variables considered environmental were Carnegie rank, age, and time spent teaching. These variables were selected as environmental because they are part of the environment that the person once in the job has the least amount of control over. They represent the priorities of the institution that do not have to be assumed, e.g., a particular Carnegie rank has a particular research focus. Time spent teaching is generally controlled by the administrators of the institution, and there is no need for a faculty member to attempt to perceive what their teaching load will be because it is assigned to him or her. These two variables are part of what Campbell (1990) discusses as job specific variables. Age is present in the model as a controlled variable due to previous research stating that age has an effect on research productivity.

Perceived organizational priorities variables were the motivational antecedents in this model. The variables included presence of institutional funding for research, opinion of research resources provided by the institution, and agreement with the statements "Research/publications should be the primary criterion for promotion of college teachers at this institution," and "At this institution, research is rewarded more than teaching." These variables are surrogates of motivation because no direct measures of motivation were available in this data set. These variables served to address Bandura's (1977) references to vicarious experience, verbal persuasion, and psychological states. For example, what is rewarded in an institution can be observed through modeling and/or observation, as well as verbally reported. Also, the more or less satisfaction/agreement one possesses due to the promotion of certain activities within his or her work environment, the more or less emotional arousal that individual will exhibit which may then affect his or her performance, behavior or actions. These variables are present also due to discussion by Thierry (1998) of an individual's perception of and interpretation of signals. Additionally, the discussion by Bandura (1977) and Staw (1984) pertaining to rewards influencing behavior or outcomes is demonstrated by the variables selected.

Personal abilities/interests was represented by preferred time spent in research. This variable served as a mediator in the model and acted as a surrogate to one's personal abilities/interests. This variable was selected because it represents both Staw's (1984) discussion of the altruistic environment, and advancement of self-goals, and of Bandura's (1977) performance accomplishments. It is the personal aspect of research productivity. Whereas the organizational priority variables serve as the person's processing of the environment, this is the person's processing of preference and skill level within him/herself. This variable is presented as a mediator due to discussion by Bandura (1977) stating that of the four factors potentially influencing personal efficacy (performance

accomplishments, vicarious experiences, verbal persuasion, and emotional arousal), the factor of performance accomplishments provides the greatest influence.

Research productivity was selected as the dependent variable for this study and was represented as career research productivity score. This variable was selected to represent a person's outcome, action or behavior - i.e., the demonstration of the end result of the individual taking in and processing environmental and personal variables and then reacting.

Purpose And Objectives

It was the purpose of this research effort to investigate what drives an HRED postsecondary faculty member to be a high producer of research. The objectives of the study were 1) describe HRED faculty members on selected demographic/professional variables, 2) describe the career research productivity of HRED faculty members in various outlets, and 3) determine if selected variables explain a significant proportion of the variance in the career research productivity of HRED faculty members.

Faculty research productivity was defined in this research effort as any scholarly research produced by a faculty member that contributes to the knowledge base of a discipline. For the purposes of this study, research productivity included articles/creative works in refereed/juried media; articles/creative works in nonrefereed/nonjuried media; reviews of books, articles, or creative works; books, textbooks, monographs, and reports; and presentations and exhibitions.

Methodology

The National Center for Education Statistics (NCES) conducted three national studies of post-secondary faculty in the years 1988-89, 1992-93, and 1998-99. The database from the 1988-89 study was not used in this study because the instrumentation and data collection procedures were modified significantly after the 1988-89 study; therefore, only the data from the 1992-93 and 1998-99 databases were utilized. Since no significant difference existed between the career research productivity scores of the faculty in the two datasets (t=-1.21, df=279, p=.23), the procedures presented below will be based on the combined data set (i.e., both the 1992-93 and 1998-99).

Population and Sample

The target population and frame for this study was all HRED full-time and part-time instructional and research faculty in colleges and universities across the United States who possessed academic and/or research responsibilities during the 1992-93 and 1998-99 school years. The sample consisted of 155 HRED faculty members (49 HRD, 59 AE, and 47 OB faculty members) for the 1992-93 survey, and 136 HRED faculty members (31 HRD, 53 AE, and 52 OB faculty members) for the 1998-99 survey for a total sample size of 291. It should be noted that of the 291 total sample size, duplication of respondents might have occurred from the 1992-93 and 1998-99 surveys. This information was not available from NCES to determine the extent of potential duplication. However, due to the randomness of the sample selection procedure and the large pool in the HRED target population and frame, it was assumed that duplication of respondents was not a substantial concern.

Representativeness of Population

To determine if this sample was representative of the population and to control for non-response error, research productivity scores were compared by sample response mode (mail versus phone follow-up) as recommended by Borg (1987) and Miller and Smith (1983) utilizing t-test procedures with an *alpha* level set a' priori at 0.05. The results of the t-test (t=.41, df=251, p=.68) revealed that no significant difference existed in the career research productivity score between the mail and phone respondents, and it was concluded that the sample was representative of the population.

Instrumentation

Face and content validity of the instrument were evaluated by NCES in the design of their study. NCES claimed that the instrument possessed face and content validity. To verify the face and content validity of the instrument, a panel of experts consisting of 40 HRED faculty members from across the nation was asked to review the questions and instructions. These individuals were selected on the basis that they had participated in research efforts utilizing survey research and would therefore possess an understanding of the concepts of validity as it applies to HRED faculty research productivity. The panel determined that the instrument possessed face and content validity, which supported the validity claimed by NCES.

To investigate reliability of the instrument, an internal consistency coefficient was calculated for the faculty opinion of institutional research resources scale, which is the only scale used in this study. A Cronbach's *alpha* of .72 was calculated for this scale as recommended by Carmines and Zeller (1979). According to Robinson, Shaver & Wrightman's Standards of Reliability (1991), this scale possessed extensive reliability, which supported the

reliability findings by NCES in which it was reported that all variables had acceptable reliability based on test-retest procedures.

Data Analyses

Descriptive statistics were used to describe the demographic and professional variables, and the career research productivity data. A mediated hierarchal regression analysis was used to determine if selected variables explained a significant proportion of the variance in the career research productivity of HRED faculty member. Mediated regression was selected because it was determined by review of previous research that perception of personal interest/abilities may account for all or some of the relationship between the independent and dependent variables. In addition, this procedure allowed full and partial mediation to be tested for this model.

The two categorical variables (presence of institutional funding, Carnegie rank) to be utilized in the regression were dummy coded. This procedure was performed due to the inability of SPSS to properly handle nominal variables as independent variables in regression equations. Institutional funding categories included presence of (coded as 1) or absence of research funding (coded as 0). The variable Carnegie rank was collapsed from 9 categories (public research, private research, public Ph.D./medical, private Ph.D./medical, public comprehensive, private comprehensive, private liberal arts, public two-year and other) to 2 categories (high research rank and low research rank). The collapsing of the categories was based on the mean career research productivity scores and mean time spent in research value. Those categories with individual mean values above those of the overall mean career research productivity and time spent in research values were included in the high research rank group, while those with below average individual mean values were placed in the low research rank group. Therefore, the high research rank institutions included public research, private research, public Ph.D./medical, private Ph.D./medical, public comprehensive, and private comprehensive; while low research rank institutions included private liberal arts, public two-year and other.

Regression assumptions and influential observations were evaluated. Assumptions and tests conducted were based on research by Hair et al. (1994) and Bates, Holton, and Burnett (1999). First, an initial regression was run, followed by tests for violation of regression assumptions, multicollinearity, and individual and multiple influential observations. Cases appearing to contribute to the violation of assumptions or acting as influential observations were removed (10 cases). Removing these cases reduced the CRPS overall data set to 281 cases or respondents. Once these cases were removed, regression assumptions were again evaluated, and no violation of assumptions was present and the condition of multicollinearity did not exist.

To perform mediated hierarchical regression, the *alpha* level was set a' priori at 0.05 with an entry level of 0.05. The recommended ratio of observations per variable of 10:1 was adhered to (Hair et al., 1994). R^2 was presented to represent effect size and was interpreted using the descriptors by Cohen (1988). The four steps to determine if mediation existed and if mediation was partial or full were based on the hierarchal regression procedures reported by Hair et al. (1994), Bates and Khasawneh (2002), and Baron and Kenny (1986). The steps were: Step 1: entered control variables as block one, entered independent variables (X) as block two and regressed variables on the dependent variable (Y); Step 2: entered control variables as block one, entered mediator variable (Z) as block two, and regressed variables on the dependent variable (Y); Step 3: entered control variables as block one, entered independent variables (X) as block two, and regressed on the mediator variable (Z); and Step 4 was conducted if steps 1 - 3 produced significant models: entered control variables as block one, entered mediator variable (Z) as block two, entered independent variables (X) as block three, and regressed on the dependent variable (Y). The results of step 4 determine the type of mediation - if a significant model resulted, partial mediation existed; however, if a nonsignificant model resulted, full mediation existed.

Findings

Objective 1: HRED faculty members selected demographic and professional characteristics. Less than one-fourth (14.4%) of the respondents received funding for research of some type (mainly from their institution). The total current research funding average was $6739. Tenure was possessed by 25.4% of respondents, while 14.4% were on tenure track. The average number of years tenured was 9.25 years. The most common principal activity reported was teaching (79%), followed by research (5.2%). Approximately half (48.8%) of the respondents were engaged in research, writing, and/or creative works, mainly applied research.

Objective 2: Career research productivity of HRED faculty members. Five research productivity items (presentations/exhibitions, refereed and nonrefereed articles/media, books/textbooks/monographs/reports, and published reviews) were identified in the review of literature and used as the basis for the career research productivity score (presented in Table 1). Respondents reported having a greater number of presentations than any other form of research output, followed by refereed articles/juried media, and nonrefereed articles/juried media.

Table 1. *Items Composing Career Research Productivity Scores of HRED Respondents*

Item	Minimum	Maximum	*M*	*SD*
Career presentations, exhibitions	0	258	20.56	39.64
Career refereed articles/juried media	0	100	5.46	12.16
Career nonrefereed articles/nonjuried media	0	70	3.75	8.68
Career books, textbooks, monographs, reports	0	30	1.58	4.20
Career published reviews	0	75	1.19	5.25

Note. *N*=281.

The formula used to calculate the career research productivity (CP) was CP = (.123*career presentations/exhibitions) + (.483*career refereed articles/juried media) + (.127*career nonrefereed articles/nonjuried media) + (.15*career books, textbooks, monographs, reports) + (.117*career published reviews). The weights were determined by a validation panel that weighted each of the 5 items used to calculate the score. The CP value was then processed one step further to obtain the career research productivity score (CRPS), i.e., CRPS = CP/years since received highest degree. The values used to compute research productivity scores were those reported by respondents in reference to the type and quantity of research each had produced over their career. The mean career research productivity score was .50.

Objective 3: Explaining the variance in the career research productivity of HRED faculty. The descriptive statistics for the variables utilized in the model are presented in Tables 2 and 3. The items "Research is rewarded more than teaching at this institution," and "Research should be promotion criteria at this institution" were individual Likert type items with 4-point scales (1=very dissatisfied, 2=somewhat dissatisfied, 3=somewhat satisfied, 4=very satisfied). The institutional research support scale (a=.72) was composed of the following Likert type items - library holdings, secretarial support, availability of research assistants and office space - with the same 4 point rating as the independent items list in the previous statement.

Table 2. *Descriptive Statistics for Interval Model Variables from CRPS Overall Data Set*

Variable	Minimum	Maximum	*M*	*SD*
Career research productivity score	0	4.67	50	.72
Percent of time spent teaching	0	100	53.51	32.71
Age	25	77	48.63	10.35
Research is rewarded more than teaching	1	4	2.31	1.06
Research should be promotion criteria	1	4	2.04	.83
Institutional research support scale	1	5	2.99	.87
Percent of time preferred to be spent in research	0	70	14.79	17.34

Note. *N*=281.

Table 3. *Descriptive Statistics for Categorical Model Variables from CRPS Overall Data Set*

Variable		*N*	*%*
Carnegie rank[a]	High rank	158	56.2
	Low rank	123	43.8
	Total	281	100.0
Institutional funding:	Funding present	25	8.9
	Funding not present	256	91.1
	Total	281	100.0

[a]Carnegie rank was divided as described in the data analyses section of this manuscript.

The evaluation of the HRED Faculty Research Productivity Model utilizing CRPS as the dependent variable is broken down into the four steps of testing a mediated model. The results of each step are presented with "C" representing the control variable, "X" representing the independent variables, "Z" representing the mediating variable, and "Y" representing the dependent variable. Steps 1 – 3 in the hierarchical regression produced statistically significant models (Step 1 (C+X=Y) - p<.001, R^2=.309; Step 2 (C+Z=Y) - p<.001, R^2=.383; Step 3 (C+X=Z) - p<.001, R^2=.258). Due to the significance of the models in Steps 1 through 3, Step 4 was conducted which also produced a statistically significant model (Step 4 (C+Z+X=Y) - p=.029, R^2=.412).

A partially mediated model exists due to the significant result (p=.029) of Step 4, and the R^2 value demonstrates a large effect size (Cohen, 1988) denoting the model's strength and practical significance. Therefore, personal interest/abilities (measured by preferred time spent in research) alters the relationship between perceived organizational priorities and career research productivity score. The regression model summaries are presented in

Table 4, standardized betas are presented in Table 5, and correlation matrix for Step 4 is presented in Table 6.

Table 4. *Career Research Productivity Score Model Summary*

Model	R^2	SE	*df*	*p*	Effect Size[a]
Step 1: C+X=Y	.309	61	261	<.001	Large
Step 2: C+Z=Y	.383	57	276	<.001	Large
Step 3: C+X=Z	.258	15.26	261	<.001	Moderate
Step 4: C+Z+X=Y	.412	57	260	.029	Large

Note. See Table 5 for variables that entered the equation in each step.
[a]Effect sizes interpreted accords to the standards proposed by Cohen (1988).

Table 5. *Standardized Betas for CRPS Steps 1, 2, 3, and 4*

Variables	Standardized betas			
	Step 1 (C+X=Y)	Step 2 (C+Z=Y)	Step 3 (C+X=Z)	Step 4 (C+Z+X=Y)
Controlled Variables (C)				
Percent of time spent teaching	-.15*	-.12*	-.05	-.13*
Age of respondent	-.08	-.09	-.04	-.07
Carnegie rank of institution	-.32*	-.24*	-.25*	-.23*
Independent Variables (X)				
Presence of funding	-.01	NA	-.11	-.04
Research should be primary promotion criteria	.22*	NA	22*	.14*
Research is rewarded more than teaching	.12*	NA	13*	.07
Opinion of institutional research resources scale	-.07	NA	-.13*	-.02
Mediating Variable (Z)				
Preferred amount of time spent in research	NA	.43*	NA	.37*

Note. "NA" represents not applicable, i.e., that variable was not entered into that step. *p<.05.

Table 6. *Career Research Productivity Step 4 Mediated Model Correlation Matrix*

Variable	1	2	3	4	5	6	7	8	9
1 - CRPS	–	–	–	–	–	–	–	–	–
2 - Percent of time in teaching	-.262*	–	–	–	–	–	–	–	–
3 - Age	-.139*	.024	–	–	–	–	–	–	–
4 - Carnegie rank of institution	-.449*	.237*	.060	–	–	–	–	–	–
5 – Preferred amount of time spent in research	.544*	-.155*	-.094	-.386*	–	–	–	–	–
6 - Research should be promotion criteria	.321*	-.074	-.151*	-.161*	.295*	–	–	–	–
7 - Research is rewarded more than teaching	.307*	-.103*	052	-.397*	.303*	.235*	–	–	–
8 - Institutional research support	-.087	.019	.063	.084	-.157*	.072	.026	–	–
9 - Presence of funding	-.119*	.081	.005	.201*	-.215*	-.015	-.193*	.171*	–

*p<.05.

Conclusions

The blocks of variables - environmental, perceived organizational priorities, and personal interest/abilities - are significant predictors of the dependent variable (career research productivity score) suggesting the existence of a partially mediated relationship. These results indicated that, after controlling for personal interests/abilities, the significant relationship between the independent variables (perception of organizational priorities) and dependent variable was reduced, but not to nonsignificance.

The HRED Faculty Research Productivity Model was proposed as a mediated model based on cognitive theory. This model is supported by the analyses conducted in this study. HRED faculty members process multiple factors including their environment, organizational priorities and self (interests/abilities), storing this information and producing some outcome, action or behavior, i.e., the quantity of career research output. Research by Thierry (1998) and Bandura (1977) is supported by this model. Organizational priorities may represent incentives or component capabilities as stated by Bandura (1977) that are encouraging individuals to produce more research over their careers, i.e., HRED faculty may be evaluating organizational priorities in a long range sense to achieve benefit over their careers. HRED faculty with higher personal interests/abilities in research produced a higher quantity of

research over their careers. This variable may represent performance accomplishments (Bandura, 1977) or internal focus on an individual (Staw, 1984), again contributing to increased career research output.

Overall, an HRED faculty member's perception of their abilities/interests is driving their research productivity, and their perception of organizational priorities is contributing to the determination of the amount research output. These factors, therefore, influence the choice of effort to expend, choice of level of effort to expend, and choice to persist in the expenditure of that level of effort (i.e., motivation - to spend time in research, produce and continue to produce research).

By examining the beta weights of the predictor variables, their relative importance in a study is evaluated. Carnegie rank, "Research should be the primary criterion for promotion of college teachers at their institution," time spent teaching, and the mediating variable "preferred time spent in research" possessed significant beta values for this model. Negative moderate correlations existed between low Carnegie rank (private liberal arts and public two-year, and other) and career research productivity score, demonstrating that HRED faculty members of lower ranked Carnegie institutions produced less research than did those HRED faculty from higher ranked Carnegie institutions; therefore, it is appropriate to consider Carnegie rank as a control variable in this model, as well as to recognize its potential influence on the career research productivity of the members of institutions within certain ranks.

"Research should be the primary criterion for promotion of college teachers at their institution" possessed a positive a significant moderate correlation with career research productivity. As the opinion that research should be the primary criterion for promotion at that institution increased, research productivity increased. It is logical that the individuals agreeing with this statement would have higher career research productivity scores.

Time spent teaching possessed low negative correlations with career research productivity score and is therefore of significance for career research productivity because, as expected, as time spent teaching increased, the career research productivity decreased. Time spent teaching may vary over one's career, which may demonstrate a long term relationship between increased time spent teaching and decreased career research productivity.

The significance of preferred percent of time spent in research as a mediating variable is highlighted by the substantial correlation between this variable and career research productivity. Preferred time spent in research is a surrogate variable to represent the individual's perception of his or her research interests, skills and abilities. Therefore, a HRED faculty member's perception of their personal interests/abilities in research is a crucial factor to their success in career research productivity.

Variables possessing non-significant beta values can also contribute to the value of a research effort and deserve to be discussed. For this effort, these variables include age, research was rewarded more than teaching at their institution, presence of institutional funding, and opinion of institutional research resources. These variables have been found by previous research to significantly contribute to research productivity. Age possessed a negative negligible association with the career research productivity that supports research by Williamson and Cable (2003) who stated that age was not a significant predicator in early career research productivity. "Research was rewarded more than teaching at their institution," possessed a moderate positive correlation with career research productivity demonstrating this variable may not have been a salient variable to HRED faculty members. "Presence of institutional funding" possessed a low association with career research productivity; however, this variable's significance in this model may have been increased if more institutions would have provided funding. Lastly, the variable "satisfaction with institutional resources" was not correlated with career research productivity.

Recommendations/Implications and Contribution To New Knowledge In HRD

Institutions housing HRED faculty and desiring to increase faculty members' research output, should utilize research as the primary promotion criteria. These institutions should ensure that this is communicated to their faculty. If these institutions are lower Carnegie rank universities (e.g., private liberal arts or public two-year), their desire for faculty to produce research should be clearly communicated to override the general assumption that their institution is one of a Carnegie rank that would not expect research production. These institutions should also strive to reduce teaching loads if increased research productivity is desired, or possibly create combined research/teaching classes where students and professors work together to throughout the course with the end product of publishable research created as a joint effort between the professor and students.

Further, to assist in the development of current HRED faculty's personal interests/abilities in research and therefore to increase research productivity, these institutions should also set up programs to increase current faculty members' personal interests/abilities in research. For example, a mentoring program could be developed to assist faculty in increasing their research abilities. Institutions could also encourage participation in research conferences by provision of funding.

Institutions establishing hiring structures to select individuals who will be high producers of research should evaluate the personal interest/abilities in research of their applicants. This can be accomplished through the evaluation of previous research produced by the applicants - both publications and presentations, or if the applicant is a recent graduate, previous research publications and presentations, advisor's research productivity, and the scholarly output of the graduate's degree granting department can be evaluated (Williamson & Cable, 2003).

This study contributes to new knowledge in HRD through the presentation of and evaluation of a new model combining previous theory and research from education, psychology and organizational behavior. Also, this model serves as a building block for future HRD research to consider prevalent factors affecting productivity in a university setting, which as Staw (1984) states differs from a traditional business/industry setting. This study provides a preliminary set of guidelines for colleges and universities to utilize when striving to build a research productive environment. It also serves as a part of a puzzle to build stronger research programs in HRD departments across postsecondary institutions noting that further research is needed through the study of leading researchers in HRD as well as leading research institutions. Lastly, through the increase of research productivity of HRD faculty, new and uncharted areas may be addressed increasing the value of HRD in both academic and practical worlds.

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