

Title: Connecting Human Resource Development to Vocational Rehabilitation: Improving Outcomes for Workers with Mental Retardation

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Abstract

This research provides an analysis of factors predicting job retention (JR), job satisfaction (JS), and job performance (JP) of workers with mental retardation (MR). Data were collected using a survey test battery of standardized instruments. The hypotheses were analyzed using three multiple regression analyses to identify significant relationships. Beta weights and hierarchical regression analyses determined the percentage of the predictor variables contribution to the total variance of the criterion variables, JR, JP, and JS. The intent of the study was to develop job retention strategies that could offer vocational rehabilitation and HRD professionals a useful structure for understanding and implementing job retention interventions for people with MR. The findings highlight self-determination (SD) as a critical skill in predicting three important work outcomes, JR, JS, and JP. Also, individuals whose jobs were matched to their interests and abilities (person-job congruency) had good job performance.

McLagan (1989) defined HRD as the “integrated use of training and development, career development, and organizational development to improve individual and organizational effectiveness” (p. 7). "The career is the individually perceived sequence of attitudes and behaviors associated with work-related experiences and activities over the span of the person's life" (Hall, 2002, p. 12). These activities according to Super (1990) are a series of segmented processes in the career development of a person which include choice, establishment, advancement, maintenance, and work/life issues. Choice includes the issue of person-job congruency. Job retention, job satisfaction, job performance and work-related social factors are all issues in the establishment, advancement, maintenance and work life issues for workers with MR.

Vocational rehabilitation (VR) offers individuals with mental or physical disabilities services that are designed to enable them to attain skills, resources, attitudes, and expectations needed to compete, get, and keep a job (Wright, 1980). Vocational rehabilitation services prepare qualified applicants to achieve a lifestyle of independence and integration within their workplaces and local communities (Wehman, 2001). Similar to HRD, vocational rehabilitation

focuses on individual development through skill training and career development to enhance work performance and satisfaction.

Job retention is a critical component in the effort to assist individuals with MR move from dependency to self-sufficiency. Work and job retention plays a central role in adult life, crucially affecting self-concept and wellness. A person's involvement in the mainstream labor force fulfills both individual and societal expectations (Super, 1990). Employment statistics, whether they address the overall low employment rate of people with MR or their ability to stay employed over time, document the need for more intensive job retention efforts (Roessler, 2002).

The problem is that government and state initiatives alone cannot solve the employment challenges of many people with MR. Rehabilitation providers and human resource (HR) professionals need to increase the effectiveness of placement and job retention services (Gilbride, Stensrud, Vandergoot, & Golden, 2003). This requires a better understanding of the relationship between personal and work characteristics of working adults with MR and their ability to remain employed. The intent of the study was to develop job retention strategies, through a proposed job retention model, that could offer rehabilitation and HR professionals a useful structure for understanding and implementing job retention interventions for workers with MR.

The Purpose and Research Questions

The purpose of the study was to test a hypothesized job retention (JR) model for adult workers with MR by examining the predictive relationships between such factors as work-related social behaviors (WRSB), self-determination (SD), person-job congruency (PJC), job performance (JP), job satisfaction (JS) and job retention (JR).

The overarching research questions were: (a) Are work-related social behaviors, self-determination skills, person-job congruency, job performance, and job satisfaction related to job retention in workers with MR? (b) Are job satisfaction, retention, work-related social behaviors, self-determination, and person-job congruency related to job performance in workers with MR? (c) Are these same variables related to job satisfaction in workers with MR?

Hypothesis

To explore the relationship among the various variables, three research hypotheses were tested.

H1. In working adults with MR, a linear combination of the variables WRSB, PJC, SD, JP, and JS would account for a significant amount of variance in the dependent variable, JR.

H2. In working adults with MR, a linear combination of the variables WRSB, PJC, SD, JS, and JR would account for a significant amount of variance of the dependent variable, JP.

H3. In working adults with MR, a linear combination of the variables WRSB, PJC, SD, JP, and JR would account for a significant amount of variance in the dependent variable, JS.

Conceptual Framework

The framework for this study was derived from theories and concepts relevant to long-term employment of individuals with MR. A literature review provided insights into the reasons low JR might exist and identified work variables related to JR of individuals with MR. These variables include work-related social behaviors (WRSB), person-job congruency (PJC), self-determination (SD), job satisfaction (JS) and job performance (JP). The researchers choose to use a model developed from the literature that focused on internal factors of workers' individual characteristics rather than external factors such as economic issues, levels of support and vocational transition. External factors were purposely excluded from the study in order to better

identify factors that predict and contribute to work outcomes (i.e. JR, JP, JS) and are within the control of the individual.

Work-Related Social Behaviors

The work-related social behaviors required for successful job retention include: social awareness, personality, (Rosenberg & Brady, 2000), and temperament (Wehman, 2001). Social awareness includes appropriate interaction with supervisors and co-workers, offering assistance, and understanding of the work environment (Brady & Rosenberg, 2002). Temperament includes adaptive, subordinate, and aberrant behaviors, ability to deal with the pressures and stress of the job, and self-control (Brady & Rosenberg, 2002). Personality characteristics include one's approach to personal appearance and hygiene (Brady & Rosenberg, 2002) and the ability to cooperate, accept constructive criticism, manage time, express appreciation, value honesty, and conform to socially acceptable standards of truthfulness (Rosenberg & Brady, 2000).

Appropriate work-related social behaviors are important factors for long-term employment of individuals with MR. Good work-related social behaviors affect job satisfaction and job performance, which leads to successful job retention (Rosenberg & Brady, 2000).

Person-Job Congruency

Person-job congruency is the match between a person's interests, characteristics, skills and abilities with the job requirements and work environment. Successful person-job congruency requires careful planning and increases employee job satisfaction and job performance leading to higher job retention (Holland, 1996; Roessler, 2002; Super, 1990).

Self-Determination

SD is the capacity to choose and to have choices, to be the determinants of one's actions (Deci, 1992). Self-determined behavior is also defined as a primary causal agent in one's life and

making choices regarding one's quality of life free from undue external influences or interferences (Wehmeyer, 1996). Self-determination emerges from learning across the lifespan and empowers individuals to plan and make choices about their careers, work, and life moving these individuals to community-based work and independent living environments. SD refers to actions that are identified by four essential characteristics: (a) the person acts autonomously, (b) his/her behaviors are self-regulated, (c) the person imitates a response to the event in a psychologically empowered manner, and (d) the person acts in a self-realizing manner (Wehmeyer, 2001). When individuals with MR capitalize on their self-determination, they are more likely to find competitive long-term employment, achieve job satisfaction, and have good job performance (Field, Martin, Miller, Ward, & Wehmeyer, 1998; Wehmeyer, 1999, 2001; Wehmeyer & Palmer, 2003).

Job Performance

Job performance depends on job responsibility and task production. Job responsibility is one's commitment and dedication to a job and involves work endurance, work motivation, work initiative, and work attitude. Task production refers to the ability to perform specific work tasks that require certain quality and quantity of work. Quality of work is an employee's ability to work at the accepted standard for accuracy and quantity of work is an employee's ability to work at an accepted rate and pace of productivity. For an individual with MR, job performance improves job retention and increases job satisfaction (Rosenberg & Brady, 2000; Roessler, 2002).

Job Satisfaction

Job satisfaction refers to the degree to which people like their jobs and the feelings about their jobs or job experiences in relation to previous experiences, current expectations, or

available alternatives. Job satisfaction increases intrinsic motivation and personal well being. Job satisfaction affects work attendance, maintenance of quality standards, and willingness to search for improved work methods and to cooperate with other employees. Job satisfaction affects job retention in the population with MR (Balzer, Kihm, Smith, Irwin, Bacheochi, Robie, 2000; Spencer, 1997; Tett & Meyer, 1993) and job performance (Mueser et al., 2001; Rosenberg & Brady, 2000; Roessler, 2002).

A Hypothesized Job Retention Model

Based on the literature, the hypothesized job retention model suggests that if adult workers with MR maintain appropriate work-related social behaviors (Rosenberg & Brady, 2000), make their own decisions (self-determination; Wehmeyer & Palmer, 2003), and work at jobs that are congruent with their interests and abilities (person-job congruency; Holland, 1985); they will have high job satisfaction, good job performance, and long-term employment (job retention). Furthermore high job satisfaction in individuals with MR predicts job performance and job retention (Mueser, Becker, & Wolfe, 2001). High job performance predicts job satisfaction and job retention (Brady & Rosenberg, 2002). Job retention will continue to predict high levels of job satisfaction and job performance, sustaining a circular performance/job retention model for workers with MR.

Method

The following section discusses the method including the research design, sample, measurement instruments, and procedure for data collection and analysis.

Research Design

The study used three multiple regression statistical analyses to test the hypotheses and examine the relationships between work-related social behaviors, self-determination, person-job

congruency, and an individual's job satisfaction, job performance, and job retention in adult workers with MR. Multiple regression is a predictive method that allows for the analysis of a large complex array of variables in an encompassing and integrated analysis accounting for correlations among several independent variables and one dependent variable (Harlow, 2004; Tabachnick & Fidell, 2001). A research study incorporating concepts of multiplicity is more rigorous, generalizable, and reliable producing more valid results (Harlow, 2004). Although a predictive relationship between these variables does not infer cause and effect, if the independent variables are shown to predict job retention, an assessment instrument would be useful to identify those factors or qualities in adult workers with MR.

Structural equation modeling has some very rigid underlying assumptions. The questions of interest in this study could be more directly estimated by writing regression models. Structural equation models introduce elaborations and additional complexity without more effectively targeting the questions of interest. Regression modeling is also likely to be more robust than structural equation modeling since it has less stringent underlying assumptions; therefore, regression was used.

Participants / Sample.

The population of interest was composed of working adults with MR, age 18 or older. A convenience sample was used due to the limited access to and availability of the MR population (Harlow, 2004). A convenience sample is a purposely heterogeneous population from which generalizations of the population are possible (Harlow, 2004). For prediction methods, such as multiple regressions, a sample size of at least 5 and up to 50 participants per independent variable is suggested (Green, 1991). Given that this study had five independent variables (IV), a minimum total sample size of 25 was suggested (Green, 1991). However, a sample size of at

least 100 adults with MR was selected to account for unusable data because of missing information and to increase the statistical power.

The participants were selected from supported employment agencies in South Florida. These individuals were employed in the open labor market earning a competitive wage for at least 3 months. The selected employees with MR were active in various jobs, including animal caretakers, laundry, building maintenance assistance, mail clerks, food service, clerical work, clerical aids, manufacturing/assembly, bench work, janitorial, dishwashers, lawn maintenance, grocery baggers, and restaurant/store host.

Measurement Instruments.

A test battery of four standardized instruments was used for the study. All instruments are standardized tests and were chosen for their ease of comprehension and use, theoretical base development, high reliability, and validation with populations with MR (Brady et al., 2006; Holland, 1985; Ironson et al., 1989; Wehmeyer, 1996).

The Job Observation and Behavior Scale: Opportunity for Self-determination (JOBS: OSD) (Brady, Rosenberg, & Frain, 2006) was used to measure job performance and work-related social behaviors. Concurrent validity of *JOBS: OSD* was obtained through a factor analysis of the items on the JOBS: OSD to establish and compare Quality of Performance Composite scores against the Brigance Diagnostic Employability Inventory (Curriculum Associates, 1995). The 20 Brigance items were correlated with the *JOBS: OSD* Quality Performance items (Brady et al., 2006). Test/re-test reliability was established by comparing the Quality of Performance provided of the person to the scores of the same instrument 2 weeks later. The test/re-test reliability for the Quality of Performance is 0.83 (Brady et al., 2006).

The Job-in-General (JIG) Scale (Ironson, Smith, Brannick, Gibson, & Paul, 1989) was used to measure job satisfaction. Internal consistency and reliability was measured by Cronbach's alpha of .91 to .95 (Smith et al., 1969). Convergent validity has been demonstrated through statistically significant correlations with four other global job satisfaction scales, ranging from correlations of $r = .66$ to $.80$ (Balzer et al., 2000).

The Arc's Self-Determination Scale (Wehmeyer, 1996; Wehmeyer & Palmer, 2003) was used to measure self-determination. The factorial validity was established by repeated factor analyses and discriminative validity and internal consistency (Wehmeyer et al., 1998). Internal consistency reliability was measured by coefficient alpha of 0.90 for the scales as a whole, 0.90 for the autonomy domain, 0.73 for psychological empowerment, and 0.62 for self-realization (Wehmeyer et al., 2000).

Holland's (1985) Self-Directed Search (SDS) measured person-job congruency. Job retention was measured by the number of months the participant was employed continuously at the same job in the open labor market earning a competitive wage. Comprehensive data support the construct validity of the *SDS* scales, which have an average internal consistency of .88.

Data Collection – Procedures

The data were collected at the supported employment agencies rather than the place of employment to avoid disruptions from co-workers, supervisors, and customers that could bias the data. The battery of tests were administered to and completed by each participant. All instruments were designed for individual or group administration. For those participants that were able to read, the instruments were administered in small groups of 3 to 4 individuals. Questions were read orally to each group as participants followed along. For those individuals unable to participate in group administration, due to specific disabilities that require more

individualized explanation of questions, instruments were administered one-on-one. Participants were allowed to ask for clarification of questions they did not fully understand, and assistance was provided by the administrator. It took 60 to 90 minutes for participants to complete all four instruments. To avoid fatigue, the instruments were administered in two separate sessions. The first session consisted of the JIG and ARC. The second session consisted of the SDS and JOBS: OSD. No more than 48 hours lapsed between the two sessions. Participation was voluntary and confidentiality was maintained (e.g., participants were identified by a code number). All participants were informed about the purpose and nature of the research.

Results - Analysis of Data

An alpha level of .05 was used for all statistical analysis. Bivariate scatter plots, tests of normality, and preliminary multiple regression analyses were run to check for outliers, non-normality, nonlinear relationships, and multicollinearity. Two cases with extremely low z scores on SD scale, or more than 3 standard deviations from the mean, were found to be univariate outliers and deleted. Four questionnaires were excluded due to substantial missing data or participant drop out. Thus, from the original sample of 100 participants, 94 were included in the analysis. No violations of assumptions were found other than evidence of multicollinearity between JP and WRSB. Multicollinearity occurs when variables are so highly correlated with each other that it is difficult to come up with reliable estimates of their individual regression coefficients (Cohen, 1992). When two variables are highly correlated, they are basically measuring the same phenomenon. Evaluations of multicollinearity showed a high correlation coefficient of .953 between JP and WRSB. This multicollinearity may be due to the work related behaviors being performance driven. Thus, WRSB and JP were combined in one variable and

referred to as job performance (JP). Table 1 presents the descriptive statistics and intercorrelation among variables with the combination variable – JP. All correlations were significant at $p < .05$.

Table 1

Descriptive Statistics and Intercorrelations among variables (N=94)

	M	SD	1. JR	2. JP	3. JS	5. PJC	6. SD
1. Job retentions	27.40	28.25	--				
2. Job performance	138.18	14.47	.416**	--			
3. Job satisfaction	29.07	6.03	.428**	.324**	--		
4. Person-Job congruency	1.86	0.74	.275**	.533**	.228**	--	
5. Self-determination	96.63	15.87	.494**	.579**	.460**	.515**	--

Note * $p < .05$, ** $p < .01$

To examine the relationship between variables, three multiple regression analyses were performed to analyze significant relationships (Tabachnick & Fidell, 2001). In all three hypotheses the null hypotheses were rejected due to the linear combination of predictor measures being significant. Beta weights and hierarchical multiple regression analyses were used to determine the percentage of predictor variables' contribution to the total variance of the selected criterion variables (Cohen, 1992; Tabachnick & Fidell, 2001) of JR, JP, and JS.

Hypothesis One – Regression Analysis One

Entering all variables simultaneously, the linear combination predictor measure (PJC, SD, JP, and JS) was significantly related to job retention, $F(4, 89) = 10.295$, $p < .05$ and considered significantly better than would be expected by chance. The multiple correlation coefficient (R) was .562, and R^2 was .31 indicating that approximately 31% of the variance of job retention in the sample could be accounted for by the linear combination of the predictor variables, PJC, SD, JP, and JS. The effect size of .31 is characterized as a large effect size (Cohen, 1992).

Table 2 presents indices to indicate the relative strength of the individual predictors by examining the significance, partial correlations, R , R^2 , adjusted R^2 , and the change in R^2 . All the bivariate correlations between the predictor measures (JP, SD, PJC, and JS) and the job retention (JR) measure were positive as expected. Two of the four work measures (JS and SD) were statistically significant at .05 ($p < .05$). On the basis of these correlational analyses, it was concluded that the only useful predictors for predicting job retention of adult workers with MR were SD and JS. These predictors alone accounted for 28% ($.28 + .25 = 0.53$ squared) of the variance of the job retention scale. A stepwise hierarchical regression was used to assess whether a variable substantially added to prediction by examining the R^2 and the change in R^2 . In the sample, it could be concluded that SD was the most important predictor of JR and accounted for 24% of the variance of the job retention scale. JS accounted for 5% of the variance; PJC and JP were not significant and together accounted for 1% of the variance.

Table 2

Partial Correlations and Hierarchical Regression for Job Retention

	Sig	Partial Correlations	R	R Square	Adjusted R Square	R Square Change
SD	.000	.28**	.494	.244	.236	.244
JS	.012	.25**	.544	.296	.280	.051
JP.	.107	.17	.562	.315	.293	.020
PJC	.789	.02	.562	.316	.286	.001

* $p < .05$, ** $p < .01$

Hypothesis Two – Regression Analysis Two

Entering all variables simultaneously, the linear combination predictor measure (PJC, SD, JS, and JR) was significantly related to JP, $F(4, 89) = 16.881, p < .05$, and was considered significantly better than would be expected by chance. The multiple correlation coefficients (R)

was .657, and R^2 was .431, indicating that approximately 43% of the variance of job performance (JP) in the sample could be accounted for by the linear combination of the predictor variables PJC, SD, JS, and JR. The effect size of .43 is characterized as a large effect size (Cohen, 1992).

Table 3 reports indices to indicate the relative strength of the individual predictors by examining the beta weights, partial correlations, R , R^2 , Adjusted R square, and the change in R^2 . All the bivariate correlations between the predictor measures (SD, PJC, JS, and JR) and the job performance (JP) measure were positive as expected. Two of the four work measures (SD and PJC) were statistically significant at .05 ($p < .05$). On the basis of these correlational analyses, it was concluded that the only useful predictors for predicting JP of adult workers with mental retardation (MR) were SD and PJC. These predictors alone accounted for 41% (.34 + .30 = 0.64 squared) of the variance of the job performance scale. A stepwise hierarchical regression was used to assess whether a variable substantially added to prediction by examining the R^2 and the change in R^2 . In the sample, it was concluded that SD was the most important predictor of JP and accounted for 33.5% of the variance of the job performance scale. PJC accounts for 7.5% of the variance. JR and JS were not significant and together accounted for only 2% of the variance.

Table 3

Partial Correlations, Hierarchical Regression for Job Performance

	Sig.	Partial Correlations	R	R Square	Adjusted R Square	R Square Change
SD	.000	.30**	.579	.335	.328	.335
PJC	.001	.34**	.640	.410	.397	.075
JR	.077	.17	.656	.430	.406	.020
JS	.686	.04	.657	.431	.411	.001

* $p < .05$, ** $p < .01$

Hypothesis Three – Regression Analysis Three

Entering all variables simultaneously, the linear combination of predictor (SD, PJC, JP, and JR) measures was significantly related to JS, $F(4, 89) = 8.035, p < .05$, and was considered significantly better than would be expected by chance, and there was a linear relationship of Y to the predictor variables. The multiple correlation coefficient (R) was .516, and R^2 was .267, indicating that approximately 27% of the variance of JS in the sample could be accounted for by the linear combination of the predictor variables, SD, PJC, JP, and JR. The effect size of .27 is characterized as a large effect size (Cohen, 1992).

Table 4 presents indices to indicate the relative strength of the individual predictors by examining the significance, partial correlations, R , R^2 , adjusted R square, the change in R^2 . All the bivariate correlations between the predictor measures (SD, PJC, JP, and JR) and the job satisfaction (JS) measure were positive as expected. Two of the four work measures (SD and JR) were statistically significant at .05 ($p < .05$). On the basis of these correlational analyses, it was concluded that the only useful predictors for predicting job satisfaction of adult workers with MR were SD and JR. These predictors alone accounted for 26% ($.26 + .25 = 0.51$ squared) of the variance of the job satisfaction scale. A stepwise hierarchical regression was used to assess whether a variable substantially added to prediction by examining the R^2 and the change in R^2 . In the sample, it could be concluded that SD was the most important predictor of JS and accounted for 21% of the variance of the job satisfaction scale. JR accounted for 5% of the variance. PJC and JP were not significant and together accounted for less than 1% of the variance.

Table 4

Partial Correlations, Hierarchical Regression with Job Satisfaction

	Sig.	Partial Correlations	R	R Square	Adjusted R Square	R Square Change
SD	.00	.26**	.460	.211	.203	.211
JR	.01	.25**	.515	.265	.249	.054
JP	.64	.04	.515	.266	.241	.001
PJC	.85	.00	.516	.267	.232	.001

* $p < .05$, ** $p < .01$

Discussions of the Results

The findings of the three multiple regression analyses confirm that not all the variables in the hypothesized JR model were statistically significant and the overall model fit was not fully satisfactory. Findings consistent and inconsistent with the hypothesized JR model lead to a revised model.

Findings that support the hypothesized JR model. Consistent with the hypothesized JR model, JS and SD are the only predictors of JR; SD and PJC are the only predictors of JP; JR and SD are the only predictors of JS. Additionally, there is a predictive relationship between PJC and SD (see Figure 1).

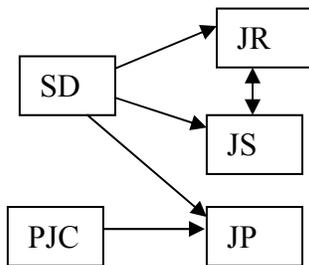


Figure 1. Illustration of the Study’s Findings.

Findings inconsistent with the hypothesized JR model. Inconsistent with the hypothesized model and previous research, there was no significant relationship between JR and JP or between

JP and JS. The results also showed no significant relationship of PJC with JS and JR, which suggests a limited fit between the hypothesized model and the study's findings. To improve the overall model fit, the model was modified by eliminating direct relationships between JR and JP, JP and JS, PJC and JS, and PJC and JR as illustrated in Figure 2.

Although only two of the study variables (SD and JS) were significant predictors of JR, SD revealed a unique and strong predictive capability for all three work outcomes (JR, JP, and JS). Conclusions and interpretations drawn from the results of this study are discussed by each criterion variable or work outcome JR, JP, JS. Since SD has been identified as an important predictor of JR, JP, and JS, a discussion of SD will follow.

Predictors of Job Retention

As expected, and consistent with the hypothesized model, H1 supported the existence of a positive relationship between SD, JS, and JR of adult workers with MR. SD accounted for most of the variance, 24%, and is the major predictor of JR. Although significant, JS accounted for only 5% of the variance, and the correlations were low to moderate. This indicates that JS is only a small part of the influence on JR in workers with MR.

SD – JR relationship. The significant relationship between SD and JR adds to the current body of knowledge around SD and positive outcomes for adults with MR transitioning into community life (Wehmeyer, 1996). Individuals who possess high self-determination are more independent and more likely to find competitive employment (Wehmeyer & Palmer, 2003). These individuals are significantly more likely to be working for higher wages and receive more company benefits (Wehmeyer & Schwartz, 1997). This leads to longer job retention and financial independence. These individuals are more likely to maintain community-based work and live in independent environments (Wehmeyer & Bolding, 2001; Wehmeyer, Agran, &

Hughes, 2000). This successful job retention helps people with MR establish social relationships, develop self-confidence, and further self-determination skills, improving their quality of life (Roessler & Rubin, 1998).

JS – JR relationship. The significant positive relationship between JS and JR supports the hypothesized JR model and Roessler's (2002) 3M Job Retention Model which suggests that individuals with disabilities who are satisfied with their job and their work environment are employed longer. Satisfaction occurs when the job provides activities that reinforce personal preferences. Job satisfaction refers to the degree to which people like their jobs (Spector, 1997) and the feelings about their job or job experiences in relation to previous experiences, current expectations, or available alternatives (Balzer, Kihm, Smith, Irwin, Bacheochi, & Robie, 2000).

PJC - JR and JP – JR relationship. Results indicated that both PJC and JP failed to demonstrate significant predictive relationships with JR. These results are inconsistent with the hypothesized JR model's prediction and which suggested that the appropriate person-job match is a prerequisite to improving job retention and performance outcomes. This inconsistency may be because supported employment is a controlled environment where workers with MR are placed on the job if they perform well and have good work related behaviors regardless of their interest in the job (PJC) and work environment. Therefore, whether people are employed 3 or 36 months, they have good work performance and work behaviors. Thus, in a supported employment environment the JP-JR and the PJC-JR relationship are difficult to measure. Further research is needed to understand if person-job fit is related to levels of job satisfaction and job tenure and if new work behaviors and skills relate to improved levels of job satisfaction and tenure (Roessler, 2002).

Predictors of Job Performance

In the second regression analysis JP was the criterion variable. Consistent with the hypothesized model, SD and PJC were significant and positive predictors of JP in adult workers with MR. SD was the strongest predictor of JP and accounted for the most variance, 33.5%. Although PJC was significant, it accounted for only a small portion of the variance 7.5%. JR and JS were not significant and together accounted for only 2% of the variance.

SD – JP relationship. The significant positive relationship between SD and JP adds to the current body of knowledge around SD and positive outcomes for working adults with MR. Workers who were more self-determined preformed better on the job (Brady & Rosenberg, 2002; Wehmeyer & Palmer, 2003), and are more independent (Wehmeyer & Palmer, 2003). Self-determination empowers individuals to plan and make choices about their careers, work, and life (Wehmeyer, 2001). Enhanced self-determination of adults with MR moves these individuals to community-based work and independent living environments (Stancliffe, Abery, & Smith, 2000; Wehmeyer & Bolding, 2001).

PJC – JP relationship. The significant relationship between PJC and JP further confirms Roessler's (2002) suggestion in that careful job match or person-job congruency results in good job performance. Additionally, proper placement, support, and careful job match that take into account individual interests, skills, and abilities results in good job performance (Rosenberg & Brady, 2000). With proper job match and support, workers with MR perform their jobs equal to or better than non-disabled workers at entry-level positions (Rosenberg & Brady, 2000).

JS – JP relationship. Results indicated that JS failed to demonstrate significant predictive relationship with JP. This result contrasts Roessler's (2002) model but is consistent with research (Iaffaldano & Muchinsky, 1985; Tett & Meyer, 1993) in non-disabled populations. It has been

found that no relationship exists between JP and JS for individuals without MR (Iaffaldano & Muchinsky 1985). Thus, this study supports the research on the workers without MR in that JP is not predictive of JS and vice versa (Iaffaldano & Muchinsky, 1985; Tett & Meyer, 1993).

Predictors of Job Satisfaction

In the third multiple regression analysis, JS was the criterion variable. Consistent with the hypothesized job retention model, SD and JR were significant and positive predictors of JS. SD accounts for most of the variance in JS (21%), but JR accounted for only 5% of the variance. PJC and JP were not significant and together accounted for less than 1% of the variance.

SD – JS relationship. The SD- JS relationship is consistent with Roessler's (2002) 3M Model and Ironson & Smith (1981). When individuals with MR capitalize on their self-determination, they are able to solve unpredictable problems (Ironson & Smith, 1981). In the 3-M Model, the mastery component involves workers' abilities to adjust to inevitable and unpredictable problems on the job. Resolving unexpected problems on the job requires self-determination skills to define problems accurately, generate feasible options, and implement the steps required to solve the problem. This self-determination skill of problem solving promotes job satisfaction as well job retention (Ironson & Smith, 1981).

PJC – JS relationship. Results indicated that PJC failed to demonstrate a significant relationship with JS which is inconsistent with the literature and the hypothesized job retention model. Roessler (2002) purports a high correlation between job match or person-job congruency, and job satisfaction and quality of life satisfaction (Roessler & Rubin, 1998). One possible explanation for this inconsistency might be internal motivation of individuals with MR and their aim to please and do a good job no matter what the job is (Rosenberg & Brady, 2000). Additionally, the inconsistency may also be because supported employment is a controlled

environment where workers with MR are placed on the job regardless of their interest in the job. Thus in a supported employment environment, the PJC-JS relationship is difficult to measure. Since job satisfaction has also been associated with life satisfaction and mental and physical health (Balzar et al., 2000; Spector, 1997), improved satisfaction has become an important outcome of work.

Self-Determination – The Main Predictor of Important Work Outcomes (JR, JP, JS)

Given that SD is the main predictor variable of our hypothesized model it is discussed in detail. Self-determination theory (SDT; Deci, 1992) is a general theory of human motivation concerned with the development and functioning of personality within social contexts. The theory focuses on the degree to which human behaviors are self-determined or the degree to which people endorse their actions by engaging in the actions with a full sense of choice (Ryan & Deci, 2000). “To be self-determining is to engage in an activity with a full sense of wanting, choosing, and personal endorsement” (Deci, 1992, p. 44).

Self-determination is viewed as a fundamental human right to govern one's life without unnecessary interference from others (Deci, 1992). Documenting the impact of self-determination on lives of individuals with disabilities helps to focus resources on this effort and to better understand how much self-determination contributes to educational and work goals to increase self-sufficiency, autonomy, and valued adult outcomes like employment, community integration, or independent living.

Opportunities to learn and practice skills related to self-determination for individuals' with disabilities are often limited because their intellectual capacity is underestimated by their co-workers, supervisors, and parents (Wehmeyer, Agran, & Hughes, 2000). While there is no doubt that intellectual ability contributes to one's capacity to become self-determined,

intelligence level does not account for differences in self-determination (Wehmeyer & Bolding, 2001; Wehmeyer & Palmer, 2003; Wehmeyer & Schwartz, 1997). Levels of self-determination, autonomy, and life satisfaction, and opportunities to make choices depend on the type of environment: (a) community-based (e.g., independent living or competitive employment), (b) community-based congregate (e.g., group home or sheltered employment), and (c) non-community based congregate (e.g., institution or work activity program; Wehmeyer & Bolding, 2001). Persons similar in mean age and mean IQ scores have more adaptive levels on each measure if they live or work in non-congregate community-based settings (Wehmeyer & Bolding, 2001).

Self-Determination Theory (Deci, 1992) is based on the assumption that people are active organisms, with innate tendencies toward psychological growth and development, who strive to master ongoing challenges and to integrate their experiences into a coherent sense of self (Deci, 1992). These natural human tendencies do not operate automatically, but require ongoing supports from the social, educational, and work environment to function effectively. Each of these environments can either support or thwart the natural tendencies toward active engagement and psychological growth. Given that this dialectic between the active organism and the environment serves as basis for SDT's predictions about work behavior, experience, and development (Deci, 1992), it should be a major focus of HRD and VR professionals. HRD and rehabilitation professionals are in the position to support the natural tendencies for workers with MR to master self-determination skills and professional growth.

Implications for HRD and Vocational Rehabilitation

Contributions made by this study are that self-determination and person-job congruency are particularly relevant in predicting long-term employment, good job performance, and job

satisfaction for people with MR. While vocational rehabilitation (VR) services encourage independent behavior and learning self-determination skills (Wehmeyer, 2001), HRD and organizations rarely provide services to address the training and development of these skills in workers with MR. Given similarities in the goals and objectives of both VR and HRD, there is a natural fit between these two disciplines regarding workers with MR. HRD is comprised of four primary functions: training and individual development, career development, organizational development, and performance improvement (Gilley & Egglund, 1995). Areas considered for individual and organizational performance improvement are individual development, including assessment and training, and career development strategies.

Individual Development

“Individual development refers to the development of new knowledge, skills, and/or improved behaviors that results in performance enhancement and improvement related to one’s current job (training)” (Gilley & Egglund, 1995, p. 15). While both HRD and VR professionals use training to provide new skills and knowledge, prior to training, an assessment of current skills and behaviors should be conducted.

Assessment for individual development. The purpose of assessment is to identify workers’ strengths and weaknesses and to give employees an opportunity to review the work they have accomplished; to identify and illuminate particularly successful activities, and to identify and define areas that need improvement (Cook & Cripps, 2005). VR conducts assessments to identify transferable skills and job readiness (Roessler & Rubin, 1998). The assessment process produces a set of goals that the supervisor and employee mutually agree upon for the subsequent period.

The data identified SD and PJC as predictors to important work outcomes for individuals with MR. Validation of the study’s revised job retention model could lead to the development of

an assessment tool to assess performance and satisfaction of adult workers with MR.

Furthermore, this assessment tool will allow HRD and VR professionals to identify the strengths and limitations of workers with MR as well as their SD skills. This assessment tool can also be used to help assess a person's PJC by assessing their interests, skills and abilities and matching this to the job requirements and work environment (see figure 2).

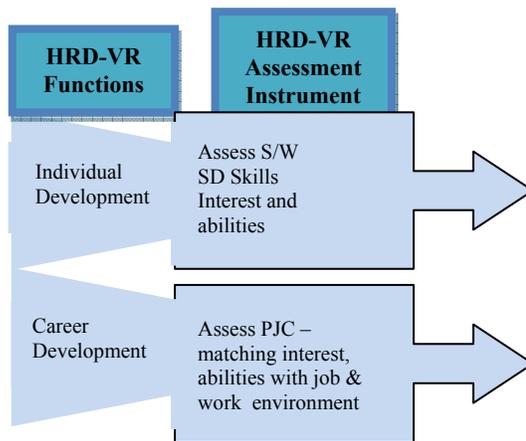


Figure 2. HRD-VR Functions and Assessment

The knowledge gained from the assessment of a worker with MR will allow HRD and VR professional the ability to develop a more focused training.

Training. Training includes learning that is provided in order to improve performance on the present job (Gilley & Egglund, 1995) or a method to stimulate individual change (Sredl & Rothwell, 1987). Skill acquisition as a result of formal education, vocational training, or on-the-job training is a significant employability and performance factor (Roessler & Rubin, 1998). While there are many descriptors of the training function the common denominator is that all pertain to a skill or knowledge necessary to do one's current job.

Based on the data and study's results, self-determination is a strong and significant predictor of JR, JP, and JS. HRD-VR training objective that promotes self-determination skills

will enhance workers' performance, job satisfaction, and promote their capacity to progress in the job that may enhance the overall organizational performance (see figure 3).

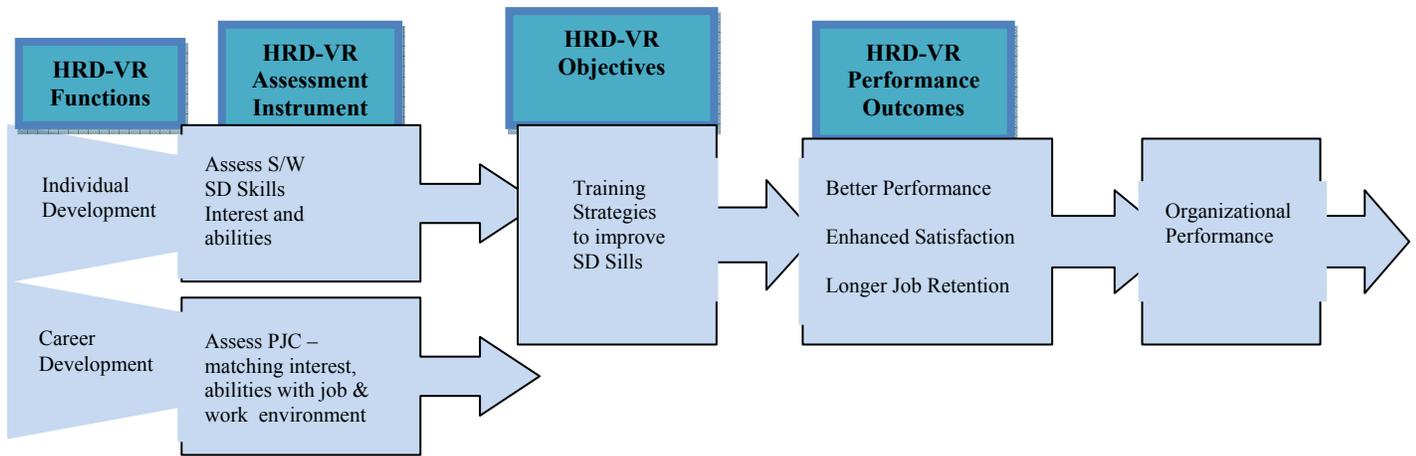


Figure 3. HRD-VR Training Objectives leading to Performance Outcomes

HRD and VR professionals that help managers, supervisors, and co-workers teach individuals with MR self-determination strategies and goal-setting skills improves their critical learning skills and organizational involvement (Gilberts, Agran, Hughes, & Whemeyer, 2001; Gumpel, Tappe, & Araki, 2000; Woods & Martin, 2004). Given the similarities in goals and objectives of HRD and VR professionals, VR could provide assistance to HRD in both training and career development.

Career Development

Career development is an organized, planned effort comprised of structural activities or processes that advance employees within an organization and result in their optimal utilization (Gilley & Egglund, 1995). Similar to person-job congruency, career development focuses on a strategic effort to create a balance between the individual's interests, values, skills, strengths, abilities, and career aspirations (Gilley & Egglund, 1995; Leibowitz, 1987).

Based on the study’s results, career development strategies focused on efforts to create congruency between the individual’s interests, values, skills, strengths, abilities, and the job requirement and work environment will enhance performance. Furthermore, allowing individuals with MR to be self-determined in their job choices, may enhance their performance, job satisfaction and ensure long-term employment (see figure 4).

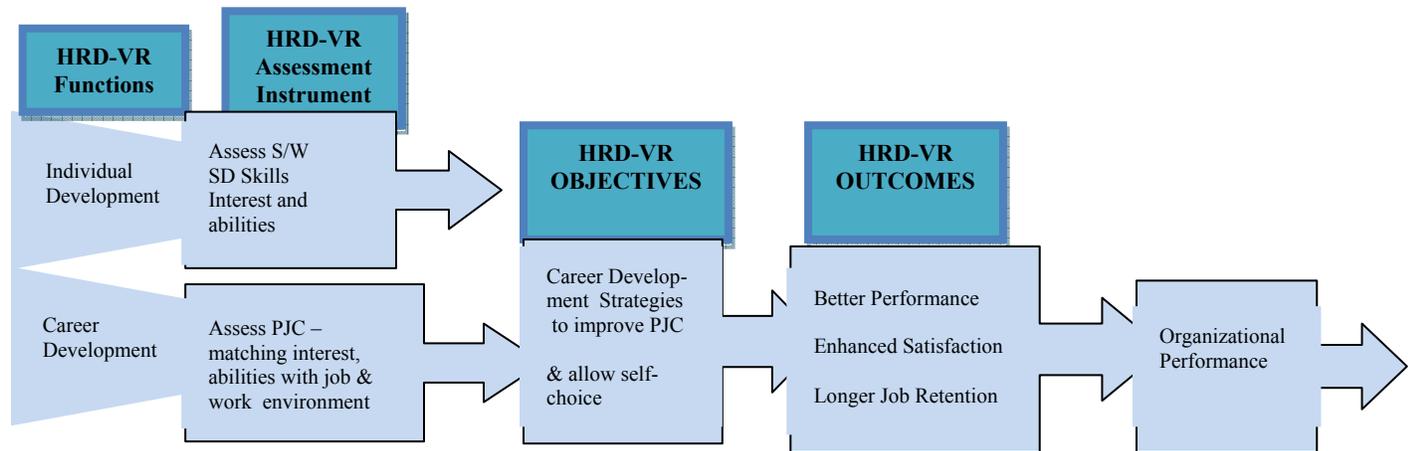


Figure 4. HRD-VR Career Development Objectives leading to Performance Outcomes

Career development is frequently equated with upward mobility which is a misconception that should be clarified. Career development also includes maintenance of the current career and lateral transfers within an organization (Super, 1990). Organizational information regarding other opportunities for job movement should be shared and explored with workers with MR, such as job enrichment, job rotation, lateral moves, and realignment moves. VR professionals can assist HRD professionals in designing career development strategies that align a worker with MR in a lateral or realignment move versus termination. Additionally, HRD-VR professional should include assisting individuals with MR in self-appraisal, career exploration and career goal setting.

In summary, based on the study’s results, HRD and VR strategies that encompass person-job congruency and self-determination skill development in training and career development strategies will enhance long-term employment, job satisfaction and good performance of workers with MR (see figure 5).

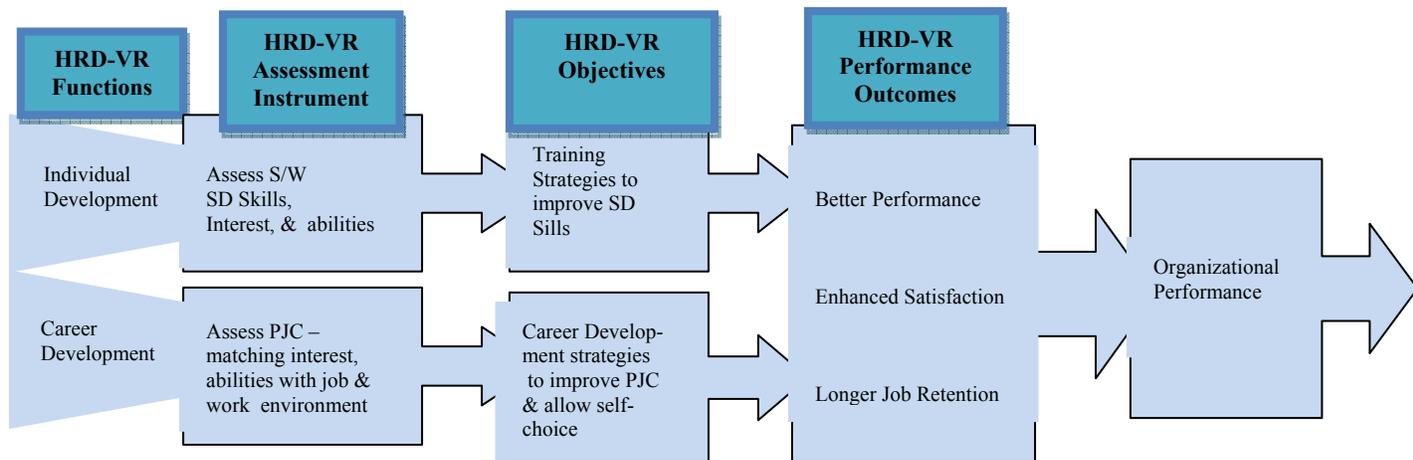


Figure 5 – HRD and VR Functions to improve work outcomes for individuals with MR.

Limitations and Direction for Future Research

This section identifies limitations of this study to guide future research. One limitation is that those placed in supported employment are generally prescreened for good job performance and appropriate work-related behaviors. Since all participants were in a supported employment environment, a type I error could have occurred, rejecting the null hypothesis when it should have been accepted. Future research should include employees in a natural support setting to verify the results. Looking at the study’s variables in two different environments, natural support and supported employment, may ascertain different results. Natural support is any assistance from supervisors and co-workers that allow people to secure, maintain, and advance in a job of their choosing. This support corresponds to the typical work routines and social actions of other employees and enhances social relationships (Rogan, Hangner, & Murphy, 1993).

The findings from this study support ongoing efforts to enhance self-determination in relation to more positive work outcomes. The next step in evaluating the impact of such efforts, in addition to replication of these findings, would be to examine longer term outcomes for workers with MR who receive specific interventions that promote self-determination, compared with those who do not receive similar work training experiences. Such an examination would provide the causal link between self-determination and positive outcomes missing in this study.

Conceptions of personality and motivational processes in persons with MR are only loosely related to theoretical models derived from mainstream psychology, virtually none of the available knowledge is based on any sustained systematic study of people with MR (Switzky, 1997). Prior, research on people with MR focused primarily on identifying the cognitive deficits rather than personal characteristics (Switzky, 1997). Despite the evidence that personality and motivational aspects are equally important to positive outcomes for people with MR, the importance of the level of intelligence remains over emphasized (Merighi, Edison, & Zigler, 1990). More research needs to focus on providing evidence that IQ and life success are not as strongly correlated as previously presumed and de-emphasize the intelligence factor as the dominate determinant of positive outcomes for people with MR.

This study highlights the importance of SD skills in working adults with MR. Self-determination in the HRD and VR planning process is the most critical factor for adult workers with disabilities because they are so often relegated to the “second seat” in the decision-making process of their own lives (Sitlington, Clark, and Kolstoe, 2000). The inclusion of self-determination training and person-job congruency infused into HRD and VR will not only improve work outcomes, but also enhance skills and abilities needed for all adult roles in life. This study provides HRD with the understanding of the importance of developing individuals

with MR to be self-determined and allowing them to work at jobs that meet their interests and abilities, leading to better job performance, satisfaction, and longer employment of individuals with MR. Given the link between HRD's and VR's functions of individual and career development considerable planning and facilitation of individuals' with MR participation in the workforce should include coordination between HRD and VR.

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