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EDITORIAL

New Tools

Benjamin Franklin stated: *The best investment is in the tools of one's own trade*. As vocational evaluators and career assessment professionals, we use psychometric tests and situational techniques as tools to empower those we serve to make an informed career choice. Finding new tools is a challenge: how can we use a new test with the varied populations we serve? How can we find a way to connect with and evaluate a student who is in transition from school to work? In this issue of the journal, two new tools are offered for possible inclusion in your tool box.

First is the *Employment Flexibility Scale* (EFS) developed by Brian J. Stevenson and Michael T. Brown. They recognize that not all college graduates will be able to find employment that is commensurate with the person's education level. This results in underemployment. A trait of job seekers who are willing to accept underemployment as a path to employment and eventual career advancement is employment flexibility. The EFS measures the client's employment flexibility across eight dimensions: (1) overeducation, (2) job-field mismatch, (3) skill underutilization, (4) hours underemployed, (5) pay underemployed, (6) status mismatch, (7) sex (gender)-type mismatch, and (8) self-concept mismatch. The 22-item EFS is a self-report survey that uses a five-point Likert type scale to indicate willingness to accept different employment situations (1 = not at all willing to 5 = completely willing). The authors provide psychometric properties that indicate the EFS's reliability and validity and include implications for practice.

Second, Andrew Byrne has developed a conceptual article to use game design principles in career counseling and assessment. He posits that game design is a way to increase engagement in school-to-work services. Byrne proposes a gamification of career activities that is "accomplished by breaking down the activity and metaphorically communicating using game-like terminology. Characters in a game progress through *leveling*, as might Vocational Rehabilitation clients progress through stages of assessment and services" (p. 29). In order to clarify his points, Byrne provides a vignette using *WorkWorld*, a game under development, to illustrate career preparation activities using game design elements. For example, he suggests calling small incremental steps to develop a skill or knowledge base, a dare. A series of dares is a quest. This novel approach to assessment would allow the evaluator to assess the client's level of skill or degree of understanding to career development. At the close of the article, Byrne links game design counseling intervention to five counseling and career theories.

We are proud of this journal and encourage you to provide us feedback on its content.

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Development and Validation of the Employment Flexibility Scale

Brian J. Stevenson and Michael T. Brown

Abstract

This study sought to develop and validate the Employment Flexibility Scale (EFS) – an instrument aimed at measuring one's willingness to accept employment options that may be perceived as inadequate by a job-seeker. Two studies ($N = 204$, $N = 123$) were undertaken using two different samples of recent college graduates to conduct reliability and validity analysis of the EFS (content analysis, exploratory factor analysis, and confirmatory factor analysis). Results from this research provide initial evidence of support for the EFS as a measure of employment flexibility.

Keywords: Employment Flexibility Scale, employment flexibility, underemployment, career assessment

Development and Validation of the Employment Flexibility Scale

Today, there are more people with college degrees in the work force than any other time in history (Fogg & Harrington, 2009; Spreen, 2013), and it is expected that the number of people with college degrees in the United States will soon surpass the projected number of high-skilled jobs actually requiring college education (Vedder, Denhart, & Robe, 2013). As a result, there is ever-increasing competition for jobs among highly education populations, which leaves many college educated jobseekers unemployed or working in jobs that require a high school diploma or less (Van Horn, 2013). In fact, some estimates suggest that approximately 48% of all employed U.S. college graduates are working in a job that requires less education than they possess (Vedder et al., 2013), while a recent survey of 2,018 college graduates found that 60% of respondents felt underemployed, which was up 10% from 2013 (Accenture, 2016). All this is to say that underemployment, defined as working fewer hours than one prefers or temporary employment, earning 20% less than peers with similar training, working in a job-field unrelated to one's educational field, working in a job that requires less education than one possesses, or working in a job that underutilizes one's skills (Feldman, 1996), is an increasingly common experience among workers with college degrees (Koen, Klehe, & Van Vianen, 2012; Mau & Kopischke, 2001).

Given the reality that workers are likely to experience underemployment as they navigate their vocational lives, recommendations for employment counselors to orient clients to these labor market realities is crucial (Greenleaf, 2013). Moreover, it seems important that job seekers demonstrate a willingness to consider job options that do not meet all of one's preferences and/or needs in order to advance within their careers. This concept has been coined as "employment flexibility," and is defined as one's willingness to work in a job that is perceived to be inadequate in some way. Employment flexibility is conceptualized as a psychological construct that impacts

one's career choices—either expanding the job possibilities one views as satisfactory or eliminating jobs as unacceptable options—and ultimately impacting one's career development. For example, a person with high levels of employment flexibility may be more willing than someone with low levels of employment flexibility to pursue employment that does not require the amount of education he or she possesses. This may lead the person high in employment flexibility to find and secure employment faster than the person low in employment flexibility, which would then go on to impact further career development. The purpose of this research is to develop a measure of employment flexibility as a first step to provide empirical support of this new concept. Moreover, a measure of employment flexibility could be used by counselors to help their clients gain awareness of the types of job settings that he or she is willing, or not willing, on which to compromise.

Theoretical Framework of Employment Flexibility

The theoretical underpinning of employment flexibility delineates the specific factors of a job that a recent college graduate may need to be willing to compromise on given the realities of today's labor market. As previously discussed, underemployment is a common experience among recent college graduates; thus, Feldman's (1996) conceptualization of underemployment provided much of the theoretical framework for employment flexibility. According to Feldman, underemployment is the result of some kind of discrepancy between one's job and what one believes to be a satisfactory job across five distinct dimensions: (1) possessing more formal education than a job requires (i.e., overeducation), (2) being involuntarily employed in a field outside one's area of formal education (i.e., job field underemployment), (3) possessing skills and/or work expertise that are not being utilized (i.e., skill underutilization), (4) being involuntarily engaged in part-time, temporary, or intermittent employment (i.e., hours underemployed), and (5) earning wages in a job that are 20% less compared to a previous job, or

for recent college graduates, earning wages that are 20% less compared to graduating peers of similar education/training (i.e., pay underemployment). Feldman's theory provides a foundation of underemployment upon which employment flexibility was conceived. Accordingly, employment flexibility is conceived as including: willingness to pursue work that requires less education than one possesses, or jobs that are outside of one's field of education and/or training, or jobs that do not match one's formal education/training, or jobs that do not utilize one's full range of skills, or jobs that are temporary or do not offer the number of hours desired, or jobs that do not offer a desired salary.

Given that employment flexibility is a psychological construct concerned with career choice, and one's willingness to compromise while making career choices, Gottfredson's (1981, 2002) theory of circumscription of compromise was integrated for conceptual thoroughness. According to Gottfredson (see 1981; 2002), children and adolescents engage in a slow developmental process where one slowly eliminates occupations as viable options, which leaves one with a self-designated tolerable range of occupational options that match with one's self-concept (e.g., interest, values, aptitudes), sex type, and social status/prestige. This developmental process of occupation elimination is referred to as circumscription. Culminating from the long, developmental process of circumscription is the experience of compromise. Compromise refers to the process of accommodating occupational choice, within one's range of acceptable occupational options, to various barriers and constraints. Following from this theory, it is expected that an individual's levels of employment flexibility would be influenced by the perceived fit of a job in terms one's gender identity, one's status identity, and one's vocational interests, values, aptitudes, and abilities (or self-concept).

In sum, circumscription and compromise (Gottfredson, 1981; 2002) and underemployment theory (Feldman, 1996) work together to provide a timely theoretical

foundation for the concept of employment flexibility by delineating eight specific job factors that workers may need to compromise on as they navigate their vocational lives. Thus, employment flexibility is conceived as one's willingness to accept employment across the following eight different dimensions: (1) overeducation, (2) job-field mismatch, (3) skill underutilization, (4) hours underemployed, (5) pay underemployed, (6) status mismatch, (7) sex-type mismatch, and (8) self-concept mismatch. Two different studies were conducted to develop a measure of the employment flexibility construct. Study One was designed to develop the items for the Employment Flexibility Scale (EFS) and to conduct initial reliability analysis as well as an exploratory factor analysis (EFA). Study Two was designed to conduct a confirmatory factor analysis (CFA). All study procedures were approved by the authors' Institutional Review Board.

Method

Study One

The scale development process began with the creation of the scale items. The items were developed to capture one's willingness to work in a variety of employment situations representing the eight dimensions of employment flexibility. Overeducation was defined as possessing more formal education than a job requires (Feldman, 1996). Five items were initially developed to capture overeducation. Job-education mismatch was defined as being involuntarily employed outside of one's area of formal education (Feldman, 1996). Five items were initially developed to capture job-education mismatch. Skill underutilization was defined as possessing higher-level work skills and more extensive work experience than a job requires (Feldman, 1996). Eight items were developed to capture skill underutilization. Hours underemployment was defined as involuntarily working in a part-time, temporary, or intermittent employment situation (Feldman, 1996). Nine items were developed to capture hours underemployment. Pay underemployed was defined as earning 20% less than in a previous job, or (if no previous

employment history exists) earning 20% less than people working in a similar job with similar education (Feldman, 1996). Four items were developed to capture pay underemployed. Sex-type mismatch was defined as being employed in a job that violates one's understanding of his or her sex/gender roles in society. Nine items were developed to capture sex-type mismatch. Status mismatch was defined as being employed in a job that violates one's understanding of his or her social status position in society. Fourteen items were developed to capture status mismatch. Self-concept mismatch was defined as being employed in a job that violates one's understanding of his or her internal, unique sense of self. Seven items were developed to capture self-concept mismatch. In total, this initial item development process resulted in the creation of 61 items. The EFS asks respondents to indicate their willingness to accept one of the above described employment situations using a 5-point scale (1 = Not at all willing; 5 = Completely willing).

Once these 61 items were developed, three different reviewers with varying levels of clinical and research experience in career counseling and assessment inspected the initial 61 items for content validity. The first reviewer was a masters-level career counselor with 30 years' experience working as a university career counselor. The second reviewer was a masters-level adjunct instructor with 10 years of experience teaching graduate career counseling and assessment courses. The third reviewer was a doctoral candidate in counseling psychology who had completed coursework in vocational psychology research and practice. Each reviewer was provided the definitions to the eight dimensions of employment flexibility being assessed, along with the corresponding items. Reviewers were instructed to rate each item on a 5-point scale in terms of how closely the items reflected the definition of a dimension (1 = Not at all; 5 = Completely). Mean scores for each item were calculated, which were used to compare items within a given dimension. The authors closely reviewed items rated below the mean and revised some items for clarity and deleted others for the sake of parsimony. As a result of this refinement

process, 22 items were deleted, which left 39 items comprising this initial version of the EFS (EFS-I). At this point, the scale was determined to be ready to be administered to a sample for reliability and EFA analysis.

Participants and Procedures

The sample for Study One consisted of individuals who had graduated from college sometime between the years 2013 and 2015. All participants were recruited via Amazon's Mechanical Turk, an online program that connects employers with workers to complete tasks over the Internet. Participation in this study was restricted to individuals residing in the United States only. Individuals agreeing to participate in this study were directed to a Survey Monkey link that asked participants to complete an informed consent, followed by a variety of demographic questions and the EFS-I. Participants were tracked by storing an individual's unique 13-digit Mechanical Turk identification code. All study participants received a financial incentive of $0.50 for completing the survey.

A total of 374 individuals completed the survey. However, 116 individuals indicated that they had never graduated from college, or that they had graduated from college before 2013. Additionally, two "rule-out" questions were embedded within the survey to verify that real people completed the surveys, as opposed to bots. These questions are different from the other survey questions because they have verifiable answers. Incorrect answers to these questions resulted in the participant's data not being analyzed. The two rule-out questions used in this study were (1) "if you are reading this, please select 'strongly disagree' as your response to this question," and (2) "if you are reading this, please choose 'not at all willing' as your response to this item." Other researchers who've used Amazon's Mechanical Turk reported that incorporating rule-out questions into a survey is an effective way to "filter out bots [software programmed to run automated tasks] and workers who are not attending to the purpose of the

study" (Mason & Suri, 2012; p. 11). A total of 54 individuals incorrectly responded to at least one of the two rule-out questions, so their data were not included in analysis. Thus, the final sample for this study consisted of 204 people. A listwise deletion method was used to handle missing data during data analysis because there was no discernable pattern to the very little missing data and the sample was large enough to counteract any concerns of losing statistical power.

Of the 204 participants, 68% identified as male and 32% identified as female. In terms of racial identity, 51% identified as Asian, 35% identified as White, 7% identified as American Indian, 3% identified as African American, 2% identified as Chicano/Latino, and 2% identified as Other. The participants ranged in age from 18 to 59, with a mean age of 25.37 ($SD = 5.10$). Participants also reported on their mother's and father's education level with responses ranging from 1 ("less than 12 years [K-12]") to 8 ("doctoral degree"). In this sample, the mean education level of mothers was 3.93 (Min = 1.00, Max = 8.00; $SD = 2.17$), while the mean education level of fathers was 4.48 (Min = 1.00, Max = 8.00; $SD = 2.15$). Approximately 35% of participants indicated that they were the first person in their family to graduate from college. Additionally, 41% of the sample identified as first generation (in terms of residency in the United States), 40% of the sample identified as third generation, and 19% of the sample identified as second generation. Among the 204 participants, 65% reported that they were unemployed. Moreover, 82% of the sample indicated that they were currently searching for a job.

Results

A reliability analysis was conducted for each of the eight theoretical dimensions comprising the EFS-I to ensure that items representing a given dimension of employment flexibility cohered together in a theoretically sound manner. The following item statistics were examined across all eight dimensions comprising the EFS-I: scale mean if item deleted, scale

variance if item deleted, corrected item-total correlation, squared multiple correlation, and Cronbach's alpha if item deleted. This analysis led to the deletion of six items to improve reliability (ITEM1, ITEM2, ITEM3, ITEM4, ITEM8, and ITEM30), which left 33 items to be subjected to an EFA. Overall, these 33 items of this scale exhibited good internal consistency in this sample ($\alpha = .94$; $N = 184$).

An exploratory factor analysis (EFA) was utilized to identify the underlying latent factors from the remaining 33 items of the EFS-I. The analysis was conducted using the principal axis factoring method with an oblique rotation (Direct Oblimin), as there was no assumption that the extracted factors would be uncorrelated. Determining how many factors and items to retain for the final factor solution was based on several considerations including: (1) eigenvalues greater than 1.0, (2) Cattell's scree test, (3) overall interpretability of factor loadings, (4) a factor loading cutoff score of .60, (5) parsimony, and (6) striving toward simple structure.

Before beginning the analysis, factorability of the 33 items was assessed. The Kaiser-Meyer-Olkin measure of sampling adequacy was .91, and Bartlett's test of sphericity resulted in significant findings (χ^2 [528] = 3773.76, $p < .001$). These findings suggest that this data was appropriate for factor analysis. Five factors had eigenvalues greater than 1.0, which collectively accounted for 55.77% of the variance. Specifically, Factor 1 had an eigenvalue of 12.16, which explained 35.53% of the variance, Factor 2 had an eigenvalue of 3.97, which explained 10.79% of the variance, Factor 3 had an eigenvalue of 2.05, which explained 4.95% of the variance, Factor 4 had an eigenvalue of 1.34, which explained 2.78% of the variance, and Factor 5 had an eigenvalue of 1.03, which explained 1.73% of the variance. Despite having five eigenvalues greater than 1.0, investigation of the scree plot suggested that the final factor solution likely consisted of one, two, or three factors, and not four or five factors. Moreover, given that the first

three factors had eigenvalues greater than 2.0, it was determined that the best factor solution should consist of one, two, or three factors.

The factor loadings of the one, two, and three factor solutions were assessed for conceptual interpretability, and ultimately, it was determined that the three-factor solution fit the data best. A total of 51.26% of the variance was accounted for in this model. Factor one was composeded of items related to one's willingness to accept an employment situation where the features of a job does not match with the experience, skills, and education that an individual possesses, which will be referred to as Person-Job Mismatch Flexibility. Factor two was composed of items related to one's willingness to accept an employment situation that provides less pay and fewer hours than an individual wants from a job, which will be referred to as Resources Mismatch Flexibility. Factor three was composed of items related to one's willingness to accept an employment situation in which the type of employees who work in that employment setting are different from one's self-concept, which will be referred to as Relational Mismatch Flexibility.

After determining that a three-factor model fit the data best, the process of refining the measure began. The following four items were removed as they did not load onto any factor at a value of at least .60: ITEM12, ITEM24, ITEM33, and ITEM36. The following two items were deleted for low conceptual consistency: ITEM10 and ITEM28. And, the following five items were deleted for reasons related to parsimony and striving toward a simple structure: ITEM17, ITEM22, ITEM23, ITEM26, and ITEM38. After removing these 11 items from the scale, a total of 22 items remained. Factor 1 (Person-Job Mismatch Flexibility) was composed of 10 items, Factor 2 (Resources Mismatch Flexibility) was composed of five items, and Factor 3 (Relational Mismatch Flexibility) was comprised of seven items. Table 1 presents the final factor loadings of the final, 22-item version of the EFS.

Table 1

Factor Loadings of Each Item with Direct Oblimin Rotation

Items	Factor Loadings		
	1	2	3
ITEM5	0.335	**0.735**	0.085
ITEM6	**0.661**	0.221	0.425
ITEM7	**0.634**	0.396	0.323
ITEM9	**0.728**	0.398	0.432
ITEM10	0.653	0.256	0.472
ITEM11	**0.686**	0.359	0.394
ITEM12	0.401	0.521	0.298
ITEM13	0.337	**0.816**	0.125
ITEM14	0.399	0.016	**0.695**
ITEM15	0.289	0.177	**0.698**
ITEM16	**0.687**	0.507	0.253
ITEM17	0.497	0.261	0.609
ITEM18	**0.796**	0.282	0.425
ITEM19	**0.741**	0.371	0.357
ITEM20	0.323	**0.618**	0.372
ITEM21	0.399	**0.751**	0.212
ITEM22	0.509	0.045	0.731
ITEM23	0.547	0.600	0.203
ITEM24	0.397	0.599	-0.014
ITEM25	0.493	0.194	**0.737**
ITEM26	0.748	0.196	0.507
ITEM27	0.448	0.141	**0.786**
ITEM28	0.187	0.364	0.646
ITEM29	0.464	**0.758**	0.246
ITEM31	0.413	0.038	**0.660**
ITEM32	**0.666**	0.498	0.218
ITEM33	0.495	0.318	0.429
ITEM34	**0.761**	0.208	0.497
ITEM35	0.397	0.076	**0.781**
ITEM36	0.276	0.191	0.442
ITEM37	0.490	0.024	**0.639**
ITEM38	0.522	0.174	0.612
ITEM39	**0.652**	0.468	0.275

Notes. Factor 1 = Person-Job Mismatch Flexibility; Factor 2 = Resources Mismatch Flexibility; Factor 3 = Relational Mismatch Flexibility. Bolded items and corresponding factor loadings depict the final factor solution.

Study Two

The same procedures used in Study One were applied to Study Two to confirm the factor structure of the newly developed, 22-item EFS (see Appendix A). A total of 138 individuals completed the EFS along with a variety of demographic questions. However, 10 individuals incorrectly responded to at least one of the two rule-out questions (previously described in the "Participants and Procedures" section of Study One), so their data were not included in the analysis. Additionally, the 13-digit Mechanical Turk codes were referenced against the sample used in Study One, which identified five repeat participants. Data from these five participants were removed from the sample as they had previously participated in Study One. Thus, the final sample for this study consisted of 123 individuals. A listwise deletion method was used to handle missing data during data analysis because there was little missing data with no discernable pattern and the sample was large enough to counteract any concerns of losing statistical power.

Among this sample of recent college graduates, approximately 57% identified as male and 43% identified as female, with an overall mean age of 26.33 (Min = 21, Max = 54; $SD =$ 5.50). Seventy-eight percent of participants identified their ethnic group as White, 8.1% identified as Asian, 5.7% identified as African American, 4.1% identified as Chicano/Latino, and 4.1% identified their ethnic group membership as Other. Approximately 72% of the sample indicated that they were third generation residents of the Unites States, while 22.8% reported they were second generation residents of the United States, and 5.7% of participants reported being a first-generation United States resident. Participants also reported on their mother's and father's education level. Responses ranged from 1 ("less than 12 years [K-12]") to 8 ("doctoral degree"). In this sample, the mean education level of mothers was 4.18 (Min = 1.00, Max = 8.00; $SD = 1.99$), while the mean education level of fathers was 4.26 (Min = 1.00, Max = 8.00; $SD =$ 2.25). A total of 30.1% of individuals in the sample reported that they were the first person in

their family to graduate from college. Additionally, 65% of the sample indicated that they were currently searching for a job, and approximately 31% indicated that they were unemployed at the time of the study.

Results

A confirmatory factor analysis (CFA) was conducted with Mplus 2.0 to confirm the three-factor solution of the EFS uncovered in Study One. To run this CFA, a three-factor model was specified, where each item was designated to its one corresponding factor (Person-Job Mismatch Flexibility, Resources Mismatch Flexibility, or Relational Mismatch Flexibility). Additionally, items representing one of the eight theoretically unique aspects of employment flexibility (over-education, job-education mismatch, skill underutilization, hours underemployment, pay underemployment, sex-type mismatch, status mismatch, and social status mismatch) were specified to correlate with each other. Lastly, factors one, two, and three were specified as correlated factors.

Overall, results from this CFA suggest fit for a three-factor model of the EFS. The Chi-square test of fit was found to be significant, $\chi^2(183) = 381.84$, $p < .001$. However, many scholars have noted that using Chi-square statistics as an indicator of model fit is problematic (see Quintana & Maxwell, 1999; Raykov & Marcoulides, 2012), and others note that fit should be determined based on an analysis of several indicators (Worthington & Whittaker, 2006). The comparative fit index (CFI) resulted in a score of .89, which is near the .90 cutoff score of acceptable fit some scholars endorse (Bentler & Bonett, 1980). The root mean square error of approximation (RMSEA) was .09 (90% CI: .08, .11). According to Brown & Cudeck (1993), a RMSEA greater than .05 demonstrates good model fit. Lastly, the standardized mean square residual (SMSR) yielded a value of .08, which falls within an acceptable range of fit as this value is below a cutoff score of .10 (Hu & Bentler, 1998).

Discussion

Findings from this research provide initial reliability and validity (content validity and stable factor structure) support for the Employment Flexibility Scale (EFS; see Appendix A). Initial evidence of validity for the EFS comes from the fact that the EFS was subjected to examination from three independent reviewers with some expertise in vocational psychology and career development. This methodological procedure provides evidence of content validity for the EFS. Additionally, results from an exploratory factor analysis (EFA) and a confirmatory factor analyses (CFA) found that a three-factor structure fit the data well, which suggests that the EFS has a stable factor structure.

The first factor of the EFS was composed of items related to one's willingness to accept employment that does not match with one's experiences, skills, or educational background, which was referred to as Person-Job Mismatch Flexibility. The second factor of the EFS was composed of items related to one's willingness to accept employment that does not provide the amount of financial benefit one wants, which was referred to as Resources Mismatch Flexibility. The third factor of the EFS was composed of items related to one's willingness to accept employment where the coworkers would be notably different from the respondent in some way, which was referred to as Relational Mismatch Flexibility. A three-factor model of the EFS was unexpected and required theoretical examination. The psychology-of-working perspective (Blustein, 2006; Blustein, Kenna, Gill, & DeVoy, 2008) may provide a theoretical basis for interpreting the three-factor solution found in the EFS.

Blustein (2006) articulates a psychology-of-working perspective that explicates upon the primary psychological needs that work can satisfy for any person. According to Blustein, the primary psychological needs that can be met through working include: (1) survival and power, (2) human connectedness and relationships, and (3) self-determination or motivation. With

regard to survival and power, the psychology-of-working perspective highlights the fact that work provides people with the means to acquire basic necessities such as food, water, shelter, clothing, and safety, as well as economic, social, and psychological power. With regard to human connectedness and relationships, the psychology-of-working perspective notes that a fundamental link exists between one's work and their relational life. As such, work is able to fulfill important social connections such as providing one with a sense of community in addition to providing social and emotional support. With regard to self-determination, the psychology-of-working perspective recognizes that work has the ability to provide individuals with a sense of motivation, or self-determination, even when career choice does not exist and when work is intrinsically uninteresting. Additionally, the psychology-of-working perspective acknowledges that some people—those with some degree of privilege such as recent college graduates—are able to choose a career that is an expression of one's identity, interests, skills, and experiences, thus meeting self-determination needs by matching their self-concepts with their work. In sum, the psychology-of-working perspective helps to provide scholars with a synthesized understanding of the psychological reasons why all people work: survival and power, social connection, and/or self-determination.

Based on the psychology-of-working perspective, the Person-Job Mismatch Flexibility factor of the EFS can be understood as a subscale that assesses the degree to which an individual is willing to compromise on his/her psychological need for self-determination by working in a job that is not an expression of one's skills, experiences, and education. Further, with a psychology-of-working perspective in mind, the Resources Mismatch Flexibility factor of the EFS can be understood as a subscale that assesses the degree to which an individual is willing to compromise on their psychological need for survival and power. Finally, from a psychology-of-working perspective, the Relational Mismatch Flexibility factor of the EFS can be understood as

a subscale that assesses the degree to which an individual is willing to compromise on their psychological need for social connectedness and relatedness with others. The latter of these propositions is particularly intriguing because prominent vocational psychologists have noted that the relational aspect of working is an important consideration in career development, yet it is also noted that the relational aspect of career choice and development is often overlooked within empirical literature (e.g., Blustein, 2001; Phillips, Christopher-Sisk, & Gravino, 2001; Schultheiss, Kress, Manzi, & Glasscock, 2001).

Limitations

The findings from this study need to be understood within the context of the following limitations. The exclusive use of Mechanical Turk to collect data in this study could be of concern. It may be that a specific subpopulation of recent college graduates tends to use Mechanical Turk, which may make generalizing findings difficult. Additionally, although the survey was specifically solicited to recent college graduates, theoretically, it is possible that individuals lied about this aspect of their identity and participated in the study even though they did not meet this specific requirement. Another issue related to data collection is the differences in demographic characteristics between the two samples comprising this overall study. One possible explanation for differences across samples may be due to the rapid rate at which study participants were recruited through Amazon's Mechanical Turk. At times, the recruitment process takes only minutes. Thus, it is plausible that the specific time and day that the recruitment announcement was posted inadvertently sampled a specific subgroup of people who were available to respond to the advertisement. The noted differences found across samples may or may not be a concern for generalizability, as employment flexibility may be conceived differently across different cultural groups. Future studies investigating the validity of these findings across various racial and ethnic groups would be beneficial.

Implications

The findings of this study provide initial support for the use of the EFS as a way of assessing one's willingness to work in occupations that is perceived as inadequate in some way; however, further research examining the psychometric properties of the EFS is needed. For instance, it is important that a follow up study investigate convergent validity by confirming the relationships the EFS has to theoretically similar or dissimilar constructs. Additional psychometric research would be valuable and may include comparing means scores across a variety of groups, conducting test-retest comparisons to examine the trait versus state phenomenon of this construct, or examining the relationships between the three factors of the EFS to other relevant, career-related variables such as career adaptability, career decision-making self-efficacy, vocational expectations and aspirations, and perceived career barriers. Findings from such research would provide support for the utility of the EFS.

In practice, counselors utilizing career assessment or vocational evaluation may find benefit from including the Employment Flexibility Scale (EFS) into their existing assessment toolkit already being used to gather relevant career information to support self-awareness and career exploration. For example, the assessment of an individual's employment flexibility may be helpful for clients who have little direction or insight into the type of work they would like to do. By assessing and exploring employment flexibility with a client, counselors may be able to help their clients begin to explore and identify the specific aspects of work that they may be more or less flexible toward. This knowledge can help guide a client in making more informed employment decisions.

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APPENDIX A

EMPLOYMENT FLEXIBILITY SCALE (EFS)

Using the scale provided below, please indicate your willingness to accept the following employment situations					
	Not <u>At</u> All Willing				Completely Willing
1. Working in a job that does not require as much formal education as you have.	1	2	3	4	5
2. Working in a job where the field of work does not match your degree field.	1	2	3	4	5
3. Working in a job that doesn't fully utilize your work experiences.					
4. Working in a job that cannot provide the amount of hours you prefer to work.	1	2	3	4	5
5. Working in a job where you earn 20% less than other employees with similar education.	1	2	3	4	5
6. Working in a job that does not match your sex.	1	2	3	4	5
7. Working in a job of lower social prestige than you have.	1	2	3	4	5
8. Working in a job that doesn't match your interests.	1	2	3	4	5
9. Working in a job where you have more formal education than most of your fellow employees.	1	2	3	4	5
10. Working in a job field that is different from the field of your formal education.	1	2	3	4	5
11. Working in a job that is below your level of expertise.	1	2	3	4	5
12. Working in a job where you earn 20% less than other employees with similar experience.	1	2	3	4	5
13. Working in a job where the majority of people have a different gender than you.	1	2	3	4	5
14. Working in a job where you are more intelligent than most of your fellow employees.	1	2	3	4	5
15. Working in a job that doesn't match your personality.	1	2	3	4	5
16. Working in a job where you have more skills than your fellow employees.	1	2	3	4	5
17. Working in a job where you earn 20% less than other employees with similar skills.	1	2	3	4	5
18. Working in a job where your sex is the minority.	1	2	3	4	5
19. Working in a job where most of your fellow employees are from a higher social class than you.	1	2	3	4	5
20. Working in a job that doesn't match your attitudes.	1	2	3	4	5
21. Working in a job where you have more work experience than your fellow employees.	1	2	3	4	5
22. Working in a job that pays 20% less than what you earned in a previous job.	1	2	3	4	5

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Applying Game Design Principles to Career Counseling and Assessment

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Abstract

Game design encompasses motivation and engagement techniques that have been previously applied in education, business, and self-help contexts. This conceptual article introduces game design as a concept to structure group-based career assessment and career development services for postsecondary education students with disabilities. Game Design Career Counseling (GDCC) is a flexible concept proposed to increase engagement in school-to-work transition services.

Keywords: rehabilitation, game, design, transition, assessment

Applying Game Design Principles to Career Counseling and Assessment

Game design is used to motivate hotel customers, frequent flyers, employees, and learners across a variety of industries to progress in some behavioral fashion toward a desired outcome (Werbach, 2014). The purpose of this article is to convey the utility of using game design components to structure and deliver career services and assessment to youth with disabilities in school and rehabilitation school-to-work transition settings. Game design career counseling (GDCC) is a concept for incorporating an engaging, coherent structure into career counseling to deliver a set of interventions, practices, or predictors of success via a group format. GDCC is not a game itself, and this article will not deliver a game to readers so much as to suggest three routes to incorporate GDCC into service provision. This article situates career exploration as inseparable from vocational assessment and proposes ways to order and enhance the process using game design. Gamification is then explained and demonstrated using examples from a career game in current development by the author. Some common elements of game design are then explained and contextualized using career counseling theories. Finally, this article proposes the next steps for implementing such interventions and measuring their efficacy.

Career exploration and decision making is a process that begins in childhood (Schultheiss & Stead, 2004) and continues throughout adulthood (Barclay, Stoltz, & Chung, 2011). Career development depends on one's integration of self-knowledge with acquired occupational knowledge (Starishevsky & Matlin, 1963). Career choices can be mediated through adolescents' notions of gender, prestige, and aptitudes (Gottfredson, 1996; Wee, 2014) and even by adolescents' chosen social circles (Sinclair, Carlsson, & Björklund, 2014). As adolescents develop into adults, they construct a work-preparation personality with each newly incorporated piece of information about themselves and how they might fit into the world of work. *Vocational*

assessment is highlighted by McCray (1982) as an "informal process, conducted over a period of time, usually involving a multidisciplinary team," (as cited in Ahlers, Annis, Ashley, Cusick, Derwart, Fried, & Thomas, 2003, p. 20). That period of time is ongoing (Clark, 1998).

Career development involves unique hurdles for students with disabilities. Across the United States, 13 percent of students between ages 3 and 21 participate in special education services (McFarland, Hussar, deBray, Snyder, Wang, Wilkinson-Flicker, & Hinz, 2017, p. xxv). Receiving these services, dictated by the Individuals with Disabilities Education Act (Rehabilitation Act, IDEA, 2004), requires not only a diagnosis, but documented academic limitations. Students with disabilities that include academic challenges may be extra sensitive to work and career preparation barriers as compared to students without significant disabilities. As an example: a student with a specific learning disability in reading might require an accommodation such as a text-to-audio reading application that conveys assigned readings aloud so that the student can participate in coursework. That student's own perception of the careers available to him/her could be predicated upon the student's notion of workplace accommodations and what a given career requires of its workers. This perception represents extra knowledge of the world of work. In postsecondary education, as students engage in college preparatory, vocational/technical, performance art, and other curricular pathways, an ideal scenario is one in which the student is educated about the many accommodations and resources available. Additionally, if knowledge acquisition is an ongoing developmental process with high social influences, as Sinclair et al. (2014) asserted, students with disabilities must be coached in self-advocacy and career self-efficacy, and encouraged to boldly explore careers. Providers who may deliver services like these to postsecondary education students include, but are not limited to, rehabilitation counselors, vocational evaluators, psychologists, career counselors, school

transition specialists, special education teachers, occupational therapists, and case managers, as well as family members.

A rehabilitation counselor who works with a caseload of transition-aged youth can be the ideal facilitator for a game-based career counseling group that helps to organize the services that students need to transition from school to work. The IDEA (2004) contextualizes transition outcomes as "…movement from school to postschool activities, including postsecondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation" (IDEA, 34 CFR 300.43 (a) [20 U.S.C. 1401(34)]). Throughout postsecondary education and shortly thereafter, youth continue to develop values, self-concept, knowledge of the world of work, vocational and academic skills, and, in the process, new goals for life. Introducing a partnership between state school-based transition programming may avail students to an array of assessments and services, while establishing Vocational Rehabilitation (VR) supports within a lifelong path of self and world discovery after postsecondary education. Because vocational assessment is iterative, ongoing, and facilitated by multiple providers (Ahlers et al., 2003) vocational assessment professionals such as evaluators and counselors are essential throughout the process of career development.

Vocational assessment can include those evaluations needed for eligibility determination, such as those used to document a disability and its functional limitations, or assessments to determine students' interests, values, and aptitudes. Vocational evaluation may also be a part of service provision to determine the need for longer term supports depending on the needs of the client. Ongoing assessment is a crucial part of transition-aged students' career exploration, as students at this developmental level have limited experiences and familiarity with the world of work (Sharf, 2014). Vocational Rehabiitation counselors may recommend and support training

for students in seeking and retaining employment, as well as for developing specific job skills and professional behavior. Vocational evaluators (VE) may also serve as expert advocates in establishing college accommodations and updating the diagnostic testing needed to document the need for college supports. Ordering and contextualizing these assessments and services in a way that the student understands and engages is the responsibility of the rehabilitation team, working in partnership with the student. By including various types of assessment in the career development continuum, the author contends that students gain more information about themselves and the world of work, and VEs and other assessment providers are needed throughout the process.

Games in Career Counseling

The introduction of game design to the continuum of assessment and career related services can take any form that the VR counselor chooses. Games in counseling have evolved since Jacob Moreno introduced psychodrama simulations in the early 1920s (Moreno, Jennings, & Whiting, 1932) and made inroads in the literature more explicitly (e.g., Crocker & Wroblewski, 1975) with descriptions of game structure, components, and purposes. Other uses of games for counseling included play therapy, centered on the work of Carl Rogers, Anna Freud, Virginia Axline, and Margaret Lowenfeld, among others (as cited in Kendrick, Wilson, & Ryan, 1992). Kim and Byrne (2019) documented research on the efficacy of readily available video games for treating mental health. While game design does not always use technological equipment, Damianidou, Arthur-Kelly, Lyons, and Wehmeyer (2018) note that embracing such advances often enhances services for students with disabilities. Game design can be as simple as (a) *gamification,* the "process of making activities more game-like" (Werbach, 2014, p. 266), or (b) using brief games within a program of activities, or as complex as (c) creating a game by planning a series of VR experiences into a complete game format.

Gamification

Making a career counseling activity more game-like is accomplished by breaking down the activity and metaphorically communicating using game-like terminology. Characters in a game progress through *leveling*, as might VR clients progress through stages of assessment and services. A career development group such as a *job club* (Lindstrom, Benz, & Johnson, 1996; Zikic & Saks, 2009) can treat the activities in which group members engage as game-like activities. The outcomes of student efforts, such as job applications or completed interviews, can be shared with the group for support. These might also be tracked graphically on a *leaderboard* (Werbach & Hunter, 2012) to help motivate others to keep trying and to visualize mutual support and the universality (Yalom, 1995) of shared experiences in the group. Group members who might otherwise track their progress in a file of case notes might enjoy equipping an avatar poster of themselves with the attributes that they picked up as a result of their experiences: a completed job application is a sword, and a volunteer experience added to their resume is a piece of armor.

Using Brief Games

Incorporating brief games is a simple point of entry to GDCC. Blaker and Samo (1973) used communication games to encourage interpersonal positivity and self-esteem through in-school group interventions, such as going out of the room and finding a small object that represents how group members each view themselves. Crocker and Wroblewski (1975) highlighted the productive use of role-playing using board games. From these experiences, they noted that in-game experiences were relevant to participants' daily lives, and low-stakes engagements with fantasy allowed for broad experimentation. More recently, the augmented reality game *Pokémon GO* by software company Niantic earned wide recognition for increasing exercise, social interaction, and moods among players in treatment for physical and behavioral

ailments (e.g., Kato, Teo, Tateno, Watabe, Kubo, & Kanba, 2017; Kaczmarek, Misiak, Behnke, Dziekan, & Guzik, 2017). Pokémon's success was in motivating people to leave their homes and walk to places identified by the mobile game, where they often met other players and had new experiences. For a VR client, this might be used to aid in mastering public transportation or following a daily schedule to leave home to interact with others. These are examples of ways to augment group experiences in schools and counseling settings, although they do not necessarily structure the experience overall. The use of GDCC is possible to whatever degree the VR counselor wishes.

Creating a Game to Structure VR Services

Some games are designed for a more immersive, structured experience, albeit one where choice and freedom are calculated as part of the game itself. In other words, the game becomes the intervention framework. While the framework is a game, the components can be traditional services and assessments. In 2015, psychologist Jane McGonigal (2016) unveiled *SuperBetter*, a mobile and Internet game designed to aid its players in personalized, flexible self-improvement. People have played SuperBetter for self-help with physical injury recovery, mental health disorders, and even employment. Roepke, Jaffee, Riffle, McGonigal, Broome, & Maxwell (2015) tested SuperBetter on users with depression, comparing three groups of game users only (n = 97), game users participating in cognitive behavioral and positive psychology therapy (n = 93), and a control group on a waitlist (n = 93). Both game groups experienced significant reductions in depression symptoms [Cohen's *d* = 0.67, t(276) = -3.90, p < .001] versus the wait list control group after a month of use. While the SuperBetter research study had considerable attrition rates, a preset group with regular attendance such as what might be expected among school students may successfully harness peer pressure to persist in a school-based VR intervention.

Vignette: *WorkWorld* as a Career Counseling Game

While the whole game of *WorkWorld* (Byrne, 2016) cannot be conveyed in an article, the author has created this group counseling intervention to facilitate and process participants' progress in evidence-based career preparation activities using game design elements. The *WorkWorld* author chose predictors for postsecondary success among students with disabilities. Test, Mazzotti, Mustian, Fowler, Kortering, & Kohler (2009), and later Test and Cease-Cook (2012), synthesized from available research sixteen predictors for postsecondary success among students with disabilities and rated their associated studies. It is a widely cited compilation across education and rehabilitation counseling literature. While some of these predictors rely on school infrastructure, class selection, and planning, several of the predictors feature relevant career development steps that the youth themselves can take. These steps have been operationalized (Rowe, Alverson, Unruh, Fowler, Kellems, & Test, 2015) as a series of more defined practices. However, the practices that work best for students with disabilities may still be experienced as complex and inaccessible without assistance. For example, one of the predictors is *career awareness.* Benz, Yovanoff, and Doren (1997) described skills related to career knowledge and career search comprising the career awareness predictor, but the process could be made more manageable with considerations for student engagement and follow-through. If each of the predictors is broken into small, accessible steps, and built into an intrinsically incentivized system, one can begin to see the possibilities behind game design. *WorkWorld* organizes the practices into small steps and calls them *dares*, daring its players to engage in these practices, one by one. In the game, each step is a quest designed to lead to predictor accomplishment and, on a larger scale, to inspire career development. One example of a dare from this game is *Know Thyself*. The challenge is to take a career interest inventory to be recommended by a VE, and then to shadow a person in one of the careers that result from the assessment. Then the player

describes the experience to his/her peers. A vocational evaluator might never know that the student to whom the VE administered a test battery has earned a game-based reward for participating in a GDCC dare. The list of dares is a *quest* system.

Through game design, each predictor that structures the group counseling curriculum can be seen as a project made up of multiple quests. A quest is a game-based task. A series of quests may lead to mastery of a theme or a macro-skill, as well as built-in incentives such as the continuation of a game-based narrative or achievement awards: a token, or formalized recognition, for example (Wang & Yu, 2017). In the *WorkWorld* career game example, each quest is meant to prepare the participant for a later quest, and to make the overall evidence-based predictor (now arranged as a series of quests) approachable in sequence, achievable, and engaging. The main focus for students in the group is to complete the quests, thereby having completed all of the predictors and accumulating in-game currency such as imaginary equipment for their avatars, as well as the social currency of support from their peers. These are all game design elements.

Game Design Elements for GDCC

Game designs aid participants with situationally relevant information (Pea & Maldonado, 2006) and life/task management, and even provide game-like mechanics with which 97% of youth are already familiar from other game-designed contexts (Rideout, Foehr, & Roberts, 2010). Some examples of game design elements for the group format include, but are not limited to: (a) using a leaderboard in the confines of the group, which tracks group members' progress and allows them to provide supportive feedback to one another, (b) quests that are built into a leveling system to encourage progress, (c) participant choices in lieu of a prescriptive curriculum, and (d) a game-based reward system. Werbach & Hunter (2012) provide a more

exhaustive description of game design components in the business context, while Kapp (2012) introduces these concepts in education.

Quest Initiative example: *Get an App*

Returning to the vignette of *WorkWorld,* the first quest in the school-based *work experience* (Test & Cease-Cook, 2012) predictor category is one of several categories that could comprise a GDCC group manual: *Get an App*. The *Get an App* activity focuses on assuring that every student has had the opportunity to approach a potential employer and request a job application, with no obligation to apply or interview. While this initiative may seem simple, the goal is to begin an ever-more-challenging series of initiatives that lead to work experiences. Job search, filling out an application, completing mock interviews, and learning workplace behaviors could all be part of the work experience quest line, but participants do not know this when they begin. They just know that they need only to obtain one job application to complete the quest. Students document this quest with a brief video, capturing their experience and narrating it for the group. Upon completion, game participants are credited for progressing on the leaderboard, a form of social capital built into the game. The videos can be entertaining and may channel student creativity. *Get an App* also fulfills an initiative in the *career exploration* predictor, which means successful participants will achieve two first steps at once. In this game, each predictor contains a *quest line*, and some quests fulfill multiple quest lines. Players in the game receive feedback on several intentional frequencies. First, the immediate feeling of accomplishment might be worthwhile (Bell, 2018), through recognition among one's peers. Bell stresses that feedback should be immediate, by drawing connections to likes and comment responses in social media. That gratification uses the feedback loop as an incentive for engagement in the game and its initiatives. Peer feedback could be more powerful than feedback from adults (Blaker & Samo, 1973). Additionally, as the game further develops in a group, the players who accomplish quests

from outside the group's meeting place return to the game structure with an asset: a symbolic sword, a trump card, or an advantageous element for use as they progress. Sometimes these assets are collected for a matching set of avatar clothing, or banked like points. The relevance of the assets depends upon the structure. An example of this structure can be found in a career game that is currently in development.

Game-based assets in *WorkWorld*. The quests described thus far need a coherent system in which to be organized, where players have a pattern or routine to follow. For example, many board games have a progression of spaces through which the player avatar (a thimble, a peg, a little model person) leaps. The leaps are decided by dice, cards, and other game events, in which there is a cyclical turn with chance built in. In *WorkWorld*, there is a two-routine mechanism in rotation: the card game and the dare system. The function of the card game is to engage students, or players, in discussion about hypothetical, often comical, workplace situations presented on cards drawn during each player's turn. Cards are based on the game's narrative, which in *WorkWorld* revolves around two satirical *bosses* in a fictional workplace (figure 1): *Mr. Man* and *Ms. Powers*. A card can be an asset, which is added to the player avatar, such as *Mr. Man's Shiny New Pen* (a clerical weapon, according to this game). A card may also turn out to be a challenge, such as *Ms. Powers needs you to write the annual report,* in which the player overcomes the challenge by rolling the dice. The score from the dice is increased if that player happens to have an asset such as *shiny new pen*. In this example, students playing in a group might question, "what is an annual report?" The facilitator can encourage students to search the Internet for examples of annual reports and discuss how workers are evaluated in various jobs relevant to students' interest test results. The objective of the board-game portion and narrative is to help students become accustomed to talking about workplaces.

Figure: *WorkWorld* concept art by Anthony Ryan, includes the narrative's villains, who assign career preparation challenges, called *dares,* to game design career counseling participants.

The third type of card is called the *dare card*. The dare card holds one of the quests. For example, *Get an App! ...You are dared to obtain a blank job application and bring it back.* The student who draws the dare card has completed the in-group game for the day, but can stay on

hand to trade cards, study the leaderboard, and/or interact with other players. By the time the group convenes for its next session, each student with a dare card returns with documentation of the task's completion.

Another quest, *Tame the Iron Dragon*, is found within the *Community Experiences* (Test & Cease-Cook, 2012) predictor and it dares the student to take an experimental public bus or other transit expedition to demonstrate their use of transportation. The feedback loop for this quest is one of the more interactive forms of game-based documentation: the student who draws this quest must bring a friend and have them video-record the experience. Students may be creative and add edits of music and narration to their videos, which are played for their peers in the group when they return.

Game-infused narrative. *Ms. Powers* and *Mr. Man* represent a part of the card game portion of *WorkWorld,* based in a fictional workplace setting, as villains who provide a storyline for the hypothetical challenges and player assets. Activision-Blizzard, the developers of *Overwatch* (2014), established a narrative that explains character backgrounds, and an ongoing out-of-game lexicon of comics, cinematics, and short stories. These narrative elements give more context to some of the in-game mechanics without posing a prerequisite to engaging in gameplay. Such storylines make the game accessible from a beginning player standpoint, but are also rich as potentially immersive experiences. *WorkWorld* has its own narrative. When a player in *WorkWorld* draws a challenge card, the challenge has been issued by, or as a result of, one of this narrative's villains, *Ms. Powers* or *Mr. Man*.

Highlighted Theoretical Bases for Game Design Career Counseling

The game design group counseling intervention can be seen as an eclectic mechanism that utilizes a number of theories common to counseling and rehabilitation. Theories might be used to inspire, or justify a given quest or component of the game. A given theory might also

provide a scaffolding for the whole game itself. This section highlights only a few of the many counseling and career theories potentially available to underlie a career counseling intervention and its components.

Social Learning

Social learning theory (Bandura & Walters, 1963; Bandura, 1977) supports participants' modeling career preparatory behaviors and experimenting with career-related scenarios. Bandura (1963) sought to combine behavioral and cognition theories. A behavioral theoretical approach seeks to implement desired behaviors through reinforcement (Watson, 1913). By adding cognitive theory, Bandura (1963) incorporated internal motivations such as those that would occur between a behavior and a reinforcement. These so-called social learning interventions are likely to lead to higher career self-efficacy, meaning that participants have reason to believe that their efforts will lead to a desired outcome (outcome efficacy) and that through their group-based experience, they have the abilities to achieve that outcome by modifying their behaviors. Modeling and mediation occur through students' observations of others' experiences and their participation in assessment and career preparation activities—the quests and achievements within the game—and career self-efficacy is the desired outcome.

Flow

Flow Theory (Csikszentmihalyi, 1997) is a conceptual structure for planning growth experiences that progressively and fluidly harness higher levels of skill and challenge in order to keep participants intrinsically engaged. Flow supports the ordinal arrangement of career predictor related quests into a progression, along with their achievement reward system.

Narrative

The content of *WorkWorld* includes a fictional narrative. Similar to the game *Overwatch* (Activision-Blizzard, 2014), the plot of the narrative enriches the experience by establishing

characters and situations to which players can relate. Narrative theory in a career counseling game can prompt discussion of the work-related situations that will arise among members of the group and encourage participants to externalize their hesitations and anxieties using hypothetical characters (Madigan, 2011; White, 2007). Participants instead take on the role of author and collaborator within a supportive group environment where their efforts can be channeled with a positive view (White & Epston, 1990). The narrative includes situations relevant to burgeoning career seekers and workers, and makes parallels between game-based fiction and the real experiences of the students as they complete situational assessments, work experiences, and other components of their career development. The idea is to use the narrative to get students talking and give them a platform on which to construct meaning (Brown & Augusta-Scott, 2007) while increasing their knowledge of the world of work.

Experiential Learning Cycle

David Kolb (1984) developed a cyclical, four-stage process whereby learners (a) experience something, (b) reflect on what they experienced and compare this with their pre-experience impressions, (c) consider what they learned from the experience in the abstract and how it informs their new impression, (d) experiment actively with what they have newly learned, and return to the first stage of experience once again. The cyclical nature lends itself well to hypothesis testing and trial-and-error. In a game design environment, games teach us to game better through repetition by their design. This speaks to career development in which we learn from our mistakes.

Happenstance

Happenstance learning theory (Krumboltz, 2008) encourages students not to make a foundational, final career decision, but to open their concepts of career preparation to lifelong unplanned learning experiences and open learning spaces. Krumboltz's theory can be used to

encourage participants not to control future circumstances, but rather to continue to hone their approaches to make the best use of ongoing experiences. This conceptualizes the steps within the career game, and within school and work life domains, they can be seen as choices and possibilities rather than a checklist for perfection. Initiatives can be failed and tried again, which is an essential component linking game design (McGonigal, 2011) and career development (Krumboltz, 2008).

Just as a certain population of students with disabilities is not the only group or context that can benefit from GDCC, the theories mentioned in this article are not the only theories to be infused. The style of a game is just as much a professional decision-making process as the selection of career theories that best complement one another in service of the students' needs.

Conclusion and Future Directions

The key to infusing game design into career counseling is to affix a feedback loop that makes each intervention or experience relevant to (a) practices that work, and (b) the participants' experiences (Bell, 2018). The examples from *WorkWorld* provided in this manuscript come from a game that has not been tested in sum, and there is paucity in the literature when it comes to the use of games in career counseling. The next steps for GDCC include a field trial for game design components, and for VR agencies and schools to set aside resources and time to design career preparation experiences for their students. By assembling such career development experiences in a coherent and engaging manner, ongoing assessment can be used to inform the construction of student career development portfolios. Student portfolios can then be used to document career preparation assessment artifacts in lieu of more traditional work experiences found on a resume. Readers looking to design GDCC interventions can look into augmented reality, simulation, and immersion game design. The field of education has *games for learning* communities that study and publish on game design, with adaptable

training and materials. The influx of gaming into student development spaces is inevitable.

Because career counseling and assessment structures and theories remain relevant throughout

student career development, rehabilitation counselors and vocational evaluators offer agility and

utility when game design is harnessed for this process.

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