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Increasing students' career readiness through career guidance: measuring the impact with a validated measure

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ABSTRACT

Career readiness is an important short-term outcome of career guidance activities in England. This research (1) details the development of a career readiness measure and (2) tests the relationship between career guidance interventions and career readiness among secondary school students. The measure was piloted on pupils (Study 1, $N = 1508$) in England taking part in a career guidance pilot programme. The instrument fitted a nine-item one-factor structure. In Study 2 ($N = 2240$), we found further evidence the factor structure was a good fit to the data. In Study 3 ($N = 5242$), we tested the relationship between career guidance activities and career readiness. Greater participation in career guidance activities was significantly associated with increased career readiness. These findings have implications for policymakers and researchers.

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Introduction

Young people in England are experiencing lengthening transitions to the workplace, more complex transition pathways (Mann & Huddleston, 2017) and depressed wages (Gardiner & Gregg, 2017) once they actually enter the labour market. Concerns with the work and career readiness of young people, alongside other policy concerns such as social mobility and domestic skills alignment in the wake of Brexit has led to new policies which reaffirm the importance of providing young people with career support while at school. The UK Government has launched a "careers strategy" for England (Department for Education [DfE], 2017) which builds on the framework set out by the Gatsby Charitable Foundation (2014) to improve the quality of career guidance available to young people in England.

Policymakers are typically interested in the impacts that career guidance can make on a range of policy areas. However, such impacts can be difficult to directly demonstrate particularly as many of them require longitudinal tracking and controls to be in place to isolate the intervention of interest from other possible attributing factors. A number of useful pieces of evidence suggest that there are links between career programmes and such impacts (Hughes et al., 2016; Kashefpakdel & Percy, 2017; Mann et al., 2018), but do not necessarily offer tools which can be easily deployed to evaluate new initiatives. Psychometric measures offer the possibility of measuring outcomes over a shorter period of time and also offer definitive and quantitative data that may offer policy makers certainty. A range of psychometrics exist which have been used to identify impact the impact of career development interventions (Arulmani, 2012, 2014, 2015; Shrestha et al., 2018; Viray, 2017) but there is no

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tool which is designed for the context of career guidance policy and practice in English schools. In England, these measures are increasingly deployed, particularly in relation to the identification and measurement of non-cognitive skills which are associated with young people's participation and success in the education system (Gutman & Schoon, 2013; Wigglesworth et al., 2017).

Within England, a broad-based definition of career guidance has been adopted based on the eight Gatsby Benchmarks (Gatsby Charitable Foundation, 2014). These state that schools and colleges should provide young people with a multi-faceted series of career guidance interventions including addressing career in the curriculum, providing access to labour market information, brokering encounters with employers and the world of work and professional one-to-one personal guidance. The aims of such interventions are to:

inspire pupils towards further study and enable them to make informed decisions whenever choices are open to them ... to understand enough about the world of work to know what skills they need to succeed. It is important for social mobility because it helps open pupils' eyes to careers they may not have considered. (p. 6)

Career guidance in this sense describes a range of school-based interventions which seek to prepare young people for their transition to their post-secondary school lives and to empower them to be successful in their lives and careers. In other words, it is based on the premise that an increase in the quantity and quality of career guidance will lead to an increase in young people's career readiness.

There are a range of existing proxy and direct measures of career readiness. Many of these are rooted in the language of "college and career readiness" that is used in the United States of America to describe and assess cognitive strategies, content knowledge, contextual skills and academic behaviours (Conley, 2007). Several measures have been used to measure college and career readiness (Lombardi et al., 2011; Lombardi et al., 2013). Gysbers's (2013) definition of "career readiness" is a much better fit for the English context as it recognises a variety of transitions for which young people may plan, takes a more holistic view of career and is conceptually distinct from the measurement of academic competence. Gysbers (2013) stated that career-ready students have the knowledge, skills and attitudes to map and plan for their futures. This definition connects strongly with the definition of career readiness that is set out in current UK policy which argues that young people should:

understand their options and different paths to work, to plan the steps they need to take, and to get from where they are to where they want to go; be inspired about new opportunities they might not have known about (or that might not exist yet), or thought they could not achieve; understand their own knowledge and skills and how they can be used in the workplace; get, hold and progress in a job, whatever their age, ability or background; increase the amount they earn across their working lives; improve their well-being through doing a job they are good at and enjoy. (DfE, 2017, p. 5)

In this article, we describe the development of a measure of career readiness suitable for use within the English secondary school and vocational education system. In the next section, we discuss our concept of career readiness and explore the need for contextually relevant instruments. We then go on to present the validation of our measure and explore the substantive results produced when we used it as part of the evaluation of the Gatsby pilot.

The studies

Two of three studies describe the development of a career readiness measure for use with young people (aged 12–18) in England. The development of this instrument was part of a wider four-year evaluation of a large-scale career education pilot in the North East of England in which 16 schools and colleges took part. A third study was conducted which explored the antecedents of career readiness. We examined whether an increase in the quantity and quality of career guidance would lead to an increase in young people's career readiness. This hypothesis would be anticipated when career guidance is delivered as a range of school-based interventions which seek to prepare

young people for post-school life. This study used three years of unmatched data collected in 2016, 2017 and 2018.

Study 1

The development of the Student Career Readiness Index (SCRI) was completed through a review of available measures, mapping of relevant policy and practice frameworks, expert review, cognitive testing, gathering pilot data and factor analysis. The first two stages were used for item generation while the remaining four stages were used to refine the instrument. This process resulted in a nine-item instrument.

Review of available measures

We reviewed the literature to identify suitable instruments to measure career readiness. Melvin and Lenz's (2014) review led us to a short list of possible measures (e.g. Betz et al., 1996; Sampson et al., 1998; Savickas & Porfeli, 2012; Taylor & Betz, 1983) which were assessed for their viability. We were guided by three main questions: (1) could the instrument serve as a measurement of career readiness (or contribute towards such a measurement), (2) was the language of the instrument relevant for the English context in which it was to be mobilised and (3) was the language of the instrument suitable for students aged 11–18.

Our initial review failed to provide us with a ready-to-use instrument. All instruments reviewed were embedded in the North American context. Most were designed with university students or adults in mind rather than school-age students. This is perhaps unsurprising as Watson et al. (2011) highlighted that career assessments are psycho-social and they describe the relationship between an individual and their context. Watson et al. made a useful distinction between *cultural validity* (does a particular instrument remain valid when used in a different cultural context to the one in which it was originated) and *cultural specificity* (does an instrument recognise the concepts that are culturally important and meaningful). Elsewhere Blustein and Ellis (2000) made a similar point by noting that career assessment practice needs to embrace the local within diverse cultural contexts. In this study, we decided that it would be insufficient merely to revalidate an existing scale from another cultural context. We determined that we needed to develop an instrument with cultural specificity to the English policy and practice context that we were studying.

We began by selecting the instrument that most closely aligned to our objectives to mitigate some of the disadvantages of initial instrument development. We identified Betz et al.'s (1996) short form of the career decision-making self-efficacy scale as the instrument with the clearest face validity for the UK context. We were not intending to revalidate the Betz et al. instrument but to use this instrument as a shortcut for initial item generation. The items were reworded to increase their relevance to the English context. For example, we changed "Select one major from a list of potential majors you are considering" to "Choose a course that you are interested in studying from a list of possible courses."

Framework mapping

The initial items from the short form of the career decision-making self-efficacy scale were mapped onto four frameworks used in English career development practice in schools and vocational education. These were the Gatsby Benchmarks (Gatsby Charitable Foundation, 2014), the Decision learning, Opportunity awareness, Transition learning and Self-awareness (DOTS) framework (Law & Watts, 2015), the English Blueprint for Careers (Learning and Skills Improvement Service, 2012) and the Career Development Institute (CDI) Framework for Careers, Employability and Enterprise Education 7–19 (CDI, 2015). These frameworks variously describe practice and codify its anticipated outcomes.

The mapping consisted of coding each item in the four frameworks to a question on our translated Betz et al. question set. A new item was created where an outcome was described in a framework that did not appear in the existing list of items. This resulted in the addition of 12 items (a total

of 37 items). This approach to item generation is innovative because it does not begin from theory (e.g. a literature-based concept of career readiness). Rather it offers an approach which makes explicit the aims and definition of career readiness that exist in policy and practice.

Expert review

Ten experts including teachers, career practitioners and academics involved in career development with young people in England were invited to provide input into the development the SCRI. They were asked to assess the relevance of each of the items to career readiness and whether the language was suitable. We followed Lawshe's (1975) content validity ratio in order to make decisions about whether to disregard an item. As a result of the expert review, nine items were removed resulting in a 29-item survey.

Following the expert review, a full draft of the SCRI was prepared. We opted for a unipolar scale of agreement (where 0 = I don't know, 1 = I don't agree, 2 = I slightly agree, 3 = I somewhat agree, 4 = I mostly agree, 5 = I completely agree). "I don't know" was coded as 0 as a result of other research on the measurement of college and career readiness which suggests that respondents who respond "I don't know" are less aware of successful college and career readiness practices and behaviours than those with the lowest rating (Lombardi et al., 2013).

Cognitive testing

Researchers completed cognitive testing for the SCRI. Cognitive testing is an important phase for survey development particularly for target populations in which the researchers are not a part (Lippman et al., 2014). Cognitive testing helps to identify issues with item wording and helps to ensure that the instrument is culturally relevant and comprehensible to the target population. Eight students aged 12–17 were recruited to test the instrument including boys and girls. The eight students were interviewed individually by a researcher and asked to complete the instrument online. Non-verbal and verbal responses were noted by the researcher.

The researcher worked through a number of feedback questions and participant's overall perception of the instrument. They received additional feedback on phrasing or relevance of items. The cognitive testing resulted in the amendment of four questions for clarity.

Gathering pilot data

The SCRI was disseminated as a part of a wider, four-year evaluation strategy of a two-year programme running in the North East of England. Sixteen schools and colleges took part in the pilot. Teachers received guidance on how to engage the students to complete the survey. Students from Years 8, 10 and 12 were targeted for the sample. Participants completed the survey online using the SurveyMonkey platform in Autumn 2016. We received 1929 initial responses to the survey. We deleted cases that did not respond to all items developed from the career readiness survey. This resulted in the deletion of 421 cases or approximately 22% of respondents due to item nonresponse.

Principal axis factoring

A total of 1508 cases were used in the analysis. Participants ranged from age 12–18 ($M = 16.39$, $SD = 2.15$). In terms of gender, 45.2% were male, 52.1% were female and 2.7% preferred not to say. Most participants identified as white (95.8%) while 1.2% identified as multiple ethnic groups, 1.1% were Asian/Asian British, 0.7% identified as Black or African, Caribbean or Black British, 0.3% identified as another ethnic group and 1.1% preferred not to say.

We conducted principal axis factoring using varimax rotation in SPSS 24 to obtain a parsimonious structure from the SCRI (Gorsuch, 1983). Items were removed with low values of loadings (<0.50), low communalities (<0.3), and cross loadings (Field, 2005). These thresholds were stringent enough to support a parsimonious and stable measure of career readiness while suppressing low factors (Comrey & Lee, 1992).

After the first iteration, we conducted a parallel analysis in order to determine the appropriate number of factors to extract. Parallel analysis is considered a more accurate determination of factors to extract rather than an “Eigenvalue greater than 1” criterion as it compares extracted Eigenvalues from our dataset and Eigenvalues from a randomly generated matrix (Patil et al., 2008; Zwick & Velicer, 1986). The analysis suggested a two-factor solution which was forced for every subsequent iteration. A total of seven iterations were conducted. At the sixth iteration, the second-factor items had communalities under .30 items. These were removed from the scale which resulted in a final one-factor solution with nine items. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was .90 and Bartlett’s test of sphericity was significant (<.001). The items loaded onto one factor explaining 44.03% of the variance (Table 1).

Study 2

Participants in the second study were part of a second wave of data collection in Autumn 2017 and were different from those sampled in the first study. There were 2640 responses to the survey. Approximately 15% of the dataset, amounting to 419 cases were deleted from the dataset as a result of item nonresponse, and 2221 cases were used in the analysis. The scale was examined for skewness and kurtosis. The scale had some negative skew (−1.13) and kurtosis of 1.15. We did not delete further cases given that kurtosis was not over 3.

In terms of gender, 44.3% were male, 53.4% were female and 2.3% preferred not to say. Most participants identified as white (91.3%) while 1.4% identified as multiple ethnic groups, 4.2% were Asian/Asian British, 0.9% identified as Black or African, Caribbean or Black British, 0.9% identified as another ethnic group and 1.3% preferred not to say.

A confirmatory factor analysis (CFA) was fitted in SPSS AMOS 24. Our main indicators of fit were the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and the Root Mean Square Error of Approximation (RMSEA). CFI and TLI are considered acceptable above .90 while RMSEA is considered acceptable at .1 and excellent at .06 (Browne & Cudeck, 1993; Kline, 2011). For our model, CFI = 0.93, TLI = 0.91 and RMSEA = 0.10. The model fit was considered good for the three main indicators.

We conducted both configural and metric invariance tests for three variables: Key stage, ethnicity and gender. For the configural models, the model is fitted so the structure should remain constant across groups (Duffy et al., 2017). If the model is a poor fit, the organisation of items may be different for the defined groups. For the metric invariance models, both the variable configuration and all factor loadings are held constant for each group in the model. If the configural model has a significantly worse fit than the metric model, then factor loadings may vary in size between the two groups. Indicators of fit for both models must be acceptable in line with the CFA section. In addition, in order to determine whether the model fit significantly changes in terms of the two invariance tests, we tested according to a change in CFI of at least 0.01. We were looking for no significant difference across the two models in order to ensure that the factor structure does not vary across the three characteristics. For gender, we created a dummy variable where 0 = female and 1 = male. For

Table 1. Final scale of the SCRI from factor analysis.

Items

I can find out how much people in different types of jobs earn
 I can find out information about how jobs and careers may change in the future
 I can choose a career that will allow me to live the life I want to lead
 I can assess my strengths and weaknesses
 I will continue to work for my career goal even when I get frustrated or hit a barrier
 I can decide what is most important to me in my working life
 I can identify employers and organisations relevant to my career interests
 I will continue to work at my studies even when I get frustrated
 I can choose a career that fits with what I am good at

ethnicity, we created a dummy variable where 0 = black and minority ethnic and 1 = white. For key stage we created a dummy variable where 0 = Key Stages 4 and 5 and 1 = Key Stage 3.

Gender

The configural model for gender had a good fit, $\chi^2_{(54)} = 743.21$ $p < .001$, CFI = .93, TLI = .91, RMSEA = .08. Fit was not significantly different for the metric invariance model where $\chi^2_{(63)} = 756.31$ $p < .001$, CFI = .93, TLI = .92, RMSEA = .03 with a Δ CFI = .000.

Ethnicity

The configural model for ethnicity had a good fit, $\chi^2_{(54)} = 755.81$ $p < .001$, CFI = .93, TLI = .91, RMSEA = .08. Fit was not significantly different for the metric invariance model where $\chi^2_{(63)} = 766.69$ $p < .001$, CFI = .93, TLI = .92, RMSEA = .07 with a Δ CFI = .001.

Key stage

The configural model for key stage had a good fit, $\chi^2_{(54)} = 734.45$ $p < .001$, CFI = .93, TLI = .91, RMSEA = .08. Fit was not significantly different for the metric invariance model where $\chi^2_{(63)} = 784.42$ $p < .001$, CFI = .93, TLI = .92, RMSEA = .07 with a Δ CFI = .004.

The iterative design process as well as the results of the PAF and the CFA tests suggested that the SCRI has good content and construct validity. Measurement invariance tests were conducted and found the survey was interpreted similarly between gender, ethnicity and key stage. This version of the SCRI was deployed as a measure of career readiness for Study 3.

Study 3

In the final study we sought to identify the antecedents of career readiness. In particular, we were interested in whether engagement in career guidance (as defined by the Gatsby Benchmarks) was positively associated with higher career readiness.

A total of 5242 cases were used in the analysis; this included respondents from Studies 1 and 2 as well as 1513 respondents from the third year of data collection. Cases with missing data from the SCRI or career activity items were removed. Analyses were run in SPSS 24 and employed listwise deletion for the handling of missing data. Participants ranged from age 12 to 18 ($M = 15.16$, $SD = 2.13$). In terms of gender, 46% were male, 53.4% were female and 0.6% preferred not to say. Most participants identified as white (92.1%) while 1.4% identified as multiple ethnic groups, 3.4% were Asian/Asian British, 0.6% identified as Black or African, Caribbean or Black British, 0.6% identified as another ethnic group and 1.4% preferred not to say.

Several other measures formed part of the overall online survey in which the SCRI was included. Respondents indicated the school or college they attended and up to 15 Gatsby aligned career-related activities they recalled taking part in over the preceding academic year. School self-assessment audit data were used to establish the number of Gatsby Benchmarks held by the school/college during each academic year (see Hanson et al., 2019) (Table 2).

Exploratory analyses

Descriptive and exploratory analyses were conducted to identify whether career readiness changed over the course of the pilot. Mean career readiness scores were found to increase across the three years of data collection (2016, 2017, 2018) as shown in Table 3.

A one-way ANOVA revealed that the increases in career readiness across the three years were statistically significant, $F_{(2, 5239)} = 449.079$, $p = .000$. Post hoc tests (Tukey) revealed that the mean score from 2016 was significantly different ($p < .001$) to that of 2017 and 2018, but that the 2017 and 2018 scores were not statistically different from each other.

Table 4 shows the mean age, number of activities recalled, number of Benchmarks held by school/college and career readiness for the sample ($N = 5242$) and the interrelationships between these

Table 2. Career-related activity items.

Items
I have talked to a current apprentice
I have accessed information about apprenticeships
I have completed work experience (not a part-time job)
I have visited a university
I have accessed information about universities
I have visited a college or currently attend a college
I have met someone from the world of work (while at school or college)
I have accessed information about colleges or currently attend a college
My school or college has a careers programme
I can access information that my school or college keeps about me (e.g. the advice that I was given about subject choices or my future career)
I have accessed information about work and careers
There is information about my school or college careers programme online
I have learnt about careers in my science lessons
I have visited a workplace and the visit was organised by my school or college
I have had an interview with a careers adviser

Table 3. Mean career readiness and standard deviations for each year of data collection.

	Mean	SD
2016	25.76	9.78
2017	33.47	8.59
2018	33.92	8.30

Note: The theoretical range was 0–45, where 0 indicates very low levels of career readiness and 45 is very high levels of career readiness.

three variables. Age, number of activities recalled and number of Benchmarks held were intercorrelated positively and significantly, although the strength of association ranged from weak to modest. For example, career readiness was significantly and positively correlated with the number of Benchmarks held by the school/college ($r = .338, p < .000$) and number of activities recalled ($r = .335, p < .000$).

The remaining independent variables were categorical (gender, ethnicity, school/college attended). Learners from colleges were significantly smaller in number than learners from schools so the comparison was skewed and indeed some colleges provided no responses at all. Typically, learners from colleges reported higher career readiness scores than learners in schools, however, learners in colleges are older (aged 16+) than learners in schools (aged 11–18 years) and this difference in career readiness was a function of age rather than educational institute type (i.e. it disappeared when age was controlled for). As a result, school/college was removed from further analyses.

Ethnicity as originally measured was converted to a two-category variable (white, Black and minority ethnic) variable due to low sample sizes from some ethnic groups. Mean career readiness scores for these two groups can be seen in Table 5 alongside means for gender. A one-way ANOVA did not reveal any statistically significant differences in career readiness scores between females and males or between white and Black and minority ethnic (BME) groups.

Table 4. Means, standard deviations and Pearson correlation coefficients of age, number of benchmarks, number of activities and career readiness.

Variable	Mean	SD	1	2	3
Age of student	15.16	2.14			
Number of benchmarks	5.36	2.08	.077**		
Number of activities	6.80	3.49	.485**	.183**	
Career readiness	31.05	9.67	.182**	.338**	.335**

Note: ** $p < .001$ (two tailed)

Table 5. Mean career readiness by gender and ethnicity.

	<i>N</i>	Mean	SD
<i>Gender</i>			
Female	2797	31.19	9.64
Male	2445	30.90	9.69
<i>Ethnicity</i>			
White	4829	31.11	9.65
BME	322	30.99	9.38

Regression analyses

Hierarchical regression analyses were conducted to test for direct effects of the independent variables on the dependent variable career readiness. Preliminary analyses showed the data were distributed normally and those independent variables had linear relationships with career readiness. The tolerance results (0.663) suggested that there was no multicollinearity (Pallant, 2016). The normal probability plot of the regression standardised residual and scatterplot showed that the data lay in a largely straight line along the diagonal and residuals were appropriately distributed with most scores concentrated in the centre. There were no outliers in the sample.

The analysis controlled for the year of study (Step 1). At Step 2, student's age, gender and ethnicity were entered. At Step 3, the number of recalled activities and Benchmarks fully achieved by the student's school or college were entered. The variance accounted for by each model is presented in Table 6 and unique variance accounted for by each predictor.

Model 1 accounted for 11.5% of the variance in career readiness ($F_{[1,5034]} = 657.59, p = .000$). Model 2 accounted for 14.7% of the variance and this increase was statistically significant ($F_{[3,5034]} = 77.32, p = .000$). Model 3 accounted for 22% of the variance in career readiness and this increase was statistically significant also ($F_{[2, 5029]} = 214.31, p = .000$). Further analyses to determine effect size suggested that number of Benchmarks held by the education provider and number of activities recalled both had a moderate effect on career readiness. Table 7 shows that neither gender nor ethnicity (white, BME) were significant predictors of career readiness and accounted for no unique variance. However, age had a significant and positive relationship with career readiness. In addition, having neither, one or both parents with a degree – compared to not knowing whether your parents have a degree – was significantly associated with increased career readiness. The number of activities engaged with and number of Benchmarks held by the school/college both accounted for unique variance in career readiness with more activities and more Benchmarks associated with greater career readiness.

Further testing was conducted to clarify the exact nature of the relationships between the predictor variables and career readiness (see Figure 1). The differences between Models 2 and 3 suggested that although age has some influence on career readiness, its primary influence might be indirect, via the number of recalled activities. There is a strong, positive significant correlation between age and number of activities. A mediation analysis was conducted using Hayes Process v3.3 macros (in SPSS) to test whether the effect of age on career readiness was mediated by recalled activities. There was a significant direct effect of age on career readiness ($b = .1374, SE = .0683, p = .04$) but this only just reached statistical significance. Age was a significant predictor of number of activities undertaken, ($b = .7904, SE = .0199, p = .000$) indicating that older students were more likely to have undertaken more activities. The indirect effect (IE = .7019) was statistically significant: 95%CI = (.6326, .7765).

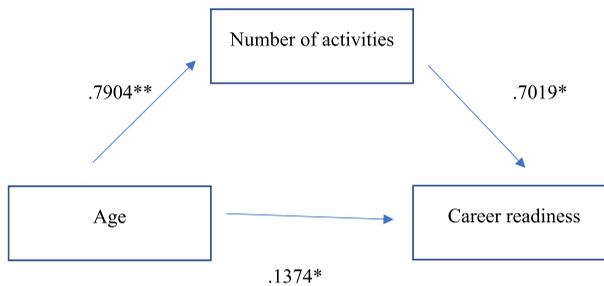
Table 6. Variance accounted for by the tested models.

Model	Adjusted R^2	Std. error of the estimate	R^2 change	F change	p
1	.115	9.12	.114	657.59	.000
2	.147	8.92	.039	77.32	.000
3	.220	8.54	.066	214.30	.000

Table 7. OLS multiple hierarchical regression analysis of career readiness.

Variable	Model 1	Model 2	Model 3
Constant	22.658	10.260	13.744
Year of evaluation study	.336**	.334**	.203**
Age		.181**	.045**
Gender		.00	.004
Ethnicity		.011	.017
Number of activities			.254**
Benchmarks achieved			.170**
Adjusted R^2	.113	.146	.220
F change	657.59*	77.32*	239.68*

Note: * $p < .005$, ** $p < .001$

Figure 1. Mediation model for age, number of activities and career readiness. $p < .05$, ** $p < .001$.

Multiple hierarchical regression analyses suggested that neither gender nor ethnicity was related to career readiness. The primary predictors of career readiness were the number of career-related activities done (partly a result of age) and the number of Benchmarks fully achieved by the school/college attended.

Discussion

The goal of the first two studies was to validate a measure of student career readiness for young people in England. We will begin by discussing this process and wider implications for instrument development. We will then discuss Study 3 and the efficacy of career guidance to enhance student career readiness.

The development of a career readiness measure for English schools

The research was aimed at identifying or developing a valid career readiness measure for secondary school students. We were unable to find an existing culturally relevant measure and so developed the SCRI presented here. The instrument development process followed in Studies 1 and 2 is robust and designed to produce an instrument relevant to local policy and practice. The SCRI has the added value that, at nine items, it is parsimonious and suitable for use in practice contexts and as a pre–post-evaluation measure.

The approach to instrument development and validation paid close attention to the policy and practice context. This inductive approach is different from typical scale development approaches. At the centre of SCRI development was a mapping to relevant policy and practice frameworks. The expert review and cognitive testing served to refine the instrument and increase its relevance.

This process of contextualised validation could be useful to others interested in creating tools in specific policy and practice contexts.

This approach focuses on applicability and policy context in the first instance. Given the approach used, we would propose a six-stage process for developing policy and context relevant measurement instruments: (1) identification of desired outcomes of the intervention and review of existing measures; (2) generating items through the identification of a “good enough” instrument to serve as a starting point, followed by the mapping of relevant policy and practice framework onto this starting point to expand the range of culturally specific items; (3) expert review by diverse local experts of the resulting instrument to check its fidelity to policy and practice; (4) cognitive testing with the intended users of the instrument to ensure its usability; (5) gathering pilot data and using factor analysis to explore factor structure; and (6) using CFA to finalise the instrument and the approach to analysis.

The impact of career guidance on career readiness

Study 3 demonstrates that career readiness is associated with a range of variables including both demographic and intervention variables.

Demographic variables

Levels of career readiness reported by students did not vary by gender or ethnicity. We would treat our results on ethnicity with caution. Over 92% of respondents were white which ruled out testing with a range of ethnicity categories. Analyses were run with non-white ethnic participants grouped together. This process obscures potentially significant differences between different ethnic groups.

We hypothesised that because gender impacts educational and vocational choices (DeWitt & Archer, 2015; Wang et al., 2013) it would impact career readiness. This was not the case with our data. However, previous literature measuring career readiness in other contexts found mixed results, with some reporting limited or no relationship (Hirschi & Läge, 2007) and other studies finding gender differences in career readiness (Mansor & Tan, 2009). Analyses of gender on individual items in the SCRI revealed no significant differences other than on the item, “I will continue to work on my studies even when I get frustrated.” Females reported a mean of 3.32, males reported a mean of 3.15 ($t = -3.472, p = .001$). This may simply be an artefact of overtesting. Other research suggests that whilst females of school age can be more resilient than males, this changes in adolescence with males showing more resilience (NCH The Bridge Child Care Development Service, 2007). It will be important for future scholars using the instrument to further explore gender and career readiness.

The study found that individuals become more career ready as they get older. This echoes developmentalist traditions in career theory (Ginzberg et al., 1951; Super, 1990) recalling normative concepts like “career maturity” (Patton & Creed, 2001) which propose an associative link between age and career readiness. Study 3 also found that a significant proportion of this relationship was explained by participation in career guidance. It may be the rest of the association is linked to wider educational experiences, rather than the process of chronological aging.

Intervention variables

There is a clear association between higher levels of participation in career guidance and higher levels of career readiness. This relationship can be seen both when individuals self-report career guidance participation and also with school audit data. This triangulation is useful because it increases confidence in the substantive finding and it suggests that both approaches (student self-reporting and institutional reporting of interventions) are viable for future evaluations of career guidance provision.

The significant association that exists between career guidance and career readiness is important as it indicates that career readiness is a relevant measure for use in evaluations. It provides evidence

that career guidance (as defined by the Gatsby Benchmarks) has a clear and demonstrable psychometric impact, of moderate effect size, on career readiness.

Conclusions and future research

The present studies detail the development of the SCRI and the antecedents of career readiness. This resulted in a nine-item scale which is valid measure of career readiness. The development of the SCRI was undertaken robustly over a number of years. The scale was developed to measure career readiness as an outcome of a large-scale career guidance intervention. This scale could be useful to UK schools as the policy under which it was created is scaled up nationally. We would like to see other researchers make use of this instrument and explore its utility in other contexts. Career guidance practitioners may find the tool useful to facilitate career conversations with young people. Revalidating the instrument with a range of different user groups and in different contexts would increase our confidence in its measurement of career readiness and its usefulness as an evaluation tool. The process to scale development used here provides a useful starting point for evaluators or researchers as they create tools to measure policy-specific interventions.

Future studies should identify factors which underpin changes in career readiness that we have observed taking place over time in order to further develop career guidance provision. We would also like to see how career readiness interacts with other factors, notably academic attainment and participation in extra-curricular activities. This is one avenue for schools/colleges to identify those at risk and to tailor provision. Finally, it is important to look at the extent to which career readiness is predictive of career success as evidenced by salary, wellbeing and other measures.

The study supports claims about the effectiveness of career guidance. We have found that participation in career guidance has a significant impact on young people's career readiness and that higher levels of participation are associated with higher levels of career readiness. This should give policy-makers some comfort about current careers policy and encourage them to focus on how the majority of schools across the country can be supported to deliver on the Gatsby Benchmarks.

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References

- Arulmani, G. (2012). *Career preparation status questionnaire*. The Promise Foundation.
- Arulmani, G. (2014). The cultural preparation process model and career development. In G. Arulmani, A. J. Bakshi, F. T. L. Leong, & A. G. Watts (Eds.), *Handbook of career development: International perspectives* (pp. 81–104). Springer International.
- Arulmani, G. (2015). The question is the answer: The cultural preparedness approach to assessment for career guidance. In M. McMahon & M. Watson (Eds.), *Career assessment: Qualitative approaches* (pp. 207–220). Sense.
- Betz, N. E., Klein, K. L., & Taylor, K. M. (1996). Evaluation of a short form of the career decision-making self-efficacy scale. *Journal of Career Assessment*, 4(1), 47–57. <https://doi.org/10.1177/106907279600400103>
- Blustein, D., & Ellis, M. (2000). The cultural context of career assessment. *Journal of Career Assessment*, 8(4), 379–390. <https://doi.org/10.1177/106907270000800407>
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of Assessing model Fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Sage.
- Career Development Institute. (2015). *Framework for careers, employability and enterprise education*. Stourbridge: Career Development Institute.
- Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis* (2nd ed.). Lawrence Erlbaum Associates.
- Conley, D. T. (2007). *Toward a comprehensive conception of college readiness*. Educational Policy Improvement Center. Department for Education. (2017). *Careers strategy: Making the most of everyone's skills and talents*.
- DeWitt, J., & Archer, L. (2015). Who aspires to a science career? A comparison of survey responses from primary and secondary school students. *International Journal of Science Education*, 37(13), 2170–2192. <https://doi.org/10.1080/09500693.2015.1071899>
- Duffy, R., Allan, B., Blustein, D., England, J., Douglass, R., & Santos, E. (2017). The development and initial validation of the decent work scale. *Journal of Counseling Psychology*, 64(2), 206–221. <https://doi.org/10.1037/cou0000191>
- Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). Sage.
- Gardiner, L., & Gregg, P. (2017). *Study, work, progress, repeat? How and why pay and progression outcomes have differed across cohorts*. The Resolution Foundation.
- Gatsby Charitable Foundation. (2014). *Good career guidance*.
- Ginzberg, E., Ginsburg, S. W., Axelrad, S., & Herma, J. L. (1951). *Occupational choice: An approach to a general theory*. Columbia University Press.
- Gorsuch, R. (1983). *Factor analysis* (2nd ed.). Lawrence Erlbaum Associates.
- Gutman, L. M., & Schoon, I. (2013). *The impact of non-cognitive skills on outcomes for young people*. The Institute of Education.
- Gysbers, N. C. (2013). Career-ready students: A goal of comprehensive school counseling programs. *Career Development Quarterly*, 61(3), 283–288. <https://doi.org/10.1002/j.2161-0045.2013.00057.x>
- Hanson, J., Vigurs, K., Moore, N., & Clark, L. (2019). *Gatsby careers benchmark north east implementation pilot: Interim evaluation (2015-2017)*. University of Derby.
- Hirschi, A., & Läge, D. (2007). The relation of secondary students' career-choice readiness to a six-phase model of career decision making. *Journal of Career Development*, 34(2), 164–191. <https://doi.org/10.1177/0894845307307473>
- Hughes, D., Mann, A., Barnes, S. A., Baldauf, B., & McKeown, R. (2016). *Careers education: International literature review*. Education Endowment Foundation.
- Kashefpakdel, E. T., & Percy, C. (2017). Career education that works: An economic analysis using the British cohort study. *Journal of Education and Work*, 30(3), 217–234. <https://doi.org/10.1080/13639080.2016.1177636>
- Kline, R. B. (2011). *Principles and practice of structural equation modelling*. Guildford.
- Law, B., & Watts, A. G. (2015). Careers education. In T. Hooley & L. Barham (Eds.), *Career Development in policy and practice: The Tony Watts Reader* (pp. 71–79). Highflyers.
- Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel Psychology*, 28, 563–575. <https://doi.org/10.1111/j.1744-6570.1975.tb01393.x>
- Learning and Skills Service. (2012). *A guide to the Blueprint for Careers and its implementation*. Coventry.
- Lippman, L. H., Moore, K. A., Guzman, L., Ryberg, R., McIntosh, H., Ramos, M. F., Caal, S., Carle, A., & Kuhfeld, M. (2014). Cognitive interviews: Designing survey questions for adolescents. In L. Lippman, K. Moore, L. Guzman, & R. Ryberg (Eds.), *Flourishing children* (pp. 25–43). New York: Springer.
- Lombardi, A., Conley, D., & Downs, A. (2013). College and career readiness assessment: Validation of the key cognitive strategies framework. *Assessment for Effective Intervention*, 38(3), 171. <https://doi.org/10.1177/1534508412448668>
- Lombardi, A., Seburn, M., & Conley, D. (2011). Development and initial validation of a measure of academic behaviours associated with college and career readiness. *Journal of Career Assessment*, 19(4), 375–391. <https://doi.org/10.1177/1069072711409345>
- Mann, A., & Huddleston, P. (2017). Schools the twenty-first century labour market: Perspectives on structural change. *British Journal of Guidance and Counselling*, 45(2), 208–218. <https://doi.org/10.1080/03069885.2016.1266440>

- Mann, A., Rehill, J., & Kashefpakdel, E. (2018). *Employer engagement in education: Insights from international evidence for effective practice and future research*. Education Endowment Foundation.
- Mansor, A. T., & Tan, K. (2009). Influence of gender on career readiness among Malaysian undergraduates. *Australian Journal of Career Development*, 18(2), 33–44. <https://doi.org/10.1177/103841620901800206>
- Melvin, B., & Lenz, J. (2014). Assessing career readiness factors and personality type: Implications for practice. *Vistas Online*. Article 48. Retrieved October 28, 2015, from http://www.counseling.org/docs/default-source/vistas/article_48.pdf?sfvrsn=8
- NCH The Bridge Child Care Development Service. (2007). *Literature review: Resilience in Children and young people*. London: NCH The Bridge Child Care Development Service.
- Pallant, J. (2016). *SPSS survival manual*. Maidenhead: Open University Press.
- Patil, V. H., Singh, S. N., Mishra, S., & Donovan, T. (2008). Efficient theory development and factor retention criteria: A case for abandoning the 'Eigenvalue greater than one' criterion. *Journal of Business Research*, 61(2), 162–170. <https://doi.org/10.1016/j.jbusres.2007.05.008>
- Patton, W., & Creed, P. (2001). Developmental issues in career maturity and career decision status. *The Career Development Quarterly*, 49(4), 336–351. <https://doi.org/10.1002/j.2161-0045.2001.tb00961.x>
- Sampson, J., Peterson, G., Lenz, J., Reardon, R., & Saunders, D. (1998). The design and use of a measure of dysfunctional career thoughts among adults, college students, and high school students: The career thoughts inventory. *Journal of Career Assessment*, 6(2), 115–134. <https://doi.org/10.1177/106907279800600201>
- Savickas, M., & Porfeli, E. (2012). Career adapt-abilities scale: Construction, reliability and measurement equivalence across 13 countries. *Journal of Vocational Behavior*, 80(3), 661–673. <https://doi.org/10.1016/j.jvb.2012.01.011>
- Shrestha, S., Regmi, S., Aravind, S., & Arulmani, G. (2018). Development of a culturally resonant career guidance programme for community schools in Nepal: The process and outcomes. *Indian Journal of Career and Livelihood Planning*, 7(1), 3–4. http://iaclp.org/yahoo_site_admin/assets/docs/2_Sunita.12230740.pdf.
- Super, D. E. (1990). A life-span, life-space approach to career development. In D. Brown & L. Brooks (Eds.), *Career choice and development* (pp. 197–261). Jossey-Bass.
- Taylor, K., & Betz, N. (1983). Applications of self-efficacy theory to the understanding and treatment of career indecision. *Journal of Vocational Behavior*, 22(1), 63–81. [https://doi.org/10.1016/0001-8791\(83\)90006-4](https://doi.org/10.1016/0001-8791(83)90006-4)
- Viray, M. M. (2017). A school-based intervention study of urban and rural indigenous high school students in the East khasi hills district, meghalaya. *Indian Journal of Career and Livelihood Planning*, 6(1), 29–43. [http://www.iaclp.org/yahoo_site_admin/assets/docs/6_Viray_Intervention_29-45.119220302.pdf<otherinfo>\]</otherinfo](http://www.iaclp.org/yahoo_site_admin/assets/docs/6_Viray_Intervention_29-45.119220302.pdf<otherinfo>]</otherinfo).
- Wang, M., Eccles, J., & Kenny, S. (2013). Not lack of ability but more choice: Individual and gender differences in choice of careers in science, technology, engineering, and mathematics. *Psychological Science*, 24(5), 770–775. <https://doi.org/10.1177/0956797612458937>
- Watson, M., Duarte, M., & Glavin, K. (2011). Cross-cultural perspectives on career assessment. *The Career Development Quarterly*, 54(1), 29–35. <https://doi.org/10.1002/j.2161-0045.2005.tb00138.x>
- Wiglesworth, M., Humphrey, N., & Stephens, E. (2017). *Social, psychological, emotional, concepts of self, and resilience outcomes: Understanding and measurement (SPECTRUM)*. University of Manchester.
- Zwick, W. R., & Velicer, W. F. (1986). Comparison of five rules for determining the number of components to retain. *Psychological Bulletin*, 99(3), 432–442. <https://doi.org/10.1037/0033-2909.99.3.432>