

**University students' perceptions of graduate employer selection tests**

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Short title: Students' perceptions of job selection tests

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## Declarations

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## Abstract

**Purpose:** The purpose of the current study was to examine university students' knowledge, confidence, and experience of popular graduate employer selection tests.

**Design:** A cross-sectional self-report survey was administered to gather a sufficient number of quantitative responses from undergraduate students. A total of 241 students completed the survey with most of them being psychology students from Swansea University. Four key variables were examined: (1) students' experience, (2) confidence and (3) knowledge of selection tests and (4) their desire for more information about selection tests as part of their degree. An audit of selection tests used by the Times Top 100 graduate employers was also conducted.

**Findings:** Students tended to misjudge how often selection tests were used by employers, and generally lacked experience with these tests. Students' confidence in completing each test varied as a function of the selection test, however, prior experience with these tests positively predicted confidence. Additionally, over 70% of students reported a desire for further information about selection tests as part of their degree.

**Originality:** These findings are, to the authors knowledge, the first to explicitly assess second- and third-year undergraduate students' knowledge, experience and confidence with popular graduate employer selection tests and demonstrate that students would like more information about these tests on their programme.

**Implications:** These novel findings suggest that students could benefit from further information about selection tests as part of their degree programme, which would be of benefit to both students and universities.

*Keywords: Graduate Employability, Higher Education, Careers, Selections tests,*

*Abstract word count: 239*

## 1 **Introduction**

2 Graduate employment is a key concern for students, Higher Education Institutions  
3 (HEIs) and governments around the world. For many students gaining employment upon  
4 graduation is one of the key motivations for studying at University (Gedye *et al.*, 2004;  
5 Kandiko and Mawer, 2013). For HEIs, the employment prospects of their students are crucial  
6 as it feeds into key metrics, including their positions in international (i.e., QS World  
7 University Rankings) and national league tables (e.g., in the UK: The Complete University  
8 Guide). For governments, it is important that universities provide employable graduates that  
9 can contribute to the workforce. The increasing recognition and importance of graduate  
10 employability is demonstrated by new government measures such as the “PROCEED” metric  
11 developed by the United Kingdom’s Office for Students (OfS, 2021). This measure details  
12 the number of students projected to complete their degree and the number of those in  
13 professional level employment 15 months after graduating. There have been suggestions that  
14 this metric may be used to regulate quality standards for UK universities (Bradley *et al.*,  
15 2023; Dickinson, 2021). Similarly, Australia has also introduced performance-based funding  
16 for universities which depends in part on graduate outcomes (Wellings *et al.*, 2019). Given  
17 the above it is clear why the employment prospects of graduates are of key importance to  
18 students, HEIs and governments around the world. However, there are many barriers  
19 graduates face when seeking employment.

20 One of the primary issues for graduates in gaining professional employment is the  
21 limited number of vacancies (Connor and Shaw, 2008). Although the number of students  
22 entering Higher Education (HE) has increased in recent decades (OECD, 2019), the number  
23 of graduate positions in organisations has not developed in tandem, resulting in a greater  
24 number of applications per vacancy ([Department for Business Innovation and Skills, 2015](#);  
25 [High Fliers](#), 2021). This increased competition for places poses a problem for organisations

1 as they must identify the most appropriate candidate(s), who they are likely to retain (see  
2 Heaton *et al.*, 2008), from a large pool of applicants in an efficient manner. To help aid the  
3 selection process organisations are now increasingly using a range of selection tests, beyond  
4 interviews and curriculum vitae, that are objective, cost-effective and have good predictive  
5 validity (Branine, 2008; Ekuma, 2012). The CIPD's (2020) Resourcing and talent planning  
6 survey of over 650 HR professionals showed that a wide range of selection tests are now  
7 incorporated into the selection process by UK organisations. These include: verbal and  
8 numerical reasoning tests, personality and aptitude tests, assessment centres, behavioural  
9 simulations (e.g., role play activities) and gamification methods. The addition of these  
10 selection tests (e.g., psychometric tests), ensures that a large pool of applicants can be  
11 whittled down to a smaller pool of applicants using automated methods that can be delivered  
12 remotely, before deciding to consider candidates' suitability in greater depth. These  
13 additional tests, however, make the selection process an increasingly arduous experience for  
14 graduates seeking employment as they have a greater number of tests to complete and failure  
15 of any one of these rules them out of the process.

16 To ensure that graduates are prepared for the rigours of the selection process  
17 universities are increasingly placing focus on *employability* (Brown, 2014; Fallows and  
18 Stevens; 2000; Miller *et al.*, 2013; Wickramasinghe and Perera, 2010). That is, the attributes  
19 and achievements that enhances graduates' employment prospects (Yorke, 2006). The  
20 approach to employability of a university can be broadly categorised into one of the three  
21 approaches: bolt-on, embedded or parallel (Cranmer, 2006; also see: Bennett *et al.*, 2017;  
22 Jackson and Bridgstock, 2021). A bolt-on approach is where a university's employability  
23 coverage is provided as part of the core degree programme but is non-mandatory (e.g., an  
24 optional third-year module). An embedded approach is where the employability provision of  
25 a university is an integral part of the student experience which is reflected in the teaching and

1 learning objectives of a degree programme (i.e., a compulsory first year employability  
2 module may form part of the degree programme). A parallel approach is where a university  
3 provides employability initiatives alongside the delivering of the core degree programme  
4 (i.e., career services may provide extra-curricular employability related awards). Bradley *et*  
5 *al.* (2019) conducted an audit of the frequency of these different approaches within  
6 psychology departments in UK universities (also see: Bennett *et al.*, 2017). Their findings  
7 revealed that the parallel approach is the most popular with 56% of UK universities  
8 employing this method within their psychology departments. The efficacy of this approach,  
9 however, is questionable as the non-mandatory nature of the parallel approach runs the risk of  
10 failing to ensure students engage with employability initiatives.

11 To explore the level of engagement with career services in a UK institution that  
12 adopted a parallel approach, Bradley *et al.* (2019) surveyed 258 undergraduate psychology  
13 students about their attendance at careers events. On average students attended less than half  
14 the careers events available to them. These results are consistent with McKeown and Lindorff  
15 (2011) and Fouad *et al.* (2006) who also found that many students were not aware of the  
16 career services available at their university or had not used them (also see: Andrews and  
17 Russell, 2012; Donald *et al.*, 2018). In Bradley *et al.* (2019) the events that related to  
18 navigating the application and selection process such as writing CVs and completing  
19 psychometric tests had particularly poorly attendance (respectively 8% and 18%). One  
20 possible explanation for the attendance levels at these events is that students do not need  
21 support as they are proficient with these tests. However, Bradley *et al.* (2020) found that <  
22 50% of participants passed two commonly used psychometric tests, with 46.43% of final year  
23 psychology students passing verbal reasoning tests and only 16.47% passing numerical  
24 reasoning tests. Notably, the best predictor of passing the numerical reasoning test, was prior  
25 experience in completing a numerical reasoning test. The results of this study would seem to

1 dismiss the notion that students do not attend career events relating to selection tests as they  
2 know how to complete these tests. It might be the case, however, that students do not know  
3 how frequently different selection tests are employed by graduate recruiters and have  
4 insufficient experience in completing these tests, hence accounting for the low pass rates  
5 observed by Bradley *et al.* (2020).

6 Students' awareness and knowledge about selection tests and the recruitment process  
7 is recognised as an essential aspect of employability in the influential CareerEDGE model of  
8 employability (Darce Pool and Sewell, 2007). In the model "Career Development Learning"  
9 which involves "job getting activities" such as preparing for job selection processes (e.g.,  
10 interviews, CVs and psychometric tests) forms one of the five key components of  
11 employability (the others four being experience, degree subject knowledge, generic skills and  
12 emotional intelligence). However, this aspect of employability has not always been well  
13 represented in HEIs (Watts, 2006). To the authors knowledge, there are also no studies that  
14 have directly assessed student awareness, confidence, experience and desire for further  
15 information about selection tests with undergraduate students in the final years of their degree  
16 programmes. Whilst there are validated scales of students' perceived employability (see  
17 Neroorkar, 2022), these do not measure in detail students' readiness for many of the selection  
18 tasks they will have to complete to attain a graduate level role (García-Aracil, 2021; Rothwell  
19 *et al.*, 2008).

## 20 **The current study**

21 Considering the above, the current study sought to explore: 1) students' knowledge of  
22 the number of graduate recruiters that employ different selection tests; 2) students'  
23 experience of completing these tests; 3) students' confidence in completing these tests; and 4)  
24 whether students would like further information about selection tests as part of their degree  
25 programme. To explore these questions a survey was administered to undergraduate students

1 in their second or third year of their degree programmes. To examine the accuracy of  
2 students' predictions regarding the popularity of different selection tests, students'  
3 predictions were compared to the percentage of graduate employers who administered  
4 different selection tests based on an Audit of the Times Top 100 Graduate Employers (see  
5 Bradley *et al.* 2020). Given the lack of previous research the research was exploratory in  
6 nature.

## 7 **Method**

### 8 **Participants**

9 Two hundred and forty-one undergraduate students took part in the study. Participants  
10 ranged from 19 to 39 years of age ( $M = 21.04$ ;  $SD = 2.82$ ). Most of the sample identified as  
11 female ( $n = 185$ , 76.76%), with 55 (22.82%) participants identifying as male and one  
12 participant identifying as non-binary (.41%). The sample consisted of 189 third-year students  
13 (78.42%) and 52 second-year students (21.58%). Most students were studying at one UK  
14 university (67.22%), with the remainder studying at other United Kingdom based universities  
15 (32.78%). A total of 137 (56.85%) participants were studying psychology, or joint honours  
16 psychology degree programmes with the rest study a diverse range of programmes. One  
17 participant did not provide information about their degree programme. Over half of the  
18 sample held a part-time job during their degree ( $n = 151$ ; 62.66%), whilst 27.39% ( $n = 66$ ) of  
19 the sample had volunteered during their degree and 17.43% ( $n = 42$ ) of the sample had  
20 completed an internship or some form of work placement. Participants received an email  
21 advertising the study. The study was also advertised through the researchers' social media  
22 networks. Participants either received subject pool credits for their participation or took part  
23 voluntarily. Ethical approval for the study was received from a UK University's Department  
24 of Psychology Ethics Committee.



## 1 **Design**

2           A cross-sectional survey design was employed as this is an effective technique for  
3 gathering quantitative information from a population about specific topics (Preston, 2009).  
4 There were four key independent variables, these were survey questions relating to students'  
5 (1) knowledge, (2) confidence and (3), experience of completing selection tests and (4) their  
6 desire for more information about selection tests as part of their degree. The first dependent  
7 variable was students' predictions of the percentage of graduate employers that administered  
8 specific job selection methods (e.g., interviews, numerical reasoning tests). The mean value  
9 of students' prediction for each selection test was compared to the percentage of graduate  
10 employers who administered these selection tests based on an audit of the Times Top 100  
11 Graduate employers 2018-19 (see Bradley *et al.*, 2020). The second dependent variable was  
12 students' confidence ratings for different job selection methods [1 = Not confident at all; 2 =  
13 Not very confident; 3 = Quite confident; 4 = Very confident] and the third dependent variable  
14 was students' experience of completing job selection methods. The fourth dependent variable  
15 was whether students would like further information about selection methods as part of the  
16 degree programme (Yes/No). Students' demographic details (e.g., gender, year of study),  
17 previous work experience and engagement with employability events also served as  
18 predictors of students' experience of job selection methods. To examine predictors of  
19 students' confidence ratings, the same predictors were used, with previous experience of  
20 completing selection tests serving as an additional predictor. The same predictor variables  
21 were also examined, in addition to confidence ratings, to determine if these factors predicted  
22 whether students would like further information about selection methods as part of their  
23 degree programme.

## 1 **Apparatus and Materials**

2 An online survey was administered using Qualtrics. A version of the survey has been  
3 used and validated in research conducted by Bradley et al. (2022). Participants were first  
4 required to provide socio-demographic details including their age, gender, university, year of  
5 study, degree programme, work experience completed during their degree (i.e., Part-time Job;  
6 Internship/Work Placement/Volunteer Work) and their engagement with career events at their  
7 university (e.g., Adviser drop-in sessions; Career Fairs). Participants were then presented  
8 with the following information: “*Employers often use selection methods to identify suitable*  
9 *candidates for the job. What percentage (%) of graduate employers do you think use the*  
10 *following selection methods? Please provide a number ranging from 0 [none of them] – 100*  
11 *[all of them] for each of the options below*”. The following selection methods were then  
12 presented: *Application Form, Assessment Centres, Curricula Vitae, Interview, Logical*  
13 *Reasoning Tests, Numerical Reasoning Tests, Personality Profiling, Preliminary Interviews*  
14 *(i.e., video/telephone interviews), Presentations, Roleplay/group Exercises, Situational*  
15 *Judgement Test and Verbal Reasoning Tests*. Two fictitious selection tests (i.e., “*Person*  
16 *Centred Grounding*” and “*Skills Assimilation Tests*”) were also provided to assess whether  
17 students were able to identify non-existent selection tests.

18 On a subsequent screen, participants were then asked: “How confident would you feel  
19 completing each of these methods?”. They were required to provide a rating on a four-point  
20 Likert-Scale (1 = “Not Confident at all”, 2 = “Not very confident”; 3 = “Quite confident”; 4 =  
21 “Very confident”) for each of the selection tests noted above. Participants were then also  
22 asked to “Please select the following job selection methods you have experience of  
23 completing?” based on the same list of selection methods. Finally, participants were asked  
24 whether they “would like further information about these selection methods on their course?  
25 [Yes/No]”.

## 1 **Procedure**

2 Participants were asked to take part in the study via an email or social media advert  
3 containing a link to the Qualtrics survey, or they signed up to take part using the  
4 Departmental Participant Pool. If participants took part, they were then required to read  
5 through an information sheet and complete a consent form. Following this, participants  
6 provided their socio-demographic details before providing ratings regarding the number of  
7 graduate recruiters likely to employ various selection tests, their confidence and experience  
8 with these methods, and whether they would like further information about these methods on  
9 their course. Finally, they were provided with a debrief sheet.

## 10 **Results**

11 All analyses were conducted in JASP (version 0.14.0.0). The datasets can be found on  
12 the Open Science Framework website (Peer Review [Link](#)).

## 13 **Audit of Graduate Employers Selection Tests**

14 An audit of the selection tests used by 100 UK graduate employers provided a  
15 measure of the frequency of different selection techniques. The audit was conducted on the  
16 Times Top 100 Graduate employers that featured in the 2018-2019 guide and has previously  
17 been described and partially reported in Bradley *et al.* (2020), however, additional selection  
18 tests have been coded for this audit. The employers that feature in the Times Top 100  
19 Graduate employers guide are those that featured most in a sample of students' response to an  
20 open-ended question about which employers they think offers the best opportunities for  
21 graduates (The Times, 2019). Given that the employers that feature in the guide are those  
22 which final year students themselves have selected and consider good employers to apply to,  
23 this is a good resource to audit.

24 The audit was conducted by accessing the recruitment website for each of the  
25 employers that featured in the Times Top 100 Graduate Employers Guide. The audit coded

1 each employer for the following selection tests: Application Forms, Interviews (preliminary  
2 and final), Logical Reasoning Tests, Numerical Reasoning Tests, Personality Profiling,  
3 Situational Judgement Test and Verbal Reasoning Tests. Insufficient information was  
4 available about additional selection tests, such as Assessment Centres, Curricula Vitae,  
5 Presentations and Roleplay/group exercises, to determine with any reliability how frequently  
6 these tests were used. The results of the audit can be seen in Table 1. As can be seen  
7 application forms and interview were the methods used most, whilst psychometric tests (e.g.,  
8 logical and verbal reasoning tests) were used to a lesser degree. However, it is important to  
9 note that the actual number of employers incorporating psychometric tests is likely to be  
10 higher as not all employers explicitly detail which tests will be used prior to a successful  
11 application.

## 12 **Students' perceptions of the likelihood of completing job selection methods**

13 Table 1 contains the mean and standard deviation of students' predictions of the  
14 percentage of graduate employers that administered job selection tests. To assess the  
15 accuracy of students' perceptions, the mean value for each selection test was compared to the  
16 percentage of graduate employers who administered these tests based on an audit of the  
17 Times Top 100 Graduate employers. As can be seen in Table 1, participants appeared to  
18 underestimate the likelihood of graduate employers using some selection tests (e.g.,  
19 interviews and numerical reasoning tests), whilst overestimating the likelihood of other  
20 selection tests (e.g., logical and verbal reasoning tests and the fictitious selection tests). For  
21 some selection tests their frequency of use could not be obtained from the audit. These will  
22 be discussed further in the discussion.

23 One-sample t-tests were performed comparing the mean value of students' predictions  
24 to the percentage of graduate employers who administered these tests based on the audit of  
25 the Times Top 100 Graduate employers. To protect against a Type 1 error, the Benjamini-

1 Hochberg Procedure was performed (Benjamini and Hochberg, 1995). These tests revealed  
2 that students underestimated the use of application forms, final interviews and numerical  
3 reasoning tests, whilst overestimating the use of logical reasoning tests, personality profiling,  
4 preliminary interviews, situational judgement tests, verbal reasoning tests and the fictitious  
5 selection tests.

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### 11 **Students' experience with job selection methods**

12 Table 2 displays the percentage of students with experience of completing each job  
13 selection task and the number of graduate employers who administer these tests based on the  
14 audit of the Times Top 100 Graduate employers. As can be seen participants' experience  
15 varied for each of the selection tasks. The selection tasks students had most experience  
16 completing were job application forms ( $M = 95.44$ ;  $SD = 20.91$ ) and final interviews ( $M =$   
17  $89.63$ ;  $SD = 30.56$ ). Those tests they reported having least experience with were the fictitious  
18 selection methods (Person Centred Grounding:  $M = 7.05$ ;  $SD = 25.66$ ; Skills Assimilation  
19 Tests:  $M = 19.92$ ;  $SD = 40.02$ ), as would be expected, and assessment centres ( $M = 17.84$ ;  $SD$   
20  $= 38.37$ ). One-sample t-tests were again performed comparing the % of students with  
21 experience of completing each selection task, to the number of graduate employers who  
22 administered these tests based on the audit of the Times Top 100 Graduate employers. The  
23 Benjamini-Hochberg correction procedure was again performed. As can be seen in Table 2,  
24 there were significant discrepancies between participants experience in completing these tests  
25 and the number of employers who administered these tests based on the audit. That is, for all

1 (real) selection methods, except for logical reasoning tests and personality profiling, students  
2 appeared to be underexperienced in completing these tests.

3 A multiple regression was also performed to identify factors that predicted experience  
4 with job selection methods. The outcome variable was the sum score of real selection  
5 methods that students had experience with. The predictor variables included: gender, year of  
6 study, work experience during university (i.e., whether students had experience of part-time  
7 time work, an internship or voluntary work) and the number of careers and employability  
8 events attended whilst at university. One participant identified as non-binary and was not  
9 dummy coded in this regression model (and subsequent regression models). The regression  
10 model was significant  $F(4, 235) = 5.82, p < .001, R^2 = .09$ , with work experience ( $B = 1.14, p$   
11  $< .01$ ) and the number of careers events attended ( $B = .42, p < .05$ ), significantly predicting  
12 the number of selection tests students had experience with. The model revealed that those  
13 students with work experience and those who had attended a greater number of careers events  
14 had experience with a greater range of selection tests. All other predictors were non-  
15 significant (smallest  $p = .11$ ).<sup>1</sup>

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20 **Students' confidence in completing job selection methods**

21 Figure 1 displays participants mean confidence ratings for each of the selection tasks.  
22 As can be seen participants' confidence ratings varied from "Not very confident" to "Quite

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<sup>1</sup> Further analyses were also conducted to examine the impact of different types of previous work experience on students' experience and confidence with job selection methods. This is reported in the supplementary analyses. In sum, more types of work experience predicted more experience and confidence with job selection tests. Specifically, part-time work and internships/work placements predicted more experience and confidence with selection methods. However, volunteering did not.

1 confident”. The selection tasks students were most confident with were Application Forms  
2 and Curricula Vitae, whilst those tests they were least confident with were Presentations,  
3 Assessment Centres and Numerical reasoning tests. Regarding participants’ confidence  
4 ratings for the fictitious selection methods, “Person-centred grounding” was rated the lowest,  
5 whilst “Skills Assimilation Test” was rated higher than several real selection tests.

6 A multiple regression was performed to identify factors that predicted confidence  
7 with the job selection tasks. The outcome variable was the mean confidence rating of all real  
8 selection methods. The predictor variables included: gender, year of study, work experience  
9 during university (i.e., whether students had experience of part-time time work, an internship  
10 or voluntary work), the number of careers events attended whilst at university and the number  
11 of selection tasks students had experience with. The regression model was significant  $F(5,$   
12  $234) = 11.197, p < .001, R^2 = .19$ , with gender ( $B = .14, p < .05$ ) and the number of selection  
13 tests students had experience with ( $B = .06, p < .001$ ), significantly predicting students’  
14 confidence with selection tests. The model revealed that males were more confident than  
15 females and those who had experience with a greater number of selection tests had a higher  
16 confidence score. All other predictors were non-significant (smallest  $p = .07$ ).

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## 21 **Students desire for further information about selection methods**

22 Finally, an important point the survey sought to establish was whether students would  
23 like further information about these job selection methods on their course. A count of  
24 participants’ binary responses revealed that most students desired further information about  
25 selection methods on their course with 180 participants (74.68%) responding “Yes” and only

1 61 (25.31%) participants responding “No”. A binary logistic regression was also performed  
2 with the outcome variable being whether students wanted further information about selection  
3 methods on their course (Yes/No) and predictor variables of gender, year of study, work  
4 experience (i.e., whether students had experience of part-time time work, an internship or  
5 voluntary work), experience of selection methods and confidence in completing selection  
6 methods. The overall model was non-significant,  $\chi^2(234) = 6.93, p = .226$ , with none of the  
7 predictors significantly predicting whether students’ desire further information about  
8 selection tests (smallest  $p = .145$ ).

### 9 **Discussion and Conclusions**

10 The current study explored students’ knowledge, experience, and confidence of  
11 popular employment selection tests, as well as whether students wanted more information on  
12 selection tasks within their degree programme. The current study makes four valuable  
13 contributions to the literature. First, students tended to underestimate the prevalence of  
14 widely used selection tasks whilst overestimating others. This suggest that students are  
15 unclear about the types of selection methods that they may be likely to encounter when  
16 applying for graduate jobs. Second, the study demonstrated that many students lack  
17 experience with key selection tasks (i.e., application forms, situational judgement tests etc.).  
18 For all selection methods, except for personality profiling and logical reasoning tests, most  
19 students were underexperienced. Third, on average students felt ‘not confident’ or ‘quite  
20 confident’ across many commonly used selection tasks with one of the key predictors of  
21 higher confidence being subsequent practice. A key factor which predicted students’  
22 confidence ratings was prior experience with selection tests. Finally, an overwhelming  
23 majority of students wished to learn more about selection tasks on their degree programme.

24 These findings hold important implications for students, academics, careers advisors  
25 and universities. Collectively these results suggest that students could benefit from further



1 coverage of these selection tests during their degree. Although many universities cover  
2 selection methods in sessions run by career services, students do not always engage in these  
3 sessions, particularly when these sessions are non-mandatory (e.g., Andrews & Russell, 2012;  
4 Bradley *et al.*, 2019; Donald *et al.*, 2018; Fouad *et al.*, 2006; McKeown and Lindorff, 2011).  
5 One way of ensuring students receive this information is by embedding employability within  
6 a degree programme and ensuring it is assessed, otherwise previous research suggests that  
7 engagement will be poor (Jackson and Edgar, 2019). An embedded approach to  
8 employability with coverage of different types of selection methods has shown to be effective  
9 at increasing students' knowledge and confidence of selection tests when practical skills  
10 about the selection process has been taught to them (Bradley *et al.*, 2022; Taylor and Hooley,  
11 2014). Previous research has also identified that prior experience with these tests also  
12 increases the likelihood that students will pass them (i.e., a practice effect; Calamia *et al.*,  
13 2012; Hausknecht *et al.*, 2007). Embedding coverage of these tests in a degree programme,  
14 where students get an opportunity to practise them, would also appear to be something  
15 students desire and would be of key benefit to them as it will ensure that they are more likely  
16 to pass these tests. Additionally, embedding information about these selection tests would be  
17 one way of ensuring that students receive information about important "job getting activities"  
18 referred to in the CareerEDGE model and thus enhance students' graduate prospects. It would  
19 also help ensure that students are better prepared to meet the expectations of employers (see  
20 Rosenberg *et al.*, 2012; Wickramasinghe and Perera, 2010) Jackson *et al.* (2022) recently  
21 noted that student engagement with employment-related activities is critical for effective  
22 transition to the workplace.

23         Enhancing students' careers prospects will be particularly important for  
24 graduates given the impact of the COVID-19 pandemic on the job market (The Organisation  
25 for Economic Co-operation and Development [OECD]), 2021). Prior to the pandemic

1 research suggested that in the UK 60% of graduates secured a graduate role before leaving  
2 university, however, during first year of the pandemic only 18% of graduates had secured a  
3 graduate role (Milkround, 2020). The number of graduate applications has also increased  
4 sharply as a result of pandemic, with the top employers reporting 41% more applications  
5 compared to pre-pandemic levels (High Fliers, 2021). The impact of the pandemic for  
6 graduates has also been predicted to last for up to a decade (Johnson, 2020), thus it is likely  
7 that increased competition for places will remain a challenge for the foreseeable future. This  
8 impact of the COVID-19 pandemic on the job market, combined with the increased pressures  
9 on HEIs to ensure graduates attain graduate level employment, make it particularly important  
10 that HEIs ensure graduates are well prepared for selection tests. If graduates are failing these  
11 tests and not attaining graduate employment as they are unaware of them, this has the  
12 potential to reflect poorly on HEIs through key metrics including league tables positions. As  
13 such, ensuring that steps are taken to facilitate students in navigating the selection process  
14 would appear to be of key importance to HEIs.

15         There are limitations to the current study. For instance, not all students seek graduate  
16 level jobs with many choosing other options (e.g., further study or non-graduate employment)  
17 and the usage of certain selection tests also differs by country and career path (Hodgkinson  
18 and Payne, 1998). The Times Top 100 Graduate Employers guide may also provide an  
19 overestimate of the use of selection tests as it contains large, established employers that are  
20 more likely to have greater need (and resources) to administer a range of selection tests. It  
21 was also difficult to obtain estimates of the usage of certain selection tests as insufficient  
22 information was provided (e.g., assessment centres, curricula vitae). However, given the  
23 increased competition for graduate vacancies (High Fliers, 2020) and the increasing usage of  
24 these tests across all organisations (e.g., Branine 2008), knowledge and experience of these  
25 tests will be of benefit to students regardless of whether they apply for graduate or non-

1 graduate jobs. Additionally, it is also possible that students simply prepare themselves for  
2 selection tests when applying for a role after they have graduated. However, students may not  
3 have easy access to the resources and support that universities provide to help them with the  
4 process after graduating and learning about these tests at such a late stage means that  
5 graduates may be insufficiently prepared. The self-report nature of the data is also an  
6 important limitation as participants may provide responses they consider to be desirable  
7 (Larson, 2019). This is illustrated by the fact that some participants reported experiencing the  
8 fictitious selection methods included in the survey. Furthermore, most participants were  
9 recruited from a single university and studied psychology, thus limiting the generalisability of  
10 the findings.

11 Future studies would benefit from a larger sample with students from a broader range  
12 of disciplines. Future research would also benefit from exploring students' perceptions of  
13 newer selection tests such as gamification methods (e.g., Lyons et al., 2023) and obtaining  
14 objective outcome measures such as students' completion of embedded careers courses and  
15 their future success in obtaining graduate work. If embedded careers courses are indeed  
16 effective in helping students obtain graduate work (e.g., O'Regan et al., 2022), it is also  
17 important that subsequent research be undertaken to identify the aspects of these courses that  
18 have the most impact on students' graduate outcomes (e.g., workshops, networking events)  
19 and to identify the students who benefit most from embedded career courses. This would help  
20 ensure that embedded careers courses can be developed to have the most impact on students  
21 at HEIs.

22 In summary, the current study makes an important contribution by revealing that  
23 students have an inaccurate view of the popularity of selection tests and lack experience with  
24 these tests. Students' confidence with these tests varied as a function of tests, however, prior  
25 experience with these resulted in higher confidence. These results have important

1 implications as they suggest that students would benefit from further coverage of these tests  
2 during their degree programme which appears to be something students themselves desire.  
3 One way to do this would be for universities to adopt an embedded approach to employability  
4 where coverage of selection tests is provided as part of degree programmes.

## 5 **References**

- 6 Andrews, G., & Russell, M. (2012). Employability skills development: strategy,  
7 evaluation and impact. *Higher Education, Skills and Work-Based Learning*, 2(1), 33-  
8 44. <http://dx.doi.org/10.1108/20423891211197721>
- 9 Benjamini, Y. and Hochberg, Y. (1995), “Controlling the false discovery rate: a practical  
10 and powerful approach to multiple testing”, *Journal Royal Statistics Society*, Vol.  
11 57, pp. 289–300.
- 12 Bennett, D., Knight, E., Divan, A., Kuchel, L., Horn, J., van Reyk, D., & Burke da Silva,  
13 K. (2017). How do research-intensive universities portray employability strategies?  
14 A review of their websites. *Australian Journal of Career Development*, 26(2), 52–  
15 61. <https://doi.org/10.1177/1038416217714475>
- 16 Bradley, A., Beevers-Cowling, F., Norton, C., Hill, C., Pelopida, B. and Quigley, M.  
17 (2020), “Falling at the first hurdle: undergraduate students’ readiness to navigate  
18 the graduate recruitment process”, *Studies in Higher Education*, Vol. 46 No. 9, pp.  
19 1827-1838. <https://doi.org/10.1080/03075079.2019.1709164>
- 20 Bradley, A., Priego-Hernandez, J. and Quigley, M. (2022), “Evaluating the efficacy of  
21 embedding employability into a second-year undergraduate module”, *Studies in*  
22 *Higher Education*, pp. 1-13. <https://doi.org/10.1080/03075079.2021.2020748>
- 23 Bradley, A. & Quigley, M. (2023) Governments harnessing the power of data to get  
24 ‘value for money’: a simulation study of England’s Office for Students B3 Proceed

1 Metric, *Studies in Higher Education*, 48:8, 1289-1302.  
2 <https://doi.org/10.1080/03075079.2023.2196292>

3 Bradley, A., Quigley, M. and Bailey, K. (2021), How well are students engaging with the  
4 careers services at university? *Studies in Higher Education*, Vol. 46 No. 4, pp.  
5 663-676. <https://doi.org/10.1080/03075079.2019.1647416>

6 Branine, M. (2008), "Graduate Recruitment and Selection in the UK." *Career*  
7 *Development International*, Vol. 13 No. 6, pp. 497–513.  
8 <https://doi.org/10.1108/13620430810901660>

9 Brown, M. (2014), *Higher Education as a Tool of Social Mobility: Reforming the*  
10 *Delivery of HE and Measuring Professional Graduate Output Success*, Centre  
11 Forum, London.

12 Calamia, M., Markon, K. and Tranel, D. (2012), "Scoring higher the second time around:  
13 meta-analyses of practice effects in neuropsychological assessment" *The Clinical*  
14 *Neuropsychologist*, Vol. 26 No. 4, pp. 543-570.  
15 <https://doi.org/10.1080/13854046.2012.680913>

16 CIPD. (2020), "Resourcing and talent planning survey 2020", available at:  
17 [https://www.cipd.co.uk/Images/resourcing-and-talent-planning-2020\\_tcm18-](https://www.cipd.co.uk/Images/resourcing-and-talent-planning-2020_tcm18-85530.pdf)  
18 [85530.pdf](https://www.cipd.co.uk/Images/resourcing-and-talent-planning-2020_tcm18-85530.pdf) (accessed 20 March 2022)

19 Complete University Guide. (2021), "University and subject league tables methodology".  
20 available at: <https://www.thecompleteuniversityguide.co.uk/> (accessed 29<sup>th</sup> June  
21 2021).

22 Connor, H. and Shaw, S. (2008), "Graduate training and development: current trends and  
23 issues", *Education + Training*, Vol. 50 No. 5, pp. 357-365.  
24 <https://doi.org/10.1108/00400910810889048>

1 Cranmer, S. (2006), “Enhancing Graduate Employability: Best Intentions and Mixed  
2 Outcomes” *Studies in Higher Education*, Vol. 31 No. 2, pp. 169–84.  
3 <https://doi.org/10.1080/03075070600572041>

4 Dacre Pool, L. and Sewell, P. (2007), "The key to employability: developing a practical  
5 model of graduate employability", *Education + Training*, Vol. 49 No. 4, pp. 277-  
6 289. <https://doi.org/10.1108/00400910710754435>

7 Department for Business Innovation & Skills. (2015), “*BIS Research Paper NO. 231:*  
8 *Understanding Employers’ Graduate Recruitment and Selection Practices: Main*  
9 *report.*” available at:  
10 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attac](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/474251/BIS-15-464-employer-graduate-recruitment.pdf)  
11 [hment\\_data/file/474251/BIS-15-464-employer-graduate-recruitment.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/474251/BIS-15-464-employer-graduate-recruitment.pdf) (accessed  
12 29 Jan 2022).

13 Department of Education. (2019), “*Participation Rates in Higher Education: Academic*  
14 *Years 2006/2007 – 2017/2018 (Provisional)*”, available at  
15 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attac](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/843542/Publication_HEIPR1718.pdf)  
16 [hment\\_data/file/843542/Publication\\_HEIPR1718.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/843542/Publication_HEIPR1718.pdf) (accessed 9 Dec 2021).

17 Dickinson, J. (2021), “*What did Williamson say at HEPI conference?*” available at:  
18 <https://wonkhe.com/wonk-corner/what-did-williamson-say-at-hepi-conference/>  
19 (accessed 30 June 2021).

20 Donald, W. E., Ashleigh, M. J., & Baruch, Y. (2018). Students’ perceptions of education  
21 and employability: Facilitating career transition from higher education into the  
22 labor market. *Career development international*, 23(5), 513-540.  
23 <https://doi.org/10.1108/CDI-09-2017-0171>

24 Ekuma, K. J. (2012), “The importance  
25 of predictive and face validity in employee selection and ways of maximizing  
them: An assessment of three selection methods” *International Journal of*

1 *Business and Management*, Vol. 7 No. 22, pp. 115 - 122.  
2 <http://dx.doi.org/10.5539/ijbm.v7n22p115>

3 Fallows, S. and Steven, C. (2000), "Building employability skills into the higher  
4 education curriculum: a university-wide initiative", *Education + Training*, Vol. 42  
5 No. 2, pp. 75-83. <https://doi.org/10.1108/00400910010331620>

6 Fouad, N. A., Guillen, A., Harris-Hodge, E., Henry, C., Novakovic, A., Terry, S., &  
7 Kantamneni, N. (2006). Need, awareness, and use of career services for college  
8 students. *Journal of career assessment*, 14(4), 407-420.  
9 <https://doi.org/10.1177/1069072706288928>

10 García-Aracil, A., Monteiro, S. and Almeida, L. S. (2021), "Students' perceptions of their  
11 preparedness for transition to work after graduation", *Active learning in higher*  
12 *education*, Vol. 22 No. 1, pp. 49-62. <https://doi.org/10.1177/1469787418791026>

13 Gedye, S., Fender, E. and Chalkley, B. (2004), "Students' undergraduate expectations and  
14 post-graduation experiences of the value of a degree", *Journal of Geography in*  
15 *Higher Education*, Vol. 28 No. 3, pp. 381 396.  
16 <https://doi.org/10.1080/0309826042000286956>

17 Hausknecht, J. P., Halpert, J. A., Di Paolo, N. T. and Moriarty Gerrard, M. O. (2007),  
18 "Retesting in selection: a meta-analysis of coaching and practice effects for tests  
19 of cognitive ability", *Journal of Applied Psychology*, Vol. 92 No. 2, pp. 373 –  
20 385. <https://doi.org/10.1037/0021-9010.92.2.373>

21 Heaton, N., McCracken, M. and Harrison, J. (2008), "Graduate recruitment and  
22 development: Sector influence on a local market/regional economy", *Education +*  
23 *Training*, Vol. 50 No. 4, pp. 276-288.  
24 <https://doi.org/10.1108/00400910810880524>

- 1 High Fliers. (2021), “The Graduate Market in 2021: Annual review of graduate vacancies  
2 & starting salaries at the UK’s leading employers” available at:  
3 [https://www.highfliers.co.uk/download/2021/graduate\\_market/GM21-Report.pdf](https://www.highfliers.co.uk/download/2021/graduate_market/GM21-Report.pdf)  
4 (accessed 9 Dec 2021).
- 5 Hodgkinson, G. P. and Payne, R. L. (1998), “Graduate selection in three European  
6 countries”, *Journal of Occupational and Organizational psychology*, Vol. 71 No.  
7 4, pp. 359-365. <https://doi.org/10.1111/j.2044-8325.1998.tb00682.x>
- 8 Jackson, D. and Edgar, S. (2019), “Encouraging students to draw on work experiences  
9 when articulating achievements and capabilities to enhance employability”,  
10 *Australian Journal of Career Development*, Vol. 28 No. 1, pp. 39–50.  
11 <https://doi.org/10.1177/1038416218790571>
- 12 Jackson, D., Riebe, L., and Macau, F. (2022). Determining factors in graduate recruitment  
13 and preparing students for success. *Education + Training*, 64(5), 681-699.  
14 <https://doi.org/10.1108/ET-11-2020-0348>
- 15 Johnson, P. (2020), “A bad time to graduate”, available at:  
16 <https://ifs.org.uk/publications/14816> (accessed 9 Dec 2021).
- 17 Kandiko, C. B. and Mawer, M. (2013), *Student expectations and perceptions of higher*  
18 *education*, King’s Learning Institute, London.
- 19 Larson, R. B. 2019. “Controlling Social Desirability Bias.” *International Journal of*  
20 *Market Research* 61 (5): 534–547. <https://doi.org/10.1177/1470785318805305>.
- 21 Lyons, R. M., Fox, G., & Stephens, S. (2023). Gamification to enhance engagement and  
22 higher order learning in entrepreneurial education. *Education+ Training*, 65(3),  
23 416-432. <https://doi.org/10.1108/ET-05-2022-0204>



1 McKeown, T., & Lindorff, M. (2011). The graduate job search process—a lesson in  
2 persistence rather than good career management?. *Education+ Training*, 53(4),  
3 310-320. <https://doi.org/10.1108/00400911111138479>

4 Milkround. (2020), “Do students feel that Covid-19 will impact their future careers?”,  
5 available at: [https://www.milkround.com/recruiter-advice/do-students-feel-that-](https://www.milkround.com/recruiter-advice/do-students-feel-that-covid-19-will-impact-their-future-careers)  
6 [covid-19-will-impact-their-future-careers](https://www.milkround.com/recruiter-advice/do-students-feel-that-covid-19-will-impact-their-future-careers) (accessed 20 April 2020).

7 Miller, L., Biggart, A. and Newton, B. (2013), “Basic and employability skills”,  
8 *International Journal of Training and Development*, Vol. 3 No. 17, pp. 173-175.  
9 <https://doi.org/10.1111/ijtd.12007>

10 Neroorkar, S. (2022), "A systematic review of measures of employability", *Education +*  
11 *Training*, Vol. 64 No. 6, pp. 844-867. <https://doi.org/10.1108/ET-08-2020-0243>

12 OECD. (2019), “Education at a Glance”. available at: <https://doi.org/10.1787/f6dc8198-es>  
13 (accessed 20 April 2020).

14 OECD. (2021), “No ordinary recovery: Navigating the transition” available at:  
15 <https://www.oecd.org/economic-outlook/may-2021/> (accessed 18 December 2022)

16 Office for Students. (2021), “New measure shows substantial differences in likely job and  
17 study outcomes for students”, available at:  
18 [https://www.officeforstudents.org.uk/news-blog-and-events/press-and-media/new-](https://www.officeforstudents.org.uk/news-blog-and-events/press-and-media/new-measure-shows-substantial-differences-in-likely-job-and-study-outcomes-for-students/)  
19 [measure-shows-substantial-differences-in-likely-job-and-study-outcomes-for-](https://www.officeforstudents.org.uk/news-blog-and-events/press-and-media/new-measure-shows-substantial-differences-in-likely-job-and-study-outcomes-for-students/)  
20 [students/](https://www.officeforstudents.org.uk/news-blog-and-events/press-and-media/new-measure-shows-substantial-differences-in-likely-job-and-study-outcomes-for-students/) (accessed 19 May 2021)

21 O'Regan, M., Carthy, A., McGuinness, C., & Owende, P. (2022). Employer collaboration  
22 in developing graduate employability: a pilot study in Ireland. *Education+*  
23 *Training*, 65(10), 1-13. <https://doi.org/10.1108/ET-03-2022-0081>

24 Preston, V. (2009) ‘Questionnaire Survey’, in *International Encyclopedia of Human*  
25 *Geography*. Available at: <https://doi.org/10.1016/B978-008044910-4.00504-6>.

1 QS Top Universities (n.d.). “QS World University Rankings – Methodology”, available  
2 at: [https://www.topuniversities.com/university-rankings/world-university-  
rankings/2022](https://www.topuniversities.com/university-rankings/world-university-<br/>3 rankings/2022) (accessed 21 May 2021) Rosenberg, S., Heimler, R. and Morote, E.  
4 (2012), "Basic employability skills: a triangular design approach", *Education +  
5 Training*, Vol. 54 No. 1, pp. 7-20. <https://doi.org/10.1108/00400911211198869>  
6 Rothwell, A., Herbert, I. and Rothwell, F. (2008), “Self-perceived employability:  
7 Construction and initial validation of a scale for university students”, *Journal of  
8 Vocational Behavior*, Vol. 73 No. 1, pp. 1–12.  
9 <https://doi.org/10.1016/j.jvb.2007.12.001>  
10 Taylor, A. R. and Hooley, T. (2014), “Evaluating the impact of career management skills  
11 module and internship programmeme within a university business school”, *British  
12 Journal of Guidance and Counselling*, Vol. 42 No. 5, pp. 487–499.  
13 <https://doi.org/10.1080/03069885.2014.918934>  
14 The Times. (2019), *Top 100 Graduate Employers 2018-19*, High Fliers Publications  
15 Limited, London.  
16 Wickramasinghe, V. and Perera, L. (2010), "Graduates', university lecturers' and  
17 employers' perceptions towards employability skills", *Education + Training*, Vol.  
18 52 No. 3, pp. 226-244. <https://doi.org/10.1108/00400911011037355>  
19 Williamson, G. (2021), “Guidance to the Office for Students (OfS) — Secretary of State’s  
20 strategic priorities”, available at:  
21 [https://www.officeforstudents.org.uk/media/48277145-4cf3-497f-b9b7-  
b13fdf16f46b/ofs-strategic-guidance-20210208.pdf](https://www.officeforstudents.org.uk/media/48277145-4cf3-497f-b9b7-<br/>22 b13fdf16f46b/ofs-strategic-guidance-20210208.pdf) (accessed 20 June 2021)  
23 Wellings, P., Black, R., Craven, G., Freshwater, D., and Harding, S. (2019),  
24 “Performance-based funding for the Commonwealth grant scheme”, available at:

1           [https://docs.education.gov.au/system/files/doc/other/ed19-0134\\_-\\_he-](https://docs.education.gov.au/system/files/doc/other/ed19-0134_-_he-)  
2           [\\_performance-based\\_funding\\_review\\_acc.pdf](https://docs.education.gov.au/system/files/doc/other/ed19-0134_-_he-) (accessed 19 June 2021)  
3       Yorke, M. (2006), “Employability in higher education: what it is-what it is not (Vol. 1)”,  
4           available at: <https://www.voced.edu.au/content/ngv:16446> (accessed 21 June  
5           2021)

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**Table 1** Source: Authors' own work

*Students' predictions of the number of graduate employers who use selection tests and the numbers obtained from an audit of the Times Top 100 Graduate Employers*

Selection Tasks	Students' Predictions	Audit	t value	p value	Cohen's d
	M (SD)	N			
Application Forms	84.46 (18.70)	100	-12.90	<.001***	-0.83
Assessment Centres	51.00 (23.38)	-	-	-	-
CV	70.73 (29.26)	-	-	-	-
Final Interview	87.33 (14.39)	100	-13.66	<.001***	-0.88
Logical Tests	51.31 (20.41)	28	17.74	<.001***	1.14
Numerical Reasoning Test	47.80 (20.64)	53	-3.91	<.001***	-0.25
<i>Person Centred Grounding</i> <sup>a</sup>	38.54 (22.81)	0	26.23	<.001***	1.69
Personality profiling	51.74 (25.26)	22	18.28	<.001***	1.17
Preliminary interviews	68.82 (20.73)	64	3.61	<.001***	0.23
Presentations	39.51 (22.30)	-	-	-	-
Role plays/Group Tasks	42.64 (22.86)	-	-	-	-
Situational Judgement Test	53.95 (24.42)	50	2.51	0.013*	0.16
<i>Skills assimilation tests</i> <sup>a</sup>	49.73 (23.30)	0	33.32	<.001***	2.14
Verbal Reasoning Test	50.01 (23.15)	39	7.38	<.001***	0.48

*Note.* <sup>a</sup> = Fictitious selection tasks. These tasks were provided to assess whether students could identify false selection tasks. "-" denotes instances where information could not be obtained from the audit. \* denotes statistical significance = < .05; \*\*\* denotes statistical significance = <.001

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**Table 2** Source: Authors' own work*% of students' with experience of job selection tests*

Selection Tasks	Students' experience (%)	Audit	t value	p value	Cohen's d
	M (SD)	N			
Application Forms	95.44 (20.91)	100	-3.38	<.001***	-0.22
Assessment Centres	17.84 (38.37)	-	-	-	-
CV	68.05 (46.73)	-	-	-	-
Final Interview	89.63 (30.56)	100	-5.27	<.001***	-0.34
Logical Tests	38.17 (48.68)	28	3.24	<.01**	0.21
Numerical Reasoning Test	32.37 (46.88)	53	-6.83	<.001***	-0.44
<i>Person Centred Grounding</i> <sup>a</sup>	7.05 (25.66)	0	4.27	<.001***	0.28
Personality profiling	25.73 (43.80)	22	1.32	.188	0.09
Preliminary interviews	53.53 (49.98)	64	-3.25	<.01**	-0.21
Presentations	24.48 (43.09)	-	-	-	-
Role plays/Group Tasks	49.38 (50.10)	-	-	-	-
Situational Judgement Test	39.00 (48.88)	50	-3.49	<.001***	-0.23
<i>Skills assimilation tests</i> <sup>a</sup>	19.92 (40.02)	0	7.73	<.001***	0.49
Verbal Reasoning Test	23.65 (42.58)	39	-5.57	<.001***	-0.36

Note. <sup>a</sup> = Fictitious selection tasks. These tasks were provided to assess whether students could identify false selection tasks. "-" denotes instances where information could not be obtained from the audit.

\* denotes statistical significance = < .05; \*\* denotes statistical significance < .01 \*\*\* denotes statistical significance = <.001

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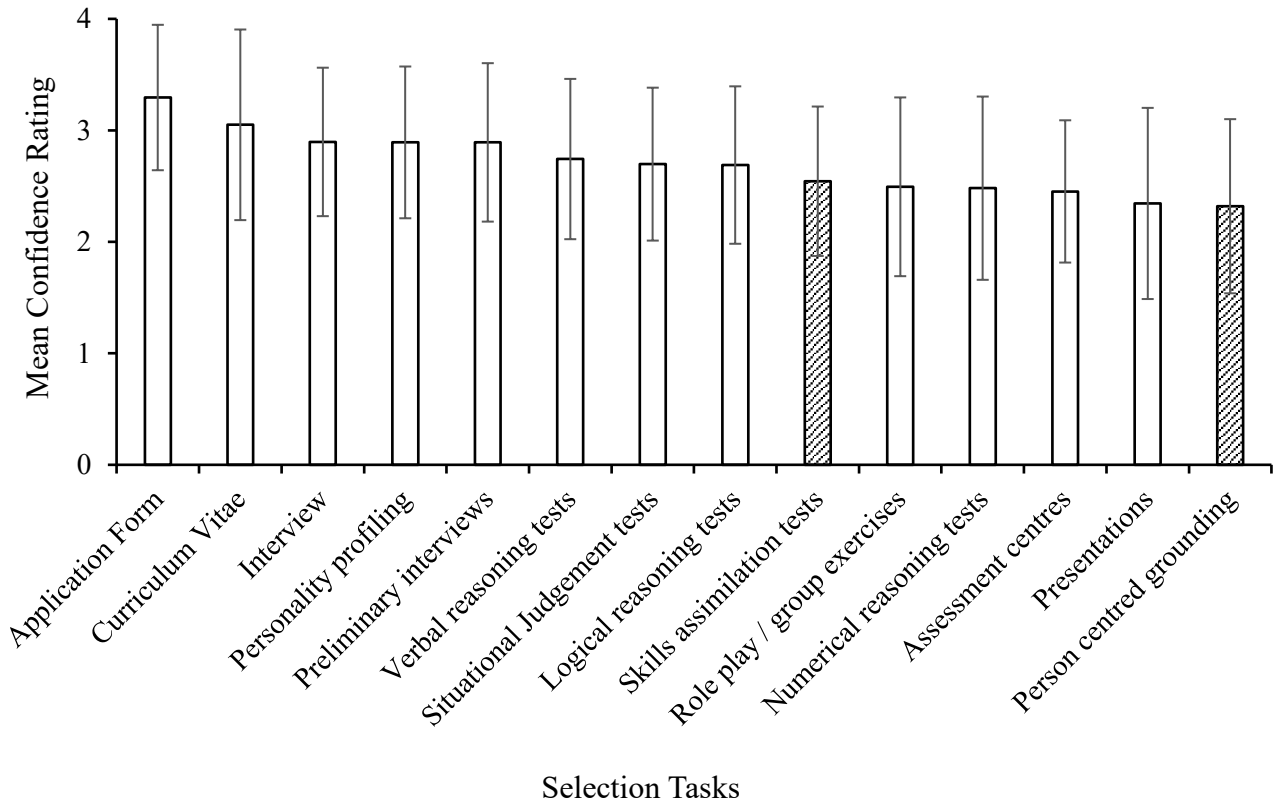
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**Figure 1** Source: Authors' own work

*Students' confidence in completing job selection tests*



*Note.* Mean confidence ratings for each of the selection tasks. Errors bars represent the standard deviation. Patterned bars represent the fictitious selection tests.