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PUBLICATION DATE

01-01-2017

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Citation:
Teychenne, Megan, Sahlqvist, Shannon, Teychenne, Danielle, Macfarlane, Susie, Dawson, Phillip and Costigan, Sarah A. 2017, The development of a tailored, career-focused interactive online learning tool for physical activity and health students: a pilot study, *Journal of teaching and learning for graduate employability*, vol. 8, no. 1, pp. 60-74.

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Originally published in the *Journal of Teaching and Learning for Graduate Employability*:
https://ojs.deakin.edu.au/index.php/jtlge/article/view/596

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Journal of Teaching and Learning for Graduate Employability

The development of a tailored, career-focused interactive online learning tool for physical activity and health students: A pilot study

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Abstract

Students enrolled in university courses often lack knowledge of potential jobs and future career paths, which can inhibit their ability to plan, job seek and make decisions about their careers, and negatively impact on their ability to gain employment. To address this problem, a tailored, career-focused interactive online learning tool was developed and piloted for public health and exercise science students, based on the constructs of Savickas' (2005) theory of career construction. This paper reports a mixed-methods study to understand student experiences of using that tool, and their perception of how well it prepared them for career planning. Twenty-two second-year students completed an online survey using both qualitative and quantitative methods to assess the perceived feasibility and acceptability of the interactive online learning tool. Descriptive (for quantitative data) and inductive content analyses (for qualitative data) were performed. Most students (86%) indicated that they would use the tool again. All students reported that the tool was user-friendly, engaging and informative and provided them with information on jobs that matched their personal and work-related skills and strengths. Qualitative data reflected these findings and identified seven key themes, including: value, career exploration, design, and tailoring, with themes partly reflecting components of Savicka's theory. The tailored, career-focused interactive online learning tool was perceived to be a feasible and effective strategy to support university students in their career planning and job seeking behaviours prior to graduation. These findings can be used to inform and refine the development of career-focused tools for students undertaking other university courses.

Keywords: careers, e-learning, higher education, career planning, online learning tools

Background

Universities are placing an increasing emphasis on skilling students for entering the workforce after graduation (Green, Hammer,& Star, 2009; Kalfa & Taksa, 2013; Pegg, Waldock, Hendy-Isaac, & Lawton, 2012). However, students enrolled in broad vocational university degrees often lack knowledge of the potential jobs and career paths they can take, and additionally lack the self-efficacy to successfully seek, find and apply for a job in their field of study after graduation (Guan et al., 2013; Picard, 2012). The repercussions of this are largely on university retention rates (McInnis, Hartley, Polesel, and Teese, 2000), and graduate employment outcomes (Bridgstock, 2009), as students who lack a sense of realistic career targets or career identity are likely to be less meaningfully engaged with their university course (Bridgstock & Hearn, 2012; Bridgstock, Thomas, Lyons, Carr, & Zelenko, 2012).

Evidence shows that developing proactive career planning behaviours such as exploring career options and career goal setting are important factors for gaining employment (Brown, Cober, Kane, Levy, & Shalhoop, 2006; Saks & Ashforth, 1999). Further, job search self-efficacy predicts employment status at graduation, as well as preparatory and active job seeking behaviours amongst university graduates (Saks & Ashforth, 1999), consistent with findings from the general population (Eden & Aviram, 1993; Schmit, Amel, & Ryan, 1993). Job seeking support has been shown to predict job seeking behaviour (Wanberg, Watt, & Rumsey, 1996) that is, identifying a career goal and pursuing that goal (Boswell, Zimmerman, & Swider, 2012). Further job seeking behaviour has been positively linked with gaining employment/employment status (Kanfer, Wanberg, & Kantrowitz, 2001). Therefore it is important that job seekers, in particular university students seeking employment in their field of study after graduation, are supported in developing practical and effective job planning and seeking behaviours. In the late 1990's, researchers identified the need for job search training in order to enhance graduates' job search self-efficacy and sense of control over job search outcomes (Saks & Ashforth, 1999). Thus, it is important that Universities provide such training, particularly within more general degrees (i.e. degrees that have broad vocational outcomes) such as Exercise and Sport Science or Health Science degrees, whereby career paths can be quite diverse and often unclear. This notion is supported by claims that 'one-size-fits-all' approaches to building students career management skills may not be effective and rather, discipline-based approaches that are embedded into the curriculum are more likely to be successful (Bridgstock, 2009). There are a number of general online job search tools available (e.g., Monster [U.S.], SimplyHired [U.S.], Indeed [U.S], SEEK [Australia], CareerOne [Australia]), and these have the benefit of being easily accessible by students (due to the web-based platform). However, there does not appear to be a resource informed by theory of career construction (Savickas, 2005) for job search/application training specifically for those gaining Health Science or Exercise Science qualifications, and tailored to students majoring in physical activity and health.

The theory of career construction explains why and how people construct their careers (Savickas, 2005). The theory posits that constructing a successful career is driven by ones vocational personality (including ones career-related abilities, values and interests), life themes (career choice being an extension of one's identity) and largely by one's career adaptability (i.e. the ability to manage/handle real world barriers on career goals) (Savickas, 2005). 'Career adaptability' consists of career planning (e.g. utilising active strategies to achieve one's career goals), decision-making (e.g. making choices about which career path and jobs to pursue), problem solving/confidence (e.g. self-efficacy to plan, seek and achieve career goals), and exploration (e.g. investigating possible career choices) (Stringer, Kerpelman, & Skorikov, 2011). Thus, based on constructs of the theory of career construction, a tailored, interactive online learning tool was developed, predominantly targeting 'career adaptability', to provide undergraduate university students studying in the area of physical activity and health with:

(a) knowledge of a range of career options in various settings, working with different population groups, suited to their skills and interest areas (targeted at the theoretical constructs of career planning, decision-making, and exploration);
(b) knowledge of additional qualifications and skills needed to be successful in selected careers (targeted at the theoretical constructs of career planning, and exploration); and,
(c) skills for addressing key selection criteria and responding to job interview questions (targeted at the theoretical constructs of career planning, and problem solving/confidence).

This was with the overall purpose of enabling students, majoring in physical activity and health, with the skills and confidence to seek and apply for jobs in a related field after graduation.

The aim of this study was to pilot test the perceived feasibility and acceptability of a tailored, career-focused interactive online learning tool for university students studying in the fields of public health and exercise science. It is important that such tools and learning experiences are evaluated in order to inform the development of other career-focused activities and tools for students undertaking similar courses, as well as extending the development of these tools to other courses at other tertiary institutions. Thus, this study addresses the research question: *How do students perceive a discipline-specific career-focused interactive online learning tool?*

Methods

Analyses were based on cross-sectional qualitative and quantitative survey data collected in 2015. Deakin University students enrolled in one particular physical activity promotion unit in trimester 2 of 2015 were recruited to participate. This study was approved by the Human Research Ethics Committee of Deakin University (HEAG-H 99_2015). Since no identifying information was requested, participants were informed that completing the survey indicates intended consent.

Context

The physical activity promotion unit (on which this study is based) is taught in the second year of a three-year degree (within either an Exercise Sports Science or Health Science degree at Deakin University). Students have a basic understanding of the field having already undertaken two foundation units in first and second year. The unit has a vocational focus, providing students with a number of key skills (e.g. grant writing, team work) required for entering the work force.

Participants and recruitment

Participants were recruited from the elected physical activity promotion unit which was taught across three campuses in 2015 via the university's Learning Management System, 'CloudDeakin' which runs on Desire2Learn. Academic staff posted a recruitment notice (poster) on the units' CloudDeakin site during the final two weeks of trimester (weeks 10 and 11), with a link to the plain language statement and online survey. Following the Dillman protocol (Dillman, 1978), potential participants were reminded two weeks later; reminders were sent by email. One hundred and fifty seven students (of a total of 198 students enrolled in the unit) completed the week 11 learning module, and twenty-two of those students completed the survey; a response rate of 14 per cent.

Intervention

During week 11 (the final week of trimester), all students undertaking the elected physical activity promotion unit were required to use an interactive online learning tool which was specifically developed to explore potential career paths and skills in the field of physical activity and health, and provide students with skills for applying for such jobs. The online tool had a

number of features, based predominately on the 'career adaptability' construct of the theory of career construction (Savickas, 2005), which includes career planning, decision-making, problem solving/confidence, and exploration (Stringer et al., 2011). Features of the tool included:

- A 'choose your own career adventure' quiz which aligned students with jobs in the area of physical activity and health based on each student's career interests, work-related skills and personal attributes (Targeted theoretical constructs=vocational personality; career adaptability: career planning, decision-making, exploration).
- A detailed overview of a selection of jobs in the area of physical activity and health (Targeted theoretical constructs=career adaptability: career planning, exploration).
- Video interviews with professionals currently holding positions in the area of physical activity and health (Targeted theoretical construct=career adaptability: exploration).
- A section to complete key selection criteria for each physical activity and health job, which could be printed out and used as notes for future job applications and/or job interview preparation (Targeted theoretical construct=career adaptability: problem solving/confidence).
- A practice job interview including interview questions specific and tailored to the selected job. Students were given three minutes to provide a response to each interview question (Targeted theoretical construct=career adaptability: problem solving/confidence).

Students were provided with instructions and asked to work through the interactive Module prior to attending the week 11 seminar, since the seminar included activities directly relating to their experience and knowledge acquired from the interactive online learning tool.

Development of the tool

Occupational information was collated over a period of 12 months from job listings published on the Australian jobs site *seek.com*. This data included job descriptions and key selection criteria relating to a number of jobs in the physical activity and health promotion industry. Thirteen distinct roles (spread across a wide range of areas and settings) were found to be dominant in the field and were chosen to be the basis of this interactive tool. This was based on the overall consensus of three researchers developing the tool, who coded each job according to job titles and descriptions. After surveying 200 job advertisements, generalisations could be made about the types of areas, settings and population groups these 13 roles worked with. Generalisations could also be made about the required work-related skills and personal qualities that each role required applicants to be equipped with. This information was then organised into an excel spread sheet for the interactive media developer to utilise in the creation of the tool. The interactive tool was built using front-end website languages HTML, CSS and Javascript; and hosted in CloudDeakin.

The module began on the homepage, which presented the user with an option of either taking a quiz (to narrow down which job is most suited) or browsing all job descriptions. At the beginning of the quiz, students could select which area in which they are most interested in working (e.g. physical activity, sedentary behaviour, evaluation and measurement of physical activity/sedentary behaviour). The tool then directed the user to choose which setting they would like to work in (e.g. education, medical sector or community etc.). The quiz then prompted users to select which population group they would like to work with (e.g. older adults, women, low socioeconomic groups, children etc.). Next, users were presented with two checklists in which they could select three to five work related skills (e.g. organised, teamwork, networking, and planning) and three to five personal qualities (e.g. patient, flexible, efficient and dependable etc.) that they believed they were equipped with. After these skills were selected, a list of job titles (tailored to those responses) was shown with a 'skills score' next to each role (the highest score indicating which role was most suited to the student, based on their work skills/personal qualities selection). Students could then browse each job description

(adapted from actual job descriptions provided on the Australian jobs site *seek.com*) and watch a video interview with a professional currently working in the position. Once the user had chosen a job that they were most interested in or compatible with, they then could (hypothetically) 'apply' for that role.

The 'application' process involved addressing five key selection criteria questions that were specific to the job. Five text boxes with 500 word limits were provided for answers. Students were provided with links to key selection criteria resources whilst addressing the criteria. Students could save their answers to a pdf file at any time during this section. Once this task was completed, students were then required to 'virtually' attend a practice job interview. This required practicing to verbally respond to five questions that were specific to the chosen role. Students were encouraged to record the practice interview (on their phones or tablets), which could then be viewed again to help refine responses. Finally, once the interview had concluded, students were presented with a number of useful web-links to resources on how to build and maintain employability skills.

The tool provided the opportunity for students to respond to key selection criteria and job interview questions that were derived directly from real world job advertisements pertaining to each selected job. This targeted approach is likely to be more beneficial than existing systems which tend to relate to more generic key criteria as the tool prompted students to show discipline specific employability evidence, and challenged students with interview questions specific to a particular role in a workplace. The tool was developed by a team including: lecturers and research assistants with expertise in physical activity and health, an expert in teaching excellence and innovation, an e-learning educational developer, an interactive developer and an image designer. Industry experts were also interviewed, which informed the tool development. For example, the experts provided in-depth responses to questions related to what their job involves, the biggest challenges in their job, the pathway they took to gaining employment in that job, crucial skills required etc. The tool was piloted by two colleagues in related disciplines prior to implementing it to students.

Measures

The online survey included 13 quantitative items, which examined the perceived feasibility of the tool. Items included: "It was a valuable tool for physical activity and health students", "The tool provided me with an insight into what different jobs involve", "The tool engaged me in preparing responses to key selection criteria for job applications". Respondents were asked to indicate their agreement with each item using a four-point categorical scale (from "strongly disagree" to "strongly agree"). The usefulness of each specific component of the tool (e.g. Matching students work-related skills to possible career options, Practicing interview skills using the 'virtual interviewer' etc) was assessed using a 7-item checklist, with response options rated on a 4-point categorical scale, ranging from "not at all useful" to "very useful".

Further, the perceived feasibility (e.g. the strengths and weaknesses, suitability and the acceptability) of the tool was assessed through a series of short-answer, open ended qualitative questions, evaluating students' perceived value of the tool including the most useful components and perceived challenges when using the tool. Open-ended questions were also posed to identify strategies to improve students' career planning in the area of physical activity and health.

Data analysis

Using Stata/SE 13, quantitative data was analysed using descriptive statistics to obtain means and standard deviations. Qualitative data was analysed using inductive content analysis outlined by Elo and Kyngäs (2008) in order to address the research question of how students perceive a discipline-specific career-focused interactive online learning tool. This approach was used since it can elicit unanticipated themes (i.e. categories arise from data, rather than data being derived from pre-determined categories) (Elo & Kyngäs, 2008). After reading all

short-answer responses several times, open coding of the survey was conducted by creating and assigning descriptive labels to parts/responses of the text. Microsoft Excel was used to organise data, facilitate creation of categories and identify relevant quotes. For this study, the coding structure was relatively simple. For each question, categories (nodes) were created through grouping codes with similar contexts. Main categories were then identified and named. To ensure results interpretation was not subject to researcher bias, all qualitative questions were independently coded by two authors. Authors then met and coding was compared and discussed. No discrepancies in coding or interpretation were observed. Written quotes were then selected to illustrate key themes.

Results

System data showed that 157/198 (79%) of students engaged with the online tool. The final sample in this study consisted of 22 students, which was sufficient to achieve data saturation in qualitative analyses. Data describing student's perceptions of the tool are outlined below and shown in Figures 1 and 2 (below). Overall, respondents rated the tool favourably. Most students (86%) reported they would like to use this tool again. All agreed that the career tool was easy to use (50% strongly agree; 50% agree), engaging (19% strongly agree, 81% agree) and informative (36% strongly agree, 64% agree). The majority of participants agreed that the career tool was valuable for physical activity and health students (95%), matched them to appropriate career options (95%), and provided them with an insight into what different jobs involve (95%). Similarly, the majority of participants agreed that the tool engaged them in preparing responses to key selection criteria for job applications (95%), preparing for job interviews (95%) and motivated them to reflect on additional qualifications, skills and/or work experience needed to increase competitiveness when applying for a physical activity and/or health job (95%). Most participants (82%) reported that the tool inspired them to conduct their own research into potential jobs in the field of physical activity and/or health.

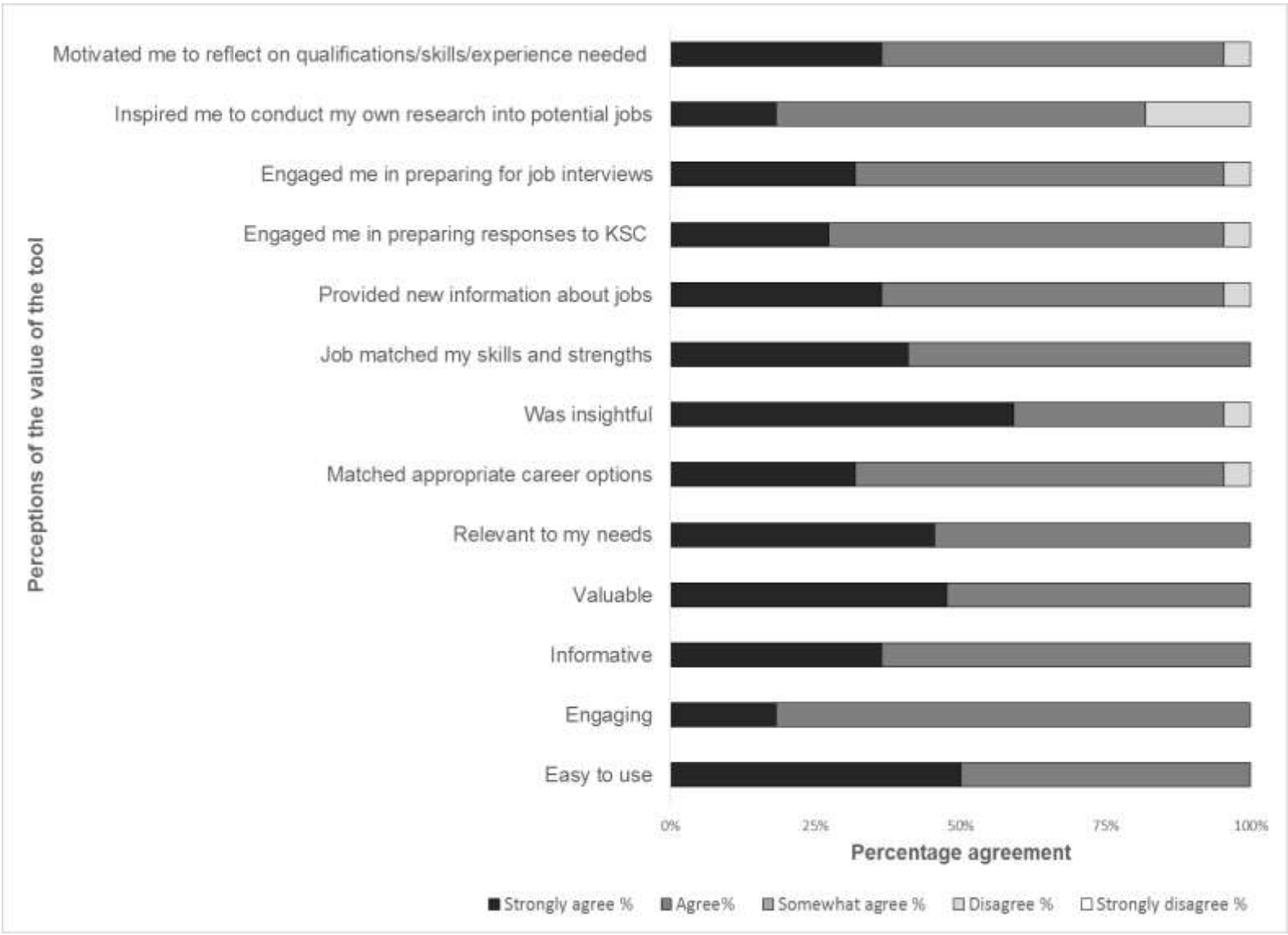


Figure 1. ***Descriptive Data of Student Perceptions of the Tailored, Career-focused Interactive Online Learning Tool*** **(n=22)** *KSC: Key Selection Criteria*

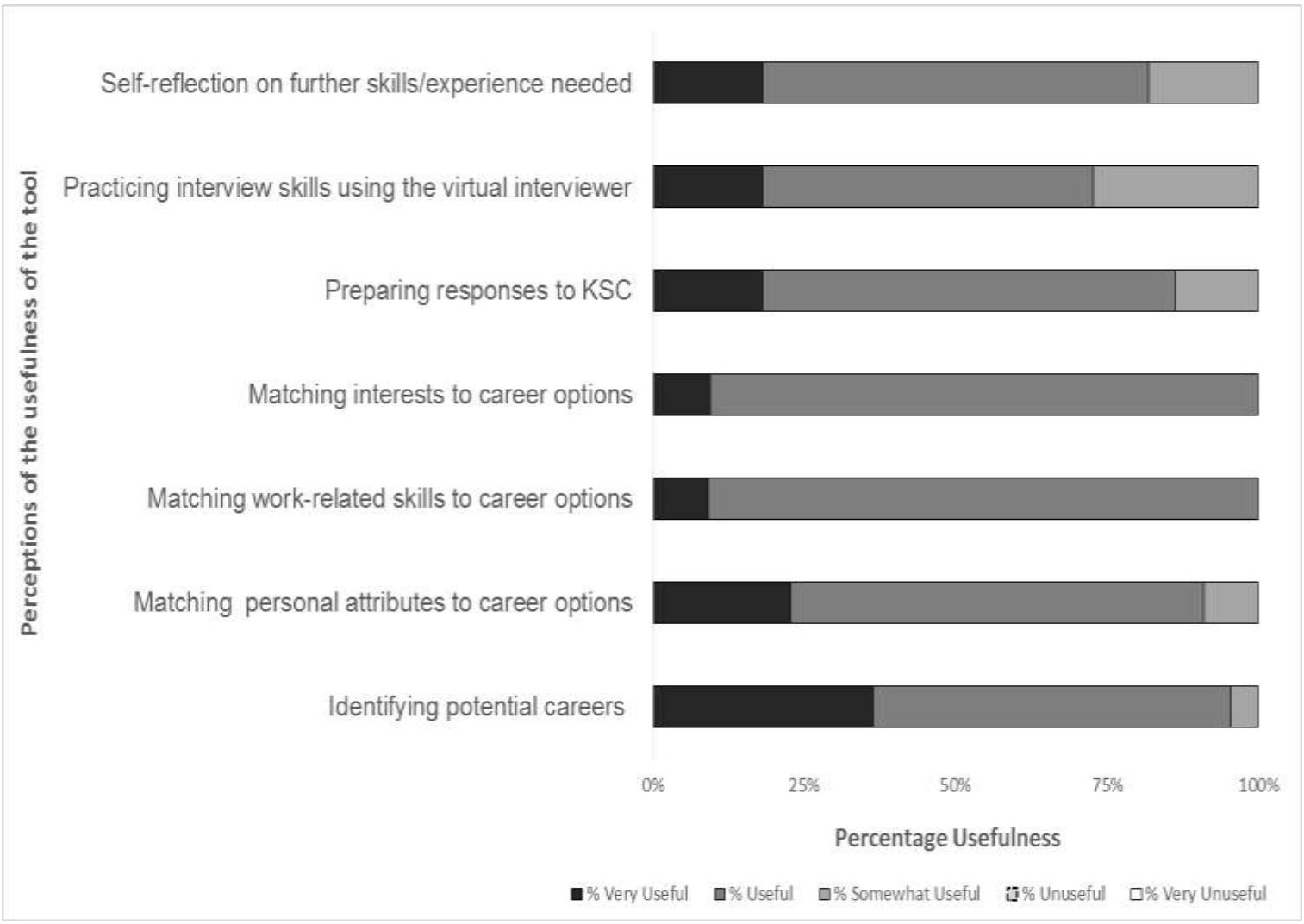


Figure 2. ***Descriptive Data of Student Perceptions of the Tailored, Career-focused Interactive Online Learning Tool*** **(n=22)**

Results from qualitative analyses showed that seven key themes emerged from the data, and are described below.

Value

The tool was perceived as valuable by a large proportion of participants. A total of 19/22 (86%) participants reported wanting to use the tool again. The main reasons for this were that: it was useful; it provided insights into career options they would have not otherwise known about; and it was user-friendly. Similarly, the majority of students suggested that they would recommend the tool to other students as it provided ideas for potential career pathways for physical activity and health students. Other reasons students would recommend the tool to others included: it was informative, user-friendly, provided insights into job interviews, and enabled self-reflection evidenced by comments such as:

> *It was a very helpful and informative way to learn about careers in health and which aspects/job opportunities best suit your needs and attributes.* (Student #22)

Overall, the majority of students valued and accepted the interactive career planning tool, suggesting that it was novel, useful, informative, tailored to the individual, and user-friendly as indicated in the following comment:

> *I would [recommend it]. They may be unsure of what they want to go into so having a tool like this would highlight a number of areas they may not know of.* (Student #13)

Career exploration

Although students suggested a number of components of the tool were valuable, which reflected the multiple components of its design, the most common theme was that students felt the tool was particularly valuable for informing and exploring possible career choices and pathways, specifically in the field of public health and exercise science. Many students reported having little idea or preference about their future career; commenting for example:

> *Going into my course (Health Sciences) I had no idea what job I wanted to do, just that I wanted to work in the health field.* (Student #3)

Other students variously described previously feeling 'lost' or finding the array of possible jobs confusing and difficult. They reported that using the tool was useful to alleviate this bewilderment:

> *Sometimes searching for jobs is difficult as names and titles are different. [The tool] allowed us to know possible fields to look in.* (Student #19)

Design

The design of the tool was well received by students with several participants suggesting that they would use the tool again as it was user-friendly (due to its simplicity in presenting large amounts of information), engaging and interactive:

> *It's an interactive way to learn and is very engaging because of the content and its use online.* (Student #20)

The in-class learning activities linked to the tool were also considered by students to be well designed. During week 11, the in-class learning activities were linked to the students' experience using the interactive career planning tool. For example, students were required to select one job using the online tool, map the key themes from the key selection criteria against the intended learning outcomes of the unit, and then provide evidence for how they have developed each skill. Qualitative results showed that all but two students who had completed

the questionnaire after attending the class suggested the learning activities were useful and relevant. Students felt the in-class activities clearly linked together their learning from the interactive online tool and helped them recognise the skills and attributes required to have a career in the physical activity and health field.

Tailoring

A key theme to emerge included the value of the tool being tailored to the individual, which was done by linking individual students' personal and work-related strengths/attributes and interests to specific jobs. This tailoring revealed otherwise unknown career options for one student:

> *Getting jobs to match your personal skills highlighted jobs I was un-aware of.* (Student #13)

Career planning and decision making

A small number of students suggested the tool provided them with knowledge and strategies in career planning and helped guide them into making decisions about their career direction.

Problem solving/confidence

Students felt the tool provided practical skills for authentically preparing for job seeking and applications. Students particularly valued how the tool provided the key selection criteria for each job, and that self-reflection was enabled by working through the tool (i.e. reflect upon which skills or qualifications are needed to be successful). Further, a small number students also suggested that putting their job application skills into practice via the virtual interviewer was a valuable strategy for gaining confidence in job interviews.

> *I liked being put on the spot and answering the questions in an interview situation.* (Student #7)

Improvements

Although the majority of responses reflected that students found all aspects of the tool valuable, a small number of students suggested that certain features of the tool could be improved. For example, a couple of students suggested that they would have liked to be able to select a greater number of personal and work-related attributes as only selecting five was quite challenging, and commented:

> *… it made it very difficult to narrow or distinguish between some choices* (Student #19)

Further, some students suggested the interview tool could be improved by: enabling a recording feature, providing a text box to write responses in, and reducing the time users had to respond to interview questions. Two students suggested that overall the tool could be improved by providing more job options, whilst one student suggested providing examples of how to respond to key selection criteria.

Discussion

This study aimed to explore the perceived feasibility and acceptability of a tailored, career-focused interactive online learning tool for university students studying in the area of physical activity and health. It was hypothesised that students would perceive the tailored, career-focused interactive online learning tool as a useful and engaging strategy to assist in career planning, application skill development and career exploration. Feasibility studies provide the opportunity to gather valuable formative information to help refine and develop methods and materials prior to undertaking larger and more costly effectiveness trials.

The career-focused online learning tool was well accepted by students and perceived as a feasible method of developing important career planning skills targeted to those studying in the area of physical activity and health. Most students suggested that they would use the tool again, which may be explained by the fact that (all) students reported that the tool was user-friendly, engaging and informative. The particular design features which created this positive effect include the easy to follow web layout, the personalised and interactive nature of the quiz, the video interviews with professionals, and the fact that large amounts of relevant career information was collated yet presented simply (as mentioned by a number of participants). In particular, students agreed that the tool provided them with insights into what different jobs involve and new information about jobs they would have otherwise not known about. Gati, Krausz, and Osipow (1996) developed a theoretical taxonomy, based on decision theory, which explains the processes and difficulties involved in career decision making. The taxonomy highlights three key constructs that can hinder career decision making, one being 'lack of information' (which includes a lack of information about occupations). Thus, the results suggest that the career-focused online learning tool is an effective strategy to target this construct ('lack of information') in the model (Gati et al., 1996) by providing students with a sound knowledge base of potential career options suited to their area of expertise.

A common theme to emerge from the qualitative data was students' appreciation that the career-focused online learning tool was tailored to the individual. This was reflected in the quantitative responses whereby all students suggested the tool was relevant to their needs as a physical activity and health student and provided them with jobs that matched their personal and work-related skills and strengths. These findings partly reflect those of Feldman and Whitcomb (2005) who suggested that directing students to choose careers based on their skills and abilities, rather than basing decisions purely on personal interests, may be more successful in helping students identify appropriate careers. Tailoring information is recognised in other disciplines (e.g. in the health field) as a key behaviour change technique (Booth, Bauman, Owen, & Gore, 1997; Dijkstra & De Vries, 1999), often more successful than a 'one size fits all' approach, which may be due to information being more relevant and thus more engaging and/or motivating to the individual. Therefore, ensuring students are provided with personally relevant career messages and information is likely to increase the effectiveness for career planning and decision-making.

Many aspects of the teaching activities linked to using the career-focused online learning tool were designed to be 'authentic' (i.e. reflect real-world activities/experiences), with most students recognising that the tool was useful for preparing responses to key selection criteria and for practicing interview skills using the virtual interviewer. Authentic learning environments allow students to readily transfer their knowledge and skills into real-world practice (Herrington, Reeves, & Oliver, 2014), increasing the personal relevance of learning tasks for students. Thus, the career-focused online learning tool enabled students to practice skills required when job seeking, better preparing them for successful job seeking behaviour. Given that effective job seeking behaviours and skills are linked with gaining employment (Kanfer et al., 2001), the method in which students are supported in developing these skills whilst at University may be indicative of employment after graduation. Hence, for universities to increase the employment success rate of new graduates, it may be useful to provide students with personalised, authentic career learning opportunities such as those outlined in the current study. This is in line with recommendations outlined for the Office for Learning and Teaching (Australia), that suggested that all students should explore and apply career-related knowledge as fundamentals of their University program, which is best achieved through authentic learning experiences (Bennett, Richardson, & MacKinnon, 2016).

It should be noted that career planning was built into the curriculum (e.g. intended learning outcomes, teaching and learning activities) and assessment within the physical activity promotion unit, based on the premise that one of the key goals of higher education is for students to be employable. This follows the principles of constructive alignment, whereby the design of a curriculum begins with the development of intended learning outcomes for the unit,

then aligns teaching and learning activities with these (in order to allow the students to develop the relevant skills and knowledge), and finally the assessment tasks are developed to determine the students level of achievement of the intended learning outcomes (Biggs & Tang, 2011). Since universities are increasingly working to ensure that students are employable after graduation (Green et al., 2009; Kalfa & Taksa, 2013; Pegg et al., 2012), this highlights the importance of constructively aligning the curriculum, beginning with the broad goals of higher education, which includes students gaining employment as a result of completing their degree.

This study demonstrates the feasibility and user-reported utility of a tailored online career development tool. Students self-reported using this tool developed their career planning in areas closely aligned with Savickas' theory of career construction (Savickas, 2005). In particular, the component of the theory 'career adaptability' (which includes *exploration, career planning, problem solving and decision-making* (Stringer et al., 2011)) was strongly present in the current study. For example, findings from the current study showed that most students reported that the learning activities linked to the tool motivated them to reflect on additional qualifications, skills and/or work experience needed to increase competitiveness when applying for relevant jobs (i.e. problem solving/confidence). Furthermore, most students reported that the tool inspired them to conduct their own research into potential physical activity and/or health jobs (i.e. career exploration) and helped guide them make choices about their career direction (decision making). Another component of the theory 'vocational personality' (which includes ones career-related abilities and interests) (Savickas, 2005) was also present in the current study, with students valuing how the tool was tailored to their career or work-related abilities/skills and their areas on interest. However, the final construct of Savickas's theory, 'life themes', whereby career choices are viewed as an extension of one's identity (i.e. the reason/s why one chooses a certain career and the significance of their career to their self-identity and broader society) (Savickas, 2005) was not present in either the development of the tool (with 'career adaptability' being the key focus), nor the results of the study. This may be another construct to target when refining the tool. For example, including a feature within the tool (or related in-class learning activities) that encourages students to reflect upon the reasons why they are interested in certain jobs/careers and the significance of those careers to their identity and to society, may foster clarity in student's career decision making.

Given these findings, it is apparent that the inclusion of similar tailored, career-focused interactive online learning tools within the university curriculum may be an important stepping stone for students (from all courses) career planning prior to graduation. This study follows the important initial step, suggested by Bridgstock, to integrate and trial a student career management program into discipline-specific curriculum (Bridgstock, 2009), in an effort to advance the university employability agenda.

Limitations and future directions

Limitations of the study should be acknowledged. Firstly, the response rate was low (14%), which could potentially present bias results since it is unknown whether non-participation in the study was due to the tool lacking usefulness to those students, or other reasons. Secondly, participant responses may have been subject to bias due to the subjective nature of assessment. Thirdly, the study did not assess whether the tool actually helped students gain a career or whether students actually applied the skills learnt to find work. Thus longer-term follow-up studies are needed to determine the effectiveness of the tool for job seeking outcomes. Further, this study did not assess whether the tool enhanced job interview and selection criteria writing skills. Future studies should consider including methods for evaluating these skills. This may also include the incorporation of peer or teacher evaluation within refinement of the online system. However, a key strength of this study was the mixed methods design which allowed rich insights to be gathered (from qualitative data), to help further refine and develop the tool in future. For example, based on suggestions from participants, the tool may be enhanced to include a recording feature for students to playback their virtual job

interview, which provides immediate feedback on their performance. Moreover, key aspects of the tool (e.g. key selection criteria and job interview questions) were derived directly from real world job advertisements pertaining to each job, enabling students to develop employability skills specific to particular roles. This 'tailored' approach would likely provide additional benefit beyond providing generic key selection criteria (as other existing systems may do) as students reflect and practice articulating how their studies have prepared them for work in their discipline. The involvement of industry experts (both directly and indirectly) in informing the development of the tool was also a key strength.

Conclusion

In conclusion, a tailored, career-focused interactive online learning tool was perceived by students to be a useful, engaging, effective and efficient strategy to support university students in their career planning and job seeking behaviours prior to graduation. The tool could be easily tailored to other courses in other tertiary institutions and thus these findings may inform the development of other career-focussed activities and tools for students undertaking similar courses, as well as extending the development of the career tool to other courses at other universities.

Acknowledgements

The authors gratefully acknowledge Maria Apostolopoulos, Simona Cicerale and Travis Zimmer for their work on the project.

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