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Canadian Journal of Career Development
Revue canadienne de développement de carrière

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CANADIAN JOURNAL OF **CAREER DEVELOPMENT**

REVUE CANADIENNE DE **DÉVELOPPEMENT DE CARRIÈRE**

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FROM THE EDITOR'S DESK

Diana Boyd, Associate Editor

This year has brought with it changes and hardships for our authors, reviewers, students, readers, and career practitioners. Much has changed worldwide within the past months and this includes our Journal. When COVID-19 arrived in Canada our Journal saw a significant decrease in submissions, of which we are only starting to return to normal. Many of our authors were suddenly thrust out of their offices and workspaces, concerns about family & health took priority, financial concerns arose, and we all had to learn to adjust to this new normal. As I write this, I am still working from home, taking care of my family, and determining how our Journal must change to adapt to this ever-changing climate.

The only certainty now is uncertainty but together we will make it through. While things are different for us all, many times, change leads to something better. Due to COVID our Journal issues will be all digital for 2021. Since the start of this year, we have been diligently working to create a new website that is fully functional and provides the services our authors require. There have been a few hiccups along the way, yet we are making progress. I want to say thank you to our readers and authors for your patience while we slowly get all the issues worked out.

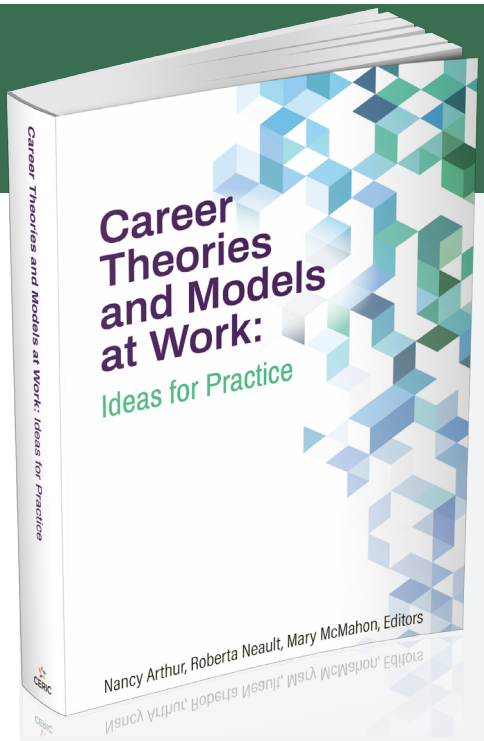
Now I like to introduce you to the three articles contained within Issue 2 of Volume 19. We have one article, one graduate student research brief, and our first article in the new Practitioners & Community Best Practices section. Our first article by Lise Gallant and Diane LeBreton is in French and focuses on the relationship between vocational indecision, burnout, and psychological flexibility. Their findings could be a promising additional intervention tool for the career counselling field. Our second article is a Graduate Student Research Brief. Written by authors Ryan Klopp and Derrick Rancourt, they provide a brief insight into competency expectations of biomedical employers. We recommend you have a read of this graduate student's work and consider how their findings could be applicable to other employer areas. Our final article is published under our new non-peer reviewed Practitioners and Community Best Practices section. Written by Abdullah Al-Ani, Tarryn Bourhill, and Derrick Rancourt of the Cumming School of Medicine at the University of Calgary, they address how informational interview techniques can be used not only as a job-seeking tool but also to enhance postsecondary education. Their article is a recommended read for those in faculty as additional benefit in your curricula.

In closing, I would like to extend sincere gratitude to our reviewers and editorial board members. Without your time and dedication our Journal would not be able to operate and provide quality peer-reviewed and non-peer-reviewed articles. Given the challenges of this year, you have risen to meet them and assisted our Journal to stay active. I would like to also thank our authors for their patience during this time. Many things have changed behind my editor’s desk and challenges that arose due to COVID restrictions which caused delays in the review process. I greatly appreciate your patience and assistance in keeping the review process moving as smoothly as possible. Finally, I extend thanks to our readers, supporters, CERIC, and The Counselling Foundation of Canada. Without you, our Journal would not be able to operate, gain global readership, nor provide valuable research information to those who could benefit from it.

I cannot say what the coming year will bring but I know that whatever comes we will face it together. Career development, career counselling, career practitioners, and the entire career field are going to be significantly more important over the next year to help individuals & businesses recover from the impact COVID has had on our world.

Sincerely,

Diana Boyd, *Associate Editor*



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THÉORIES ET MODÈLES ORIENTÉS SUR LA CARRIÈRE : DES IDÉES POUR LA PRATIQUE

Une équipe internationale travaille à un projet de traduction et de révision linguistique de l'ouvrage pour une édition en français. **Louis Cournoyer (UQAM)** assure la coordination du projet avec **Patricia Dionne (Sherbrooke)** et **Simon Viviers (Laval)**. L'ensemble de l'édition originale sera traduite avec l'ajout d'une préface complémentaire rendant compte de distinctions conceptuelles et réglementaires sur le plan des pratiques du counseling de carrière dans la francophonie canadienne, européenne et d'ailleurs dans le monde. La publication de la version francophone de l'ouvrage est prévue en **janvier 2021**.

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CANADIAN JOURNAL OF CAREER DEVELOPMENT | REVUE CANADIENNE DE DÉVELOPPEMENT DE CARRIÈRE

À la rencontre de l'indécision vocationnelle et de l'épuisement professionnel : la flexibilité psychologique comme levier d'intervention

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Résumé

Au moment de définir son projet vie-carrière, la personne se voit souvent confrontée à faire des choix. Cette situation, qui engendre des moments d'incertitude, l'amène souvent à vivre un état d'indécision vocationnelle. À son tour, cette indécision peut mener à des difficultés d'ordre psychologique, dont l'épuisement professionnel. Par ailleurs, la flexibilité psychologique contribue au bien-être et à la santé psychologique de la personne, en plus d'être considérée comme une habileté essentielle à la tâche d'exploration et à la construction d'un projet vie-carrière. Afin de mieux connaître la nature des relations qui existent entre l'indécision vocationnelle, l'épuisement professionnel et la flexibilité psychologique, une recherche quantitative a permis d'interroger 318 étudiantes et étudiants universitaires de premier cycle par rapport à chacune de ces trois variables. Les résultats de l'étude révèlent que les personnes indécises et épuisées sont moins portées à être flexibles sur le plan psychologique. Les résultats permettent aussi d'avancer que la flexibilité psychologique, qui agit comme variable médiatrice dans le modèle à l'étude, pourrait s'avérer un levier d'intervention prometteur pour le domaine du développement et du counseling de carrière.

Certains individus éprouvent plus de difficultés que d'autres à définir et à s'engager dans un projet vie-carrière (Brioux, Villate et Oubrayrie-Roussel, 2019; Falardeau, 2007; Faurie et Giacometti, 2017; Walker et Tracey, 2012; Walsh, Savickas et Hartung, 2013; Zunker, 2016). Bon nombre d'étudiantes et d'étudiants au niveau postsecondaire sont aux prises avec une incapacité à formuler un projet d'avenir. Décrite par plusieurs comme l'indécision vocationnelle (Cournoyer et Lachance, 2018; Dosnon, 1996; Falardeau, 2007, 2012; Faurie et Giacometti, 2017; Forner, 2007; Gati, 2013), cette incapacité à prendre une décision compte parmi les problématiques vocationnelles les plus courantes et complexes (Amir et Gati, 2006; Faurie et Giacometti, 2017; Osipow, 1999). Plus particulièrement, l'indécision vocationnelle peut rendre la personne vulnérable, au point où elle peut vivre du stress (Faurie et Giacometti, 2017), de l'anxiété (Campagna et Curtis, 2007; Cournoyer et Lachance, 2018; Falardeau, 2012; Yu, 2019), de la dépression (Walker et Peterson, 2012). À une époque où les structures traditionnelles du marché du travail se transforment à un rythme fulgurant, les enjeux liés à l'indécision vocationnelle et, par ricochet, à l'insertion socioprofessionnelle sont réels. Cet article vise justement à présenter les principaux résultats d'une étude portant sur la nature des relations entre l'indécision vocationnelle, l'épuisement professionnel et la flexibilité psychologique auprès d'un échantillon d'étudiantes et d'étudiants universitaires de premier cycle.

Énoncé du problème

De nombreux écrits rapportent que plusieurs personnes étudiantes au niveau postsecondaire connaissent un état d'indécision vocationnelle (Brioux et al., 2019; Falardeau, 2007, 2012; Faurie et Giacometti, 2017; Guay, Ratelle, Senécal, Larose et Deschênes, 2006; Picard, 2012). À ce chapitre, les données d'une enquête longitudinale et pancanadienne révèlent que 13,3 % des jeunes canadiens « étaient indécis à l'égard de leur carrière à 25 ans, ou avaient choisi une nouvelle carrière (38,3 %) » (p. 5, Statistique Canada, 2015). Même si l'enquête ne révèle pas les motifs ayant appelé ces nombreux jeunes (38,3 %) à opter pour une nouvelle carrière à cet âge, il apparait, d'une perspective pratique, qu'une forme quelconque d'indécision pourrait être lié à cette décision. Par ail-

leurs, lorsqu'elle s'entremêle à des problématiques de santé mentale, l'indécision vocationnelle se complexifie (Walker et Peterson, 2012; Yu, 2019; Zunker, 2008). À ce propos, Walker et Peterson (2012) démontrent que le fait d'entretenir des pensées dysfonctionnelles relativement à la carrière tout en souffrant d'indécision vocationnelle est associé à l'apparition de symptômes dépressifs chez une population universitaire de niveau premier cycle. Pour leur part, Boudreau, Santen, Hemphill et Dobson (2004) affirment que l'incertitude vis-à-vis le futur serait parmi les facteurs déterminants de l'épuisement professionnel.

En plus de la dépression et de l'anxiété, l'épuisement professionnel est également présent au niveau des études postsecondaires (Mazurkiewicz, Korenstein, Fallar et Ripp, 2012; Schaufeli, Martinez, Pinto, Salanova et Baker, 2002) et peut être vécu différemment, selon le genre et le programme d'études (Divaris, Polychronopoulou, Taoufic, Katsaros et Eliades, 2012; Prins et al., 2010). Dans ce contexte, l'épuisement professionnel réfère à un syndrome psychologique lié au travail ou aux études, caractérisé par une fatigue émotionnelle, une attitude cynique ou détachée et un faible sentiment d'accomplissement personnel à la suite d'une exposition à des agents stressants (Maslach et Jackson, 1981; Schaufeli et al., 2002). Au fil des ans, l'épuisement professionnel a fait l'objet de recherches auprès d'étudiantes et d'étudiants universitaires étant donné le nombre croissant de personnes qui en souffrent et de ses répercussions sur le plan personnel et académique. Ainsi, une étude effectuée par Mazurkiewicz et al. (2012) auprès d'étudiantes et d'étudiants universitaires (n=86) démontre que 71 % de leur échantillon souffrent d'épuisement professionnel et, n'étant plus en mesure de performer adéquatement, ils adoptent conséquemment une attitude négative envers leurs études. Cette situation résulte couramment en un manque d'engagement (Pienaar et Sieberhagen, 2005; Salanova, Schaufeli, Martínez et Bresó, 2010). Certaines personnes iront même jusqu'à abandonner leurs études, leur état de santé étant devenu insupportable (Dryman, Gardner, Weeks et Heimberg, 2016; Dyrbye et al., 2010; Moneta, 2011).

Dans un autre ordre d'idées, les écrits en développement de carrière reconnaissent que la flexibilité est une habileté essentielle à la tâche d'exploration et à la construction d'un projet professionnel (Pelletier et Bujold, 1984; Pelletier, Noiseux et Bujold, 1974; Krumboltz, 2009; Krumboltz, Foley et Cotter, 2013, Xu et Tracey, 2014). Cette habileté est aussi reconnue pour favoriser l'acquisition d'une incertitude positive (Gelatt, 1989, Gelatt et Gelatt, 2003) et d'une adaptabilité à la carrière (Savickas, 2002, 2013; Savickas et al., 2010). En psychologie clinique, la flexibilité correspond au fait d'être en harmonie avec son expérience personnelle, malgré la présence d'événements indésirables, tout en s'engageant dans des actions cohérentes avec ses valeurs (Bond, Flaxman et Bunce, 2008). Cette flexibilité psychologique est considérée comme étant essentielle au bien-être de la personne (Kashdan et Rottenberg, 2010). L'incertitude étant ce qui caractérise les transformations qu'a subi le marché du travail au cours des cinquante dernières années (Gati, 2013), il importe d'intervenir au moyen de pratiques novatrices qui puissent permettre aux individus de se vivre plus harmonieusement en étant davantage flexibles et aptes à apprivoiser positivement l'incertitude et les ambigüités. À ce propos, une recherche menée auprès d'étudiantes et d'étudiants de niveau postsecondaire révèle que la tolérance à l'incertitude peut agir comme effet médiateur dans la relation entre le développement de l'identité professionnelle et la satisfaction de vie (Garrison, Lee et Ali, 2017). Cette recherche appuie en quelque sorte le modèle à l'étude.

L'approche d'acceptation et d'engagement, connue sous l'appellation anglaise Acceptance and Commitement Therapy - ACT (Hayes, 1987; Hayes, Strosahl et Wilson, 1999), sous-tend l'idée que l'inflexibilité psychologique ou encore la rigidité psychologique est plus que souvent liée au développement de problématiques de santé mentale, dont la dépression, l'anxiété et l'épuisement professionnel (Hayes, Luoma, Bond, Masuda et Lillis, 2006; Kashdan et Rottenberg, 2010). L'ACT vise donc à développer chez la personne la capacité à faire des choix qui lui permettent de se rapprocher des personnes et des

choses qui lui sont importantes selon ses valeurs, et ce, même en présence d'obstacles (Polk, Schoendorff, Webster et Olaz, 2017). À ce propos, Lloyd et al. (2013) avancent, au terme d'une étude menée auprès de travailleuses et de travailleurs britanniques (n=100), que l'utilisation de l'approche ACT en milieu de travail avait réduit considérablement les signes d'épuisement professionnel, en plus d'améliorer leur flexibilité psychologique. Pour leur part, Muto, Hayes et Jeffcoat (2011) démontrent qu'une intervention par bibliothérapie (thérapie par la lecture) au moyen de l'approche ACT avait également diminué les signes de stress, d'anxiété et de dépression auprès d'une population universitaire au Nevada.

Enfin, il semble pertinent de rappeler qu'à la base de l'approche ACT et de la flexibilité psychologique se trouve la pleine conscience (Brown, Ryan et Creswell, 2007; Ménard et Beresford, 2016). Selon ces sources, la pleine conscience renvoie à l'habileté à être en contact avec les expériences du moment. Certains écrits soutiennent que les individus faisant preuve de pleine conscience sont en mesure d'avoir une meilleure connaissance d'eux-mêmes (Heeren et Philippot, 2010), de prendre des décisions cohérentes avec leurs valeurs, leurs intérêts et leurs besoins (Grégoire, Baron et Baron, 2012; Grégoire, Lachance et Richer, 2016) de même qu'à reconnaitre les paradoxes et à mieux composer avec les ambigüités (Cayer et Baron, 2006). En ce sens, Ryan et Deci (2004) soutiennent que les personnes qui sont en mesure de prendre des décisions ont la capacité à être plus flexible et à s'adapter aux événements. Pour sa part, une autre étude menée au niveau postsecondaire démontre que l'indécision aversive (aversive indecisiveness), décrite comme un trait mal adapté découlant d'une difficulté à prendre des décisions, constituait un facteur prédicteur d'un faible niveau de flexibilité psychologique (Lauderdale, Martin et Moore, 2019). En somme, l'indécision vocationnelle peut engendrer un état d'instabilité et les effets peuvent s'avérer plus signifiants lorsque liés à des problématiques de santé mentale. De fait, certaines personnes indécises peuvent être susceptibles de vivre de la détresse psychologique, telle que l'anxiété et la dépression. Dans ce contexte, il semble avisé de les amener à vivre avec ouverture et acceptation cet état d'indécision et de détresse psychologique.

Hypothèses de recherche

Le but de cette recherche était de connaitre la nature des relations entre l'indécision vocationnelle, l'épuisement professionnel et la flexibilité psychologique auprès d'un échantillon d'étudiantes et d'étudiants universitaires de premier cycle. Pour ce faire, les deux hypothèses suivantes ont été formulées :

H1 : Plus les étudiantes et les étudiants universitaires sont indécis sur le plan vocationnel, plus ils sont épuisés professionnellement envers leurs études.

H2 : La flexibilité psychologique constitue une variable médiatrice dans la relation entre l'indécision vocationnelle et l'épuisement professionnel.

Selon Baron et Kenny (1986), une variable médiatrice peut être utilisée dans un contexte où il existe conceptuellement une relation entre une variable indépendante et une variable dépendante. La variable médiatrice est aussi utilisée pour déterminer dans quelle mesure la variable indépendante influence la variable dépendante. Dans le cas de la présente étude, il est à supposer que la flexibilité psychologique serve de mécanisme afin d'expliquer comment les personnes indécises sont portées à être plus épuisées aux études. De plus, l'analyse de médiation fut testée à l'aide d'hypothèses spécifiques (Agler et De Boeck, 2017).

Méthode

Sujets de recherche

Les sujets de cette étude, âgés entre 18 et 25 ans, ont été ciblés à l'aide de la méthode d'échantillonnage non aléatoire de personnes volontaires (Johnson et Christensen, 2012). Cette tranche d'âge correspond au premier cycle d'études universitaires, en plus de représenter une période d'exploration marquée par de nombreux changements au plan

vie-carrière. Seules les personnes inscrites aux études à temps plein ont été retenues afin d'assurer le plus d'homogénéité possible. Au total, l'échantillon fut composé de 318 personnes étudiantes, dont 239 femmes et 79 hommes âgés en moyenne de 20 ans.

Outils de mesure et procédure

Un questionnaire électronique de langue française élaboré à l'aide de la plateforme SurveyMonkey (durée approximative de 15 minutes) a d'abord été soumis à l'ensemble de la population étudiante inscrite au premier cycle d'études à l'Université de Moncton (campus de Moncton). Une version papier de ce questionnaire a aussi été administrée afin d'assurer l'atteinte de l'échantillon visé, alors que des personnes étudiantes inscrites à certains cours universitaires furent sollicitées. La collecte des données s'est déroulée à la session d'hiver 2015.

Outre les questions habituelles d'ordre sociodémographique (ex. : sexe, âge), certains énoncés portaient sur le parcours académique des sujets (ex. : nombre d'années, statut étudiant, programme d'études). En ce qui a trait aux variables à l'étude, la sous-échelle indécision vocationnelle de la Career Decision Scale (CDS; Osipow, 1987), traduite en français par Martin, Sabourin, Laplante et Coallier (1991), fut retenue puisqu'il s'agit d'une mesure largement utilisée dans les études portant sur l'indécision vocationnelle (Bujold et Gingras, 2000; Forner, 2007), en plus d'avoir été adaptée à divers pays (Dosnon, 1996; Osipow, 1999) et d'avoir de bonnes propriétés psychométriques (Osipow, Carney et Barak, 1976; Sabourin et Coallier, 1991).

L'outil est composé de 18 items, dont une sous-échelle mesurant la certitude vocationnelle et une autre mesurant l'indécision vocationnelle. Les réponses sont présentées sur une échelle Likert graduée en quatre points, allant de pas du tout comme moi à exactement comme moi. Seuls les items de la sous-échelle indécision vocationnelle ont été analysés dans le cadre de cette étude, étant donné le but visé. Pour sa part, la limite inférieure de la fidélité, évaluée à l'aide du modèle de Guttman, approchait 0,95 ($\lambda 6 = 0,92$), ce qui est excellent.

De plus, la version française du Maslach Burnout Inventory – Student Survey (MBI-SS; Schaufeli et al., 2002) fut utilisée comme mesure du degré d'épuisement professionnel. Déjà reconnu pour ses propriétés psychométriques, le MBI-SS a, de plus, fait l'objet d'une traduction inversée dans le cadre de cette recherche. Cet outil est composé de trois sous-échelles : épuisement émotionnel, dépersonnalisation, accomplissement personnel. Des scores élevés aux sous-échelles épuisement émotionnel et dépersonnalisation ainsi que des scores faibles à la sous-échelle accomplissement personnel suggèrent la présence d'épuisement professionnel. Les réponses sont présentées sur une échelle Likert graduée en sept points allant de jamais à toujours. Quant aux indices de fidélité, la limite inférieure de la fidélité de la mesure, évaluée à l'aide du modèle de Guttman, approchait 0,85 ($\lambda 4 = 0,84$) pour la sous-échelle épuisement émotionnel, 0,90 ($\lambda 2 = 0,89$) pour la sous-échelle dépersonnalisation et 0,80 ($\lambda 2 = 0,78$) pour la sous-échelle accomplissement personnel. Ses indices sont acceptables selon les critères utilisés en sciences sociales (Nunnaly et Bernstein, 1994).

En dernier lieu, la version française du Acceptance and Action Questionnaire II (Bond et al., 2011), le Questionnaire d'acceptation et d'action II traduit par Monestès, Villatte, Mouras, Loas et Bond (2009), a servi à mesurer la flexibilité psychologique. Cet outil est composé de dix items. Une bonne flexibilité psychologique se traduit par des scores plus élevés. L'outil présente les réponses selon une échelle Likert graduée en sept points allant de jamais vrai à toujours vrai. Il s'agit de l'un des rares outils mesurant le concept de flexibilité psychologique. La limite inférieure de la fidélité pour cette mesure, évaluée à l'aide du modèle de Guttman, approchait 0,90 ($\lambda 2 = 0,88$), ce qui est excellent.

Analyse des données

L'entrée des données s'est faite à l'aide du logiciel SPSS. La base de données a été épurée afin de traiter les erreurs de saisie, les données manquantes ainsi que les données déviantes. La normalité, la linéarité, l'homogénéité des variances ainsi que la colinéarité

des variables ont aussi été mises à l'épreuve, afin d'assurer le respect des postulats de base en inférence statistique. Par ailleurs, les propriétés psychométriques ont été examinées à l'aide de l'analyse factorielle (validité) et des indices de Guttman (fidélité) respectivement. Des analyses descriptives ont été effectuées pour, entre autres, décrire l'échantillon à l'étude, puis établir le profil des variables. Une matrice de corrélation a également été produite, permettant ainsi d'observer les relations entre les différentes variables à l'étude. Finalement, des analyses de régression multiple faites à l'aide du logiciel AMOS, suivant la procédure de Baron et Kenny (1986), ont permis de déterminer les relations entre l'indécision vocationnelle, l'épuisement professionnel et la flexibilité psychologique.

Principaux résultats

Analyses descriptives

Le tableau 1 présente les fréquences et les pourcentages des variables catégorielles à l'étude. Tel que démontre ce tableau, les femmes composaient la grande majorité de l'échantillon (74,9 %). Par ailleurs, les femmes et les hommes représentaient une proportion relativement égale au niveau des programmes menant à une formation professionnelle et à ceux menant à une formation générale. Les programmes de formation professionnelle réfèrent aux programmes d'études qui mènent directement à un titre professionnel (p. ex. : éducation, science infirmière, ingénierie). A l'inverse, les programmes de formation générale procurent une formation de base dans une discipline servant souvent de tremplin à des études supérieures, sans nécessairement mener directement à une profession spécifique (p. ex. : études françaises, sociologie, histoire). Le tableau 1 montre aussi que la plus forte proportion des participantes et des participants provient du baccalauréat en éducation (24,1%), alors que la plus petite proportion provient du domaine de l'administration des affaires (5,6%). Finalement, l'échantillon se répartit de façon relativement égale selon les années du programme d'études, sauf pour la cinquième année où l'on retrouve une plus petite proportion d'étudiantes et d'étudiants.

Tableau 1. Fréquences et pourcentages des variables catégorielles à l'étude

Variables	Fréquences	Pourcentages
Genre (n = 318)		
Féminin	239	74,9 %
Masculin	79	24,8 %
Type de formation (n = 315)		
Formation professionnelle (FP)	137	42,9 %
Formation générale (FG)	178	55,8 %
Nom du programme d'études (n = 315)		
Administration des affaires (administration, comptabilité, management)	18	5,6 %
Arts, lettres et multidisciplinaire (anglais, arts visuels, études françaises, information-communication, musique, traduction, multidisciplinaire)	31	9,7 %
Sciences humaines (économie, études familiales, histoire, sciences politiques, sociologie, travail social)	46	14,4 %
Sciences naturelles et ingénierie (biochimie, biologie, sciences de la santé, informatique, ingénierie, laboratoire médical, techniques radiologiques, thérapie respiratoire)	37	11,6 %
Éducation	77	24,1 %
Récréologie et kinésiologie	33	10,4 %
Science infirmière et nutrition	29	9,1 %
Psychologie	44	13,8 %
Année du programme d'études actuel (n = 316)		
1re année	67	21,0 %
2e année	77	24,1 %
3e année	72	22,6 %
4e année	74	23,2 %
5e année	26	8,2 %

Le tableau 2, quant à lui, présente les minimums, maximums, moyennes et écarts-types des variables continues à l'étude. L'âge moyen des participants est de 20 ans. De manière générale, les scores moyens de l'indécision vocationnelle et de l'épuisement professionnel (épuisement émotionnel, dépersonnalisation, accomplissement personnel) sont à plus de trois écarts-types du score

Tableau 2. Minimums, maximums, moyennes et écarts-types des variables continues à l'étude (n = 318)

Variables	Minimums obtenus (possible)	Maximums obtenus (possible)	Moyennes	Écarts-types
Âge	18 (18)	25 (25)	20,34	1,70
Indécision vocationnelle	16 (16)	53 (64)	27,98	9,03
Épuisement professionnel	12 (12)	75 (84)	36,43	9,88
Épuisement émotionnel	4 (4)	28 (28)	15,51	4,02
Dépersonnalisation	4 (4)	27 (28)	10,51	5,10
Accomplissement personnel	4 (4)	20 (28)	10,52	2,34
Flexibilité psychologique	17 (9)	62 (63)	44,09	8,46

Tableau 3. Matrice de corrélations de Pearson des variables continues du modèle de médiation à l'étude (n = 318)

	1	2	3	4	5	6
1. **Indécision vocationnelle**	-	,42**	,21**	,46**	,29**	-,34**
2. **Épuisement professionnel**		-	,77**	,87**	,70**	-,45**
3. **Épuisement émotionnel**			-	,49**	,32**	-,41**
4. **Dépersonnalisation**				-	,43**	-,32**
5. **Accomplissement personnel**					-	-,35**
6. **Flexibilité psychologique**						-

Note. **p<0,01

maximum de ces sous-échelles. Le même phénomène se produit à la sous-échelle indécision vocationnelle. Cependant, en ce qui a trait à l'échelle flexibilité psychologique, le score moyen de 44,09 est un peu plus de deux écarts-types du score maximal possible de 63.

Le tableau 3, pour sa part, présente la matrice de corrélations de Pearson des variables continues du modèle de médiation à l'étude. Un examen des données révèle que l'ensemble des variables sont liées de manière significative. Plus spécifiquement, les items à la sous-échelle indécision vocationnelle et à l'échelle épuisement professionnel corrèlent négativement avec le score à l'échelle flexibilité psychologique. De plus, les items à la sous-échelle indécision vocationnelle corrèlent positivement avec les scores à l'échelle épuisement professionnel. Autrement dit, plus les personnes sont indécises, moins elles sont flexibles et plus elles sont épuisées.

Analyses univariées

Des tests-t ainsi que des analyses de variance univariées (ANOVA) ont permis de déterminer la nature des relations entre les variables catégorielles et continues. En ce qui a trait au genre, le score moyen de l'indécision vocationnelle des hommes (m = 31,49, s = 9,46) est significativement supérieur (t[123,490] = -3,90, p = 0,000) au score moyen des femmes (m = 26,81, s = 8,61). Par ailleurs, le score moyen à la sous-échelle dépersonnalisation chez les hommes (m = 12,03, s = 5,17) est significativement supérieur (t[316] = -3,05, p = 0,002) au score moyen des femmes (m = 10,03, s = 4,99). Finalement, le score moyen à la sous-échelle épuisement émotionnel chez les femmes (m = 15,69, s = 3,94) est significativement supérieur (t[316] = 2,31, p = 0,022) au score moyen des hommes (m = 14,49, s = 4,11). Il est à noter qu'il n'y a pas de différence de genre aux scores moyens obtenus à l'échelle flexibilité psychologique et aux sous-échelles accomplissement personnel et dépersonnalisation.

Quant au type de formation (c.-à-d., formation professionnelle ou formation générale), le score moyen à la sous-échelle indécision vocationnelle (m = 30,03, s = 8,89) est significativement supérieur dans le cas des programmes de formation générale (t[303,85] = 5,19, p = 0,000) au score moyen des programmes de formation professionnelle (m = 14,49, s = 4,11). De plus, le score moyen à la sous-échelle dépersonnalisation chez les personnes inscrites à un programme de formation générale (m = 11,38, s = 5,24) est significativement supérieur (t[313] = 3,31, p = 0,001) au score moyen de celles

inscrites à un programme de formation professionnelle (m = 9,48, s = 4,75). Les niveaux de flexibilité psychologique, d'épuisement émotionnel, d'accomplissement personnel et d'épuisement professionnel ne diffèrent pas significativement selon le type de formation.

Plus spécifiquement, au niveau des programmes d'études, une ANOVA à plan simple indique une différence significative (F[7, 307] = 2,203, p = 0.034) à l'échelle flexibilité psychologique. Le test des comparaisons multiples REGWQ indique que le score moyen à l'échelle flexibilité psychologique est plus élevé chez les étudiantes et les étudiants inscrits dans les programmes de sciences et d'ingénierie (m = 47,00, s = 7,60) que chez les étudiantes et les étudiants inscrits dans les domaines des arts, des lettres et multidisciplinaire (m = 39,87, s = 8,92). Les autres variables ne sont pas significativement reliées aux différents programmes d'études.

Pour ce qui est de l'année du programme d'études, une ANOVA à plan simple indique une différence significative (F[4, 303,18] = 3,14, p = 0,015) à la sous-échelle indécision vocationnelle, selon l'année du programme. Le test des comparaisons multiples de moyennes Games-Howell indique que le score moyen à la sous-échelle indécision vocationnelle est plus élevé en 1re année (m = 29,48, s = 9,88), en 3e année (m = 28,7778, s = 8,42736) et en 4e année du programme (m = 28,39, s = 9,32) qu'en 5e année (m = 23,00, s = 5,50). Les autres variables ne sont pas significativement reliées à l'année du programme d'études.

Enfin, en ce qui a trait à l'âge, une ANOVA à plan simple indique une différence significative (F[7, 32,77] = 2,08, p = 0,045) à la sous-échelle épuisement émotionnel. Le test des comparaisons multiples REGWQ indique que le score moyen à la sous-échelle épuisement émotionnel est significativement élevé, peu importe l'âge. Les autres variables ne sont pas significativement liées à l'âge.

Analyse multivariée

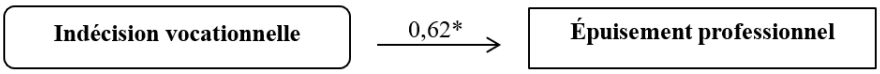
L'analyse multivariée de régression multiple utilisée dans le but de vérifier l'effet médiateur de la variable flexibilité psychologique s'inspirait de l'approche de Baron et Kenny (1986). En guise de rappel, l'effet médiateur est obtenu lorsque l'effet d'une variable indépendante (X) sur une variable dépendante (Y) est transmis par une variable médiatrice (M). L'approche de Baron et Kenny est la plus utilisée en sciences sociales pour tester l'effet de médiation (Fritz et MacKinnon, 2007).

La figure 1 présente la première étape de l'approche de Baron et Kenny (1986), c'est-à-dire l'effet total de la variable X sur la variable Y. La relation s'avère statistiquement significative, ce qui démontre que plus les personnes sont indécises sur le plan vocationnel, plus elles sont portées à être épuisées sur le plan professionnel.

La figure 2 présente les résultats obtenus de la deuxième étape à la quatrième étape de Baron et Kenny (1986). L'effet de la variable indécision vocationnelle sur la variable flexibilité psychologique (- 0,56) s'avère significative. Par ailleurs, l'effet de cette dernière variable sur la variable épuisement professionnel en contrôlant l'effet de la variable indécision vocationnelle (- 0,30) est significatif. Finalement, l'effet de la variable indécision vocationnelle sur la variable épuisement professionnel en contrôlant l'effet de la variable flexibilité psychologique (0,45) est plus petit que l'effet total initial. Ces résultats suggèrent que l'effet de la relation entre l'indécision vocationnelle et l'épuisement professionnel se fait partiellement par l'entremise de la flexibilité psychologique.

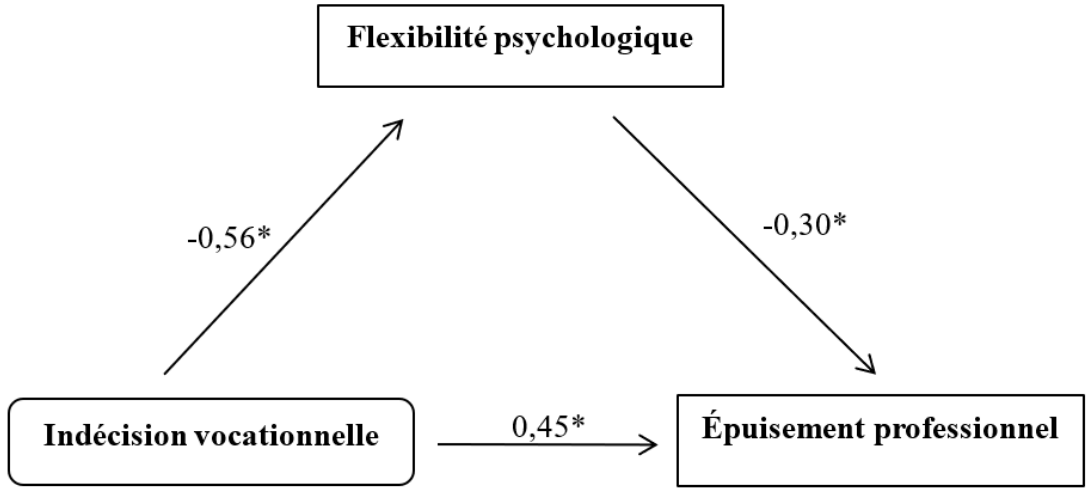
Le tableau 4, quant à lui, présente les coefficients de régression standardisés du modèle de médiation à l'essai en indiquant les relations directes et indirectes des variables venant appuyer la quatrième étape de l'approche de

Figure 1. Coefficient de régression (B) de l'effet total de la variable indécision vocationnelle (X) sur la variable épuisement professionnel (Y)



Note. *p<,001

Figure 2. Coefficients de régression (B) de l'effet direct du modèle à l'essai incluant la variable médiatrice (M) de flexibilité psychologique



Note. *p<,001

Tableau 4. Coefficients de régression standardisés (ß) du modèle de médiation à l'étude (n = 318)

Modèle à l'essai	Relation directe sans médiation	Relation directe avec médiation	Relation indirecte (méthode du *bootstrap* avec correction)
IV_FP_EP	0,42*	0,31*	Médiation partielle 0.116 *

Note. *p<,001

Baron et Kenny (1986). La significativité de l'effet médiateur est également obtenue par la méthode du bootstrap avec correction (Fritz et MacKinnon, 2007), soit une méthode ayant des paramètres d'estimation plus précis que d'autres méthodes connues, telle que le test de Sobel (Hayes, 2009). Elle permet également de corriger le problème d'asymétrie qui peut survenir dans la nouvelle distribution (Fritz et MacKinnon, 2007). De manière générale, cette dernière étape permet de déterminer que l'effet médiateur de la variable flexibilité psychologique s'avère significatif. Il est alors possible de conclure que la flexibilité psychologique constitue une variable médiatrice dans la relation entre l'indécision vocationnelle et l'épuisement professionnel chez l'échantillon à l'étude.

Discussion

Au terme des analyses, il est possible de confirmer la première hypothèse de recherche qui stipule que plus les étudiantes et les étudiants universitaires sont indécis sur le plan vocationnel, plus ils sont épuisés professionnellement envers leurs études. En effet, les étudiantes et les étudiants universitaires de l'échantillon présentant des signes d'indécision vocationnelle étaient plus aptes à vivre de l'épuisement professionnel. Ces résultats appuient les travaux de Boudreau et al. (2004) qui avancent que l'incertitude ressentie face à son futur est un élément clé contribuant au développement de l'épuisement professionnel. D'autres travaux rejoignent en quelque sorte les résultats

de cette recherche en démontrant que les personnes indécises sont plus aptes à vivre des sentiments dépressifs (Lauderdale et al., 2019; Walker et Peterson, 2012), reçoivent moins de renforcements de leur environnement académique ou familial (Garcia, Restubog, Bordia, Bordia et al., 2015), proviennent de milieux où les parents accordent une importance plutôt variable ou faible par rapport aux études postsecondaires (Statistique Canada, 2015) et ont moins tendance à avoir un fort sentiment d'efficacité (Faurie et Giacometti, 2017; Guay et al., 2006). Plusieurs de ces travaux appuient indirectement la relation qui existe entre l'indécision vocationnelle et les trois composantes de l'épuisement professionnel (épuisement émotionnel, dépersonnalisation, affaiblissement du sentiment d'accomplissement personnel).

Par ailleurs, les niveaux d'indécision vocationnelle et d'épuisement professionnel obtenus au terme des analyses diffèrent de ceux répertoriés dans la littérature scientifique (Falardeau, 2007, 2012; Guay et al., 2006; Mazurkiewicz et al., 2012; Picard, 2012; Schaufeli et al., 2002). Bien qu'une comparaison entre les résultats obtenus et ceux recensés doive se faire avec prudence, les niveaux d'indécision vocationnelle et d'épuisement professionnel de l'échantillon à l'étude demeurent peu élevés. Cette différence pourrait notamment être attribuable à l'effet de désirabilité sociale. À l'inverse, il se pourrait également que les étudiantes et les étudiants ayant répondu aux questionnaires étaient plus aptes à prendre des décisions et en meilleure santé mentale en raison de leurs caractéristiques personnelles ou encore des diverses formes d'appui à la réussite des études offertes au sein de leur établissement (p. ex., tutorat et centres d'aide, mentorat étudiant, coach à l'apprentissage, services d'orientation ou de recherche de travail, service de psychologie). Si tel est le cas, ce dernier point pourrait peut-être servir d'explications face à la capacité des étudiantes et des étudiants à exercer une flexibilité sur le plan psychologique.

La seconde hypothèse de recherche, qui stipule que la flexibilité psychologique constitue une variable médiatrice dans la relation entre l'indécision vocationnelle et l'épuisement professionnel, fut également confirmée. Cela signifie donc que plus les étudiantes et les étudiants font preuve de flexibilité psychologique, moins ils sont portés à vivre de l'indécision vocationnelle ou de l'épuisement professionnel. En d'autres mots, moins les personnes sont indécises, plus elles sont portées à être flexibles sur le plan psychologique et, conséquemment, moins elles sont enclines à être épuisées face à leurs études. Ces résultats corroborent les travaux de Brown et al. (2007) qui révèlent que les personnes capables d'être pleinement conscientes du moment présent (une habileté à la base de la flexibilité psychologique) sont en mesure de faire des choix cohérents avec leurs valeurs, leurs besoins et leurs sentiments. Plus précisément, elles sont en mesure de s'engager dans une tâche, de l'accomplir et d'atteindre leurs objectifs (Brown et al., 2007).

Les résultats obtenus à cette deuxième hypothèse permettent aussi d'affirmer, à l'instar des travaux de Kashdan et Rottenberg (2010), que les personnes flexibles sur le plan psychologique seraient plus aptes à prendre des décisions et seraient donc moins indécises. Ces résultats appuient les travaux de Xu et Tracey (2014), à l'effet que les personnes moins indécises seraient plus aptes à tolérer l'ambiguïté, ce qui n'est pas sans rappeler l'importance que revêt pour le développement et le counseling de carrière le concept d'incertitude positive (Gelatt, 1989, Gelatt et Gelatt, 2003). De plus, ces résultats trouvent écho, en quelque sorte, dans les écrits qui insistent sur l'importance de développer chez la personne une compétence d'adaptabilité afin d'être en mesure de mieux s'ajuster en fonction de nouvelles situations et, conséquemment, d'être mieux préparée à prendre une décision de carrière qui lui est propre (Hartung, Porfeli et Vondracek, 2008; Savickas, 2002; Savickas et al., 2010). Enfin, les résultats obtenus peuvent servir d'appui à plusieurs autres recherches qui tendent à démontrer que les personnes flexibles sur le plan psychologique sont en meilleure santé mentale (Flaxman et Bond, 2010; Hayes et al., 1999; Kashdan et Rottenberg, 2010), sont moins portées à souffrir d'épuisement professionnel (Hayes, Follette et Lineham, 2004; Hayes et al., 2006; Lloyd, Bond et Flaxman, 2013) ou à éprouver

des symptômes de dépression et d'anxiété (Lauderdale et al, 2019; Levin, Pistorello, Seely et Hayes, 2014; Muto et al., 2011), soit des concepts se rattachant à l'épuisement professionnel.

En ce qui a trait aux relations entre les principales variables à l'étude et les variables sociodémographiques, il appert ici que les hommes de l'échantillon sont plus indécis que les femmes, alors que les études recensées indiquaient le contraire (Rassin et Muris, 2005; Zhou et Santos, 2007), étant donné notamment qu'ils sont plutôt impulsifs lorsqu'ils prennent une décision relativement à la carrière (Creed, Prideaux et Patton, 2005). Dans le cas de la présente étude, une plus forte proportion d'hommes (n = 47) de l'échantillon sont inscrits à des programmes de formation générale, comparativement à des programmes de formation professionnelle, ce qui pourrait expliquer en partie ce résultat, puisque ceux ne menant pas à des professions spécifiques incluaient plus d'étudiantes et d'étudiants indécis. Les travaux de Daniels, Stewart, Stupnisky, Perry et LoVerso (2011) corroborent ce résultat en affirmant que les étudiantes et les étudiants qui choisissent des programmes de formation professionnelle ont, en quelque sorte, déjà effectué un choix de carrière, ce qui les amènerait à vivre moins d'indécision vocationnelle. Finalement, les étudiantes et les étudiants en début de parcours académique étaient plus indécis que ceux en fin de parcours, ce qui semble attendu puisque la plupart des personnes en fin de parcours sont généralement plus près de leur objectif de carrière que celles qui entament un programme d'études.

Du point de vue de l'épuisement professionnel, on note que les femmes de l'échantillon sont plus épuisées émotionnellement envers leurs études que les hommes qui, eux, semblent davantage faire preuve d'un sentiment de dépersonnalisation. Ce constat est appuyé par d'autres études (Divaris et al., 2012; Prins et al., 2010). De plus, en matière de programmes d'études, les étudiantes et étudiants inscrits à des programmes de formation générale font preuve d'un plus grand sentiment de dépersonnalisation et, par conséquent, connaissent davantage de signes d'épuisement. Étant donné que les personnes indécises de l'échantillon se trouvaient majoritairement inscrites dans des programmes de formation générale, cela pourrait peut-être expliquer pourquoi elles ont démontré un sentiment de détachement ou une attitude plus cynique envers leur domaine de formation.

Finalement, en ce qui a trait à la flexibilité psychologique, les résultats permettent d'avancer que les sujets provenant des programmes de sciences naturelles et d'ingénierie sont plus flexibles sur le plan psychologique que ceux inscrits dans des programmes d'arts, de lettres et multidisciplinaires. Ce constat peut possiblement s'expliquer par le fait que les étudiantes et les étudiants qui proviennent de programmes menant à une formation professionnelle (p. ex., ingénierie) sont moins indécis (Daniels et al., 2011) et, par conséquent, plus flexibles sur le plan psychologique, tel qu'observé dans cette recherche.

Limites de la recherche

Le moment de la collecte des données (début d'un semestre) a pu avoir un certain effet sur les résultats obtenus, puisqu'il s'agit d'une période habituellement moins stressante, comparativement aux périodes de mi-session ou de fin de session. Également, les sujets ciblés étaient issus d'une population dite générale, c'est-à-dire qu'aucune présélection n'a été faite en fonction de l'état d'indécision vocationnelle, d'épuisement professionnel ou du degré de flexibilité psychologique. En ciblant au préalable des personnes indécises et épuisées, les résultats auraient peut-être pu mieux expliquer le modèle à l'étude. La taille restreinte de l'échantillon et la non-représentativité des genres représentent une autre limite et ne permettent pas la généralisation des résultats à la population générale. Enfin, cette recherche ne permet pas d'établir des relations de causalité ou de cause à effet (Pelletier, Boivin et Alain, 2000) ou à se défaire des variables confondantes qui pourraient faire l'objet d'interférence statistique dans le modèle à l'étude (Pelham et Blanton, 2007).

Conclusion et quelques pistes d'action

Somme toute, le regard croisé entre l'indécision vocation-

nelle, l'épuisement professionnel et la flexibilité psychologique s'avère une démarche novatrice et prometteuse en développement et en counseling de carrière. En ayant accès à des interventions visant à améliorer la flexibilité psychologique, les jeunes adultes, dont les étudiantes et les étudiants universitaires, pourraient être mieux outillés à apprivoiser plus positivement les périodes d'incertitude, le tout favorisant du même souffle une meilleure santé mentale. Ainsi, une démarche préventive d'accompagnement qui s'appuierait sur la flexibilité psychologique s'avère une voie à explorer en matière d'indécision vocationnelle et d'épuisement professionnel au sein des divers services offerts aux personnes étudiantes qui fréquentent les établissements postsecondaires.

En ce qui a trait à des pistes d'action futures, il pourrait être intéressant d'entreprendre une étude qualitative connexe à celle-ci (voire une étude longitudinale) afin de mieux comprendre le vécu et le cheminement des personnes en matière d'indécision vocationnelle et d'épuisement professionnel en milieu universitaire. En comprenant mieux l'histoire de vie des personnes aux prises avec ce type de problématique, cela permettrait de mieux saisir la dynamique entourant, par exemple, la progression de l'indécision vocationnelle vers l'épuisement professionnel, ou encore de mieux saisir de quelle manière d'autres facteurs influencent les variables à l'étude. Des études permettant de prendre en compte les différences entre les genres seraient également pertinentes, considérant la spécificité des femmes en matière d'insertion socioprofessionnelle et les inégalités entre les genres qui persistent (LeBreton, 2008; UNESCO, 2017). Enfin, puisque l'entrainement à la flexibilité psychologique, concept à la base de l'approche ACT, s'est démontré efficace à réduire les effets de différentes problématiques, dont l'épuisement professionnel et l'anxiété, il pourrait être intéressant d'évaluer sa faisabilité et son efficacité auprès de différentes populations qui vivent à la fois des difficultés en matière d'indécision vocationnelle et d'épuisement professionnel.

Références

Amir, T. et Gati, I. (2006). Facets of career decision-making difficulties. British Journal of Guidance & Counseling, 34(4), 483-503. doi : 10.1080/03069880600942608

Agler, R. et De Boeck, P. (2017). On the interpretation and use of mediation : Multiple perspectives on mediation analysis. Frontiers in Psychology, 8, 1984. doi :10.3389/fpsyg.2017.01984

Baron, R. M. et Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research : Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51(6), 1173-1182. doi : 10.1037/0022-3514.51.6.1173

Bond, F. W., Flaxman, P. E. et Bunce, D. (2008). The influence of psychological flexibility on work redesign : Mediated moderation of a work reorganization intervention. Journal of Applied Psychology, 93(3), 645-654. doi : 10.1037/0021-9010.93.3.645

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., ... Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire–II : A revised measure of psychological inflexibility and experiential avoidance. Behavior Therapy, 42(4), 676-688. doi : 10.1016/j.beth.2011.03.007

Boudreau, D., Santen, S.A., Hemphill, R.R. et Dobson, J. (2004) Burnout in medical students : Examining the prevalence and predisposing factors during the four years of medical school. Annals of Emergency Medicine, 44(4), 75–76. doi : 10.1016/j.annemergmed.2004.07.248

Brioux, K., Villate, A. et Oubrayrie-Roussel, N. (2019). Perspectives temporelles passées et indécision vocationnelle chez les étudiants postsecondaires en transition vers l'âge adulte. L'orientation scolaire et professionnelle, 48(1), 105-125. doi : 10.4000/osp.10140

Brown, K. W., Ryan, R. et Creswell, J. D. (2007). Mindfulness : Theoretical foundations and evidence for its salutary effects. Psychological Inquiry, 18(4), 211-237. doi :

10.1080/10478400701598298

Bujold, C. et Gingras, M. (2000). Choix professionnel et développement de carrière : théories et recherches. Montréal : Gaëtan Morin.

Campagna, C. et Curtis, G. J. (2007). So worried I don't know what to be : Anxiety is associated with increased career indecision and reduced career certainty. Australian Journal of Guidance & Counseling, 17(1), 91-96. doi : 10.1375/ajgc.17.1.91

Cayer, M. et Baron, L. (2006). Développer un leadership postconventionnel par une formation à la présence attentive. Revue québécoise de psychologie, 27(1), 257-271.

Cournoyer, L. et Lachance, L. (2018). L'ado en mode décision. Québec : Septembre éditeur.

Creed, P., Prideaux, L. A. et Patton, W. (2005). Antecedents and consequences of career decisional states in adolescence. Journal of Vocational Behavior, 67(3), 397-412. doi : 10.1016/j.jvb.2004.08.008

Daniels, L. M., Stewart, T. L., Stupnisky, R. H., Perry, R. P. et LoVerso, T. (2011). Relieving career anxiety and indecision : The role of undergraduate students' perceived control and faculty affiliations. Social Psychology of Education, 14(3), 409-426. doi : 10.1007/s11218-010-9151-x

Divaris, K., Polychronopoulou, A., Taoufik, K., Katsaros, C. et Eliades, T. (2012). Stress and burnout in postgraduate dental education. European Journal of Dental Education, 16(1), 35-42. doi : 10.1111/j.1600-0579.2011.00715.x

Dosnon, O. (1996). L'indécision face au choix scolaire ou professionnel : concepts et mesures. L'orientation scolaire et professionnelle, 25(1), 129-168.

Dryman, M. T., Gardner, S., Weeks, J. W. et Heimberg, R. G. (2016). Social anxiety disorder and quality of life : How fears of negative and positive evaluation relate to specific domains of life satisfaction. Journal of Anxiety Disorders, 38, 1-8. doi: 10.1016/j.janxdis.2015.12.003

Dyrbye, L. N., Thomas, M. R., Power, D. V., Durning, S., Moutier, C., Massie, F. R., ... Shanafelt, T. D. (2010). Burnout and serious thoughts of dropping out of medical school : A multi-institutional study. Academic Medicine, 85(1), 94-102. doi : 10.1097/ACM.0b013e3181c46aad

Falardeau, I. (2007). Sortir de l'indécision. Québec : Septembre éditeur.

Falardeau, I. (2012). J'enseigne, ils s'orientent : Pour une pédagogie orientante au collégial. Québec : Septembre éditeur.

Faurie, I. et Giacommetti, N. (2017). Effets de l'indécision de carrière et du sentiment d'efficacité personnelle sur le vécu de la transition lycée-université. L'orientation scolaire et professionnelle, 46(2). doi : 10.4000/osp.5378

Flaxman, P. E. et Bond, F. W. (2010). A randomised worksite comparison of acceptance and commitment therapy and stress inoculation training. Behaviour Research and Therapy, 48(8), 816-820. doi : 10.1016/j.brat.2010.05.004

Forner, Y. (2007). L'indécision de carrière des adolescents. Travail Humain, 70(3), 213-234.

Fritz, M. S. et MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. Psychological Science, 18(3), 233-239. doi : 10.1111/j.1467-9280.2007.01882.x

Garcia, P. R. J. M., Restubog, S. L. D., Bordia, P., Bordia, S. et Roxas, R. E. O. (2015). Career optimism : The roles of contextual support and career decision-making self-efficacy. Journal of Vocational Behavior, 88, 10-18. doi :10.1016/j.jvb.2015.02.004

Garrison, Y. L, Lee, K-H et Ali, S. R. (2017). Career identity and life satisfaction : The mediating role of tolerance for uncertainty and positive/negative affect. Journal of Career Development, 44(6), 516-529

Gati, I. (2013). Advances in career decision making. In W. B. Walsh, M. L. Savickas et P. J. Hartung (dir.), Handbook of vocational psychology (4e éd., p. 183-215). New-York, NY : Routledge.

Gelatt, H. B. (1989). Positive uncertainty : A new decision-making framework for counseling. Journal of Counseling Psychology, 36(2), 252-256. doi : 10.1037/0022-0167.36.2.252

Gelatt, H. B. et Gelatt, C. (2003). Creative decision making using positive uncertainty. Boston, MA : Crisp Learning.

Grégoire, S., Baron, C. et Baron, L. (2012). Pleine conscience et counseling. Revue canadienne de counseling et de psychothérapie, 46(2), 161-177.

Grégoire, S., Lachance, L. et Richer, L. (dir.). (2016). La présence attentive. Mindfulness. État des connaissances théoriques, empiriques et pratiques. Québec : Presses de l'Université du Québec.

Guay, F., Ratelle, C., Senécal, C., Larose, S. et Deschênes, A. (2006). Distinguishing developmental from chronic career indecision : Self-efficacy, autonomy, and social support. Journal of Career Assessment, 14(2), 235-251. doi : 10.1177/1069072705283975

Hartung, P. J., Porfeli, E. J. et Vondracek, F. W. (2008). Career adaptability in childhood. The Career Development Quarterly, 57(1), 63-74. doi : 10.1002/j.2161-0045.2008.tb00166.x

Hayes, A. F. (2009). Beyond Baron and Kenny : Statistical mediation analysis in the new millennium. Communication Monographs, 76(4), 408-420.

Hayes, S. C. (1987). A contextual approach to therapeutic change. In N. Jacobson (dir.), Psychotherapists in clinical practice (p. 327-387). New York : Guilford Press.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A. et Lillis, J. (2006). Acceptance and commitment therapy : Model, processes and outcomes. Behavior Research and Therapy, 44(1), 1-25. doi : 10.1016/j.brat.2005.06.006

Hayes, S. C., Follette, V. M. et Linehan, M. M. (dir.). (2004). Mindfulness and acceptance : Expanding the cognitive-behavioral tradition. New York, NY : Guilford Press.

Hayes, S. C., Strosahl, K. D. et Wilson, K. G. (1999). Acceptance and commitment therapy : An experiential approach to behavior change. New York, NY : Guilford Press.

Heeren, A. et Philippot, P. (2010). Les interventions basées sur la pleine conscience : une revue conceptuelle et empirique. Revue québécoise de psychologie, 31(3), 37-61.

Johnson, R. R. B. et Christensen, L. B. (2012). Educational research : Quantitative, qualitative, and mixed approaches (4e éd.). Thousand Oaks, CA : Sage Publications.

Kashdan, T. B. et Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. Clinical Psychology Review, 30(7), 865-878. doi : 10.1016/j.cpr.2010.03.001

Krumboltz, J. D. (2009). The happenstance learning theory. Journal of Career Assessment, 17(2), 135-154.

Krumboltz, J. D., Foley, P. F. et Cotter, E. W. (2013). Applying the happenstance theory to involuntary career transitions. The Career Development Quarterly, 61(1), 15-26.

Lauderdale, S. A., Martin, K. J. et Moore, J. (2019). Aversive indecisiveness predicts risks for and symptoms of anxiety and depression over avoidant indecisiveness. Journal of Rational-Emotive & Cognitive-Behavior Therapy, 37(1), 62-83. doi: 10.1007/s10942-018-0302-x

LeBreton, D. (2009). Trajectoire d'insertion socioprofessionnelle de femmes sous l'angle des variables personnelles et sociales. Revue canadienne de counseling, 43(2), 131-145.

Levin, M. E., Pistorello, J., Seeley, J. R. et Hayes, S. C. (2014). Feasibility of a prototype web-based acceptance and commitment therapy prevention program for college students. Journal of American College Health, 62(1), 20-30. doi :10.1080/07448481.2013.843533

Lloyd, J., Bond, F. W. et Flaxman, P. E. (2013). The value of psychological flexibility : Examining psychological mechanisms underpinning a cognitive behavioural therapy intervention for burnout. Work and Stress, 27(2), 181-199. doi : 10.1080/02678373.2013.782157

Martin, F., Sabourin, S., Laplante, B. et Coallier, J.-C. (1991). Diffusion, support, approach, and external barriers as distinct theoretical dimensions of the career decision scale : Disconfirming evidence? Journal of Vocational Behavior, 38(2), 187-197. doi : 10.1016/0001-8791(91)90026-I

Maslach, C. et Jackson, S. E. (1981). The measurement of experienced burnout. Journal of Occupational Behaviour, 2(2), 99-113. doi : 10.1002/job.4030020205

Mazurkiewicz, R., Korenstein, D., Fallar, R. et Ripp, J. (2012). The prevalence and correlations of medical student burnout in the pre-clinical years : A cross-sectional study. Psychology, Health & Medicine, 17(2), 188-195. doi :10.1080/13548506.2011.597770

Ménard, J. et Beresford, B. (2016). Interventions basées sur la présence attentive. In S. Grégoire, L. Lachance et L. Richer (dir.), La présence attentive mindfulness. État des connaissances théoriques, empiriques et pratiques (p. 71-90). Québec : Presses de l'Université du Québec.

Monestès, J. L., Villatte, M., Mouras, H., Loas, G. et Bond, F. W. (2009). Traduction et validation française du questionnaire d'acceptation et d'action (AAQ-II). Revue européenne de psychologie appliquée, 59(4), 301-308. doi : 10.1016/j.erap.2009.09.001

Moneta, G. B. (2011). Need for achievement, burnout, and intention to leave : Testing an occupational model in educational settings. Personality and Individual Differences, 50(2), 274-278. doi : 10.1016/j.paid.2010.10.002

Muto, T., Hayes, S. C. et Jeffcoat, T. (2011). The effectiveness of acceptance and commitment therapy bibliotherapy for enhancing the psychological health of Japanese college students living abroad. Behavior Therapy, 42(2), 323-335. doi : 10.1016/j.beth.2010.08.009

Nunnally, J. C. et Bernstein, I. H. (1994). Psychometric theory. New York: McGraw-Hill.

Osipow, S. H. (1987). Manual for the Career Decision Scale. Odessa, FL : Psychological Assessment Resources.

Osipow, S. H. (1999). Assessing career indecision. Journal of Vocational Behavior, 55(1), 147-154. doi : 10.1006/jvbe.1999.1704

Osipow, S. H., Carney, C. G. et Barak, A. (1976). A scale of educational-vocational undecidedness: A typological approach. Journal of Vocational Behavior, 9, 233-243. doi : 10.1016/0001-8791(76)90081-6

Pelham, B. W. et Blanton, H. (2007). Conducting research in psychology : Measuring the weight of smoke (3e éd.). Belmont, CA : Wadsworth Cengage Learning.

Pelletier, L. G., Boivin, M. et Alain, M. (2000). Les plans de recherche corrélationnels. In R. J. Vallerand et U. Hess (dir.), Méthodes de recherche en psychologie (p. 193-238). Boucherville, QC : Gaëtan Morin éditeur.

Pelletier, D. et Bujold, C. E. (1984). Pour une approche éducative en orientation. Chicoutimi, QC : Gaëtan Morin éditeur.

Pelletier, D., Noiseux, G., et Bujold, C. E. (1974). Développement vocationnel et croissance personnelle : approche opératoire. Montréal : McGraw-Hill.

Picard, F. (2012). Reducing academic and career indecision : The effectiveness of a first-year college program. The Online Journal of Counseling and Education, 1(3), 71-83.

Pienaar, J. et Sieberhagen, C. (2005). Burnout and engagement of student leaders in a higher education institution. South African Journal of Higher Education, 19(1), 155-166.

Polk, K., Schoendorff, B., Webster, M. et Olaz, F. (2017). Guide de la matrice ACT. Belgique : De Boeck supérieur.

Prins, J. T., Hoekstra-Weebers, J. E., Gazendam-Donofrio, S. M., Dillingh, G. S., Bakker, A. B., Huisman, M., ... Van Der Heijden, F. M. (2010). Burnout and engagement among resident doctors in the Netherlands : A national study. Medical Education, 44(3), 236-247. doi : 10.1111/j.1365-2923.2009.03590.x

Rassin, E. et Muris, P. (2005). To be or not to be . . . indecisive : Gender differences, correlations with obsessive-compulsive complaints, and behavioral manifestation. Personality and Individual Differences, 38(5), 1175–1181. doi : 10.1016/j.paid.2004.07.014

Ryan, R. M. et Deci, E. L. (2004). Autonomy is no illusion : Self-determination theory and the empirical study of authen-

ticity, awareness, and will. In J. Greenberg, S. L. Koole et T. Pyszczynski (dir.), Handbook of experimental existential psychology (p. 449-479). New York : The Guilford Press.

Sabourin, S. et Coallier, J. C. (1991). The relationship between response style and reports of career indecision. Measurement & Evaluation in Counseling & Development, 24, 69-79.

Salanova, M., Schaufeli, W., Martínez, I. et Bresó, E. (2010). How obstacles and facilitators predict academic performance : The mediating role of study burnout and engagement. Anxiety, Stress & Coping, 23(1), 53-70. doi : 10.1080/10615800802609965

Savickas, M. L. (2002). Career construction : A developmental theory of vocational behavior. In D. Brown et associés (dir.), Career choice and development (4e éd., p. 149-205). San Francisco, CA : Jossey-Bass.

Savickas, M. L. (2013). Career construction theory and practice. In S. D. Brown et R. W. Lent (dir.), Career development and counseling : Putting theory and research to work (2e éd., p. 42-70). Hoboken, NJ : Wiley.

Savickas, M.L., Nota, L., Rossier, J., Dauwalder,J.-P., Duarte, M.E., Guichard, J., … Bigeon, C. (2010). Construire sa vie (Life designing): un paradigme pour l'orientation au 21e siècle. L'orientation scolaire et professionnelle, 39(1), 5-39. doi : 10.4000/osp.2401

Schaufeli, W. B., Martínez, I. M., Pinto, A. M., Salanova, M. et Bakker, A. B. (2002). Burnout and engagement in university students : A cross-national study. Journal of Cross-Cultural Psychology, 33(2), 464–481. doi : 10.1177/0022022102033005003

Statistique Canada. (2015). Tendances liées au choix de carrière des jeunes Canadiens et les études postsecondaires qui lui sont associées (No 81-599-X au catalogue). Repéré en ligne le 25 novembre 2019 de https://www150.statcan.gc.ca/n1/fr/pub/81-599-x/81-599-x2015010-fra.pdf?st=5n-rPweiH.

UNESCO (2017). Déchiffrer le code : l'éducation des filles et des femmes aux sciences, technologie, ingénierie et mathématique (STEM). Repéré en ligne le 18 décembre 2019 de https://unesdoc.unesco.org/ark:/48223/pf0000259816

Walker, J. V. I. I. I. et Peterson, G. W. (2012). Career thoughts, indecision, and depression : Implications for mental health assessment in career counseling. Journal of Career Assessment, 20(4), 497-506. doi : 10.1177/1069072712450010

Walker, T. L. et Tracey, T. J. G. (2012). The role of future time perspective in career decision-making. Journal of Vocational Behavior, 81(2), 150-158. doi : 10.1016/j.jvb.2012.06.002

Walsh, B. W., Savickas, M. L. et Hartung, P. J. (2013). Handbook of vocational psychology. Theory, research, and practice (4e éd.). New-York, NY : Routledge.

Xu, H. et Tracey, T. J. (2014). The role of ambiguity tolerance in career decision making. Journal of Vocational Behavior, 85(1), 18-26. doi : 10.1016/j.jvb.2014.04.001

Yu, C. M. (2019). A theoretical framework for understanding social anxiety in the context of career development. Revue Canadienne de développement de carrière, 18(1), 20-31.

Zhou, D. et Santos, A. (2007). Career decision-making difficulties of British and Chinese international university students. British Journal of Guidance & Counselling, 35(2), 219-235. doi : 10.1080/03069880701256684

Zunker, V. G. (2008). Career, work, and mental health : Integrating career and personal counseling. Thousand Oaks, CA : Sage.

Zunker, V. G. (2016). Career counseling : A holistic approach (9e éd.). Boston, MA : Cengage Learning.

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CANADIAN JOURNAL OF CAREER DEVELOPMENT | REVUE CANADIENNE DE DÉVELOPPEMENT DE CARRIÈRE

Managing Emergent Knowledge: Addressing the Competency Expectations of Biomedical Employers

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Abstract

Biomedical graduate students face an uncertain job market. A significant number of these graduates are sub or un-employed and work in areas not requiring a university degree. For those graduates experiencing this, feeling they have no control over their careers, future sub-employment has become a significant contributor to the rise in mental illness among this cohort (Frank & Hou, 2018). The government of Alberta has begun to communicate expectations that university education and training should be tied to labor market expectations, so this study surveyed and interviewed 92 biomedical hiring managers in western Canada. When asked which non-technical skills they felt graduate degree holders typically are missing, 85 percent of respondents indicated that project management and/or customer engagement were the skills that were lacking in recent graduate students in this field of study. The responses received from these leaders in the Biomedical field who were surveyed suggest that a skills awareness gap is preventing employers from understanding the full value of graduates because these graduates do not articulate the professional skills that they gain in graduate school throughout the hiring process or demonstrate their competencies in the workplace. Accordingly, these shortfalls can be addressed by introducing project management and knowledge translation awareness into curricula. Demand for project management expertise is rising in the biomedical field. Greater awareness and exposure to project management and customer engagement through knowledge translation will help prepare students for the transition into their professional field of work, while also making them more productive in their educational program. Likewise, stakeholder (i.e., customers) interaction such as students presenting their research to stakeholders can promote knowledge translation while introducing students to potential employers earlier in their training.

Academic leaders receive significant pressure from employers to better equip students with the knowledge and skills to succeed in their careers (Bok, 2017) in addition to their academic program knowledge. Employers give students low grades in a variety of learning outcomes, including those considered most important for career success (Hart Research Association, 2015). Similarly, recent graduates have also indicated that "unpreparedness" was a real problem (Bentley University, 2014) (Moore & Morton, 2017), suggesting that a "skills gap" exists between institutions and the workplace.

Science graduates face an uncertain job market In Canada, of the employment that graduates with a master's degree in biology or biomedical sciences pursued, only 40% of these graduates obtained a job related to their field of study (Statistics Canada, 2018). Graduates with a doctoral degree in biology or biomedical sciences fared slightly better, with 55% of them obtaining a job related to their field of study.

Recently, it has been argued by media that the skills gap is actually a skills "awareness" gap because employers do not comprehend the professional skills students acquire through their training and co-curricular activities (Craig & Markowitz, 2017). Students contribute to the discrepancies by not being able to articulate their skills readily (Craig & Markowitz, 2017). Hence, universities need to develop and or promote systems that help students to recognize their skills, competencies and achievements gained, developed and enhanced through their academic programs, work experiences and volunteer experienc-

es and how to communicate these underlying skills to employers.

To understand how we could prepare graduate students' transitioning to the non-academic workplace, email questionnaires and semi-structured telephone interviews were used to collect data from senior employees in biomedical companies, support organizations, and governmental organizations in western Canada. The goal was to determine the skills/competencies that employers valued in graduates from biology and biomedical graduate degree programs and the skills/competencies that recent graduates were missing. We contacted interviewees with human resource (HR) experience in biomedical companies, as well as interviewees that had previously hired employees with a graduate degree or represented organizations that hired employees with a graduate degree in biomedical science.

Methods

Two methods were used to reach the interviewees, direct email and through posting on Rainforest Alberta's Slack channel, a community involved in Alberta's innovation ecosystem. Interviewees were selected based on two criteria: 1) they had to be operating in the biomedical field, and 2) they had to have previously hired an employee with a biomedical based graduate degree. Criteria were verified using LinkedIn profiles. Each recipient was asked the following four questions:

1) Is there a non-technical skill that you typically see employees with a graduate degree excel at?
2) Is there a non-technical skill that you typically see employees with a graduate degree struggle with?
3) What skill do you think correlates most to the success an employee has in their role in your organization?
4) What have you found to be the biggest change that new employees must make when transitioning from their studies to industry?

Results

In total, 301 email recipients' were contacted; 27 failed to deliver. Of the 274 emails that were received, there were 98 responses, one of the individuals asked not to be contacted, and five others had not hired employees with a graduate degree. Twenty-three of the respondents responded with a phone call. To engage a larger audience, a post was made in Rainforest Alberta's Slack Channel from which two individuals directly replied to the inquiry for feedback. Of the people contacted, most responses came from managers. Recruiters were poorly engaged: of the 39 individuals reached, only two responded to the questions asked, preventing analysis of the differing views between hiring managers and human resources. All the interviewees responded to the first question asked regarding the skills that they believed graduate degree holders were lacking. However, not all interviewees answered all the questions, with the question regarding what they thought was the biggest change answered least often.

We learned that recent graduates lacked non-technical skills that could be grouped mainly into project management and customer service skills (see Appendix A). The most frequent concern noted from the data collected from the surveys was with the graduate's ability to lead projects. Some respondents indicated that multiple skill areas were lacking, reporting that both customer service and project management skills were lacking. In total, 94 respondents answered this question.

When the interviewees answered the question what skills graduate degree holders typically excel at, 36 percent of interviewees mentioned their ability to learn new skills, stressing that the technology in their field is constantly changing and that they prioritize the ability to learn over the knowledge job candidates have. One response was excluded that suggested graduates had no skills. Some respondents indicated multiple skills. In total, 73 respondents answered this question.

When interviewees were asked which skill was most linked to career success, communication was the most frequently identified skill that interviewees/respondents mentioned 47 percent of the time as the most important indicator of future career success. Both external and internal communication was mentioned as being important. Forty-two percent of respondents indicating that the most significant

change that new graduates had to make with respect to skill development was related to decision making. Specifically, the need to make faster decisions when you don't have all the information and the ability to understand and balance the stakeholder's interests when making decisions. The question about the biggest change that new employees must make when transitioning to outside academia was the least answered question, with only 29 interviewees/respondents answering the question, most of them answering the question by phone.

Discussion

Graduate students from Canadian biomedical science programs face an uncertain job market (Statistics Canada, 2018). Not surprisingly, students feel that they have little control over their careers. This external locus of control is a significant contributor to the anxiety and depression that is on the rise amongst university graduate students (Dreher, 2019). It is also a primary reason why governments (and the public) are questioning the value of a university education (Bok, 2017). The popular press has begun to portray university graduates as "intelligent idiots" being book-smart but having no tacit knowledge (Taleb, 2018). Accordingly, governments now expect higher educational settings to transfer tacit knowledge through professional experiences (Takwe & Sağsan, 2011).
This study reinforces the importance of graduate students possessing professional skills when graduate students transition to the biomedical workforce. Skills such as critical thinking, problem-solving, and data analytics emerged as assets amongst graduate students from the survey results. Because technology is constantly changing, employers valued these skills more than their technical knowledge upon graduation.

This study also partially supports the proposal that a skills awareness gap exists between graduate students and employers (Craig & Markowitz, 2017). This observation was portrayed by survey respondents/employers' indicating that project management skills were lacking amongst graduate students. Graduate students work on projects that provide exposure to fundamental project management skills. There are several parallels between the graduate thesis and project management: New graduate students start with a charter. They prepare a research proposal, a well-planned document that is vetted by a supervisory committee (i.e., stakeholders) that outlines project scope, schedule, and cost. They conduct procurement management to pursue the project. Progress is monitored and controlled by themselves by meeting with their stakeholders. Finally, like a project manager's final report, they prepare deliverables in the form of a thesis and defend it in committee. Although students are practicing project management skills, they lack the training and awareness to connect these skills and their best practices and the transferability of these skills to the broader workforce. This lack of instruction and awareness of employer expectations is unfortunate because formal project management training would both help graduate students complete tasks on time, produce higher quality research (Hidalgo, 2019), and better prepare graduate students for professional opportunities.

Project management is experiencing significant growth. By 2027, employers will need 87.7 million individuals to work in project management related roles. Many industries that have historically been non-project-oriented, such as healthcare, have begun to transition to a project-orientated focus (Project Management Institute [PMI], 2017). Canada is expected to need 90,000 new project management jobs by2027 compared to 2017. If this talent gap is not addressed, $2.1 billion in Canada's GDP would be at risk (PMI, 2017). By teaching graduate students project management processes early in their program, we will not only better prepare them for success outside academia, but will also make them more productive and disciplined scientists in their studies.

This study also supports the notion that a skills gap exists between graduate students and non-academic employers in the biomedical sector. For example, we were initially surprised by the employers' expectations that graduate students should have customer engagement experience. By having students formally practice integrated knowledge translation, they can gain tacit knowledge of

customer engagement (Graham et. al., 2006). Popular trends, such as lean product development and design thinking suggest that product development teams, including scientists and engineers, should interact with customers early in the product development cycle (Gomory, 1989). By giving students opportunities to develop skills for customer interaction, we can help them become more flexible to employer needs. This also benefits businesses as they can retain the technical knowledge students offer, thus allowing them to be more flexible in the future.

Governments have called for greater research impact by developing knowledge into products that solve a customer's problem (Khazragui & Hudson, 2015). Integrating market pull into research requires the early integration of knowledge consumers (i.e., customers) into the research co-production process (Graham et. al., 2006) (Wyatt et al., 2008). By engaging potential project stakeholders (i.e., customers/employers/industry representatives/leaders) early in the research process, students will become known earlier by potential mentors and employers.

It is important to recognize activities that universities are already doing to address both the skills and skills awareness gap. Providing career advising services, universities help students understand the skills that they have developed through academic activities. A co-curricular record can help recognize on-campus extra-curricular activities, as can encouraging students to development and maintain of an individual development plan and an e-portfolio. Regardless, it is important for universities to continue to interact with hiring managers so that learning outcomes can be tied to increased employment success.

References

Bok, D. C. (2017). The struggle to reform our colleges. Princeton, NJ: Princeton University Press.

Bentley University (2014). The prepared U project: An in-depth look at millennial preparedness for today's workforce [SlideShare]. Retrieved from https://www.slideshare.net/BentleyU/prepared-u-project-on-millennial-preparedness

Craig, R., & Markowitz, T. (2017). The Skills Gap Is Actually An Awareness Gap -- And It's Easier To Fix. Retrieved from https://www.forbes.com/sites/ryancraig/2017/03/17/the-skills-gap-is-actually-anawareness-gap-and-its-easier-to-fix/#f17699d3ff4a

Dreher, D. (2019). Why do so many college students have anxiety disorders? Retrieved from https://www.psychologytoday.com/ca/blog/your-personal-renaissance/201903/why-do-so-manycollege-students-have-anxiety-disorders

Frank, K., & Hou, F. (2018). Over-education and well-being: how does education-occupation mismatch affect the life satisfaction of university-educated immigrant and non-immigrant workers? Ethnicity & Health, 23, 884-901.

Gomory, R. E. (1989). From the 'ladder of science' to the product development cycle. Scout for technology, design for manufacture, shorten the time to market. Harvard Business Review, 67, 99105.

Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W., Robinson, N. (2006). Lost in knowledge translation: Time for a map? Journal of Continuing Education in the Health Profession, 26, 13–24.

Hart Research Association (2015). Falling Short? College Learning and Career Success [PDF file]. Retrieved from https://www.aacu.org/leap/public-opinion-research/2015-survey-results

Hidalgo, E. S. (2019). Adapting the scrum framework for agile project management in science: case study of a distributed research initiative. Heliyon 5: e01447.

Khazragui, H., & Hudson, J. (2015). Measuring the benefits of university research: impact and the REF in UK. Research Evaluation, 24, 51-62.

Moore, T., & Morton, J. (2017). The myth of job readiness? Written communication, employability, and the 'skills gap' in higher education. Studies in Higher Education, 42: 591-609.

Project Management Institute (2017). Project Management Job Growth and Talent Gap Report 20172027 [PDF file]. Retrieved from https://www.pmi.org/-/media/pmi/documents/public/pdf/ learning/job-growth-report.pdf?sc_lang_temp=en

Statistics Canada (2018). Employment Income Statistics (4), Work Activity During the Reference Year (5), Occupation - National Occupational Classification (NOC) 2016 (193A), Major Field of Study - Classification of Instructional Programs (CIP) 2016 (43), Highest Certificate, Diploma or Degree

(15), Age (4D) and Sex (3) for the Population Aged 15 Years and Over in Private Households of Canada, 2016 Census - 25% Sample Data. 2016 Census Population. Retrieved from https://www150.statcan.gc.ca/n1/en/catalogue/98-400-X2016271

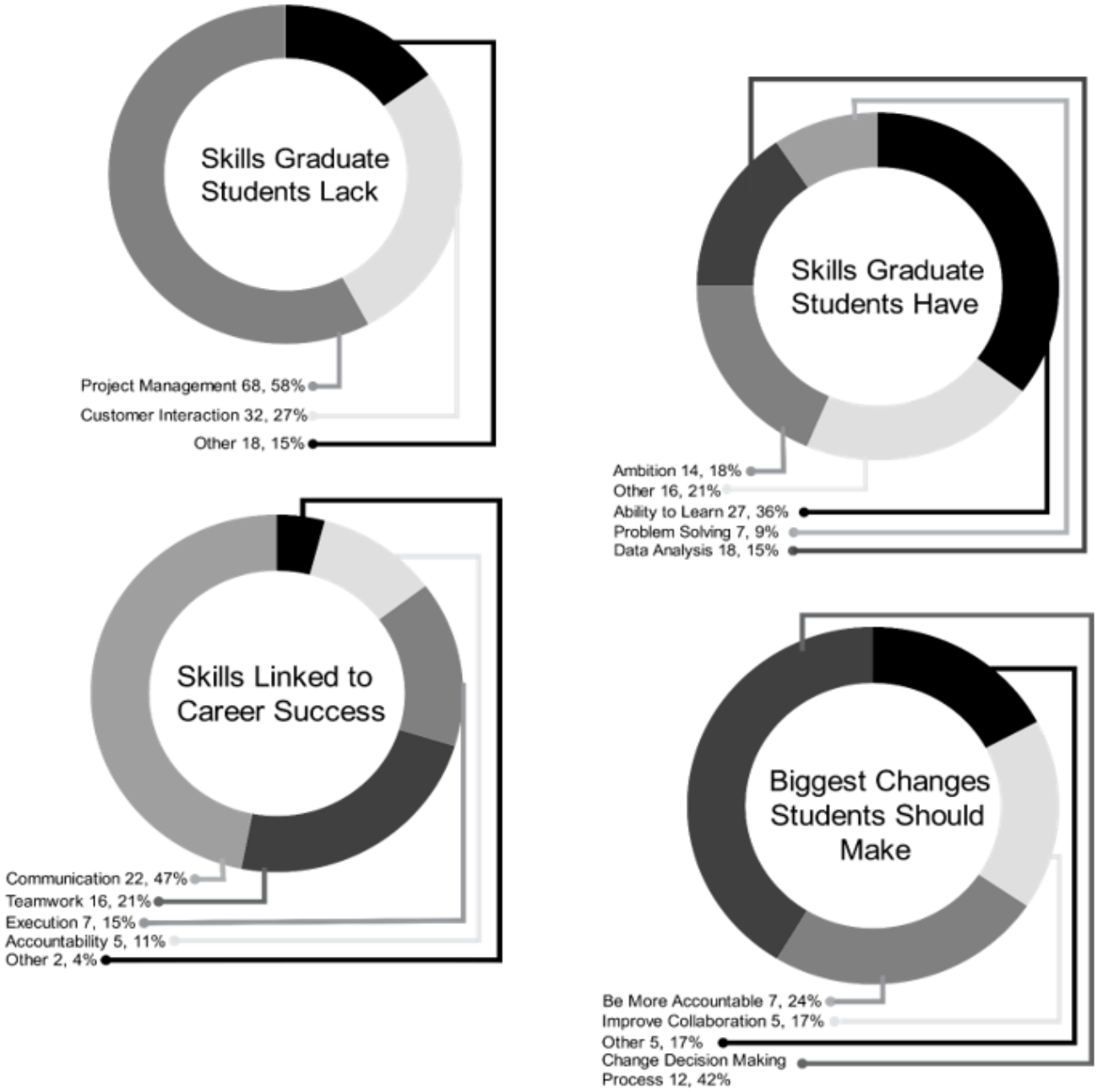
Takwe, Y. F., & Sagsan, M. (2011). Tacit to Tacit Knowledge Transfer within the Informal Environment of Higher Education [PDF file]. Retrieved from https://www.academia.edu/ 19727422/Tacit_To_Tacit_Knowledge_Transfer_within_the_Informal_Environment_Of_Higher_Education_A_Case_Study_On_TRNC_s_Academia

Taleb, N. N. (2018) Skin in the Game: Hidden Asymmetries in Daily Life. Manhattan, NY: Penguin Random House. 68

Wyatt, K., Carter, M., Mahtani, V., Barnard, A., Hawton, A., Britten, N. (2008). The impact of consumer involvement in research: an evaluation of consumer involvement in the London Primary Care Studies Programme. Family Practice, 25, 154-61.

Appendix A

Figure 1. Sorted Interview Responses.



Appendix B

Table 1. Detailed responses to question 1.

SKILLS / COMPETENCIES LACKING IN BIOMEDICAL GRADUATES	FREQUENCY MENTIONED
Project Management	
General project management	7
Ability to determine points to either discontinue the project or to continue project	2
Ability to determine projects critical path	1
Ability to manage multiple concurrent projects/ understand workflow	9
Ability to prioritize Stakeholders/tasks	7
Ability to use information to make timely Decisions	1
Ability to manage time effectively	14
Ability to set goals and to-do lists	2
Ability to determine quality to which project needs to be completed with	1
Ability to effectively lead successful projects	19
Ability to identify similar projects	1
Ability to see project through multiple stakeholders' perspective such as customers, and business units	1
Ability to effectively communicate progress with team and stakeholders	3
TOTAL PROJECT MANAGEMENT	**68**
Customer Engagement	
Sales- communicating to customer their value Proposition	19
Ability to identify solutions and provide focused solution	1

Ability to understand market trends	2
Ability to understand larger picture as to why they are doing a certain task	5
Negotiation skills	2
Ability to identify potential customers	3
TOTAL CUSTOMER INTERACTION	**32**
Other	
Problem solving in business environment	1
Ability to accept new ideas	2
General Communications	10
Ability to work effectively together	1
Ability to deal with failure and use feedback from failure to change	1
Ability to make consistent decisions	1
Ability to work regular business hours	1
Numeracy	1
TOTAL OTHER	***18***

*some respondents mentioned both customer oriented and project management skills were lacking

Appendix C

Table 2. Detailed responses to question 2.

SKILLS/COMPETENCIES THAT NEW BIOMEDICAL GRADUATES POSSESS	FREQUENCY MENTIONED
Ambition	**14**
Ability to Learn	
Able to learn new skills	20
Able of staying up to date in their field of Expertise	7
TOTAL ABILITY TO LEARN	**27**
Problem Solving	
Has ability to be creative	4
Seeks out opinions of others	1
Uses data to make a decision	2
TOTAL PROBLEM SOLVING	7
Data Analysis	**12**
Other	
Computer skills	2
Presentation skills	6
Positive attitude	6
Wiliness to work in teams	2
Determination	1
Social skills	1
TOTAL OTHER	**16**

*some respondents mentioned multiple skills

Appendix D

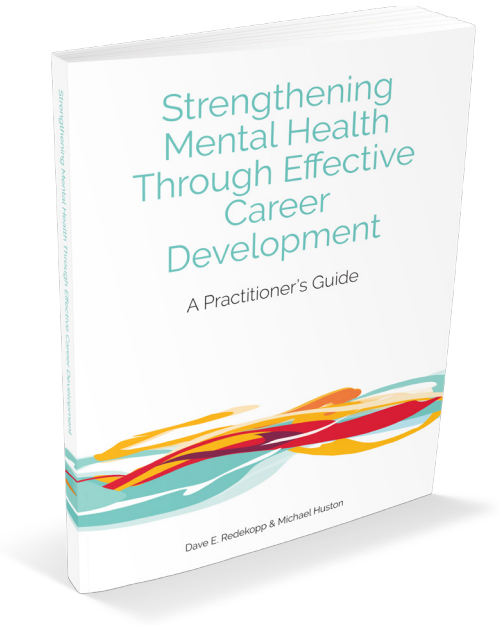
Table 3. Detailed response to the question 3

MOST IMPORTANT SKILS/COMPETENCIES FOR CAREER SUCCESS FOR NEW BIOMEDICAL GRADUATES	FREQUENCY MENTIONED
Communication	
General communication	8
Communicate value to customers	7
Communicate responsibilities and progress with co-workers	7
TOTAL COMMUNICATION	**22**
Teamwork	
General teamwork	8
Attitude when working with a team	1
Willingness to help and be helped by others	1
Integrity	1
TOTAL TEAMWORK	**11**
Accountability	
Takes responsibility for outcomes and actions	4
Learns from mistakes/ implements corrective Actions	1
TOTAL ACCOUNTABILITY	**5**
Execution	
Able to be on budget	1
Able to consistently complete projects	1
Able to meet expectations of different Stakeholders	1
Accomplishes tasks on time	2
Flexible	1
Able to make decisions from available Information	1
TOTAL EXECUTION	7
Other	
Ability to lead	1
Willingness to struggle	1
TOTAL OTHER	**2**

Appendix E

Table 4. Detailed response to the question 4.

CHANGE IN SKILLS NEW EMPLOYEES TYPICALLY HAVE TO MAKE	FREQUENCY MENTIONED
Decision Making	
Make decisions with incomplete information	1
Balance and take into account stakeholder Interests	1
Quicker timeframes	10
TOTAL FREQUENCY	**12**
Accountability	
Be able to set completion dates independently	3
Understand how individual performance influences organizational performance	3
improve self-accountability to determine quality	1
TOTAL FREQUENCY	7
Collaboration	
Work within a team with a diverse skillset	4
Be willing to share reasons behind decisions	1
TOTAL FREQUENCY	**5**
Other	
Work hours	1
Communicate in a professional manner	1
Open to changing focus	1
Working on multiple projects	2
TOTAL FREQUENCY	**5**



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Non- Peer Reviewed
Practitioners & Community Best Practices

Embedding Informational Interviews into Postsecondary Curriculum

Abdullah Al-Ani, Terryn Bourhill, & Derrick E. Rancourt
Cumming School of Medicine, University of Calgary

Abstract

The informational interview (II) is a career exploration technique typically used to seek advice and gain insight about a specific industry and career paths. IIs can be used broadly to support students' exploration of careers and beyond. While IIs are classically used by job seekers to identify potential positions to be filled, they can also be used to enhance postsecondary education (Decarie, 2010). In its simplest form, IIs present opportunities for students to have conversations with professionals who can serve as models for students' futures. Although this approach has been used in business school curricula (Mulvaney, 2003; Sheppard, 1989), it has not been used in other academic disciplines or faculties to any significant extent. As a form of experiential learning associated with superior educational outcomes, IIs activate both sides of the brain, create episodic memory and appeal to multiple intelligences. By pushing students out of their comfort zone to talk to working professionals, IIs promote the acquisition of tacit knowledge where they visualize their future selves. Beyond being used to promote effective career exploration, IIs can be used to facilitate institutional change towards more community engagement in inquiry-based learning and research theses in any discipline.

Background

An informational interview is a traditional career exploration technique. Students have a conversation with professionals where they seek advice on their career (Fiske, 2016). They can also be used to find information on industry and specific workplaces. A form of rapid prototype testing (Burnett & Evans, 2016), after each interview, the interviewer makes changes to their career vision and plan – refining it through additional interviews. These interviews help students build a network of contacts in a specific professional area. They can also benefit the interviewees by helping them to build a candidate pool for future hires. Although it is taboo for interviewers to ask for employment, IIs often lead to employment via planned happenstance (Mitchell, Al Levin, & Krumboltz, 1999). This makes it a more effective job search strategy than conventional applications because there is a significant hidden job market (Burnett & Evans, 2016).

We have been using IIs in our biomedical teaching, as a platform to promote career exploration (Rancourt, 2017). Students are assigned a career path to research and are required to perform an interview with someone in the field. They then present their findings to the class in a distributed learning approach (Table 1). Students typically are only focused on technical positions inside life science companies namely scientists. Since these jobs are often limited in number, we show students there are many other career paths they can consider, which leverage their science expertise. Such careers can be in the regulatory, business, and/or financial area. Students teach their peers how their technical knowledge and their transferable skills (communication, leadership, teamwork, etc.) are used within a career. Having researched their assigned career before their interview, students present the credentials and competencies necessary to fulfill the position.

While some instructors may view our assignment as a distraction from the "important" discipline-specific material that must be taught, most of the student's work is independent and outside class time. Of course, other approaches may be used to share students' research with peers. For instructors who do not want to devote important class time to student presentations, we suggest two approaches. The first is to have students submit written work. This can be devel-

oped into a compendium or reference guide that can be an excellent resource for the department and faculty. Although we previously considered this approach, we were recently waylaid by the development of an excellent series of resources (The Cheeky Scientist Association, 2016). Instead, last year, we held our first alternative career symposium, where graduate students presented their assigned career and II experience to interested students and faculty in parallel sessions (Table 1).

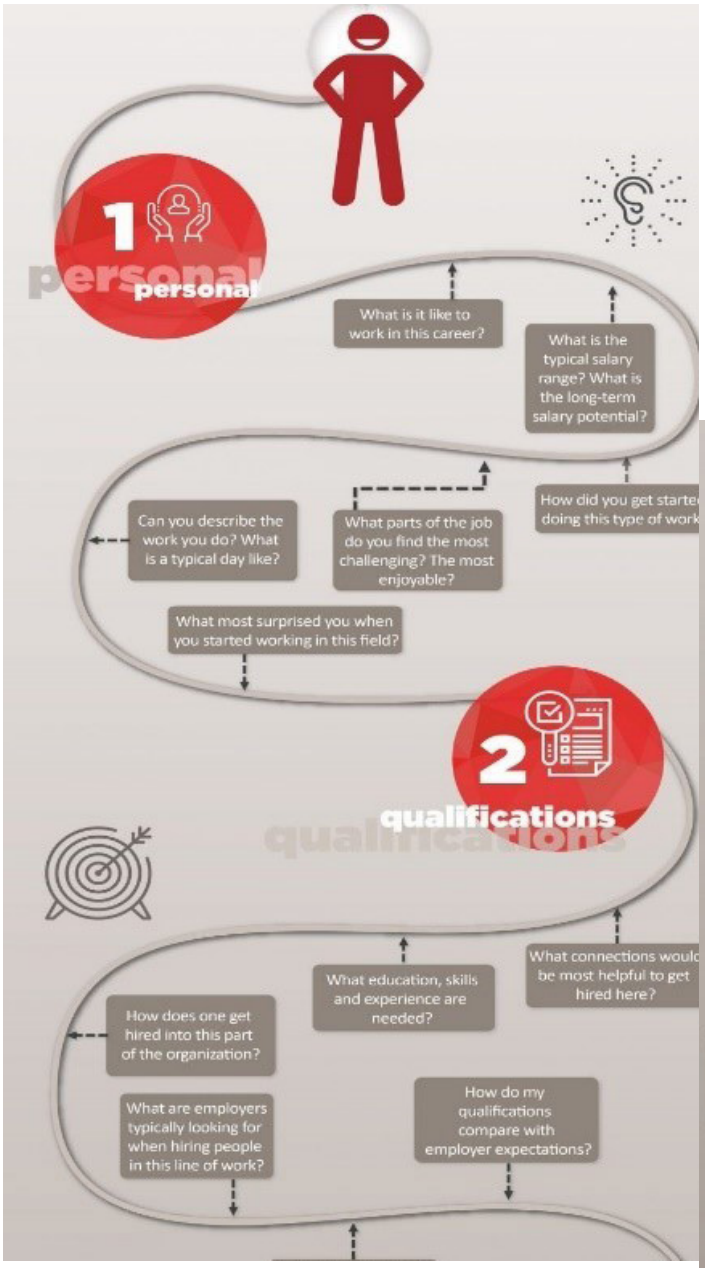
Another approach we have considered is to have students choose their own career to explore rather be assigned one. The value is that students can be focused on a career that may be meaningful to them and this is some of the feedback that we have received from students. One of the downsides of this approach is that students may not be cognizant of the vista of career opportunities that are in front of them. Therefore, a compendium of careers developed in previous years can be valuable. New research from Gallup suggests that one of the most productive things that an instructor can do for their students is to display an interest in them as people and to discuss their career interests (Gallup-Purdue Index 2017). As of late, we have met with undergraduate and graduate students individually after they reviewed our career compendium (mentioned above) to help them focus on a career path to explore. We took care to make sure that the student is truly interested in this career path and not short cutting the process (i.e. simply interviewing a family friend). Due diligence will include having the student report the networking that they did to arrange their interview(s).

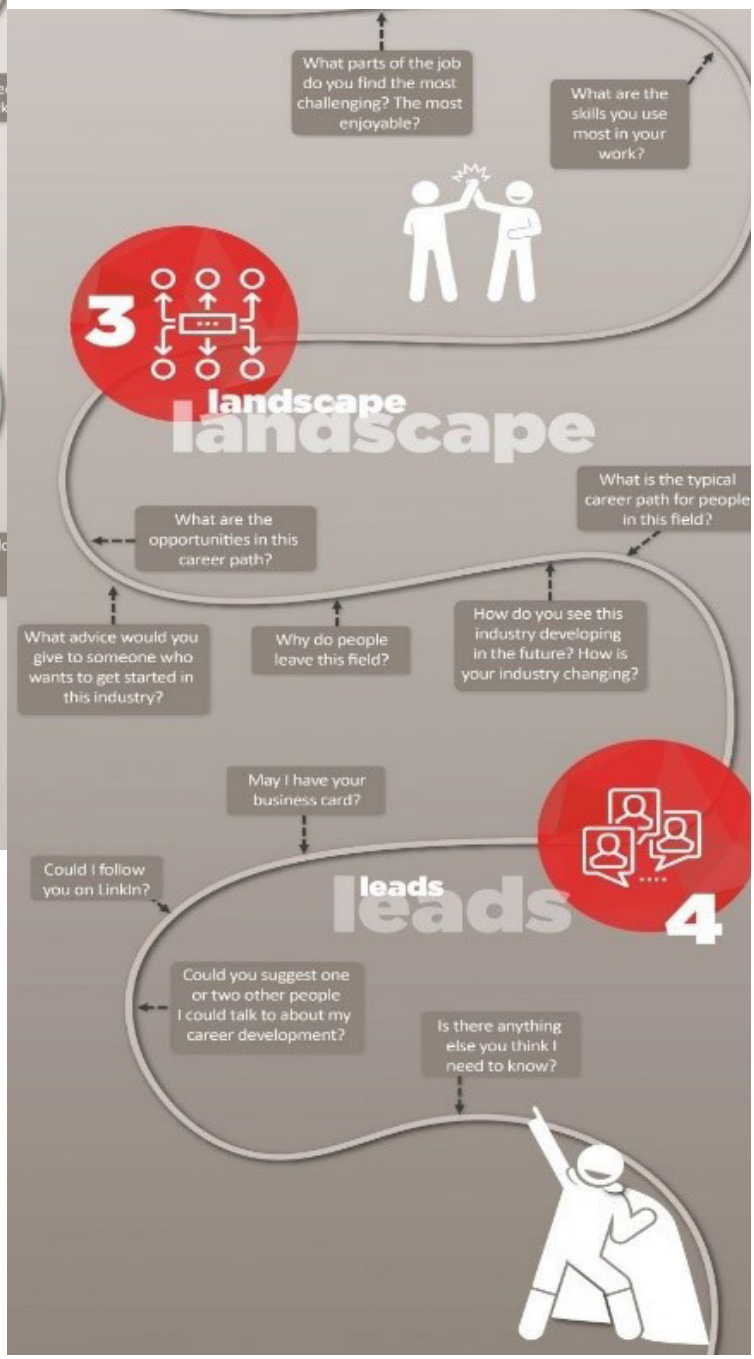
Part of the students' research includes identifying individuals who work in their assigned career. To assist with their networking, we introduce them to LinkedIn and networking theory. We remind them to leverage the network of their parents, family, and friends. Students are encouraged to "play the student card" and to leverage the kindness of strangers who are asked to help (Stanbury, 2010a). We find that students are very resourceful. Rarely, if ever, do we need to intercede to help students with finding an interviewee.

Students ask interviewee(s) questions in four areas that are typical of an II: Personal, Qualifications, Landscape, and Leads (Fig. 1). Since people like to talk about themselves, personal questions represent an ice breaker but often get to an interviewee's personal story and how they got to the position. Typically, the interviewee will then ask the student

Table 1.

Science and Non-Science Careers in Biotechnology		
Science	Administration	Business
Clinical Trials Manager	Communications	Business Development
Data Analyst	Ethics	Competitive Intelligence
Medical Liaison	Grants Facilitator	Market Analyst
Project Manager	Human Resources	Financial Analyst
Quality Control	Information Management	Investor Relations
Technical Support	Policy	Management Consulting
IP Manager	Regulatory Affairs	Stock Analyst
Patent Agent	Writer	Venture Capital Analyst
Scientist	Logistics	Sales


1
personal
What is it like to work in this career?
What is the typical salary range? What is the long-term salary potential?
How did you get starte doing this type of work
Can you describe the work you do? What is a typical day like?
What parts of the job do you find the most challenging? The most enjoyable?
What most surprised you when you started working in this field?
2
qualifications
What connections would be most helpful to get hired here?
What education, skills and experience are needed?
How does one get hired into this part of the organization?
How do my qualifications compare with employer expectations?
What are employers typically looking for when hiring people in this line of work?


What parts of the job do you find the most challenging? The most enjoyable?
What are the skills you use most in your work?
3
landscape
What is the typical career path for people in this field?
What are the opportunities in this career path?
What advice would you give to someone who wants to get started in this industry?
Why do people leave this field?
How do you see this industry developing in the future? How is your industry changing?
May I have your business card?
Could I follow you on LinkIn?
leads
4
Could you suggest one or two other people I could talk to about my career development?
Is there anything else you think I need to know?

about themselves. This is a perfect opportunity for students to move to the next segment, asking what qualifications they might require to transition into the interviewee's position. Students can also ask about what transferable skills are important and how to develop these whilst completing their degree. Here it is important not to interview someone who isn't too senior, so that a realistic transition plan can be identified. Landscape is also important to discuss, because this may or may not threaten to change the plan. For example, it might be good to know if artificial intelligence will disrupt a career path of interest, so that students might take the opportunity to become better equipped for the position while still in school. Finally, we suggest that students might ask for leads to interview other people. Although this is not a requirement, many students do interview more than one work professional because of leads and because they have casted a wide net to find their interviewee. By interviewing more than one professional in a role, students have the advantage of presenting different perspectives of the career, reinforcing the need to interview multiple people in career exploration.

Feedback from this assignment has been overwhelmingly positive. While most students were initially fearful of the interview, they learned that most (but not all) working professionals are generous with their time, especially when it comes to students. Through this exercise, students seem to enjoy meeting new professionals and appreciate the value of networking (Teller, 2017). Through class discussions, presentations and workshops, students recognize that interviews can lead to non-academic mentors, internships and even job offers (Jablonski, 2015). Many of the interviewees indicate to their student interviewers that they appreciated the value of this exercise. In some cases, even bystanders sitting next to the interview commend students on the activity.

Learning Theory

Experts suggest that because of the significant hidden job market, it is far more effective to perform IIs than to apply for jobs (O'Brien, 2015). Despite this, most students are reluctant to pursue them when recommended by university career counselors. Students are busy. Drive theory suggests that most students will not be motivated to pursue an uncomfortable task such as an II. Students will procrastinate career exploration according to the future time theory (Taber, 2013). However, when making it an in course assignment, IIs suddenly become part of students' hierarchy of needs (Maslow, 1943)

As an experiential learning process, IIs are meaningful because they are motivating (D. Kolb, 1984). Students pay more attention while participating. Experiential learning activates both sides of the brain. It appeals to multiple intelligences and creates episodic memory (A. Y. Kolb & Kolb, 2005). Students' personal associations form the basis for remembering and understanding.

The Yerkes-Dodson law (Dodson & Yerkes, 1908) suggesting that anxiety improves performance has been extended to learning theory (Senninger, 2000) and is loosely based upon Karl Rohnke's Comfort, Stretch, Panic model of learning. According to Rohnke, spending too much time in the Comfort Zone can lead to a shrinking of capabilities. Students need to step into the stretch zone where activities challenge but do not overwhelm them.

In alignment with Kolb's observations about experiential learning, there is a positive correlation between Yerkes-Dodson performance and mild stress hormone (i.e. glucocorticoid) production, which plays a role in the process of forming long-term memories (Lupien, Maheu, Tu, Fiocco, & Schramek, 2007). In order for such a mild stress response to be triggered, the event has to be interpreted by the student as being novel, unpredictable, uncontrollable and/or a socio-evaluative threat (Lupien et al., 2007).

In our experience, a student's first II is quite stressful. Most students are reluctant to seek advice for fear of looking incompetent. However, once students get over the fear, they learn that most working professionals are giving of their time and are interested in helping students. Based on this first experience, students see the value of IIs and adopt it as part of their personal and professional growth.

Many students are still developing their communicative and self knowledge. Experiences such as IIs can be extremely rigorous and arguably more valuable in the long term because little discipline-specific knowledge may be used in students's future career (Abel & Deitz, 2014).

IIs are also a form of transformational learning (Cranton & Roy, 2003). Most of our students are in the life sciences. From an adult learning perspective, they are exposed to both technical and communicative knowledge (Mezirow, 1991). However, by encouraging them to reflect on and to share their II experience, students encounter emancipatory knowledge (Habermas, 2015), which forms the basis of change. Most students continue the II process outside of class. Many develop working relationships with their interviewees, be it as protégés, short-term projects, and/or internships. Some students are offered jobs by their interviewees, which reinforces to students and their peers that jobs are often procured through networking.

Although students are reticent to seek advice for fear of looking incompetent, research suggests that those who seek advice on complex problems (such as career development) are viewed to be more competent (Brooks, Gino, & Schweitzer, 2015). Advice seeking is an effective strategy for students to exercise influence when lacking authority (Liljenquist & Galinsky, 2007; Yukl & Tracey, 1992). This explains why we observe that some interviewees invest themselves into the career aspirations of their interviewers.

Our II assignment gives students the opportunity to imagine themselves in a professional role which motivates them to focus on their personal career development (Cabras & Mondo, 2017; Casey Ozaki, 2016; Stevenson & Clegg, 2011; Strauss, Griffin, & Parker, 2012). At the undergraduate level, we expose third year life sciences students to careers via our "Biotechnology Business and Profession" course. The beginning of third year is a perfect time to plant the career exploration seed. At this time, many students are confused as to whether they are even qualified to procure a job straight out of their bachelors. By showing them a vista of potential careers, students learn that there are many potential entry-level positions (i.e. sales, market analyst, patent agent) that they are qualified to pursue. The onus is on them to position themselves to be competitive. Others require higher education, such as the pursuit of graduate school. However, rather than simply telling them that graduate school will increase the number of opportunities they can pursue in the future, through our distributed II process, students show each other how graduate school, or some other form of higher education can better qualify them for certain careers.

We are also exposing first year biomedical engineering (BME) graduate students to IIs via their first semester core course focused on communication and career development. Much like the situation above, this timing is perfect for master's students who have a two-year runway to explore careers while pursuing their research projects. For PhDs, our career development course would be better served post candidacy, as is done at other institutions (Van Houten, 2016). Despite the long lead time for PhDs, we emphasize to PhD students that because the PhD job market is hyper-competitive, the onus is on students to develop a network where they become professionally know and to pursue side projects (i.e. gigs, side hustles) to help develop their work portfolio.

Discussion

A significant amount of concern about the mission and future of higher education has been mounting over the last 30 years (Etzkowitz, Webster, & Healey, 1998). Some argue that our current higher education system is lagging and failing to respond to the rapid changes and needs in our society making higher education less relevant to our daily societal demands (Newman, Couturier, & Scurry, 2004). Many leading companies no longer require a four-year undergraduate degree to be hired (Akhtar, 2019). The gap between our society and the higher education is partially attributed to the lag in curriculum re-evaluation and renewal by academic institutions (Desha, Hargroves, & Smith, 2009). Indeed, universities in North America are too slow to respond to changes in the market. This is partially because academic

institutions are removed from day-to-day life outside the university. Some argue that universities and colleges are now suffering from a decrease in public confidence, particularly in their mission to serve society (Boyer, 1989, 1996). For this reason, academic institutions in North America have identified community engagement as a new strategic priority (Weerts & Sandmann, 2010).

Community engagement can be defined as a collaboration or partnership between academic institutions and their communities to exchange knowledge and resources (Weerts & Sandmann, 2010). It is important that community engagement is not confused with community services and outreach. While community outreach is perceived as a one-way approach to deliver services and educate the public, community engagement can be thought of as a two-way approach where academic institutions and key community entities collaborate on how to best attend to public needs (Barker, 2004; Boyer, 1996; Weerts & Sandmann, 2010). We believe that IIs have the potential to serve as a platform to harbor a 'two-way' approach of engagement between academic institutions and various communities. This comprehensive level of engagement between university students and various communities can attract support from many sources, enhancing the prospects of higher education (Fitzgerald, Bruns, Sonka, Furco, & Swanson, 2012). We propose that implementing IIs into the curriculum of these academic programs can establish yet another channel of collaboration with these stakeholders. Through IIs, students and trainees can learn about the societal demand and plan to actively utilize and supplement their education to meet these demands.

To address these societal demands, academic institutions can use various strategies to engage stakeholders. These strategies are not only employed as a moral duty to the community but also to enhance student engagement and learning outcomes (DeClou, Peters, & Sattler, 2013). The Higher Education Quality Council of Ontario has suggested several experiential learning programs to help in community engagement including: community service learning (CSL), community-based learning (CBL) and in-course learning activities (ICLA) (Lenton et al., 2014). We believe that supplementing current curricula with IIs will further enhance student engagement and educational outcomes by giving them license to create their own experiential learning opportunities by leveraging their community.

While being a full-time student can be isolating from the trends and demands of the workforce, IIs can help students stay current with these trends. Learning about the ever-changing demands of the market can help students customize their education to address expectations (Watson & Watson, 2013). This is especially important for graduate students conducting research at the university. Conducing IIs with the stakeholders is vital to understanding the multi-dimensionality of the conducted research and how it affects society (Ahmed & Palermo, 2010). This can potentially inform the experimental design of these research projects to make them more applicable and competitive (Ahmed & Palermo, 2010). Students can leverage II to further their careers in academia itself. From scouting out summer internships to connecting with principal investigators and investigating potential post-doctoral positions students can create an expansive network throughout their academic careers that will be critical once they graduate and decide to pursue research as a full-time career.

IIs also present a great opportunity for students to showcase their expertise and become visible beyond academia (Orr, Sherony, & Steinhaus, 2011). Indeed, IIs represent a great opportunity for students to enhance their network beyond their classmates and professors. While academia and research are often isolating for students, leveraging the community through IIs can be thought of as a tool to stay connected with the outside world.

While institutions feel satisfied with their student career preparation (Bok, 2017), employers gave students low grades in a multitude of learning outcomes, including those deemed most important for career success (Hart Research Association, 2015). A similar tenor was noted by recent graduates, who also suggested that "unpreparedness" was a real problem for graduates (Bentley University, 2014; Public Agenda,

2014). The recognized "skills gap" that exists between institutions and the workplace may be in part due to poor employer effort to train new hires (Cappelli, 2012; Smith & LaVelle, 2013).

Many institutions have responded to the so-called skills gap by introducing work-integrated learning (WIL) opportunities, such as co-ops, practicum and internships into curriculum (Sattler, 2011). While suitable for professional programs (i.e. engineering, nursing, business, and education), universities are not prepared to implement this approach in all of its programs (Peters, 2012). This is because co-op programs are resource intensive, requiring coordinators who help students to arrange these opportunities. Moreover, it can be argued that there may not be enough WIL experiences to go around.

Recently, it has been argued that the skills gap is actually a "skills awareness gap" (Craig & Markowitz, 2017). This is because employers do not see the skills that students have acquired through their coursework and co-curricular activities. In order to address this problem, colleges and universities need to develop systems that help students to recognize their achievements and communicate the underlying skills (teamwork, leadership, communication, problem-solving, grit) to employers (Stanbury, 2010a).

Curriculum mapping and syllabuses should communicate, and students should be encouraged to reflect on the underlying competencies that are being learned in specific courses. Students should maintain a co-curricular record demonstrating that their learning is not restricted to the classroom. Moreover, online tools such as ePortfolio can be used to help students to inventory and reflect on the competencies they've developed in university. For instance, in Great Britain post-secondary students must prepare and update a mandatory professional development plan. This not only promotes competency self-reflection but also encourages goal orientation, which can be communicated to mentors and employers (Quality Assurance Agency for Higher Education, 2001).

Currently 73% of workers are employed in positions unrelated to their area of study (Abel & Deitz, 2014), which reinforces the argument that universities do not teach a vocation. If many future careers have yet to be imagined, students must be encouraged to pursue career exploration as part of their education. IIs provide an avenue for students to learn how to explore potential career paths by leveraging the community. For example, in the life sciences we encourage students to explore careers that are pertinent but peripheral to science including regulatory, business development, market and finance. In these careers a strong understanding of science may be required, yet students are taught to think flexibly about their careers. This flexibility is especially important when considering a career in a smaller city, where careers specific to a major may not be available or difficult to procure (Abel & Deitz, 2014).

Poor connection between work and interest is partly responsible for the significant economic burden of mental health (Faragher, 2005). Arguably most students pick specific disciplines in University based upon previous positive exposure in high school. However, attitude towards said discipline can change, especially when viewed as being replete of career opportunity. We have observed that students are motivated when exposed to a vista of careers via IIs, even when their pursuit requires stretching or pivoting. By cycling through different IIs, students build resilience by pivoting to careers that match their interests. By combining career exploration with continuous learning, students are taught to be nimble and to pursue a career of their own design.

To make higher education more relevant and sustainable, academic institutions must prepare their graduates to the world beyond academia. We believe that introducing IIs into curriculum will address some of the mentioned problems and allow students to stay in touch with the real world and its professional demands. Traditionally universities have outsourced this job to career counselling offices in hopes to fill this gap. However, career counselling offices are typically unable to provide support multiple disciplines beyond the traditional workshops and organization of career fairs. Since these offices provide campus wide services, they struggle to provide discipline specific advice and support. For

this reason, we believe that career mapping should be introduced at the departmental level. A practical way to achieve this goal would be through the implementation of the II assignment. This would allow departments to deliver discipline specific career development training.

Recommendations

Many universities have approached the problem of workplace transition through the introduction of workplace experiences (Peters, 2012; Sattler, 2011). While this approach can be applied to professional programs, it is only sustainable because there is a receptor market for students. In Canada, for example, many undergraduate life science programs have established co-ops where students have the option to pursue work terms. Unfortunately, since the biotech sector is small in Canada, many students do not work inside companies. Rather, they find research positions inside universities (how is this any different from a summer research internship?), which helps to promote a revolving door where students transition to graduate school instead of industry, thus kicking the problem of career transition down the road.

One problem with co-ops from our perspective is that it tends to suppress career exploration when work experiences are handed to students on a silver platter. This, plus the sunk-cost fallacy (Arkes & Blumer, 1985) of discipline-specific education is what promotes the current herd approach to career. However, just like we encourage students to choose a discipline, we should be encouraging them to pursue a career that interests them. This is especially poignant when we consider that only 27% of graduates work in jobs directly related to their degree (Abel & Deitz, 2014).

For students to pursue career exploration, it must be grounded. It's not good enough that universities establish career centers that help students to explore careers. Wayfinding must have a starting point, which is the discipline. Just as we do in our life science courses, individual disciplines need to go beyond the obvious careers (i.e. the technical), moving into the less obvious careers (i.e. regulatory, business, finance, etc.), where discipline-specific knowledge is leveraged.

Once students' minds are opened, they begin to see that it is also possible to abandon the sunk-cost fallacy and recognize that many of the competencies that they have practiced during their university education, such as critical thinking, enables them to pursue other careers that may be completely away from their discipline. For example, we have a strong energy sector in Calgary, so we encourage life science students to think creatively about mapping themselves to the energy sector.

We believe that IIs can be more broadly applied in university and have begun to work with other faculties at the University of Calgary to apply our approach. This assignment is best performed in smaller classes, namely discipline-specific, senior undergraduate or graduate level core courses. The first step is to develop a list of 20 to 30 careers. It is simply a matter of having instructors develop a list of careers for students to draw from. While it may be challenging for an instructor to develop the list in isolation, colleagues can help, especially when they reflect on where some of their former trainees and peers have landed career wise. The careers are not important. Rather, it's the scope that is central, as it pushes students to think about careers beyond the standard opportunities offered to them.

Finally, as stated above, we believe that IIs can be more than a career mapping tool and can be to strengthen inquiry-based-learning and research theses in any discipline. Currently we are planning to develop a new graduate training program where IIs are used to recruit outside stakeholders and mentors early in the research design process.

References

Abel, J., & Deitz, R. (2014). Agglomeration and job matching among college graduates. Retrieved from https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr587.pdf

Ahmed, S. M., & Palermo, A.-G. S. (2010). Community Engagement in Research: Frameworks for Education and Peer Review. American Journal of Public Health, 100(8), 1380–1387. https://doi.org/10.2105/

AJPH.2009.178137

Akhtar, A. (2019). Top companies are hiring more candidates without 4-year degrees - Business Insider. Retrieved October 7, 2019, from Business Insider website: https://www.businessinsider.com/top-companies-are-hiring-more-candidates-without-a-4-year-degree-2019-4

Arkes, H. R., & Blumer, C. (1985). The psychology of sunk cost. Organizational Behavior and Human Decision Processes, 35(1), 124–140. https://doi.org/10.1016/0749-5978(85)90049-4

Barker, D. (2004). The Scholarship of Engagement: A Taxonomy of Five Emerging Practice. Journal of Higher Education Outreach and Engagement, 9(2), 123–137.

Bentley University. (2014). The prepared U project: An in-depth look at millennial preparedness for today's workforce. Retrieved July 30, 2018, from https://www.bentley.edu/files/prepared/1.29.2013_BentleyU_Whitepaper_Shareable.pdf

Bok, D. (2017). The struggle to reform our colleges (Vol. 105). Princeton University Press.

Boyer, E. L. (1989). Scholarship reconsidered: priorities of the professioriate (1st ed.). New Jersey: The Carnegie Foundation for the Advancement of Teaching.

Boyer, E. L. (1996). The Scholarship of Engagement. Bulletin of the American Academy of Arts and Sciences, 49(7), 18. https://doi.org/10.2307/3824459

Brooks, A. W., Gino, F., & Schweitzer, M. E. (2015). Smart People Ask for (My) Advice: Seeking Advice Boosts Perceptions of Competence. Management Science, 61(6), 1421–1435. https://doi.org/10.1287/mnsc.2014.2054

Burnett, B., & Evans, D. (2016). Designing your life: How to build a well-lived, joyful life (1st ed.). New York: Alfred A. Knopf.

Cabras, C., & Mondo, M. (2017). Future Orientation as a Mediator Between Career Adaptability and Life Satisfaction in University Students. Journal of Career Development, 89484531772761. https://doi.org/10.1177/0894845317727616

Cappelli, P. (2012). Why good people can't get good jobs: the Skills gap and what people can do. Wharton Digital Press.

Casey Ozaki, C. (2016). Possible Selves, Possible Futures. Journal of College Student Retention: Research, Theory & Practice, 17(4), 413–436. https://doi.org.10.0.1177/152102511557 9248

Craig, R., & Markowitz, T. (2017). The Skills Gap Is Actually An Awareness Gap -- And It's Easier To Fix. Retrieved from Forbes Magazine website: https://www.forbes.com/sites/ryancraig/2017/03/17/the-skills-gap-is-actually-an-awareness-gap-and-its-easier-to-fix/#4daa50883ff4

Cranton, P., & Roy, M. (2003). When the Bottom Falls Out of the Bucket. Journal of Transformative Education, 1(2), 86–98. https://doi.org/10.1177/1541344603253928

Decarie, C. (2010). Literacy and Informational Interviews. Business Communication Quarterly, 73(3), 306–317. https://doi.org/10.1177/1080569910376533

DeClou, L., Peters, J., & Sattler, P. (2013). The University of Waterloo and Work-Integrated Learning : Three Perspectives The Higher Education Quality Council of Ontario. Toronto.

Desha, C. J., Hargroves, K., & Smith, M. H. (2009). Addressing the time lag dilemma in curriculum renewal towards engineering education for sustainable development. International Journal of Sustainability in Higher Education, 10(2), 184–199. https://doi.org/10.1108/14676370910949356

Dodson, J. D., & Yerkes, R. (1908). The relation of strength of stimulus to rapidity of habit-formation in the kitten. Journal of Animal Behavior, 5(4), 330–336. https://doi.org/10.1037/h0073415

Etzkowitz, H., Webster, A., & Healey, P. (1998). apitalizing knowledge: New intersections of industry and academia (1st ed.). New York: Suny Press.

Faragher, E. B. (2005). The relationship between job

satisfaction and health: a meta-analysis. Occupational and Environmental Medicine, 62(2), 105–112. https://doi.org/10.1136/oem.2002.006734

Fiske, P. (2016). For your information. Nature, 538(7625), 417–418. https://doi.org/10.1038/nj7625-417a

Fitzgerald, H. E., Bruns, K., Sonka, S. T., Furco, A., & Swanson, L. (2012). The centrality of engagement in higher education. Journal of Higher Education Outreach and Engagement, 16(3), 7–28. https://doi.org/10.1080/00222 50X.1999.9990219

Habermas, J. (2015). Knowledge and human interests. ohn Wiley & Sons.

Hart Research Association. (2015). Falling Short? College Learning and Career Success. Retrieved July 30, 2018, from Association of American Colleges & Universities website: https://www.aacu.org/leap/public-opinion-research/2015-survey-falling-short

Jablonski, C. (2015). Informational Interview Delivers a Lucky Break. Retrieved from Cumming School of Medicine - Graduate Science Education website: https://cumming.ucalgary.ca/gse/professional-development/informational-interview-delivers-lucky-break

Kolb, A. Y., & Kolb, D. A. (2005). Learning Styles and Learning Spaces: Enhancing Experiential Learning in Higher Education. Academy of Management Learning & Education, 4(2), 193–212. https://doi.org/10.5465/amle.2005.17268566

Kolb, D. (1984). The Process of Experiential Learning. In Strategic Learning in a Knowledge Economy (pp. 313–331). https://doi.org/10.1016/B978-0-7506-7223-8.50017-4

Lenton, R., Sidhu, R., Kaur, S., Conrad, M., Kennedy, B., Munro, Y., & Smith, R. (2014). Community Service Learning and Community-Based Learning as Approaches to Enhancing University Service Learning. Toronto.

Liljenquist, K., & Galinsky, A. (2007). Turn your adversary into your advocate. Negotiation, 10(5), 1–3.

Lupien, S. J., Maheu, F., Tu, M., Fiocco, A., & Schramek, T. E. (2007). The effects of stress and stress hormones on human cognition: Implications for the field of brain and cognition. Brain and Cognition, 65(3), 209–237. https://doi.org/10.1016/j.bandc.2007.02.007

Maslow, A. H. (1943). A theory of human motivation. Psychological Review, 50(4), 370–396. https://doi.org/10.1037/h0054346

Mezirow, J. (1991). Transformative dimensions of adult learning. San Francisco, CA: Jossey-Bass.

Mitchell, K. E., Al Levin, S., & Krumboltz, J. D. (1999). Planned Happenstance: Constructing Unexpected Career Opportunities. Journal of Counseling & Development, 77(2), 115–124. https://doi.org/10.1002/j.1556-6676.1999.tb02431.x

Mulvaney, M. K. (2003). The Information Interview: Bridging College and Beyond. Business Communication Quarterly, 66(3), 66–70. https://doi.org/10.1177/108056990306600307

Newman, F., Couturier, L., & Scurry, J. (2004). The Future of Higher Education : Rhetoric, Reality, and the Risks of the Market (1st ed.). Jossey-Bass.

O'Brien, B. (2015). Market, The hidden job. Retrieved from Nature jobs website: http://blogs.nature.com/naturejobs/2015/03/19/the-hidden-job-market/

Orr, C., Sherony, B., & Steinhaus, C. (2011). Employer perceptions of student informational interviewing skills and behaviors. American Journal of Business Education, 4(12), 23–32.

Peters, J. (2012). Faculty experienes with and perception of work-Integrated Learning in Ontario's Postsecondary Sector. Retrieved from Higher Education Quality Council of Ontario website: http://www.heqco.ca/SiteCollectionDocuments/WILFacultyENG.pdf

Public Agenda. (2014). Profiting higher education: What students, alumni, and employers think about for-profit colleges. Retrieved from https://www.publicagenda.org/files/Profit-

ingHigherEducation_PublicAgenda_2014.pdf

Quality Assurance Agency for Higher Education. (2001). Guidelines for HE progress files. Retrieved from http://dera.ioe.ac.uk/8480/1/progfile2001.pdf

Rancourt, D. (2017). Informational Interviews: More Than a Career Mapping Tool. Retrieved from Taylor Institute for Teaching and Learning website: http://connections.ucalgaryblogs.ca/2017/04/06/informational-interviews-more-than-a-career-mapping-tool/

Sattler, P. (2011). Work-Integrated Learning in Ontario's Postsecondary Sector. Toronto.

Senninger, T. (2000). The Learning Zone Model. Retrieved from ThemPra Social Pedagogy website: http://www.thempra.org.uk/social-pedagogy/key-concepts-in-social-pedagogy/the-learning-zone-model/

Sheppard, S. (1989). II The Informational Inter- Ii View as a Tool for Sharp Ening Oral, Written, and Interviewing Skills. The Bulletin of the Association for Business Communication, 52(2), 19–20. https://doi.org/10.1177/10805699 8905200208

Smith, D., & LaVelle, K. (2013). The new skills imperative: Reconnecting work with the workforce. Retrieved from Accenture website: https://www.accenture.com/ca-en/insight-outlook-new-skills-imperative-reconnecting-work-with-workforce

Stanbury, D. (2010a). The kindness of strangers. Education + Training, 52(2), 100–116. https://doi.org/10.1108/0040091101 1027707

Stanbury, D. (2010b). The kindness of strangers: How careers educators and the wider academic community can help each other. Education + Training, 52(2), 100–116. https://doi.org/10.1108/0040091101102 7707

Stevenson, J., & Clegg, S. (2011). Possible selves: students orientating themselves towards the future through extracurricular activity. British Educational Research Journal, 37(2), 231–246. https://doi.org/10.1080/01411920903 540672

Strada-Gallup 2017 College Student Survey. (2017). In Gallup & Strada Education Network. Retrieved from http://stradaeducation.gallup.com/reports/225161/2017-strada-gallup-college-student-survey.aspx

Strauss, K., Griffin, M. A., & Parker, S. K. (2012). Future work selves: How salient hoped-for identities motivate proactive career behaviors. Journal of Applied Psychology, 97(3), 580–598. https://doi.org/10.1037/a0026423

Taber, B. J. (2013). Time Perspective and Career Decision-Making Difficulties in Adults. Journal of Career Assessment, 21(2), 200–209. https://doi.org/10.1177/10690727124 66722

Teller, E. (2017). Teaching the Importance of Networking by Conducting Informational Interviews. Journal of the Academy of Business Education, 18, 417. Retrieved from http://mendeley.csuc.cat/fitxers/e226cad27fc6506eb9a-fac16fe26c9d3

The Cheeky Scientist Association. (2016). Top 20 Industry Positions for PhDs. Retrieved from https://cheekyscientist.com/guidebook/

Van Houten, A. (2016). Professional development program teaches valuable soft skills to science PhDs. Retrieved from University Affairs website: https://www.universityaffairs.ca/career-advice/career-advice-article/professional-development-program-teaches-valuable-soft-skills-science-phds/

Watson, W. R., & Watson, S. L. (2013). Exploding the Ivory Tower: Systemic Change for Higher Education. TechTrends, 57(5), 42–46. https://doi.org/10.1007/s11528-013-0690-9

Weerts, D. J., & Sandmann, L. R. (2010). Community Engagement and Boundary-Spanning Roles at Research Universities. The Journal of Higher Education, 81(6), 632–657. https://doi.org/10.1080/00221546.2010.11779075

Yukl, G., & Tracey, J. B. (1992). Consequences of influence

tactics used with subordinates, peers, and the boss. Journal of Applied Psychology, 77(4), 525–535. https://doi.org/10.1037/0021-9010.77.4.525

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20

VOL 19/ NO 2

In this issue
Dans ce numéro

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