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Embedding Career Education in Domain Courses

Easy Customizable Canvas Learning Modules to Teach Career Elements in Any Course

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Rationale

Before I start discussing the work performed, I would like to address the question: Why do I need as an instructor to integrated career elements in my subject matter course?

Career education is critical both for undergraduate and graduate students because it equips them with the skills, knowledge, and strategies needed to move from the educational mindset to the professional world mindset, with a successful transition from academia to the professional world.

Many students will start a new program without knowing what they want to do in the future and if it is a good fit for them. They need to have opportunities to explore interests, strengths, and values that will engage, motivate and inspire their work. Clarifying their own career goals is enabling them to take informed decisions not only during their academic life but also for the future career trajectory. As advocated by Lent (2013), career life preparedness is a needed activity for our students.

Moreover, many of the practical skills that students need for securing employment, like resume writing, interviewing, networking, and job search strategies, are not taught to the students but captured through practical experience, most of the time toward the end of their educational journey. Specialized career education courses offer a good introduction as supported by Hansen et al. (2016). However, many programs will not formally include such courses and therefore, they will not be taken by many students. Also, they are looking at general aspects not always relevant for the career field of all the students.

Objective

Our objective was to design a suite of learning modules that are providing elements of career education and can be integrated in various courses in a synergic manner with the domain learning objectives of the course.

Description

In addition to teaching the students theory and skills related to the subject matter of a course, it is essential to also present the utility of these for their future career thus generating motivation and facilitating engagement. This report introduces 5 micro-modules in Canvas: Role Models, LinkedIn profile, CV, Job Search, Occupational Identity. They are all having a similar structure and are adaptable to various courses allowing the introduction of career relevant elements utilizing AI-based techniques.

Two of these modules (Role Models and Occupational Identity) were previously developed together with Dr. Ioulia Rytikova and Garimella Sri Vidya in Blackboard LMS. A small experiment was conducted, and the results show promising utility for the students as described in Rytikova and Boicu (2024a, 2024b. During this project the modules were updated and improved to use AI-based techniques in the searching process and transferred and redesigned for Canvas LMS.

The other 3 were based on prior ideas but were redesigned and developed in a consistent manner. Ms. Vidya helped in some of the implementation tasks in Canvas.

The structure of the modules includes learning materials, mini quizzes, discussion board, AI-based search activity teaching prompt engineering (e.g., ChatGPT, Groq), and integration of extra-curricular activities.

Integrating career guidance into a college course in relation to the skills and knowledge presented become essential for preparing students for the workforce, increasing their employability, and generating motivation by aligning their education with personal and professional goals. As the proposed micro-modules are intended to be adaptable to a large variety of courses, the reflection below is a general and not specific to a single course. The intent is to bridge the gap between academic learning and the relevance in practical application as students often struggle to translate theoretical knowledge into workplace skills. According to Gati and Asher (2001), career decision-making is a complex process that benefits from early intervention and guidance, enabling students to make informed choices about their future. Embedding career guidance in curricula helps students identify how their coursework relates to potential career paths, fostering a sense of purpose and direction. A study by Bridgstock (2009) emphasizes that employability skills are critical for students entering competitive job markets. Moreover, this aligns with employers' expectations, as noted in Harvey (2000), who argues that graduates need more than disciplinary expertise to succeed. Moreover, career guidance supports equity and inclusivity helping students from underrepresented or disadvantaged backgrounds access to informal career networks or resources. Kuh et al. (2006) highlight that structured guidance within courses can level the playing field, offering all students opportunities to explore career options and build professional confidence.

Below we will briefly describe each of these modules.

Career Guide: Update your LinkedIn Profile based on this course.

In this module the students will create or update their LinkedIn profile to include the new knowledge and skills they acquired in the taught course (e.g., databases). The objectives of the module are for students to learn about the importance of professional profiles (like LinkedIn) in

their career; identify the skills and knowledge that are relevant to the employers in the field and to learn on how to improve their professional profile based on the knowledge and skills acquired in the parent course.

Career Guide: Update your CV based on this course.

In this module the students will create or update their CV to include the new knowledge, skills and relevant projects or assignments they acquired in the taught course (e.g., databases). The objectives of the module are for students to learn about the importance of the CV in their career; identify the skills and knowledge that are relevant to the employers in the field and to learn on how to improve their CV based on the performed activities and the knowledge and skills acquired in the parent course.

Career Guide: Relevant jobs for this course.

In this module the students will search and create applications for jobs in which the skills and knowledge from the parent course are useful. The objectives of the module are for the students to learn how to identify the skills and knowledge learned in this course that are useful for job applications and to learn how to search and apply for jobs related to the skills and knowledge they learned in the parent course.

Career Guide: Building occupational identity in the professional area related to this course.

In this module the students will start by identifying and learning about the occupational identity in the subject area of the parent course. Then they will perform literature research related to one potential professional occupation. In addition to the career goals, they will learn about how to perform literature research and how to summarize the findings in a written report.

Career Guide: Finding a role model in the professional area related to this course.

In this module the students will start by learning about the importance of having a role model and/or mentor, then they will select a role model (or mentor) and identify literature research related to your role model. They will learn not only about role models but also how to search and identify one and perform literature research about the selected role model. In the end, they will summarize the findings in a written report.

New Publications and Presentations

Career Center Workshop: *Just for Influencers: By Faculty for Faculty, Fairfax, VA, March 26, 2025*

Presenters: Mihai Boicu, College of Engineering and Computing; Jihye Moon, College of Humanities and Social Sciences; Antti Pentikainen, Carter School.

Abstract: "From Curriculum to Careers" Join University Career Services Faculty Fellows for a catered workshop on how integrating career readiness into your courses and program curriculum can help students develop essential career skills to meet workforce demands and navigate today's rapidly evolving industries. Faculty Fellows will showcase ways to increase students' career awareness across various disciplines through low-effort, high impact changes like modified syllabi and Canvas-based career awareness micro-modules. Participants will have the

opportunity to brainstorm ways to integrate these tools in their courses and adapt the modules with minor customizations after the workshop. The workshop will end with a discussion over lunch from Panera.

17th Annual Innovations in Teaching and Learning Conference: Teaching for the Future: AI, Analog and Beyond, Fairfax, VA, September 25-26, 2025

Interactive Session: ***From Curriculum to Careers – AI-enabled strategies to improve career readiness***

Presenters: Mihai Boicu, College of Engineering and Computing; Jihye Moon, College of Humanities and Social Sciences; Antti Pentikainen, Carter School.

Abstract: As faculty, we play a critical role in helping students connect their coursework to their careers. *"From Curriculum to Careers"* is a practical, discussion-based workshop focused on simple ways to embed career awareness into your courses. We'll explore easy-to-implement strategies—like small syllabus tweaks and Canvas-based micro-modules (Role Models, LinkedIn profile, CV, Job Search, Occupational Identity) —that help students develop essential career skills. You'll also have time to collaborate with colleagues and customize tools for your own courses. We will also discuss how the AI assistants can be used by the students to solve simple career related activities, from writing a customized cover letter to a job application to improving or customizing their CV. The session is presented by the 2024-2025 University Life Faculty Fellows who worked in partnership with University Career Services (UCS).

On Demand Teaching Resources: ***Career Guidance through AI-Based Micro-Modules in Canvas***

Authors: Mihai Boicu, Ioulia Rytikova, Garimella Sri Vidya, College of Engineering and Computing;

Abstract: In addition to teaching the students theory and skills related to the subject matter of a course, it is essential to also present the utility of these for their future career thus generating motivation and facilitating engagement. We developed 5 micro-modules in Canvas (Role Models, LinkedIn profile, CV, Job Search, Occupational Identity) having a similar structure that are adaptable to various courses and allow the introduction of career relevant elements utilizing AI-based techniques. The structure of the modules includes learning materials, mini quizzes, discussion board, AI-based search activity teaching prompt engineering (e.g., ChatGPT, Groq), and integration of extra-curricular activities. These resources contain materials to present these modules, specify how you can get access to them, guide how you can adapt them for your course and how you can get help and support during such a process.

Timeline and Accomplishments

Fall 2024:

- Regular meeting with the fellows group
- Discuss similarities and differences between proposed activities

- Design the 5 modules identifying elements to be updated, changed, or added for each of the modules.

Spring 2025:

- Regular meetings with the fellows group

- Develop the 5 modules with limited help from Ms. Garimella Sri Vidya

- Co-Designer and co-presenter at the first career center workshop: *Just for Influencers: By Faculty for Faculty*

Summer 2025 and beyond:

- Integrate the modules in several courses

- Perform an experiment to study the students' subjective opinion on the topics taught

- Create a working group to maintain the modules, keep them updated and offer integration support and success stories for new adopters

Conclusion and Future Work

The fellowship was a great experience allowing me to redesign, develop and prepare the implementation of these learning modules but also acquire a more comprehensive view on the needs of the students based on the collaboration with the other two fellows: Jihye Moon, from College of Humanities and Social Sciences and Antti Pentikainen, from Carter School.

In the future I plan to run an efficacity experiment with early adopters that will further encourage faculty to integrate these modules and potentially to develop new ones.

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