

# ICED 2020 proceedings:

## Bridging the gap between thinking and doing: Industry expert adjuncts and future-ready teaching methods

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### **Abstract**

This study examines the experiences of three industry expert adjuncts (IEA), a specialized type of adjunct instructor who maintains a full-time career outside of academia while teaching a university course. The courses they designed and taught during this study focused on helping students bridge the gap between the classroom and the profession.

### **1 Introduction**

In higher education, we often lament a perceived gap between the classroom and the workplace with regard to what and how knowledge is created within the traditional academic structure. To address this issue, future-ready teaching methods should effectively connect knowledge produced in a classroom to knowledge needed outside of class. This challenge has led instructors to look for ways to provide students with “real world” experiences.

Internships and co-op programs are one option that provide industry exposure through full time, short term employment with a company. These programs, however, require a significant investment from both the company and the university and become difficult to implement with a large number of students (Hora et al., 2017). Other solutions to increase real world exposure include case studies, virtual or game-based learning, situated project-based learning, and service learning projects (Chesler et al., 2013, 2015; Gasper & Lipinski, 2016; Walker, 2016), but these may not provide sufficient industry experience to adequately prepare every student.

Another way to provide industry exposure is by employing industry expert adjuncts (IEA) as classroom instructors. IEAs are a specialized type of adjunct instructor teaching a semester-long course while also maintaining a full time, non-academic position (Boyer & Walker, in press). IEAs are not just technical experts in their fields; they also bring best practices and creative problem solving from an industry context into the classroom. A 2014 report stated that IEAs make up less than 2% of contingent faculty positions (House Committee on Education and the Workforce Democratic Staff, 2014), but that number is growing. Previous studies show that this type of adjunct can bring a wealth of industry knowledge and experience into the classroom which can aid in the preparation of students for specific professions (Bettinger & Long, 2010; Gasper & Lipinski, 2016; Peer Review, 2010).

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Building from successful aspects of traditional apprenticeships where an expert works side-by-side with apprentices showing them how to complete tasks within a trade, cognitive apprenticeship is an educational framework that encourages instructors to share how they think about and approach tasks within their own industry (Collins et al., 1991; Stalmeijer, 2015; Walker, 2019). Educational frameworks can help educators, especially beginning teachers, connect learning objectives to assignments and assessments. By implementing the cognitive apprenticeship framework in the classroom, IEAs can share important insights into their own professional practice while also capitalizing on their desire to mentor students.

## **2 Context**

The initial courses offered in this study were housed in the same academic department and focused on exposing students to the specific career expertise of the IEA. Each course addressed unique learning objectives. Course enrollment was open to students from all majors and provided credit hours from the hosting academic department. Throughout the study, all three IEAs maintained a full time job working outside of academia and held class three to five hours a week for fifteen weeks each semester.

Leading up to the first semester the course was offered, the IEA met with a curriculum developer two to three times a month for approximately three months. During these meetings they co-developed course materials based on the cognitive apprenticeship model, discussed best practices for assessment, created recruitment materials to advertise the course, set up the learning management system, and discussed general onboarding to the academic department and the university as a whole.

Once the learning objectives were determined, the curriculum developer facilitated the translation of the IEA's expertise and course goals into unique and measurable classroom experiences. Course development included elements of the cognitive apprenticeship framework (Collins et al., 1991; Stalmeijer, 2015; Walker, 2019), such as combining knowledge and strategies; situated, real world assignments; and the moving of students from observing the instructor demonstration to scaffolded hands-on experiences to reflection on how they would approach the task independently next time.

## **3 Methods and findings**

Using a phenomenological approach to analysis, this study examines the experiences of three IEAs who were contracted to design and teach courses from Spring 2017 – Fall 2018, each IEA coming from a different area of expertise within creative production. To provide a rich, ongoing source of documentation and qualitative data, the IEAs, the curriculum developer, and enrolled students participated in semi-structured video interviews. The interviews spanned a two-year time period from course development through the first four to six semesters when each course was taught. In addition, course materials, classroom footage, student work, and other resources were collected to provide useful evidence for analysis.

The video interviews were transcribed and coded into themes using NVivo qualitative software and the emergent coding process. Findings from the interviews were then considered in relation to the course materials and other resources collected. For this paper, integration of data sources was used to reveal descriptive and interpretive phenomena related to student confidence and job-readiness.

A central theme emerged which concerned the classroom content in all three courses. The IEAs, the curriculum developer and the students all commented that the courses included an emphasis on both *skill work* and *professional skills*. Emergent coding revealed that skill work was defined as the hard skills necessary to complete a task within the industry, and professional skills centered around confidence, communication, critical thinking, working under

tight deadlines, and collaboration. These two skills content areas align with the cognitive apprenticeship knowledge areas that are necessary to gain expertise: domain knowledge (skill work) and strategies (professional skills). During the interviews, students stated that they felt more prepared to enter industry after developing both skill work and professional skills through the courses, and all three IEAs discussed the importance of incorporating both types of knowledge in order to prepare students for future careers.

In addition, students noted that the IEA instructors shared their professional network as a way to develop professional skills. IEAs provided “real world” feedback directly to students and also invited professional colleagues and guests into the classroom to share their career paths and provide feedback on student work. These aspects of the course align with the sociology aspect of cognitive apprenticeship, including building a community of practice and situated learning within a real world context.

#### **4 Discussion**

Industry expert adjuncts spend time in both the professional world and in the classroom each week. This impacts the content of their courses because they can provide recent examples and integrate them into hands-on activities and discussions. One IEA stated, “I’m literally coming from my office over to class. I can translate things that may have happened to me that day or the previous week and...bring that into the classroom.” The advantage is that course content can stay up-to-date and students are exposed to timely industry best practices.

Students benefit from frank conversations and the ability to pose questions to an industry insider. As the IEAs share their career experiences, students realize that they had similar struggles when they first started out in their fields. Exposure to insider information about culture, salaries, setbacks and more helps students gain confidence, be future ready and less fearful as they transition from the classroom to the workplace.

As one IEA shared, “If...they’re passionate about this industry, I want to make sure that they have the tools that they need to feel successful and to be successful.” A common trait of IEAs is a passion for mentoring students and impacting the next generation of leaders in their fields. They have decided to commit time and energy to developing and teaching a course on top of their ongoing career and family commitments. They believe that they have something of value to contribute and think that the classroom is the best way to share it with students. Courses designed with the cognitive apprenticeship framework in mind emphasize these aspects of teaching by combining the career experience of the IEA with their desire to mentor and prepare students for their future careers.

#### **5 Conclusions**

In the words of one IEA: “Having an active industry professional and practitioner is something that I don’t know that there’s a total substitute for, because there’s a lot of theory background [traditionally academic] that’s really, really important to students, but there’s also a lot of practice background [traditionally industry] that’s really important for careers.” IEAs bring a point of view into the classroom that adds to the university experience. When these courses are combined with courses taught by academics, students benefit from a well-rounded education that prepares them for the future.

#### **References**

- Bettinger, E. P., & Long, B. T. (2010). Does cheaper mean better? The impact of using adjunct instructors on student outcomes. *The Review of Economics and Statistics*. [https://www-mitpressjournals-org.libproxy.clemson.edu/doi/abs/10.1162/rest\\_a\\_00014](https://www-mitpressjournals-org.libproxy.clemson.edu/doi/abs/10.1162/rest_a_00014)

- Boyer, D. M. & Walker, E. B. (in press) The impact of industry expert adjuncts on students' course experiences. *International Journal of Innovative Teaching and Learning in Higher Education*.
- Chesler, N. C., Arastoopour, G., D'Angelo, C. M., Bagley, E. A., & Shaffer, D. W. (2013). Design of professional practice simulator for educating and motivating first-year engineering students. *WSEAS Transactions on Advances in Engineering Education*, 3(3), 1–29. <http://edgaps.org/gaps/wp-content/uploads/aee-vol03-issue03-01.pdf>
- Chesler, N. C., Ruis, A. R., Collier, W., Swiecki, Z., Arastoopour, G., & Williamson Shaffer, D. (2015). A novel paradigm for engineering education: virtual internships with individualized mentoring and assessment of engineering thinking. *Journal of Biomechanical Engineering*, 137(2), 024701. <https://doi.org/10.1115/1.4029235>
- Collins, A., Brown, J. S., & Holum, A. (1991). Cognitive apprenticeship: Making thinking visible. *American Educator*, 15(3), 6–11. [http://elc.fhda.edu/transform/resources/collins\\_brown\\_holum\\_1991.pdf](http://elc.fhda.edu/transform/resources/collins_brown_holum_1991.pdf)
- Gasper, C., & Lipinski, J. (2016). Industry Experience: Enhancing a Professor's Ability to Effectively Teach in Higher Education. *The Journal of Humanistic Education and Development*, 5(3), 63–67. [http://jehdnet.com/journals/jehd/Vol\\_5\\_No\\_3\\_September\\_2016/7.pdf](http://jehdnet.com/journals/jehd/Vol_5_No_3_September_2016/7.pdf)
- Hora, M. T., Wolfgram, M., & Thompson, S. (2017). *What do we know about the impact of internships on student outcomes? Results from a preliminary review of the scholarly and practitioner literatures* (No. 2). University of Wisconsin- Madison. <http://ccwt.wceruw.org/documents/CCWT-report-Designing-Internship-Programs.pdf>
- House Committee on Education and the Workforce Democratic Staff. (2014). *The Just-In-Time Professor*.
- Peer Review. (2010, July 30). *The Role of Adjuncts in the Professoriate*. Association of American Colleges & Universities. <https://www.aacu.org/publications-research/periodicals/role-adjuncts-professoriate>
- Stalmeijer, R. E. (2015). When I say ... cognitive apprenticeship. *Medical Education*, 49(4), 355–356. <https://doi.org/10.1111/medu.12630>
- Walker, E. B. (2016). *Opportunities for Innovation: Game-based Learning in an Engineering Senior Design Course*. [https://tigerprints.clemson.edu/all\\_dissertations/1805/](https://tigerprints.clemson.edu/all_dissertations/1805/)
- Walker, E. B. (2019). Teaching Like a Master: Implementing the cognitive apprenticeship framework in graphic communications laboratory assignments. *Visual Communications Journal*, 55(2).