

Experiential internships: understanding the process of student learning in small business internships

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Abstract: *This qualitative study examines the process of student learning in a small-business experiential internship programme that pairs highly qualified undergraduates with local small or start-up companies. The Cognitive Apprenticeship model developed by Collins et al (1991) was used to conceptualize students' reported experiences. The results revealed that the internship structure allowed students to acquire knowledge successfully from experts in the field, situate their learning in the environment of practice, and learn valuable professional and entrepreneurial skills not found in traditional classroom settings. Students reported an increase in self-efficacy and indicated that their interests in working in a small business were solidified or further enhanced. It is argued that these findings have important implications for researchers, small business owners and entrepreneurial and small business support initiatives in higher education.*

Keywords: *small business; internship; experiential learning; cognitive apprenticeship*

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Career and technical education programmes have long been interested in providing students a learning environment with opportunities to gain professional experience and develop career skills in practical contexts. Higher education has traditionally formed partnerships with prominent, established businesses to provide students with such opportunities. However, these opportunities may not serve as the best models for the future work environments students will experience after graduation. Many graduates will end up either working in small, start-up firms or launching

businesses of their own. Additionally, many valuable learning opportunities may be found in small/start-up company internships to a greater extent than in large corporate internships, such as gaining practical experience in a diverse array of disciplines, holding more responsibility and facing more challenges, and creating novel ideas and solutions (Chigunta, 2002; Heriot and Lahm, 2009). Internship opportunities in the small or start-up business sector can benefit students by providing a rich learning experience that models future work environments and allows them to

develop valuable skills that will prove beneficial in variety of professional endeavours.

Small businesses are a pivotal driving force in the global economy. In a 2006 US report, small businesses (defined as companies having fewer than 500 employees) comprised 99.7% of all employers in the USA, employed half of all American non-government employees, produced half of the country's non-farm output and generated 13 to 14 times more patents per employee than large firms (Leebaert, 2006). Additionally, the US Small Business Administration reported in 2008 that businesses with fewer than 500 employees created 74% of the net new jobs in the nation while firms with fewer than 20 employees created 22% of new jobs (Small Business Administration, 2008). In the European Union, small and medium-sized enterprises (SMEs) provided more than two-thirds of private sector employment opportunities and, in 2010, 92% of all EU businesses were micro-firms with less than 10 employees (Wymenga *et al*, 2011). Entrepreneurship has also proved to be an important source of economic growth and job creation in developing countries and transitional economies (Ahmed *et al*, 2010; Iakovleva *et al*, 2011; Roxas *et al*, 2008). Innovative, hard working and determined small business owners and entrepreneurs create jobs in the community, decentralize economic power, stimulate the economy and allow employees to share in the success of their pursuits (Barreto, 2006). Given the importance of small businesses to the global economy, initiatives to stimulate and nurture small business growth and entrepreneurial interest in the community are vital. Previous research highlights the successful outcomes of various entrepreneurship support programmes that enhance perceptions of entrepreneurship in college students (Peterman and Kennedy, 2003; Roxas *et al*, 2008). Today, providing entrepreneurial education and enhancing interest in and understanding of small businesses are of increasing interest in higher education.

Previous studies have examined factors influencing entrepreneurial intent, including intrinsic personality traits, perceived barriers and support, and the socio-political-economical context (Boyd and Vozikis, 1994; Luthje and Franke, 2003). Research has also shown that the opportunity to acquire skills and experience achievement through applied internships reinforces self-efficacy which in turn influences entrepreneurial intent (Boyd and Vozikis, 1994; Chen *et al*, 1998; Herron and Sapienza, 1992; Zhao *et al*, 2005). These findings imply that experiential internship programmes can have an effect on student understanding, attitudes, perceptions, and intentions with regard to entrepreneurship and small businesses. However, the current literature focuses predominantly

on outcomes of experiential entrepreneurial programmes with little attention given to the process of student learning and development within programmes. Nonetheless, understanding both process and outcomes is important for educators, administrators and funding agencies who aim to design effective programmes (Adedokun *et al*, 2011). This present study aims to fill this gap in the literature and examine the process of student learning in an entrepreneurial internship programme.

Theoretical framework: Cognitive Apprenticeship

Cognitive Apprenticeship, CA, (Collins *et al*, 1991) is a well-recognized conceptual framework that has been employed to design learning environments in which experts transfer knowledge to students and students gain knowledge that is situated in the authentic activities of a particular discipline or profession. In the CA model, students work closely with professionals to complete and reflect upon meaningful tasks (Lave, 1997). The CA model has been used to explain student learning in internships in science fields (for example, undergraduate research; Kardash, 2000) and health fields (for example, nursing residencies; Taylor and Care, 1999). Although the principles and goals of CA seem to fit appropriately with internships in entrepreneurial education, we are not aware of any published empirical study or observation of Cognitive Apprenticeship in this setting. The purpose of this paper is to apply CA to describe the process of student learning during undergraduate internships at small or start-up companies.

The CA framework comprises four broad dimensions: content, method, sequence and sociology. Additionally, these dimensions feature several different elements that characterize optimal learning environments. The components of CA are further depicted in Figure 1. Content refers to the strategic knowledge that experts use in solving problems and accomplishing tasks. In CA, the content dimension includes four components: domain knowledge, heuristic strategies, control strategies and learning strategies. Domain knowledge includes 'concepts, facts, and procedures explicitly identified with a particular subject matter' (Collins *et al*, 1991, p 13). Heuristic strategies are generally regarded as the 'tricks of the trade' that experts use in carrying out tasks within their specific disciplines. Control strategies are techniques for managing the process of carrying out a task, including assessing a problem and identifying the most effective problem-solving strategy. Learning strategies refer to strategies for learning content that aids in carrying out complex tasks and exploring new domains.

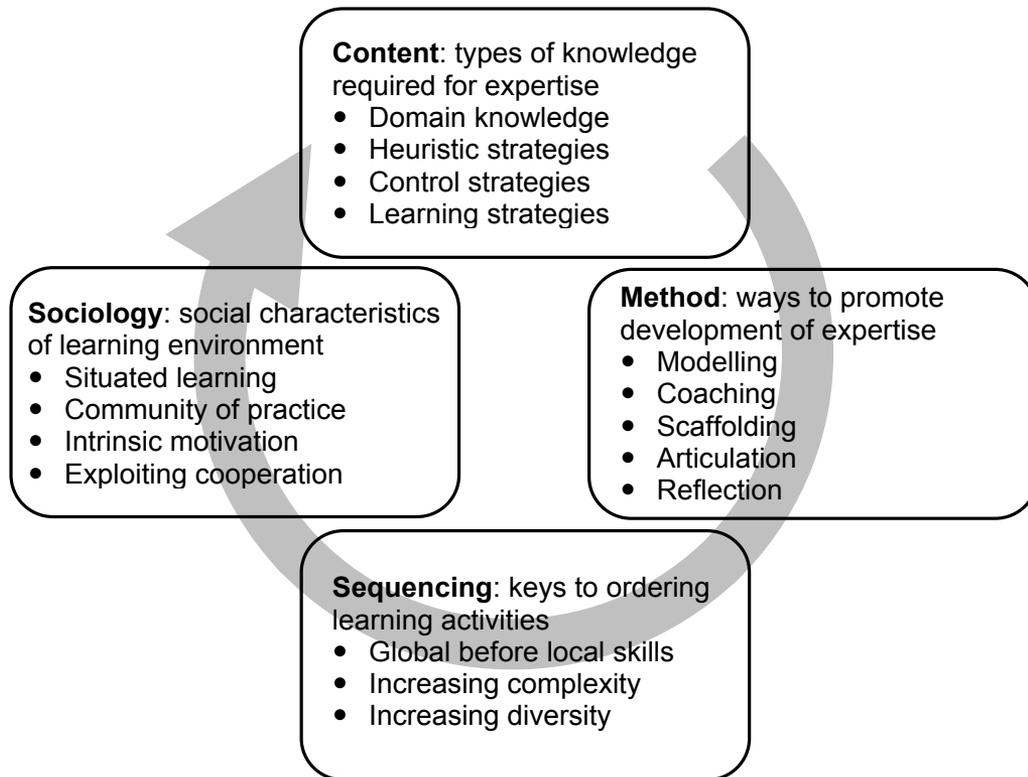


Figure 1. Components of cognitive apprenticeship.

In describing the method dimension, Collins *et al* (1991) argue that teaching methods within a CA framework should ‘give students the opportunity to observe, engage in, and invent or discover expert strategies in context’ (*ibid*, p 13). The researchers further outline six components of teaching methods: modelling, coaching, scaffolding, articulation, reflection and exploration. Modelling occurs when students are able to observe experts performing a task and develop a conceptual model. Coaching entails experts observing students carrying out tasks and offering guidance through various means of scaffolding. Scaffolding refers to the types of support students receive from experts to help them, the students, carry out tasks. Articulation consists of experiences allowing students to describe their knowledge base and how they apply their knowledge in problem-solving. In reflection, students are able to compare their practice with their own previous practice or with the practice of experts or other students. Collins *et al* (1991) describe exploration as the ‘natural culmination of the fading of supports’ (*ibid*, p 14). Exploration involves creating opportunities for students to solve problems on their own.

The third dimension of CA is known as sequencing and has three main components: global before local skills, increasing complexity and increasing diversity. Collins *et al* (1991) argue that appropriate sequencing of

learning activities for students provides structure and meaning to their learning. In the ‘global before local skills’ component of sequencing, Collins *et al* (1991) explain that building a conceptual model of a target skill or process before learning the specific details for carrying out the process allows students to make sense of their tasks, monitor their progress and develop self-correction skills. Increasing complexity refers to sequencing tasks so that the integration of more and more skills is required for expert performance. Increasing diversity refers to sequencing tasks so that a wider variety of strategies and skills are required.

The sociology dimension refers to four elements that allow for the integration of students into the actual practice environment of their profession: situated learning, community of practice, intrinsic motivation and exploiting cooperation. Situated learning is a critical element of learning that allows students to apply their knowledge in an environment that ‘reflects the multiple uses to which their knowledge will be put in the future’ (Collins *et al*, 1991, p 16). A community of practice refers to a learning environment in which students can actively participate and engage with other experts in the community. Intrinsic motivation refers to the importance of fostering a learning environment in which students eventually perform tasks out of an internal motivation and interest rather than a solely

external motivation. Exploiting cooperation refers to having students learn through collaborative problem solving.

Using the CA model as a guiding framework for this study offers several advantages. First, the descriptive, dimensional nature of the model is appropriate for describing the components that explain the process of student learning. Second, CA can serve as an effective construct for understanding experiential entrepreneurial learning specifically because of the emphasis on transferring knowledge from experts and situating learning in a practical environment. Third, the concept of apprenticeship is universal and one that has been practised for centuries in several different cultures. Thus, the findings from this study are cross-culturally relevant and can be applied in many different contexts. However, a major limitation to the CA model is that it does not appear to be ideal for evaluating programme outcomes or cause-and-effect relationships.

Internship programme

Interns for Indiana (IfI) is an internship programme created by a large, Midwestern Research University in the USA as part of a novel initiative to enhance undergraduate students' entrepreneurial skills and motivation to work in small companies or start their own businesses. The programme also promotes regional economic development by supporting early-stage start-up companies. IfI is uniquely distinct from other internship programmes in that it provides experiential opportunities for students to work in fast-paced entrepreneurial environments. Students are paired with local high-tech start-up companies in which they are typically given more autonomy and responsibility than in corporate internship programmes. Since the inception of the programme in 2004, 477 students and 160 companies have participated. Highly qualified, self-selected undergraduate juniors and seniors from a wide range of colleges and majors are accepted into the programme; qualified companies from a variety of high-tech industries (including biomedical, software development, and aerospace) also apply for participation in the programme. Students are interviewed by selected companies and matches are created based on both student and company rankings, needs of the company and student skills. Students then complete an internship for the full academic year or summer semester. On average, interns work 150 hours during each academic year semester (300 hours total) or 400 hours in the summer and receive credit and a scholarship (academic year) or a stipend (summer) for their participation. Academic year interns work with their supervisors to

develop a flexible schedule so as not to interfere with their academic obligations.

The IfI programme is also unique in that it offers a classroom component that allows students to integrate their internship experience with their academic experience. IfI students participate in a seminar course which includes small group discussions of internship experiences, a poster session in which students present the outcomes of their specific projects to their peers and other interested members in the community, and a guided reflective writing assignment in which students compare their expectations and preconceptions prior to starting the internship with their actual experiences as interns. Additionally, students participate in individual interviews mid-semester and focus group discussions at the end of the semester. During these activities, students have the opportunity to articulate and identify their gains, challenges, perspectives and growth throughout the internship experience. These supplemental activities are included in order to allow students to reflect on their internship and construct meaning from their experience. In the following sections, we will demonstrate how the Cognitive Apprenticeship framework can be used to conceptualize the learning process of students in IfI.

Methods

Participants and data collection

Sixty-six students from a large Midwestern university participated in Interns for Indiana over the course of five academic terms between fall (autumn) 2009 and spring 2011. Academic terms at the university are distinct grading periods that are approximately three months long. Of the participants, 18 (27%) were women and 48 (73%) were men. The gender distribution of the participants in the study reflects the overall gender distribution in business and STEM (science, technology, engineering and mathematics) majors at the university in which the population is 26% female and 74% male. Additionally, 18 (26%) were juniors and 48 (73%) were seniors; 25 (38%) were engineering majors, 21 (32%) were business majors, 6 (9%) were natural science majors, 8 (12%) were computer sciences majors and 6 (9%) students were from various other majors.

Data for this analysis come from three key sources. First, a programme representative conducted mid-semester one-on-one interviews with interns at their internship site. The representative asked interns questions concerning lessons learned, challenges and successes, and perceptions of start-up companies. Interviews, typically lasting 10–15 minutes, were recorded and later transcribed. Second, students

completed prompted reflective writing assignments, at mid-semester, on topics including: expectations, personal lessons learned, challenges and rewards, and attitude towards working in small/start-up companies.

Third, an assessment specialist conducted focus group sessions with all interns after the completion of their internship. Participants were encouraged to engage in open dialogue about their views on the programme, internship influence on their career plans and suggestions for programme enhancement. Sessions typically lasted 45 minutes to an hour and were recorded and later transcribed.

Data analysis

A directed content analysis was used to conceptualize and analyse the qualitative data according to the Cognitive Apprenticeship framework. Directed content analysis allows researchers to use a structured deductive approach to data analysis in order to 'validate or extend conceptually a theoretical framework or theory' (Hsieh and Shannon, 2005, p 1281). Directed content analysis involves securing units of analyses, identifying textual passages representing a particular phenomenon, developing a categorization matrix based on the key concepts of a theory and coding selected passages into the matrix. In order to increase trustworthiness, researchers can include an additional step which involves assigning new codes to text not categorized in the initial coding scheme (interested readers should see Hsieh and Shannon, 2005, for a detailed description of directed content analysis).

In the current study, students' reflective writings and verbatim transcriptions from the focus groups and interviews served as units of analyses. Prior to coding, the researchers read through and reviewed the data thoroughly several times. During this review, textual examples illustrating the phenomenon of student learning were identified. The categories and subcategories of the CA framework (shown in Figure 1) provided a predetermined categorization matrix that guided the coding of the data (Elo and Kyngas, 2007). The identified text was then coded into categories using this categorization matrix. The frequency count for each category was determined by the number of students who mentioned the category at least once. The categories were then grouped into the four distinct dimensions of CA. During analysis, additional themes emerged that fell outside the CA coding scheme. These themes were assigned codes and are briefly discussed but were not relevant to the explanation of the phenomenon of student learning. NVivo 8.0, the qualitative analysis software, was used to record and organize textual data.

Results

We integrated findings from all data sources to illustrate the different components of the four CA dimensions found in the internship programme.¹

Content dimension

Students reported that their internship experiences allowed them to gain important knowledge not taught in traditional classrooms, such as learning the different components of running a business, or how to work with real life clients and customers.

1. Domain knowledge. Students reported entering the internship programme with domain knowledge from classes in various subjects such as engineering, business, computer science, etc. Most students had internships related to their academic major and thus were familiar with the technical background of concepts they were exposed to in the workplace. One student commented,

'I'm [a] biology major and I went to a biomedical firm; the stuff I was dealing with was building off of what I had already learned.'

However, students soon realized that domain knowledge alone was insufficient for surviving in the workforce. One student commented on his initial struggle with the discrepancy between school and work:

'Majoring in economics with minors in mathematics and statistics, I used to think that I have very strong analytical and quantitative skills. However, when I started my internship, the problem occurred to me was how I can use these skills I learned. Work is different from study, as no one will give us problem sets to solve during work.'

From their early internship experiences, students learned they would need to acquire a new skill set in order to successfully translate their academic knowledge into practical work behaviour.

2. Heuristic strategies. In their internships, students reported learning specific heuristic strategies from their bosses and co-workers about work issues such as dealing with difficult customers, managing stress effectively and maximizing output from experiments. These strategies are distinct from domain knowledge and were learned through direct experiences on the job. One student described learning tricks of the trade from company founders:

'The founders watched over us and gave us tips as our direct supervisor, a former Intern for Indiana

participant, had gone through many of the same things I was experiencing.’

Students mentioned that the heuristic strategies they learned in the workplace were vital to success but could not be properly learned from traditional methods of learning such as reading a textbook or listening to a lecture.

3. Control strategies. Collins *et al* (1991) reported that as students expand their bank of heuristic strategies, they often encounter new control problems. This phenomenon was also apparent in students’ internship experiences. Many students reported initially facing a challenge in balancing the increasing demands of their internship. Students were often given multiple tasks at once or asked to work on different projects simultaneously. Students found the internship structure (modeled on the structure of a real small business working environment) very different from the more linear, sequential structure of traditional classes. Thus, many students reported having to adopt new strategies for prioritizing tasks and effectively managing their time. One student’s journal response illustrates examples of new control strategies he learned during his internship:

‘I have learned to prioritize my goals and tasks and look at the overall picture to realize the value of each task. This has in turn lead to better overall time management efficient use of my day. Before my internship, I would do general tasks around the house or schoolwork in random order. This took away from my day as I was not efficient. Through my time in the internship, I realized the economic value of aligning tasks in the best way possible.’

Accordingly, many students reported that the control strategies they learned from their internships were skills which would be useful in their future career and professional development.

4. Learning strategies. After learning effective control strategies, students described having to learn to choose or modify strategies most appropriate for specific tasks:

‘However, it’s never too late to learn. Having realized this problem, I am planning to spend more of my spare time on readings and other subjects. To make this change happen, I will have to speed up a little bit in order to leap from the learning stage to the production stage.’

Students also mentioned that the structures of their small companies were fluid and dynamic and thus they were continuously adapting to changing environments

and structures. Although some students noted this as an initial challenge, students reported flexibility and adaptability would be lifelong career skills. Additional learning strategies students mentioned were conducting background research, learning to ask for help, and brainstorming with a group.

Method

In the practical component of the internship programme, supervisors and co-workers at the internship sites served as informal instructors while activities in the classroom component provided more traditional instructional methods related to students’ informal learning.

1. Modelling. Students reported that interning in a small business allowed them to hold important responsibilities and work closely with their supervisors and other company employees:

‘From being in the same office almost every time I worked with people like [my supervisors] I was able to gain some understanding of what the industry is all about.’

Thus students were exposed to a plethora of modelling opportunities. Students observed hard work, dedication and other necessary components for starting a business:

‘I think that knowing how busy [my boss] is and being able to observe that first hand doesn’t compare to [my entrepreneurial classes]. . . Actually getting to work with [my boss] has really opened my eyes to how much it actually takes to start and run your own business.’

Students also reported learning important entrepreneurial lessons from observing their bosses such as professional etiquette, how to work with a team and work independently, how to communicate with different professionals, and how to raise money from investors.

2. Coaching. Students’ reports of experiences of coaching varied, according to their internship sites. A few students mentioned being initially paired with an employee in the company who served as an instructor for using technical equipment and software. Other students mentioned having regularly scheduled meetings at which they brought questions and concerns and received feedback and guidance. Many students described having ‘open door policies’ in which they were able to seek help and advice from supervisors as needed. Thus it appeared that most companies had structures in place to coach interns. However, six students reported not receiving as much coaching as they expected, due to limited resources and lack of

expertise in specific areas within their companies. For example, one student reported:

‘. . .there’s not a lot of direction necessarily. I’ll be given a task and [my supervisor] doesn’t really have a good idea of what needs to be done to accomplish the task so putting the brain power in to figure out what I have to do exactly has been a bit of a challenge.’

3. Scaffolding. Students reported that the open environment of their small companies allowed them to communicate easily with supervisors and other employees and thus gave them access to ample scaffolding. According to student reports, scaffolding generally took the form of specific technical advice, tips for conceptualizing and writing business plans, clarification of questions, guidance in constructing long term goals and constructive feedback.

4. Articulation. Students were given an opportunity to articulate their knowledge and experience in the classroom component of the internship programme. Students engaged in group discussions with other interns in the programme and presented a poster at the end of the semester detailing their work projects. Students mentioned that these experiences helped them improve their presentation and communication skills. In addition, one student mentioned that the opportunity to train a new intern at her internship site allowed her to understand and internalize better the knowledge she had acquired.

5. Reflection. Students were given opportunities for reflection during the classroom component in which they engaged in group discussion and completed reflective writing activities. Students reported using their reflective writing to identify positive changes they had made throughout the semester as well as identifying areas for improvement. Students also realized the benefit of reflection in future career pursuits.

6. Exploration. Several students reported that working in a small company allowed them to hold many important responsibilities and make meaningful contributions to the company, to an extent not typical in other types of internships. Students also reported that they eventually had to make important decisions and solve complicated problems with little or no guidance. Many students initially found this to be a challenge and were unsure of their capabilities, but they learned to integrate their skills along with heuristic, learning, and control strategies to carry out their tasks. For example, one intern stated:

‘I was then expecting to be told how I was to go about solving this problem. However, I was instead

told to design an experiment myself. At first, this was a very overwhelming task for me. I believe this challenge ended up being one of the most rewarding experiences of my internship. I had to step outside of my comfort zone and do what I didn’t think I was capable of.’

Students stated that they learned many other important entrepreneurial skills such as taking initiative, working independently, problem solving and learning how and where to ask for help.

Sequencing

Student reports indicate that the learning experiences provided by their internships embodied the three principles of sequencing.

1. Global before local skills. Students reported that their supervisors asked them to spend the beginning stages of their internship researching their area and learning broad theories and basics about topics such as market competition and programming. Although some students said that they did not enjoy researching, they were able to appreciate the value and importance of having a strong conceptual understanding of their field. For example, one student described his experience:

‘I feel like I have only been researching during the internship so far. I understand that I need to understand the entire market and all of the companies in it. . . I think it was good for me to do this on my own so I could get my own idea of the market so when I talk with [my bosses] I will not be influenced by the ideas they already have. I could have asked for a couple of smaller jobs that were not research oriented but overall I feel like I have learned a lot so I am happy with my experience so far.’

2. Increasing complexity. Students reported that their tasks progressively increased in complexity and they simultaneously received less coaching and scaffolding. For example, one student reported:

‘Initially. . . I was paired with a specific employee within the company, and for the first couple of weeks, he showed me how some of the equipment was used and how to perform some experiments. However, for the next couple of weeks, my responsibilities were not at all what I expected. I was given a specific project and a question to answer.’

Students stated that after mastering the initial learning curve, they were able to accomplish increasingly complex tasks, using the broad knowledge base they had acquired.

3. *Increasing diversity.* Several students reported that working in a small group of professional staff, where they were in constant contact with many different departments, allowed them to gain exposure to different disciplines in the work place and develop a diverse skill set. For example, one student commented:

‘All of the interns gained some quality sales experience, but we were all given the chance to work on different projects or even lead projects in different fields. I was able to focus on lead generation through marketing. I have many projects that gave me marketing experience and knowledge which will help in future jobs.’

Students also mentioned that they learned how to adapt their acquired skills for different environments.

Sociology

Students described feeling fully integrated into their companies and being immersed in the small business/entrepreneurial culture.

1. *Situated learning.* Students reported that their internship gave them valuable opportunities to apply their knowledge in a real work setting and thus learned many practical lessons and acquired skills that are not taught in traditional classrooms. For example, one student commented:

‘A lot of things I’ve learned here is about marketing products that you don’t really learn a lot about in engineering classes but it’s nice to get the aspect of being able to design something to be marketable; I’m used to designing things to make it function the best.’

Other students commented that they gained a new appreciation for different work tasks (for example, laboratory work, research) after witnessing the functional purposes of such tasks.

2. *Community of practice.* Student reports revealed that students felt fully integrated in their internship communities and found the small business culture to be significantly different from what they perceived to be corporate culture. Several students compared the relationship dynamics within their companies to that of a family. Students also appreciated being able to develop personal relationships with their bosses and other employees, feeling valued and being able to make meaningful contributions to the company. Students contrasted these favorable characteristics of their small business sites with their perception of working in a large corporation as ‘being stuck in a cubicle’, ‘making coffee runs’, and being told ‘here’s your paycheck. Go home.’

3. *Intrinsic motivation.* Through their internship experiences, students discovered aspects of working that they found exciting and truly enjoyed. Some students were even surprised when they realized how much they enjoyed their work:

‘One thing that I learned about myself is that I enjoy research work. I am always eager to conduct experiments, look at the resulting data, and analyse it. My excitement would especially peak right before the data becomes visible. It is fascinating to examine data for trends and using robust statistical tests to prove or disprove their significance.’

For many of the interns, being able to witness the practical impact of their work provided a strong intrinsic motivation for them to produce results. Students described their motivation to produce results at work as stronger than motivation to get good grades in school:

‘I seem more motivated to work for a company than for grades. The motivation seems to stem from my fascination that something I am researching and working on can actually be used by people and can make [the] company money.’

4. *Exploiting cooperation.* Throughout their internship, many students reported realizing the integral role of teamwork in the operation of small/start-up companies:

‘I believe in order for a start-up business to be successful everyone needs to be willing to brainstorm new ideas and communicate with each other.’

Accordingly, many interns worked closely in teams or with other employees in their companies. Through these teamwork experiences, students reported being able to improve their communication skills and learn how to use co-workers as resources for brainstorming and problem-solving. Students also mentioned learning the importance of responsibility and accountability when working in a team.

Implications and recommendations

This paper provides a conceptual extension of the Cognitive Apprenticeship framework to the process of student learning in an experiential entrepreneurial internship. Our analyses revealed that student experiences in the Interns for Indiana programme match the dimensions of CA theory and that using the CA framework to interpret evidence of student learning yields significant insight into the process of student learning. The results from this study raise important implications for researchers, educators, administrators

and small businesses. We would argue that integrative internship programmes with small/start-up companies can effectively teach students critical entrepreneurial skills not taught in traditional classrooms or large corporate internships. Administrators and funding agencies interested in developing educational endeavours aimed at providing entrepreneurial education and promoting entrepreneurial intent can be successful by designing similar programmes that embody the principles of CA. The findings from this study are also likely to be beneficial and informative for small/start-up businesses wishing to promote interest and education in small businesses and entrepreneurship among undergraduates in their community. Companies wishing to provide experiential internships can use the CA framework to design their internship programmes and create a conducive learning environment.

Exposure to the different components of CA during the internship allowed students to successfully acquire knowledge from experts in the field and situate their learning in the environment of practice. As a result of these critical CA learning experiences, students were able to learn crucial entrepreneurial skills that are beneficial to a variety of professional endeavours.

Content dimension

Students found that they could not rely on their pre-existing domain knowledge alone to perform successfully in their internship. Heuristic, control and learning strategies specific to the industry proved crucial in helping students bridge the gap between academic knowledge and practical work behaviour. Students further mentioned that these important lessons were acquired informally on the job. These findings regarding the content dimension hold important implications for meaningful entrepreneurial internships. For example, employers may need to place special emphasis on informal contact with interns in order to pass down heuristic knowledge and valuable entrepreneurial skills such as how to work with real life clients, how to efficiently manage time, and the different components of running a business. In line with our findings, earlier studies (for example, Roxas *et al*, 2008) have suggested that acquisition of such entrepreneurial knowledge positively influences entrepreneurial self-efficacy and perceived desirability of entrepreneurship which, in turn, influences entrepreneurial intent.

Method dimension

The simultaneous classroom component of IfI complemented and supplemented students' internship experiences and provided students with a unique integrated learning environment in which they were able to acquire skills through observation and guided

practice and experience autonomy in applying their skills. We recommend that programme creators devise effective strategies (such as classroom experiences) for fostering a community of support for interns and include a reflective component that allows students to reflect consciously on their growth and articulate their experiences. Additionally, one challenge some students reported facing was the perception of not receiving adequate support or coaching on the job. This finding reflects a central challenge for many small and start-up companies that may struggle with allocating already limited resources to intern development. Indeed, earlier studies (for example, Rohde *et al*, 2005) have noted that the establishment of a cohesive community of practice between student interns and start-up company practitioners can be hindered by limited resources of company time and personnel. In this study, however, interns who reported having knowledge of systems in place, in which they had a place or set time to seek additional resources or ask questions, perceived more support and coaching being available from their employers. Establishing a precedent of clear communication and actively creating explicit support structures to allow for coaching opportunities may, therefore, be some of the ways in which companies can compensate for having only limited resources. When assessing potential companies for inclusion, internship programme administrators can also take into account the stability of the company as well as its capacity to provide resources for intern development.

Also, students who reported having several opportunities to learn by modelling in their internships reported learning several important entrepreneurial lessons and techniques for performing their jobs. Modelling therefore appears to be an effective method for informal teaching that does not necessarily require many company resources. Once these coaching systems are set in place, employers can gradually 'fade' them in order to facilitate intern exploration. Students who reported having several exploration opportunities also reported that they felt a strong sense of accomplishment and an increase in self-efficacy after successfully completing tasks on their own.

Sequence dimension

Sequencing appeared to be a crucial component in students' acquisition and integration of valuable entrepreneurial skills. Students who acquired global before local skills gained an in-depth understanding of their respective fields, identified how smaller tasks contributed to the overall big picture and were able to think critically about current strategies and new ideas. Students further described this global understanding as being a critical component of entrepreneurship. In

addition, students stated that after mastering the initial learning curve they were able to accomplish increasingly complex tasks, using the broad knowledge base they had acquired. Because of this sequencing dimension, students were able to grasp a holistic understanding of business processes and product development, something they deemed crucial to entrepreneurship. Students also mentioned that they learned how to adapt their acquired skills to accommodate the needs of different environments. They concluded that gaining a cohesive understanding of how different disciplines collaborate in developing a finished product is important in entrepreneurship. Our finding is in line with previous studies that show having a wide diversity of educational experiences, rather than a highly specialized education, positively predicts successful entrepreneurial ventures (Dutta *et al*, 2011). We therefore recommend that employers keep track of students' development, decrease coaching and scaffolding as appropriate and, incrementally, add more challenging and diverse tasks in order to optimize students' learning and understanding.

Sociology dimension

A benefit of working in a small company environment that emerged from students' data was the opportunity to work closely with employers and experience integration. Students who reported being able to develop personal relationships with their supervisors and other employees were able to feel immersed in the company culture and also identified many benefits of working in a small/start-up company. Furthermore, students who were immersed in their company environment were also able to apply their knowledge directly to their tasks and situate their learning effectively. Students also reported that being able to work as a member of a team helped them learn many important professional skills such as communication, problem solving and accountability. Another benefit that many students attributed to the small business environment was that they were able to perform meaningful tasks and directly see their contributions to the company. Students described finding their work personally rewarding and feeling a sense of personal achievement. Many mentioned gaining more self confidence and self-efficacy and experiencing personal growth. These students also reported gaining a holistic understanding of their work and were more likely to start their own business as a result of their increased insight. Our finding is supported by earlier research which showed that the opportunity to acquire skills and experience achievement reinforces self-efficacy which, in turn, influences entrepreneurial intent (Boyd and Vozikis, 1994; Chen *et al*, 1998; Herron and Sapienza, 1992; Zhao *et al*, 2005). Based on

these findings, we recommend that employers should cultivate a close community of practice in their companies by creating opportunities for interns to work collaboratively as members of teams or with other employees, apply their knowledge in the industry of the company and understand the impact of their work on the overall company goals.

Limitations and future work

One limitation to be noted is that because of the use of a self-selected sample, the results cannot be definitively generalized beyond the scope and context of the study. Furthermore, it is likely that students' internship experiences varied according to the characteristics of the companies with which they were placed, whether they were enrolled during the summer or academic term, and other environmental and economic conditions specific to the time frame in which they completed their internship. It is possible, therefore, that not every student in the study experienced separately each element of Cognitive Apprenticeship in the same way. For example, some students mentioned receiving plenty of coaching and scaffolding from their supervisors while others in significantly smaller companies reported receiving relatively little. However, our results indicate that the programme as a whole provided students with opportunities to learn through Cognitive Apprenticeship and provided examples of how elements of CA can be incorporated into internship programmes.

Furthermore, we observed CA themes mentioned across cohorts, suggesting that in general small business internships do provide the elements of CA. Future studies can further control for outside variables and examine how variations in experiences within a CA framework affects students' learning. Another limitation of the study is that it was based solely on the experiences of companies and students in the Midwest USA. Future studies can expand our findings by applying the model presented here to entrepreneurial internships in other regions and countries.

Although the focus of our study was to explain the process of student learning, additional themes related to student outcomes emerged from the students' responses. The internship experience seemed to enhance students' attitudes about small and start-up businesses and they further reported increased interest, confidence and motivation in starting their own company or working in a small business. These preliminary findings serve as a rationale for a follow-up study examining the impact of Interns for Indiana on students' attitudes towards small businesses and the subsequent likelihood of starting their own business or working in a small business. Furthermore, we make a strong argument that the

Cognitive Apprenticeship theory is an appropriate descriptive theory for the process of experiential entrepreneurial learning. Future studies can expand upon our findings by testing a model of entrepreneurial learning or entrepreneurial intent using the principles of CA.

Notes

¹Additional information about collected data is available upon request.

References

- Adedokun, O.A., Childress, A.L., and Burgess, W.D. (2011), 'Testing conceptual frameworks of non-experimental programme evaluation designs using structural equation modeling', *American Journal of Evaluation*, Vol 32, pp 480–493.
- Ahmed, I., Nawaz, M.M., Ahmad, Z., Shaukat, M.Z., Usman, A., Rehman, W., and Ahmed, N. (2010), 'Determinants of students' entrepreneurial career intentions: evidence from business graduates', *European Journal of Social Sciences*, Vol 15, No 2, pp 14–22.
- Baretto, H.W. (2006), 'Introduction: entrepreneurship and small business', *Economic Perspectives*, Vol 11, No 1, pp 2–26, last retrieved 11 July 2011 from: <http://usinfo.state.gov/journals/journals.htm>.
- Boyd, N.G., and Vozikis, G.S. (1994), 'The influence of self-efficacy on the development of entrepreneurial intentions and actions', *Entrepreneurship: Theory and Practice*, Vol 18, No 4, pp 63–77.
- Chen, C.C., Greene, P.G., and Crick, A. (1998), 'Does entrepreneurial self-efficacy distinguish entrepreneurs from managers?', *Journal of Business Venturing*, Vol 13, pp 295–316.
- Chigunta, F. (2002), 'Youth entrepreneurship: meeting the key policy challenges', retrieved from: www.yesweb.org/gkr/res/bg.entrep.ta.doc.
- Collins, A., Brown, S.B., and Holum, A. (1991), 'Cognitive apprenticeship: making thinking visible', *American Educator*, Vol 15, No 3, pp 4–46.
- Dutta, D.K., Li, J., and Merenda, M. (2011), 'Fostering entrepreneurship: impact of specialization and diversity in education', *International Entrepreneurship and Management Journal*, Vol 7, pp 163–179.
- Elo, S., and Kyngäs, H. (2007), 'The qualitative content analysis process', *Journal of Advanced Nursing*, Vol 62, No 1, pp 107–115.
- Heriot, K., and Lahm, B. (2009), 'Entrepreneurship internships differ from traditional business and management internships: a framework for implementation', *Small Business Institute National Proceedings*, Vol 33, pp 124–139.
- Herron, L., and Sapienza, H.J. (1992), 'The entrepreneur and the initiation of new venture launch activities', *Entrepreneurship Theory and Practice*, Vol 17, No 1, pp 49–55.
- Hsieh, H.-F., and Shannon, S.E. (2005), 'Three approaches to qualitative content analysis', *Qualitative Health Research*, Vol 15, No 9, pp 1277–1288.
- Iakovleva, T., Kolvereid, L., and Stephan, U. (2011), 'Entrepreneurial intentions in developing and developed countries', *Education + Training*, Vol. 53, pp 353–370.
- Kardash, C.M. (2000), 'Evaluation of undergraduate research experience: perceptions of undergraduate interns and their faculty mentors', *Journal of Educational Psychology*, Vol 92, No 1, 191–201.
- Lave, J. (1997), 'The culture of acquisition and the practice of understanding', in Kirshner, D., and Whitson, J.A., eds, *Situated Cognition: Social, Semiotic and Psychological Perspectives*, Lawrence Erlbaum Associates, Mahwah, NJ, pp 17–36.
- Leebaert, D. (2006), 'How small businesses contribute to US economic expansion', *Economic Perspectives*, Vol 11, No 1, pp 2–26, last retrieved 11 July 2011 from: <http://usinfo.state.gov/journals/journals.htm>.
- Luthje, C., and Franke, N. (2003), 'The "making" of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT', *R&D Management*, Vol 33, pp 135–147.
- Peterman, N.E., and Kennedy, J. (2003), 'Enterprise education: influencing students' perceptions of entrepreneurship', *Entrepreneurship: Theory and Practice*, Vol 28, No 2, pp 129–144.
- Rohde, M., Klamma, R., and Wulf, V. (2005), 'Establishing communities of practice among students and start-up companies', in *Proceedings of the 2005 Conference on Computer Support for Collaborative Learning*, Taipei, Taiwan, pp 514–519.
- Roxas, B.G., Cayoca-Panizales, R., and Mae de Jesus, R. (2008), 'Entrepreneurial knowledge and its effects on entrepreneurial intentions: development of a conceptual framework', *Asia-Pacific Social Science Review*, Vol 8, No 2, pp 61–77.
- Small Business Administration (2008), 'The small business economy: a report to the president', SBA Office of Advocacy, last retrieved 11 July 2011 from: <http://www.sba.gov/advocacy/>.
- Taylor, K.L. and Care, W.D. (1999), 'Nursing education as cognitive apprenticeship: a framework for clinical education', *Nurse Educator*, Vol 24, No 4, pp 31–36.
- Wymenga, P., Spanikova, V., Derbyshire, J., and Barker, A. (2011), 'Are EU SME's recovering from the crisis?' *Annual Report on EU Small and Medium Sized Enterprises*, pp 1–59.
- Zhao, H., Seibert, S. E., and Hills, G. E. (2005), 'The mediating role of self-efficacy in the development of entrepreneurial intentions', *Journal of Applied Psychology*, Vol 90, No 6, pp 1265–1272.