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ABSTRACT
In my research, I employ a highly qualitative, narrative methodology to explore the sense students make of their own educational experiences within their wider learning trajectories. By taking such a holistic perspective on a Computing Education, I hope to be able to identify and distil aspects of successful Computing programs, whose effects may only emerge over time.

Categories and Subject Descriptors
K.3.2 [Computers and Education]: Computer and Information Science Education – computer science education.

Keywords
qualitative research, narrative methodology, student experience

1. PROGRAM CONTEXT
I am a PhD student in the first year of my program in computer science in the School of Computing at the University of Kent and am part of the local computing education research group. To date, I have identified my area of research, conducted a pilot study with students at my undergraduate institution, and worked over the past few months to better understand the context of my work. My next steps going into the fall will include recruiting and conducting interviews with participants from the university here.

2. CONTEXT AND MOTIVATION
Computing is a notoriously fast-moving discipline, where large technical advancements can quickly alter relevant disciplinary knowledge. The ACM curriculum recommendations, for instance, highlight the importance of lifelong learning: “Curricula must prepare students for lifelong learning and must include professional practice (e.g., communication skills, teamwork, ethics) as components of the undergraduate experience.” [3] Indeed, graduates will be unlikely to use many of the specific applications and techniques they learn after they leave University, although the intellectual utility of algorithms, theories and principles will persist.

At the same time, it is hard for academic departments to understand the cumulative effect of the undergraduate experience they provide. Educators only have access to immediate, short-cycle, feedback on separate modules through end-of-year outcomes and surveys. There is little opportunity to either reflect on, or gather data on, the totality of an undergraduate education. Consequently, it is hard for educators and departments to make informed decisions about large-scale changes to curriculum or environment and, when such decisions are made, they are based on partial, time-bound evidence.

Nevertheless, student trajectories are, without doubt, influenced and shaped by educational institutions: different institutions yield different characteristics in different graduates. The goal of this study then is to leverage students’ conception of their own education to characterize “graduateness”. Graduateness, as a concept, is defined as encompassing disciplinary knowledge, skills related to the type of discipline studied, and generic capabilities (of cognition or presentation for example). With this work, however, I am proposing a more nuanced examination of meaning and contribution of an undergraduate education as a whole in the diverse and changing discipline.

3. BACKGROUND & RELATED WORK
The question of just how students change in college has been a frequent topic of research. Pascarella and Terenzini, for instance, published what is now a third decade of research in their “How College Affects Students” series. Their comprehensive, albeit quantitative, review exposes the reader to a large number of studies – with the goal of identifying effects that are uniquely caused by college. [6]

Indeed, for many students, college is a time of fundamental personal growth and identity development. And “the prevalent institutional culture, navigation of identity, and development of skills are among the factors contributing to the individual growth of students.” [1] However, as Pascarella and Terenzini contend, “rendering tone, tint, texture, and nuance [of the college experience] may require the finer brushstrokes characteristic of qualitative approaches”. I take such an approach in my work by employing a highly qualitative, narrative methodology.

This approach is grounded in the work of psychologist Dan McAdams, who posed the question “what do we know when we know a person?” [5] According to his research, there are multiple levels at which differences in personality may be described. One of them is the life story that we, as adults, “[continue] to author and revise over time to make sense, for [ourselves] and others, of [our] own life in time.” Eliciting this life story, then, permits us to explore how students make sense of their own experiences – including those pertaining to education.

Of course, a multitude of factors affect the process of constructing this story. For example, master narratives, which are embedded in the prevalent culture in which the narrative is told, provide scripts that serve as scaffold for stories. [2] In his work, Phil Hammack describes a model of identity that bridges cognitive, social, and cultural perspectives. He argues that we construct personal narratives to make sense of our experiences by integrating stories of culture (that is, cultural scripts available to members of a
another contextualization, both for the data from the focussed study and of the general nature of Computing graduateness.

As in all interpretive work, this project is structured, but not constrained, by its aims. The data may suggest quite other avenues for investigation and I will be open to them.

5. DISSERTATION STATUS

At this point, I have:

- Conducted a pilot study with undergraduate students at Olin College. We explored these students’ learning trajectories and identified a number of developmental themes. [1] I am looking to return to these participants and interview them again within a year’s time.
- Undertaken a literature review on narrative approaches, which provides methodological grounding for my work.
- Worked to understand the context of a computing education over time by interviewing participants of the major ACM curriculum reports over the past five decades. And in a publication currently under review, my supervisor and I explore how these reports are crafted through community involvement, and what pedagogic perspectives they have taken over the years.

Both the research into methodology and the exploration of context will each form a chapter in my dissertation. Going forward, I plan to recruit and interview participants for the focussed study next.

6. EXPECTED CONTRIBUTIONS

There are two ways this work may directly benefit practice. Firstly, it will provide a deep investigation of a degree program over time, indicating strengths (and weaknesses) that are otherwise invisible. At the moment, what parts of their education students value when they are embarked on their careers is unknown. Secondly, it will permit interrogation of “what works”. While we may not be able to apprehend components of successful degree programs immediately, they may come to prominence over time, in the years after students’ graduation. If such features are identified, they will be distilled to guidelines and more widely disseminated to the educational Computing community.

7. REFERENCES