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Hopes and Concerns for Digital T-Levels: A Preliminary Study

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ABSTRACT

T-Levels have been heralded as the new gold standard of UK technical education. However, little research has explored how providers are finding the delivery of this new qualification. This paper reports on the findings of a preliminary study which interviews nine employees from three college providers of the digital T-Level. Findings indicate that there are five main areas of concern; a lack of suitable 'digital' work placements, the appropriateness of assessments, content being too cutting edge, a lack of awareness, and the termination of government funding. However, providers are optimistic of the benefits T-Levels can provide. This paper contributes to the limited body of research on T-Levels, and highlights the challenges which providers, employers and policy makers may find beneficial to know in helping improve future T-Level adoption and delivery.

CCSCONCEPTS

• Social and professional topics → Computing education programs; *Employment issues*; *K-12 education*.

KEYWORDS

T-Level, Curriculum, Computing Education, Further Education

1 INTRODUCTION

Lave and Wenger posit that learning is a contextual social phenomenon where learners develop knowledge and skills through being involved in communities of practice [4]. This learning theory is heavily linked to an apprenticeship model of learning, and emphasises the importance of knowledge being co-constructed and situated in specific contexts [4]. Given that skills gaps have been highlighted in ICT and computer science [2], with computer science graduates lacking the skills required for employment [7], this gives precedence to focus on curricula with a greater focus on the work-place, where students can move from being a newcomer, towards becoming more experienced as an old-timer [4]. In response to this, the UK government developed T-Levels, a two-year qualification for students aged 16-18 that were initially proposed in the 2016 UK Post-16 skills plan, and are based on an apprenticeship model. However, unlike apprentices, T-Level students spend most of their time in the classroom. Hence, T-Levels are more akin to an academic qualification but one which is highly contextualised to the work-place. With almost 1800 guided learning hours, T-Levels are an alternate route of education for students after their 14-16 schooling, and have been described as the new 'gold standard' of UK technical education [8]. September 2020 marked the delivery of the first three T-Levels, which included the 'Digital Production, Design and Development T-Level' [6], hereafter referred to as the digital T-Level. It is intended for students who want to progress into a career within the digital sector, with a focus on software design and development [6]. In addition to an industry placement of 315 hours

and achieving a minimum level of attainment in Maths and English [6], the digital T-Level contains three other components which students must pass to be awarded the T-Level.

Core Component: Knowledge and Skills. Students are externally assessed through two equally weighted 150 minute long examinations graded A*-E, which together contribute 66% of the total mark for the core component. Topics include; problem solving (e.g. computational thinking and algorithms), programming, emerging issues and impact of digital, legislation and regulatory requirements, business context, data, digital environments, and security.

Core Component: Employer Set Project. Accounting for the final 33% of the core component, and graded A*-E, the employer set project totals 14.5 hours. Students respond to a brief in a vocational context, where they need to plan a project, identify and fix defects in existing code, design and develop a solution, and conduct a reflective evaluation. The project is validated by an employer panel, which takes into account client requirements and the user experience [6]. *Occupational Specialism*. Students are given a scenario where
they must analyse a problem and design and develop a software based solution, followed by gathering and evaluating feedback to inform further development. This takes place over multiple sessions up to a combined total of 67 hours, culminating in students submitting an externally-assessed portfolio of evidence which is graded either Fail, Pass, Merit or Distinction.

2 RESEARCHQUESTIONANDRATIONALE

As a new qualification, existing research surrounding the implementation of T-Levels is extremely limited. Meanwhile, a number of reports indicated pre-delivery concerns such as placements fitting in with lessons [8], difficulties for learners with other commitments [9], having a stable workforce with the knowledge and skills to deliver T-Levels effectively [3, 8, 9], and concerns of limited work placements being available [3, 8]. Furthermore, the main provider of T-Levels are colleges (in the UK, colleges are institutions that primarily, but not exclusively offer 16-18 education programs), who already deal with an unprecedented amount of change [5], and suffer from many challenges in teaching computing related courses [1]. Therefore, this paper aims to answer the following research question: *What are the benefits and challenges of the new digital T-Level from a college providers perspective?*

3 METHODOLOGY

Semi-structured interviews were conducted with employees from three of the six digital T-Level providers in South-West England. All interviewees were male, with job roles equally distributed between senior leadership (n=3), heads of computing departments (n=3) and lecturers (n=3). Contacts were chosen due to being known contacts identified as part of a larger study on college computing education, while it was hoped that interviewing employees at different levels of a colleges hierarchy would provide a broader range of perspectives. Interview audio recordings were transcribed and coded using thematic analysis, where an iterative five-stage coding process was used to ensure what was coded was representative of the code given. This resulted in the creation of five overarching themes.

4 FINDINGS

Availability of 'Digital' Work Placements. Interviewees were hopeful that work placement availability will improve after COVID-19, and as an initial provider, building employer relationships should be easier. However, there were concerns about the limited availability of 'digital' work placements, as 'digital' employers may be unwilling to allow 16-18 learners admin rights, particularly in areas such as cyber security. Further, due to many companies in this sector operating on a freelance or remote working basis, this can hinder student placements. Other reasons included poor employer engagement, and issues of student transport in rural locations.

Appropriateness of Curriculum Design. Interviewees agreed the work placement is beneficial in increasing student employability and makes taught content 'more real'. Interviewees also stated how it is good how the specification is up-to-date, and how T-Levels should help overcome the concerns of grade inflation that has previously plagued existing vocational qualifications. However, the exam-based components were described as inappropriate and not relevant to the workplace. Interviewees also had reservations about how Maths and English requirements would lead to some students not applying to the T-Level, or that if students failed this aspect, they would fail the whole qualification. Hence, delivering only the T-level was seen as impractical, since from a college point of view, and an overall pass rate, this would be classed as a fail.

Cutting Edge Specification. Having a cutting-edge specification was viewed that students will be able to meet the needs of industry more readily, while teaching staff have the opportunity to keep their skills and knowledge up-to-date. However, interviewees cited how the specification was 'too cutting edge', causing issues for colleges regarding staff expertise and resource availability. For instance having to allocate a small retained network for the time-controlled assessment is a high resource constraint.

Needs Time to Become Established. It was hoped that T-Levels will become the predominant vocational qualification to offer regarding 'digital'. However, they need time to become established, with interviewees explaining how employers and students are unaware of the benefits that T-Levels provide.

Government Support. Government funding has supported colleges for equipment and staff training if offering the T-Level. However, there were concerns that the funding received is still not sufficient at current levels due to the 'cutting-edge' requirements, and if funding stops, offering the qualification may not be feasible.

5 CONCLUSIONANDFUTUREWORK

This preliminary study indicates that interviewee concerns were consistent by job type, and focused on curriculum integration and implementation rather than pedagogy. This suggests that their focus was more aligned on how to offer the qualification, as opposed to delivering it well. This is not surprising and perhaps commonplace for the first year of any new program implementation, especially one with a workplace component. Given this was only a small-scale preliminary study investigating the implementation of the digital T-Level during its inaugural year, its scope was limited. Future work will also consider employer and student perspectives to provide a more comprehensive view of the implementation of the digital T-Level, while repeat interviews with college staff would give an indication to how perceptions have changed over time. Nevertheless, the results of this study provide some initial

foundations for future work to build upon, while also contributing to the limited amount of literature concerning T-Levels through reporting colleges hopes and concerns surrounding the qualification. By understanding the challenges being faced in delivering the digital T-Level, this paper should prove useful for providers and employers who are considering offering the T-Level, so they know what the qualification involves, and what is important for implementation success.

This paper also raises a key question where the answer may differ depending on individual country context. What is the appropriate blend of academic classroom activity and work based learning for those in a digital or computing based subject of study? With the recent development and push towards T-Levels, the UK government seems to be supporting qualifications with at least a 20% workplace component, but other countries may be taking different approaches in this increasingly digital world. This is another avenue for future research, where related qualifications should be compared.

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