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**An exploration of how independent  
research and project management  
skills can be developed and  
assessed among 16 to 19 year olds**

*Conference Paper Abstract*

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## **An exploration of how independent research and project management skills can be developed and assessed among 16 to 19 year olds**

### **Background**

Arguably, since life has become increasingly international, multicultural and inter-connected, new skills sets are needed to secure places in higher education and employment. Although conceptualisations of so-called 21<sup>st</sup> Century skills are many and varied, most include critical thinking, problem-solving, creativity, communication, collaboration, ICT, and life skills. To support skills development among 16-19 year olds, diverse educational approaches have been advocated. One of these is to provide opportunities for project work with a specific focus on independent learning and research. In this paper, we analyse major independent research routes available nationally and internationally.

### **Focus of enquiry**

The overarching research questions addressed are those of how 21<sup>st</sup> Century skills can best be (i) developed, and (ii) assessed, among 16 to 19 year olds. After reviewing conceptualisations of 21<sup>st</sup> Century skills, we consider the relative merits of some contrasting approaches to cultivating them. These include: continuing with long-standing teaching methods; developing curricula that cover 21<sup>st</sup> Century skills explicitly; adopting skills-centred pedagogies; and nurturing skills through extra-curricular activities or in the workplace. We then focus in depth on independent research routes, exploring five examples drawn from British and international contexts. We examine the Extended Project Qualification and the International Baccalaureate Extended Essay in detail, comparing their aims, structures and scopes. Challenges for the summative and formative assessment of student research are also discussed.

### **Literature and theoretical frameworks**

We draw from an extensive international literature on 21<sup>st</sup> Century skills, present recent examples from schools and colleges, and analyse current curricular and assessment materials. To illustrate the perspective that many so-called '21<sup>st</sup> Century' skills are not new, such skills are mapped onto the cognitive domain of Bloom *et al.*'s (1956) taxonomy of educational objectives. A recent model of factors affecting assessment accuracy (Suto and Nádas, 2008) is used to structure the discussion of assessment challenges.

### **Contribution to knowledge**

This paper applies established theoretical perspectives to a topic in popular discourse. It clarifies differences in the aims, structure, scope, and assessment challenges of alternative independent research routes which are often assumed to be similar.

### **References**

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