2019 cohort

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Does including career contents in Science lessons have a positive impact on students' career aspirations?

The benefits of a career provision in schools are numerous: from increased students' motivation and attainment (Irving, 2010) to decreased behaviour issues (Plasman, 2018).

The gap between the pupils' dream job and the path to follow to achieve that job was identified as the most important problem to tackle in the school I was working in, both by Career and Employability Coach and preliminary data collected by anonymous questionnaires of Year 8 students.

The urge to invest in the secondary students' career development that starts in schools has been highlight in the past as a response to a huge change in the job's scenario over the past generation both from the press (Hooley, 2013) and the Department for Education (DfE) (DfE, 2015). The importance of embedding career content in lessons has been shown to be one of the many ways schools could introduce to support students' career choices. The use of curriculum resources to effectively showcase career learning opportunities has been reported as advisable (Implementing the Gatsby benchmark). It also seems to become clearer and clearer that experiences that students have many years before they make their first career choices are of great importance for STEM (Science, Science, Technology, Engineering, and Mathematics) subject choices and careers (Tai, 2006). Conversely, students who took part in a six week pilot STEM career intervention showed no significant change in their aspirations or views of Science (Archer, 2014).

Based on both the school career state-of-the-art and the literature read, I decide to mainly focus on gaining a deeper understanding of whether having career talks during the Science lessons would increase the students' understanding of the steps and qualifications to take to pursue a particular career and the information students have in order to make an informed choice after GCSE.

The expected outcomes of the career intervention project I carried out with 30 students in my Y8 Science class were:
increased awareness of future aspiration after GCSE, better understanding of the qualifications needed to achieve a particular job and increased perceptions from the students of the space given to career content in the lessons.

The project rationale was informed by preliminary data collected as answers to an anonymous multiple-choice questionnaire. It appeared clear that students had very little information about career and very little space in the Science lessons to talk about it. Prompt by this information the project aimed at changing a series of Science lessons to embed career content into them. Moderating factors were also taken into account in planning the project. The career content needed to be added to the lessons by staying within the 50 minutes lesson time and without missing on any curriculum content. Moreover, the lessons were all structured in the same logic sequence and planned in advance in order to avoid negative effects on teachers' workload.

The study involved 30 students in Y8 in the school I am working in at the moment. The students' sample was decided to be one class (30 students) that I already teach to make the project manageable in the time frame given to the researcher.

A series of four Science lessons (aerobic respiration, anaerobic respiration, structure of the lungs, asthma and smoking) from the topic respiration in the Year 8 curriculum were modified in order to include career content in them. The lessons were modified ensuring no curriculum content will be omitted from them. I delivered the edited lessons to 30 students in Y8 using my timetabled Science lessons.

The lessons were edited following a structure that includes: one example of Science career that is linked to the lessons' topic; a series of links to the introduced career throughout the lessons' tasks; a final slide that summarises the qualifications needed for the job described during the lesson. Students filled a five multiple choice anonymous questionnaire pre-intervention and post-intervention and the collected data were analysed and used to evaluate the impact of the intervention on the students involved.

The students' questionnaires revealed the pupils' overall increased awareness, even if not significant, of their future aspirations after GCSE.

The percentage of students who did not know what path to follow after GCSE slightly dropped after the career intervention (61% before the intervention versus 50% after the intervention.

The data also showed a slightly better understanding of the qualifications needed to aim at a particular job from the students after taking place in the career intervention project (10% difference before and after intervention).

Project limitations need to be considered when analysing the data and drawing conclusions from it. Firstly, the use of fixed-choice questions can be intrinsically biased and can be misleading (Hyman, 1955).

The small sample (30 students) selected for the career intervention might be a reason to overlook the outcome and potential benefit of the intervention (Schanzenbach, 2012).

The promising results obtained from the career project interested me and the Science Department to explore the scope of the project further in the future.

Plans will be put in place to scale-up the career intervention to involve more year groups than Y8. The Science Department is also planning to edit more lessons with embedded career content in order to cover a wider range of topics in the Science National Curriculum. The aim of the Science department is to create a series of career lessons resources that teachers can use at any time when delivering topics during the academic year.

A series of lessons is going to be planned and delivered in order to embed an understanding of the different skills that pupils can acquire in the Science lessons and that can be useful for non-scientific careers.

Finally, it would be interesting to include non-scientific careers alongside with scientific ones in the lessons delivered to the students, in the attempt to widen their understanding on career's options and to give them the possibility to make a more informed decision about their future.

References

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