

# **OUTSTANDING TEACHING, LEARNING AND ASSESSMENT TECHNICAL SKILLS NATIONAL PROGRAMME**

**Output 18: Think Piece 2: Problem-Based Learning, different technical routes and teachers' professionalism**

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## **Does Problem-Based Learning need to be adapted in different technical routes?**

### **Problem-Based Learning and Teachers' Professionalism**

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Problem-based learning is a way of bringing real-world learning into the classroom and could be a powerful pedagogical approach to work-placement learning for the forthcoming L3 Study Programme Technical routes proposed in the Post-16 Skills Plan (2016) if the right conditions exist. T Levels are designed to prepare students for highly skilled jobs to meet the skills needs of the future.

A problem-based learning approach to curriculum design and teaching can be effective in involving employers in co-constructing real-world problems, offering learning spaces and participating in the problem-solving process and outcomes presented by students, developing a genuine “two-way street”. When done well it adds authenticity in preparing students for a role in industry. Learning and assessment goes beyond the confines of the qualification outcomes. At its heart is learning for capability rather than for the sake of acquiring knowledge embedding the principle of authenticity and promoting situated learning in meaningful problem-solving contexts. It allows for innovation of curriculum design, potentially supporting the integration of different traditional “subjects” (technical routes), for example Business and Computing, or Engineering and Business students can work together on a live problem, bringing different expertise and skills to the problem, which is typical of what happens in industry.

Problem-based learning develops skills and attitudes essential for young people to thrive in the 21<sup>st</sup> century workplace, such as interpersonal skills, communication, critical and creative thinking, logic, analysis, reasoned decision-making, reflection and self-evaluation (Nesta, 2018). Instead of the starting point for curriculum design being focused on “delivering” content as defined by a specification and exam, content is selected from industry standards and practices, innovatively integrating topics and holistically developing knowledge, skills and behaviours. If the problem-based learning episodes are also used to assess against a qualification (rather than being purely focused on skills and attitude development), alignment with the qualification takes place after the development of the scenarios.

Problem-based learning requires faith and trust in students to believe that they *could* do the work and *could* learn without depending on the teacher to feed them everything. When students are trusted and given freedom, they produce work beyond the “expected progress”. But students’ role-change in the learning process can conflict with habits and expectations of learning. School leavers need to be introduced gradually and carefully to the process and given the opportunity to acquire successful learning skills early in the course or they may actively resist the approach. This is especially true of competitive students and those used to achieving very high marks in traditional exams. They may not be able to identify what is wrong, only that they feel confused, disorientated and resentful. (Boyd and Felletti 1991). Even when they have been helped to see the relevance and benefits of problem-based learning, teachers can expect to mediate students’ prior learning habits developed in 14-16 education and discovery-based learning pedagogy presented in problem-based learning. There is a need to develop students’ problem-solving and interpersonal skills and their ability to learn independently through mini problem-solving tasks, formative problem-based learning and structured reflective diaries and self-rating of own attitudes, skills and thinking-processes during a problem-based learning episode. Teachers spending time on individual reflections after each

session to reflect on what is going well and challenges can lead to timely and relevant interventions, such as the delivery of masterclasses (academic or skill/behaviour focused) for students to sign up to.

Problem-based learning can redefine relationships in learning, enabling students to experience new relationships with each other, working as a team and being accountable for shared goals. It is based on cooperation rather than competition. Teachers build new relationships with students, becoming partners in the learning process. Relationships with employers is deepened. Student engagement is developed and this “creative curriculum design and instruction make a classroom a place of energy and motivation” (Dewey, 1904, cited in Durst 2010, p10). Inclusion and integration can be advanced as the approach provides teachers with time and opportunity to address individual needs; to positively value the active use of different kinds of knowledge and assuredly use personal and social differences within the group. However, given the way the quality of education is currently measured, teachers require additional professional development to successfully facilitate problem-based learning as it goes beyond current training. Bespoke professional development on problem-creation and design, successful employer engagement, facilitation and intervention skills and assessment and feedback strategies appropriate for problem-based learning can assist teachers to avoid marginalisation of students. Limiting group size to no more than five students, spending time deciding the groups and using a Belbin team role analysis can further support inclusion (Belbin 2012).

Problem-based learning presents many challenges within the current educational climate. Assessment has a massive effect on curriculum design. Problem-based learning presents a dichotomy between the policy and practice of assessing short-term gain and the longer-term outcomes of attitudinal change and holistic skills development, such as critical appraisal, self-evaluation, communication and life-long learning. Careful consideration needs to be given to *what* and *how* we assess in order to better measure progress, both academically and behaviourally. Logs and diaries, tutor and peer/self-ratings and feedback by teachers on skills observed are critical in developing our future highly-skilled workforce. It is apparent that standardised assessment through exams, as currently proposed as the assessment methodology for much of the new T-Level programme, cannot usefully assess these attributes. Only when there is alignment between the pedagogical approach and assessment can problem-based learning be truly successful in its goals of developing students’ knowledge, skills and behaviours holistically through authentic industry-related problem-solving. The CBI 2016 states that

Businesses need increasing levels of skills among their employees – and the skill-sets in demand tomorrow will be different from those required today. This opens up new opportunities for people to progress at work. But the results from our survey show firms expect to find it increasingly hard to secure people with the right levels and mix of skills to fill their growing number of skilled jobs in the future. (p12).

Yet policy remains wedded to standardised assessments through exams which do not and cannot assess these vital skills so important to the success of industry.

Problem-based learning will naturally be adapted for different students learning in different contexts. It is a pedagogical approach that puts teachers’ freedom and enquiry at its heart. Its *starting point* is individual needs. It is not the *technical route* that will determine the approach adopted by teachers; it is the professional decisions of teachers in planning appropriate problem-based learning episodes for individual students learning in a context. The interplay between teachers’ professionalism, educational directives and the goal of preparing our future workforce is tortuous. Whilst T Level development remains preoccupied with high-stakes testing and there is a pressure to standardise education, we diminish the professionalisation of teachers. If teaching is

organised according to the mandates of distant politicians, teachers are discouraged from creative curriculum design and teaching that truly prepares young people for highly skilled industry roles and higher-level learning, so needed to bridge the skills gap.

Problem based learning requires teachers to be competent enquirers, to make decisions about curriculum and teaching, to evaluate the results of their decisions and then modify in accordance with these evaluations. What is certainly true is that it requires policy to trust the teachers to construct high quality technical learning programmes and assess students' learning so that there is a synergy between teaching, learning and assessment.

## REFERENCES

Belbin, R. M. (2012). **Team Roles at Work**. Abingdon, Oxon: Routledge.

Boyd, D. and Felletti, G (1991). **The challenge of problem-based learning**. 2<sup>nd</sup> Ed. New York: Kogan Page

CBI/Pearson (2016). **The Right Combination**. Available @ <http://www.cbi.org.uk/cbi-prod/assets/File/pdf/cbi-education-and-skills-survey2016.pdf>. Date accessed 09/12/18

Durst, A. (2010). **Women Educators in the Progressive Era**. New York: Palgrave McMillan

Bakhashi, H. Downing, J.M., Osbourne, M.A and Schneider, P. (2018) **The Future of Skills: Employment in 2030**. Available at [https://media.nesta.org.uk/documents/the\\_future\\_of\\_skills\\_employment\\_in\\_2030\\_0.pdf](https://media.nesta.org.uk/documents/the_future_of_skills_employment_in_2030_0.pdf). Date accessed 08/11/18