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Is Collaborative Problem Solving The Key Skill For The Fourth Industrial Revolution?

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Careers

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The last few years have seen a great deal of uncertainty around the kind of jobs that will exist in the future and indeed whether enough jobs will exist in the face of rising technological capabilities. I [wrote recently](#) about a new report from consultancy firm Cognizant that identified 21 new jobs that they believe will emerge, and the report was a follow-on from a previous report of a similar ilk conducted by the company.



A new [report](#) from the University of Memphis attempts to take a slightly more grounded perspective on matters. As with previous papers, the study highlights the importance of soft skills, such as resilience and team work, as the authors believe these will underpin a wide range of roles, whether tackling cybersecurity challenges or preparing coastal regions for rising sea levels.

The researchers attempted to identify what they believe to be the essential cognitive and social components that go into making such collaborative problem solving (CPS) a success. The authors believe that by combining skills and knowledge from a variety of existing fields, we can come up with better ways of training and assessing people for their collaborative problem

solving abilities.

“CPS is an essential skill in the workforce and the community because many of the problems faced in the modern world require teams to integrate group achievements with team members’ idiosyncratic knowledge,” the researchers explain.

Problem solving skills

The heart of this is the growing complexity of society that requires a collaborative approach to problem solving. This in turn requires the kind of collaborative problem solving skills that the authors believe are lacking in many young people today. In their assessment of over 500,000 15-year-olds, just 8% were found to have these skills, prompting the authors to cast severe doubts on their readiness for the workplace.

They believe a number of key cognitive and social skills sit at the heart of this modern requirement, including:

- A common purpose for group members to get behind when solving a new problem.
- Clear accountability regarding the contributions each member makes to the task.
- Sufficiently differentiated roles to tap into the cognitive diversity in the group.
- An interdependency of working with all members required to work together to solve the problem.

The authors believe that the current deficit in these kind of skills is largely due to the lack of any real evidence-based curricula. As such, schools tend to focus instead on teaching task specific knowledge, with little emphasis given to the ability of students to actually communicate and collaborate effectively.

What training that does exist often comes via extracurricular activities, such as sports or volunteering, where teamwork is something that is a happy consequence of the activity itself. It’s an instructional deficit that the authors believe must be overcome if young people are to be adequately prepared for the future workplace.

“Work isn’t a place anymore. It’s a dynamic activity that happens anywhere, anytime,” David Henshall, President and CEO of Citrix Systems, Inc. told me recently. “And for the first time in history, you’ve got five generations working together – each with different ways of communicating and collaborating.”

Improving collaborative problem solving

Enabling them to work effectively together will take some work however. The research literature is rich in terms of effective learning generally, but rather scarce when it comes to improving collaborative problem solving. Nonetheless there are early-stage projects to try and do just that, not least of which is a recent [project](#) by the Memphis team to develop collaborative skills among students from a wide range of disciplines.

“It’s exciting to engage in real world testing of methods developed in laboratory studies on teamwork, to see how feedback on collaboration, and reflection on that feedback to improve teamwork strategies, can improve students’ problem solving,” the team explain.

It’s perhaps quite fitting that they believe developing the pedagogy for such training will itself require an interdisciplinary effort from researchers, educators and policymakers. It’s a task that will also require the right tools to exist in the workplace.

To be successful, Henshall says companies need to recognize the importance of collaboration and give their employees access to information and tools that enable them to collaborate and problem solve outside the four walls of their office.

“IT for a long time was about enabling transactions. The focus now needs to be on enabling people,” he says.

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