# T20 Statement on Reskilling Employees for the Future of Work: How G20 Countries Can Utilize AI-Based Learning Technologies to Scale-Up Workplace Training

## Context

Artificial intelligence (AI) is changing both the nature of employment and the character of work. Firstly, the ability to manipulate a mass of data through internet links enables people to be employed by 'platforms', for example in the provision of taxis, and other facets of the growing gig economy. Secondly, work is less concerned with manual and repetitive tasks, as these can be undertaken by increasingly smart machines. The use of increasing volumes of data and the expansion of virtual communications was already changing the nature of occupations. The COVID-19 pandemic has accelerated the switch to a reliance on AI. As a result, some businesses have closed, and there will be further unemployment as consumers move online and AI takes over routine work. On the other hand, new work will evolve. Social values will be recalibrated as a result of the emergency with more employment in health, data services, entertainment and, in all likelihood, further virtual services as yet unforeseen. AI can both assist the rapid reskilling that the economy will require and help support those who are moving into employment which is reliant on computer generated technology.

## Challenges

1. The need for reskilling is urgent as many economies are experiencing mass unemployment. Traditional qualifications or training programs, such as apprenticeships, generally operate within a 'time-served' framework (commonly a minimum of two years). As employment is required immediately there is no time to obtain these traditional qualifications. Fourth Industrial Revolution (4IR) employers require skills and flexibility, not certificates.

2. Most skills being rendered redundant or giving way to AI are low-order skills, while those being created are of a higher order and are mostly conceptual (design, creativity, philosophical, ethical). Reskilling is therefore more than replacing like for like. It requires a step change in capacity and outlook. Such high-order skills require human interaction, the ability to respond to intellectual challenges and critiques.

3. There are some excellent examples, globally, of technical and vocational education training (TVET). However, in too many countries vocational institutions are regarded as of a low order, often providing outdated skills, and lacking any meaningful interactions with employers. Internationally, academic learning is generally valued as being of a higher status than TVET. As employment focuses more on conceptual skills, the two forms of learning will increasingly overlap. However, for TVET, one aspect remains central: the learning must relate directly to a work-based context. It is important that TVET becomes both more widely acknowledged and integrated into working practices.

4. Employment in the post-COVID-19 world will be fragmented and dispersed. There will be fewer large factories employing mass workforces, and more small-scale, regionally networked employers, and more self-employed workers. Workplace training, therefore, cannot be uniform. Teaching and learning will need to become much more customized. However, AI will be more able to reach this scattered workforce.

## Strategies

As well as preserving social distancing, AI has three significant advantages in providing work-based training.

- For those with the necessary equipment and internet provision, accessing AI training is easy.
- Learning materials can be tailored to an individual's or small group's needs and updated as required.
- The materials can be vivid and, if required, immersive, and directly related to a specific employment context.

In the short-term, micro-credentials should be given more prominence. Micro-credentials form part of an existing qualification or course of study that is directly related to the employment context of an individual or small group. It is important that micro-credentials are sponsored by recognized institutions and not by the unethical and dishonest groups that are prone to operate in the field of adult education.

Both employers and individuals should be encouraged to take responsibility for the provision of learning. There is some ambiguity at present regarding the responsibility of platform and gig employers for the well-being of their workers. The advantages of a highly skilled workforce should be promoted. In many economies employees have not been proactive about acquiring skills, only taking qualifications if required to do so to remain in work. Many of these qualifications are compliance qualifications, as in languages and math, and not directly related to the requirements of employment. Individual employees should be encouraged to take responsibility for their own learning to enhance their capacity to work.

The track record of passive learning through digital means is not good, requiring high levels of motivation. For most people learning is most effective as a social activity. Thus, the development of interactive, immersive programs that enable peer group communications should be encouraged. AI should not be seen as a panacea for the future of education. Vocational learning, in particular, benefits from being interactive and social. These elements should be emphasized.

With the increased sophistication of information manipulation and communication knowledge is being generated at a rapid rate. Traditional centers

of learning are no longer necessarily the best sources of understanding of the skills needed for work. Employers and, importantly, those who have recently and successfully entered employment have a more contemporary understanding of what is required for employment. Those who are providing work or following successful careers should be encouraged to actively participate in the design of workplace training provision.

It is possible to construct a hierarchy of AI learning modes:

| Passive, program-based learning for large groups | Least expensive, but least effective. |
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| Passive, program-based learning for small groups and individuals | A little more effective, as it is customized. Challenges the learners' powers of concentration. |
| Individualized learning programs, but asynchronistic, causing a time delay in feedback | Lacks immediacy, but learners can work at their own pace. |
| Automated interactive | Gives immediate feedback, but as it is automated a little artificial and lacking in nuance and individual challenge to improve. |
| Human interactive | The teacher can respond adequately to a reasonable number of students. |
| Human interactive with peer group communication | This provides a strongly social learning environment, but it is clearly complex and expensive to create. |

## Recommendations

1. That the G20 supports and promotes micro-credentials and shares information about them through its networks. The G20 should, through a suitable task force, issue guidelines for assessing the validity of micro-credentials and for authenticating institutions that sponsor them.
2. That the G20 sponsor standards for all employers in the provision of workplace learning, including for those working in the platform and gig economy. The G20 should encourage member nations to adhere to these guidelines when awarding contracts. TVET institutions should be encouraged, perhaps as a condition of their funding, to issue regional prospectuses of local career trajectories, the skills required to gain such employment, and the ways to achieve these skills (not confined to the issuing institution).

3. The G20 should stress that AI alone is not the solution to high-quality skills development. The G20 should emphasize the advantages of immersive, interactive AI that reflects good teaching practices. AI in skills development, as in all areas of AI deployment, should be seen as a tool for the teacher, enabling them to create vivid and graphic enhancement of their teaching, but not as a replacement for that teacher.

4. G20 members should promote forward-looking TVET institutions. All quality control and licensing bodies should ensure that employers demonstrate their interaction and participation in vocational training.