Observatório do Emprego

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Digital trends and the growth the e-learning market

The value of the e-learning market has surpassed the value of € 167 billion in 2019, in current values, and it is predicted to reach € 290 billion by 2026. This is largely driven by the adoption of technologies including: cloud computing and artificial intelligence (AI), but also due the increase in internet access. With more people connected, and for longer time, it was possible to observe a growth in the demand for more diversified training, offered by institutions from different parts of the world, as a solution for individual or corporate training. Likewise, the popularization of professions that require highly specialized skills, such as coding and digital design, has also added to the phenomena. According to Google, between April and May 2020, the worldwide demand for online courses has increased more than 100%.

The growth of the online education market was also characterized by new trends, including: mobile learning, microlearning, social learning and corporate massive open online courses (MOOCs).

Several restrictions due the COVID-19 pandemic also influenced the development of the online education market. According to the World Economic Forum, globally, more than 90% of students were affected by the closure of schools. With this new scenario, the efforts of the industry were quickly redirected towards the development of solutions in digital education for students and companies.

Digital trends such as big data analysis associated with artificial intelligence have helped education professionals to address the individual needs of students more adequately, while offering the possibility to collect data about students' experiences that can offer important insights to improve the quality of the courses.

Virtual reality and augmented reality which are generally applied in training of specific occupations, such as aviation and industry professionals (e.g. for the conduction of simulations and tests), have been adopted in other sectors. Mobile technologies became an important tool, providing alternatives to improve the several services including education and health services, allowing, in many circumstances, to mitigate inequalities.

In the forthcoming years it is expected that the e-learning market will continue to grow driven by new digital technologies and connectivity tools, but also stimulated by the conditions created by the pandemic which allowed to accelerate the innovation in the education sector.

Source: photo by Marvin Meyer available in Unsplash.

Digital transformation: digital tools for teachers

The digital transformation is a transversal and disruptive process that involves more that than the mere digitalization of internal processes, services and products, It requires profound changes in business models and in organizational culture.

In this context, the digital transformation within the education sector has provided to the adoption of several digital tools, ranging from management systems to learning environments and virtual classrooms to resources content archiving.

In addition to physical devices such as tablets, smartphones, digital desks and digital whiteboards that are used to support teachers and students work there are other digital productivity and communication tools which are being incorporated to the teaching and training environment in order to help teachers inside and outside of the classrooms, replacing manual tasks to digital ones, as an alternative to complement the teaching learning processes (e.g. applications and software, makerspaces, portals, websites and platforms).

Likewise, the adoption of applications based on artificial intelligence, makes it possible to create models that allow for more personalized learning experiences, that are better adjusted to individual performance and skills.

Gamification is a trend with a huge potential for education, given that it builds on elements and on the dynamic of games to engage students, while allowing for gains in the level of participation, as well as in the development of creativity and autonomy competencies.

Digitalization will increasingly present in teaching and learning contexts, with the addition of new digital tools, that can contribute significantly to the learning process. However, the fast inclusion of these new technologies requires teachers and instructors to continuously update their competencies, and calls for professionals increasingly specialized in the development of these innovations, which makes the qualification in digital skills essential.

To learn more about the Unlock project, access:

http://www.un-lock.eu/#

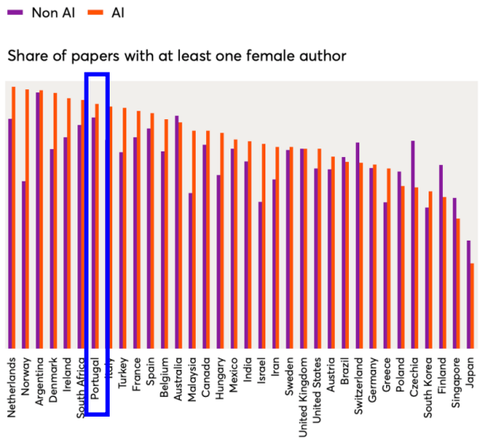
Source: photo by Jesus Loves Austin available in Unsplash.

Did you know that...

Even though, in the past decades we have observed a growth in the number of women in the fields of artificial intelligence, data science and STEM (science, technology, engineering and math) , this number still remains much lower than that of men, despite the incentives through international campaigns in different countries to include women in the sector.

According to the AI Now Institute, in 2019 only 24.4% of the total workers in the computer science domain were women, whose salaries were equivalent to 66% of the men. The 2020 Global Gender Gap Report of the World Economic Forum shows that only 26% of data science and AI workers are women. And in 2020 in the European Union only 17% of information and communication technology (ICT) specialists are women. Based on Linkedin data from 2018, the 2018 Global Gender Gap Index report from the World Economic Forum identified that 78% of users who reported having AI skills are male.

The Forbes magazine of 2020, shows that the presence of women in the labor market in science and engineering is higher than the number of women seeking university degrees in these areas. Women represent 55% of new university graduates. And of this percentage just over a third are associated with women in the STEM areas. The World Economic Forum points out that only 3% of women choose courses in the ICT area and 8% choose engineering courses.



Source: Adapted from Gender diversity in AI research report, 2019.

Regarding to the research area, data from 2018 of the European Commission show that, globally, women represent only 12% of AI researchers, while the 2019 Global AI Talent report points out that 18% of authors who participate in leading AI conferences are women. Moreover, only three (2006, 2008, 2012) of the 68 Turing Award winners, the equivalent of the Nobel Prize for Computer Science, were women. In the academic community, women represent 18% of AI researchers at Oxford University with publications, while at Cambridge University this number drops to 15.6% in 2019.

These issues and others related to overcoming the gender imbalances regarding to the access of young people and adults to career and personal development opportunities were debated in the webinar "Gender challenges in the labor market" held on March 12, within the scope of the O'Bias project. The event was supported by Inova-Ria and had the participation of Carla Eliana Tavares, president of the Commission for Equality in Work and Employment (CITE); Fátima Alves, chairman of the Board of Directors of the Port of Aveiro and Mário Rodrigues the Executive Committee of UNAVE - Association for Professional Training and Research of the UA and professor of the University of Aveiro.

The graph below indicates the percentage of articles with at least one female author, while the table shows a comparison of Portugal and the European Union regarding to female employability and competence skills.

SPECIALIST SKILLS AND EMPLOYMENT

	Portugal			European Union	
	WOMEN	RANK	MEN	WOMEN	MEN
STEM Graduates Per 1000 individuals aged 20-29, 2018	15.4	5	25.5	14.3	26.3
ICT specialists % total employment, 2019	0.9%	26	4.6%	1.6%	6.2%
Unadjusted gender pay gap %difference in pay, 2018	12%	5		18%	

Source: Adapted from Women in Digital Scoreboard 2020

To watch the webinar, access:

⇒ https://www.facebook.com/watch/live/?v=449777856336738&ref=watch_permalink

⇒ https://m.facebook.com/story.php?story_fbid=126879356108790&id=104325198364206&__tn__=%2As%2As-R

COVID – 19 and the Artificial Intelligence

Artificial Intelligence (AI) is present in our daily lives and it has transformed the economy and the society. The exponential growth in the use of AI has been driven by the growth of archival capacity, the reduction of data storage costs and the increase of the potential to measure activities through data.

According to Appen's 2020 State of AI report, in 2020 during the COVID-19 pandemic, 41% of companies accelerated their AI strategies as a way to invest in automation to streamline remote work, improve the user and customer experience and reduce their costs. In addition, 75% of the surveyed associations quoted AI as a critical factor for their success in 2020.

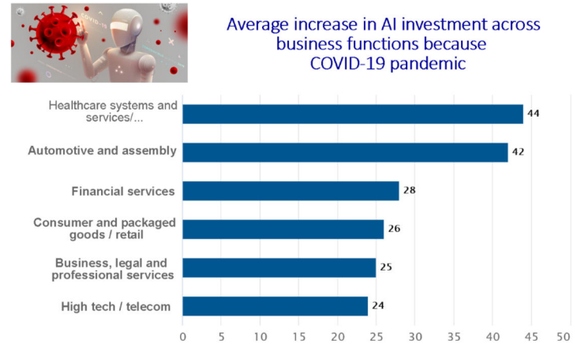
In order to act quickly, an opportunity was created for the development of AI-based techniques to increase the decision-making capacity. Thereby, due the pandemic, these tools were applied in areas such as education, tourism and retail, where AI helped the logistics of delivering meals without physical contact, the booking systems for scheduling at your local retail store and in the development of more autonomous stores in which it was necessary to use computerized models for store mapping and inventory tracking.

In the health sector, AI has helped to provide more accurate and fast screening, mapping and prognosis of patients, as well as monitoring infected people. In addition, AI has enabled the development of drugs and vaccines, as well as reduced the workload for healthcare professionals.

Chatbots, which are computer programs that seek to simulate a human being in conversation with people, were used for the purpose of diagnosis and as a way of accessing free online health services.

Therefore, the use of artificial intelligence is already a reality in many sectors and will shape the near future, with a significant impact on companies and society, namely with the post-Covid scenario. According to an Accenture and Frontier Economics report, by 2035 is expected an increase of up to 40% to the influence of artificial intelligence on labor productivity in developed countries. By the other hand, there will be a bigger necessity for more skilled workers in the labour market.

In this context, the Aveiro Labour Observatory has been working on identifying the qualification needs with the local business in order to attract and retain qualified professionals in Aveiro. The the exercises of prioritization and auscultation in the workshops in 2019 and 2020 with TICE and Industry sectors, but also in the interviews and questionnaires, the Specialist in Artificial Intelligence profession was considered by the participants as one of the most priority for the sector and whose skills (techniques and soft skills) are the most difficult to find in the regional market.



Source: Adapted from McKinsey, The State of AI in 2020

To learn more about the Aveiro Labour Observatory: http://observatoriodoemprego.web.ua.pt/

To learn more about the Urban Innovative Actions: https://www.uia-initiative.eu/en/uia-cities/aveiro

To learn more about the project: https://www.aveirotechcity.pt/pt/atividades/observatorio-do-emprego

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Main Urban Authority

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