Higher Education and Research: Vector of Responsible Innovations

According to Academic Ranking of World Universities 2020 (Shanghai ranking), France is ranked third behind the United States and England and 5 French universities are in the top 100. However, many voices are currently being raised in France and in other countries to emphasize the difficult working conditions of researchers and academics, and even the precarious nature of the profession, as well as the growing inequalities between higher education institutions. Since the end of the 20th century, higher education and research have indeed been the subject of numerous reforms.

The French Law on research and innovation in 1999 relating to the commercialization of research offered researchers the opportunity to create an enterprise, to file a patent or to develop cooperative relationships with enterprises. Before that, the US Bayh Dole Act enacted in 1980 enabled universities, to own patent and commercialize inventions developed under federally funded research programs. Hovewer, these close interaction between research and the market is not in itself a novelty (Uzunidis, 2018dir, Boutillier, Alexandre, 2019, Schaeffer, 2019). In the 19th century, Louis Pasteur and many other scientists were also entrepreneurs. What has changed since the end of the 20th century is that the university has become entrepreneurial in the primary sense of the term (Etzkowitz, Leydesdorff, 1997dir), it has come out of its "ivory tower" (Etzkowitz et al, 2000), in the age of the knowledge economy (Powell, Snellman, 2004), the centrepiece of the entrepreneurial society (Audretsch, 2007, Boutillier, Uzunidis, 2017, Chambard, 2020, Matt, Schaeffer, 2015).

The entrepreneurial university is an institution that is open to the economy and society. In a globalized economy, based on competition, states must give companies the means to innovate and be competitive. Since the beginning of the 21st century, the Triple Helix (Etzkowitz, 2003, 2008) has highlighted the close interactions between the university, business and the State, and even with civil society (depending on its needs), the environment and democracy (Carayannis, Campbell, 2017), showing to what extent the production of knowledge and its commercialisation are an integral part of social dynamics. In addition to its two initial missions, teaching and research, the university must also transfer the results of research to the market. Under these conditions, over the last twenty years, it is the very functioning of the university that has changed, marked by a double contradictory movement: on the one hand the university has become both bureaucratized (multiplication of procedures, rankings, evaluation of teaching, research results, etc.) and on the other hand liberalized by the social models it disseminates. It advocates entrepreneurship not only for researchers, but also for students in all disciplines. Research work has also changed considerably. To be recognized by their peers, researchers must have publications in journals listed in international directories (Lanciano-Morandat, 2019).

Presidents and directors of higher education and research institutions (HEIs) build their strategy around entrepreneurship, incubators, the creation of start-ups and competitiveness. Moreover, the open innovation model (Chesbrough, 2003) has shown that the formation and development of the firm's knowledge capital (Laperche, 2018) is based on the development of cooperative relationships with a set of actors (startup, research centers, universities, etc.). Higher Education and Research Institutions are at the heart of fundamental transformations that are not limited to teaching, research, and transfer, but whose consequences are much more important in economic and social terms. In an uncertain economic context marked by increasing inequalities and to counter the consequences of climate change, all actors in the innovation ecosystem (companies, universities, research institutions, the State, consumers, etc.) (Fetters et al., 2010) are concerned by the subject of responsibility. Thus, inspired by the framework of the 2030 agenda and the objectives of sustainable development, socio-economic inequalities and environmental degradation have become some of the problems that today fall within the competence of Higher Education and Research Institutions (Bolio Dominguez, Pinzon Lizarrage, 2019). If these problems remain unresolved, they may call into question the social relevance of the Higher

Education Institutions (HEIs), understood as the capacity to train students and use the results of their research to address society's problems. Moreover, young people who pass through universities are the main driving force for HEIs to find pathways to social transformation (UNESCO, 2015). The HEIs have therefore developed education and training programs to support students who have a project to create a business, or even raise awareness if they do not have one.

This change is also accompanied by new ways of innovating by taking into account within the innovation process itself as well as in the results the negative impacts that could be generated. Since the beginning of the 21st century, responsible innovation (Debref et al., 2019) is therefore the new model that allows the actors in the innovation ecosystem to respond to the urgent challenges that the world has been facing in recent years, particularly social and environmental challenges (Von Schomberg, Hankins, 2019). For example, the AUF (Agence Universitaire de la Francophonie) has developed the ACTIF (Action pour l'innovation responsable francophone / Actions for Francophone responsible innovation) scheme, which aims to "identify, federate, promote and develop innovation with a positive impact where it is already in the AUF network and where it will be created". The European HEIRRI (Higher Education Institutions and Responsible Research and Innovation) project, funded by the European Commission between 2015 and 2018 as part of the Horizon 2020 program, aimed to stimulate the alignment of research and innovation practices with social needs and expectations. It now offers a state of the art and a database of teaching and research practices in responsible innovation, as well as proposals for training programs. The question of how higher education and research take up these challenges and respond to them is thus fundamental. The objective is to produce reliable scientific knowledge that meets the real needs of society. In this sense, should the organization of science be based neither on the State or on the market, since researchers should be able to carry out their work in complete independence (Pénin, 2020)?

This evolution raises many questions that cut across the three major missions of higher education and research, plus a cross-cutting issue of university governance:

1/ **In a perspective of sustainable innovation, the question of research and knowledge production is important: how are the orientations of sustainable research defined?** How do they take into account major societal issues? How does the work of researchers evolve? Are new processes being put in place? What are the conditions of recruitment and training of

researchers, have their working conditions changed? How is research funded? What are the consequences of private funding on the autonomy and independence of research activities? What are the modalities and consequences of the "publish or perish" principle, particularly in terms of the quality of research (scientific fraud, manipulation of results, etc.)?

2/ **How is research valued for socially desirable outcomes?** How are its results disseminated? How does this research translate into responsible innovations? In what way in this case? How is innovation based on sustainable research financed? How do these processes fit into sustainable HEI-company-state relationships? What is the role of support structures for business creation?

3/ **The HEI also has a mission of teaching and transmission of knowledge, including training in entrepreneurship and responsible innovation.** Is this objective taken into account in the modalities of teaching and knowledge transmission? If so, in what way? Does it generate new pedagogical approaches? Does it have an impact on the recruitment and training of teachers?

4/ **Finally, what is the link between the imperative of responsible innovation and the governance of the HEIs?** Does it contribute to the development of inequalities between higher education institutions? Does it contribute to the establishment of an inclusive stakeholder dialogue and the participation of a wide range of actors in order to increase social engagement? What could tomorrow's RSE model be that promotes sustainable innovation and is likely to respond to major challenges?

Deadlines for submissions:

15th March 2021: deadline for **electronic submission of paper** to the conference (two pages including: objectives of the paper, research question, methodology, excepted results, main references - ten max) of for **electronic submission of session** to the conference (on page including: topic of the session, name of proposed authors. Each author will submit his/her proposition individually).

15th April 2021: notification of authors regarding acceptance to the conference.

15th May 2021: deadline for registration

Contact: https://foruminnov21.univ-littoral.fr/

References

Audretsch D., 2007, *The entrepreneurial society*, Oxford University Press.

Boutillier S., Alexandre L., 2019dir, L'entrepreneuriat scientifique. Institutions et innovation, *Marché & organisations*, 34, 11-14.

Bolio Domínguez V., Pinzón Lizarraga L. M., 2019, Construction and Validation of an Instrument to Evaluate the Characteristics of University Social Responsibility in University Students, *Revista Internacional de Educación para la Justicia Social*, 8(1), 79-96

Boutillier S., Uzunidis D., 2017, *L'entrepreneur*, ISTE Editions.

Carayannis E. G., Campbell D. F. J., 2017, Les systèmes d'innovation de la quadruple et de la quintuple hélice, *Innovations,* 54, 173-195.

Chambard O., 2020, *Business Model, nouveau laboratoire de l'idéologie entrepreneuriale,* La découverte.

Chesbrough H., 2003, *Open innovation. The new imperative for creating and profiting from technology*, Harvard Business School Press.

Debref R., Gallaud D., Temple L., Temri L., 2019, L'innovation responsible, dimension stratégique des organisations, *Innovations,* 59, 5-13.

Etzkowitz H., 2003, Research groups as « quasi firms »: the invention of entrepreneurial university, *Research Policy*, 32(1), 109-121.

Etzkowitz H., 2008, *The triple Helix University-industry-governement. Innovation and entrepreneurship*, Routlege.

Etzkowitz H., Webster A., Gebhardt C., Terra B. R. C., 2000, The future of the university and the university of the future: evolution of ivory tower to entrepreneurial paradigm, *Research Policy,* 29, 313-330.

Fetters M. L., Greene F. G., Rice M. P., Butler J. S., 2010eds, *The development of University-based entrepreneurship ecosystem,* Edward Elgar.

Lanciano-Morandat C., 2019, *Le travail de recherche. Production de savoirs et pratiques scientifiques et techniques*, CNRS Editions.

Laperche B., 2018, *Le capital savoir de l'entreprise*, ISTE Editions.

Matt M., Schaeffer V., 2015, Le soutien à l'entrepreneuriat académique dans le modèle d'université HUB, *Innovations,* 48, 13-39.

Pénin J., 2020, La gouvernance du commun scientifique ouvert et ses remises en cause, *Innovations,* 63, pp.15-37.

Powell W.W., Snellman K., 2004, The knowledge economy, *Annual review of Sociology*, 30, 199-220.

UNESCO.,2016, *Education à la citoyenneté mondiale : préparer les apprenants aux défis du XXIe siècle*. París: UNESCO.

Schaeffer V., 2019, L'université entrepreneuriale. Eléments historiques et débat, *Marché & organisations*, 34, 87-108.

Uzunidis D., 2018dir, *Recherche académique et innovation. La force productive de la science*, Peter Lang.

Von Schomberg, R., Hankins, J. (Eds.). (2019). *International handbook on responsible innovation: A global resource*. Edward Elgar Publishing.

Scientific committee

David Audretsch (Indiana University), Pierre Barbaroux (Ecole de l'air), Patricia Baudier (EM-Normandie), Sonia Ben Slimane (ESCP), Bertrand Bocquet (Université de Lille), Sophie Boutillier (Université du Littoral Côte d'Opale), Thierry Burger-Helmchen (Université de Strasbourg), David Campbell (University of Applied Arts, Vienna), Vanessa Casadella (Université de Picardie Jules Verne), Patrick Cohendet (HEC Montréal), Elias Carayannis (University George Washington), Muriel Cordier (AUF), Romain Debref (Université Reims Champagne Ardennes), Béatrice Dumont (Université Sorbonne Paris Nord), Laurent Dupont (Université de Lorraine), Henry Etzkowitz (Stanford University), Joëlle Forest (INSA Lyon), Michel Grossetti (Université Toulouse Jean Jaurès), Jeremy Howells (University of Portsmouth), Caroline Hussler (Université Lyon 3), Caroline Lanciano-Morandat (Université d'Aix en Provence), Blandine Laperche (Université du Littoral Côte d'Opale), Isabelle Laudier (CDC), Birgit Leick (University of South-Eastern Norway), Son Thi Kim Le (Université du Littoral Côte d'Opale), Marcos Lima (SKEMA), Mireille Matt (INRAE-Lisis), Laure Morel (ENSGSI, Université de Lorraine), Sana Mrizak (Université du Littoral Côte d'Opale), Julien Pénin (Université de Strasbourg), Loïc Petitgirard (CNAM), Emmanuelle Picard (Ens-Lyon), Sophie Reboud (Burgundy School of Business), Jean-Claude Ruano-Borbalan (CNAM), Francesco Schiavone (University Parthenope, Naples), Eric Seulliet (La Fabrique du Futur), Véronique Schaeffer (Université de Strasbourg), Michele Simoni (University Parthenope,

Naples), Bérangère Szostak (Université de Lorraine), Sofiane Tahi (Université de Picardie Jules Verne), Corine Tanguy (AgroSup Dijon), Ludovic Temple (CIRAD), Leila Temri (Supagro), Jean-Marc Touzard (INRAE), Dimitri Uzunidis (Université du Littoral Côte d'Opale).

Organization Committee: Sophie Boutillier (Université du Littoral Côte d'Opale), Blandine Laperche (Université du Littoral Côte d'Opale), Son Thi Kim Le (Université du Littoral Côte d'Opale), Leila Temri (Supagro), Jean-Marc Touzard (INRAE), Dave Mohbe-Bokoko (Université du Littoral Côte d'Opale).