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Entrepreneurship and innovation in a metropolis: Education and policy implications in Hong Kong

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Ken Kahn in his "*Catalyst: Innovation Is Not Entrepreneurship, nor Vice Versa*" initiated an inspiring discussion of the concepts of entrepreneurship and innovation. Extending the idea, we propose such connections and differences also carry university education and policy implications. Below we summarize our thoughts based on our observations in Hong Kong. We agree with Ken's argument that innovation and entrepreneurship are different conceptually and often not differentiated well by researchers and others, which may cause some inefficiency in program design and student learning. However, we also think that educators and policymakers are inclined to focus on the integration between the two for good reasons in practice. The purpose of this commentary is not to refute Ken's points, but to explore how to move from distinguishing between entrepreneurship and innovation to creating value from both educators and policymakers.

At our university, we have an undergraduate business concentration in Entrepreneurship and a university-wide "Entrepreneurship and Innovation Minor Programme" (EPIN, **2022**). It is understandable some students may get confused between two programs, especially when both curricula include similar elements of developing an entrepreneurial mindset, building knowledge of new ventures, and living an entrepreneurial experience. We, therefore, agree that entrepreneurship education indeed is different from innovation education, supporting the notion that "the skill sets needed to develop technology are not the same as those needed to start a business venture" (Kahn, **2022**, p. 2). Entrepreneurship education emphasizes the creation, survival, and growth of new ventures (Kuratko, **2005**). Students are trained on how to identify and realize opportunities in the market, formulate a viable business model, and sustain its competitiveness amid the existence of other competitors. Innovation education, in contrast, centers on the integrated process of product or service development, technological breakthrough, and commercialization of innovation (Yanez et al., **2010**). Students are trained to empower and collaborate with other members, comprising technology inventors and business entrepreneurs; and more importantly, effectively create and deliver value to stakeholders. This could include, for example, reducing traffic jams with AI analysis within road logistics models, designing special care food products for elderly individuals having swallowing difficulties, and supporting digital literature access among low-income families.

The differences in skill sets needed for entrepreneurship versus innovation have important implications for the interdisciplinary challenges in innovation education, as innovation capabilities subsume entrepreneurial capabilities, including the development of new products/services, and technological know-how, sometimes through creating new ventures. This "integrated" nature of multiple disciplines in different contexts makes the development of effective curricula particularly challenging. However, from our limited successful experiences of support centers and incubation programs that have nurtured many teams and startups, we contend that innovative ways to teach innovation are necessary, transforming the traditional classroom-based approach.

The idea of transformational education is engendered in The *Stanford2025 Project*(Stanford2025, **2022**), representing one possible audacious direction for innovation curricula. That project aims to develop an open-looped, paced education system, where experiential learning in practical settings is adopted. A broader mix of students, from first-year freshmen to populi (i.e., returning students from work or internship), join classes that they see relevant based on their individual readiness and problem-solving needs. Certainly, such fundamental transformation of a curriculum requires mutual recognition and support by stakeholders, including universities, educators, students, accreditation authorities, and business sectors. In the short run, a practical step forward would be team-based, interdisciplinary programs integrating both innovation and entrepreneurship education.

Relatedly, policymakers acknowledge that innovation plays an important role in economic growth (Schumpeter, **1947**). In general, policymakers may not see innovation and entrepreneurship as separate but an integrated concept. That is why there has been a substantial increase in government support in entrepreneurship, considering new ventures taking the major role in innovation. In the Guangdong-Hong Kong-Macao Greater Bay Area, for example, there are many funding schemes supporting entrepreneurs starting new ventures, ranging from direct subsidies to various benefits and facilitative measures, like the Innovation and Technology Venture Fund for startups or venture capital, and the Enterprise Support Scheme for funding R&D (ITF, **2022**). While applauding all these, we support the notion that the development of entrepreneurship and development of innovation should not be the same at a policy level because innovation and entrepreneurship have different funding orientations with different risks being incurred (Kahn, **2022**). We believe governments should nurture the entrepreneurial ecosystem by, on one hand, continuing support on new ventures; and on the other hand, providing investment for developing infrastructure and facilitating knowledge spillover (Audretsch & Keilbach, **2008**).

As a case in point, the Hong Kong government, together with the local educational institutes, has implemented an investment plan to initiate innovative impactful education, as its R&D activities and tertiary education on such matters are behind other cities. Despite a dozen of emerging unicorns in recent years, its entrepreneurial ecosystem is still in its "adolescence." This audacious plan is called *InnoHK* (InnoHK, **2022**). It is a major initiative of the Hong Kong Government to develop Hong Kong as the hub for global research. It involves the establishment of world-class research clusters at the Hong Kong Science and Technology Park with research laboratories set up by world-renowned universities and research institutes to conduct collaborative research. A total of 28 research projects/centers were established in 2020.

The first phase of the plan focuses on health care, as well as AI and robotics. The former, called *Health@InnoHK*, supports drug discovery, personalized medicine, molecular diagnostics, bioengineering, chemical biology, bioinformatics, vaccine development, medical instrumentation, and so forth. The latter called *AIR@InnoHK* develops artificial intelligence and robotics technologies to financial services, smart city, and advanced manufacturing. An example is the Multi-Scale Medical Robotics Centre set up to investigate medical robotics by the Chinese University of Hong Kong in collaboration with ETH Zürich, Imperial College London, and Johns Hopkins University. It will receive roughly US$60M over the next 3 years.

The InnoHK centers are aimed to engage in research and return its innovations through licensing IPs and setting up new ventures or joint ventures. It is hoped that they will stimulate

more R&D investments in local companies as well as attract overseas corporations and entrepreneurs to Hong Kong. Amidst the interest and policies to blend advanced research and business venturing, new kinds of educational objectives and designs are needed.

Other than cutting-edge research centers, another development of the governmental policies to blend innovation and entrepreneurship is intrapreneurship or corporate entrepreneurship. Due to Hong Kong's development paths in trading and OEM manufacturing, many firms, large and small, have succeeded in taking the advantage of operational flexibility and astute alertness to opportunities. R&D investment has been usually very low. Turning to and absorbing advanced technologies is only a recent attempt in corporations. Yet, some corporations in traditional industries, such as properties and commerce, have taken some bold steps. For example, Sino Group is a 50-year-old large property developer. Recently, it has established their Sino Inno Lab to support the development of PropTech, and initiated the Hong Kong PropTech Alliance with other developers. The effort of the Hong Kong government and its various stakeholders to transform the business hub into a knowledge-based economy and a regional innovation hub could meet many challenges, since its working population and students have yet to show enough awareness about the applications of advanced technologies and an innovative mindset among corporations and SMEs in Hong Kong.

Given its nature as a metropolis, entrepreneurial education in Hong Kong needs to go beyond a focus of starting up new ventures and integrate corporate R&D at industrial leaders into curricula. It is because Hong Kong as an international financial center and a metropolis, similar to London, New York, or Shanghai, has decades of business activities and deep-rooted industrial establishments. Creating bridges between innovative ideas and inventions and established industries and corporations is thus critical. New York, for example, has attracted the second largest amount of venture capital investment in the United States into many ventures catering to traditional industries, such as entertainment, media, real estate, and so forth. These include businesses like Buzzfeed, WeWork, FanDuel, and Peloton. They are creative ventures offering innovative solutions to serve ongoing needs of customers. They do not possess deep tech or exhibit disruptive technology which tech ventures in Israel, Boston, and Silicon Valley are good at. Due to the nature of their business ventures, entrepreneurship education in Hong Kong, being a metropolis, may include more on enhancing R&D, analyzing the needs of establishing industries, and the application of innovations to established industries. A more nuanced understanding of innovation and entrepreneurship, followed with a blend of the two, is going to be needed in our education systems for the future. Similar situation may also apply to developed regions that have under-invested in innovation and new technology.

In sum, we applaud Ken Kahn in conceptually differentiating innovation and entrepreneurship. We agree with the potential shortcomings in education and policymaking for not recognizing their differences. Most stakeholders can benefit from this recognition and be cognizant of the shortcomings if they do not. Yet, practical integration, we suspect, is probably in the mind of educators and policymakers when they promulgate and implement their programs. Borrowing the famous adage of Mr Deng Xiao Ping, who is hailed as the designer of China's Open Door reform, “It doesn't matter whether the cat is black or white; it is a good cat if it can catch the mouse.” Certainly, policymakers and educators can learn from Ken's arguments when they review their programs and look for new opportunities to serve their beneficiaries.

CONFLICT OF INTEREST

No co-authors have any conflicts of interest.

Biographies

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