Promoting Student Startups: Redesigning Entrepreneurship Education and Practices

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ABSTRACT:

Entrepreneurship education (EE) in universities strengthens students' entrepreneurial potential, for their country's economic growth. Universities in Oman are dedicated to a systemic approach, collaborating with the entrepreneurial ecosystem and private sector to equip students with practical competencies, upholding vital national priorities outlined in Oman Vision 2040. The inclusion of UNSDGs adds value to this drive. By synergizing these vision documents, this approach transforms students into entrepreneurs, benefiting the national economy and global community. A study involving 80 undergraduate engineering students revealed a positive correlation between curricular and co-curricular entrepreneurship programs. The paper also explores entrepreneurial activities enhancing the educational journey. Furthermore, the concept of 'Entreversities' presents a three-stage model to transform EE practices and promote student startups, aligning with Oman Vision 2020. This provides an opportunity for universities to re-evaluate their entrepreneurship education paradigms, foster an entrepreneurial ecosystem, and cultivate a renewed culture of entrepreneurship.

Keywords: Entrepreneurship education, entrepreneurial ecosystem, curricular program, co-curricular program, HEI/University, Student startup, Oman Vision 2040, UN sustainable goal

1.   INTRODUCTION:

Entrepreneurship education (EE) has become a fundamental part of the curriculum in most universities/Higher education institutions (HEIs) and, therefore in Oman as well. Educators are dedicated to instilling an entrepreneurial mindset in students encouraging them to become innovators and creators of enterprises for themselves and their communities, rather than merely job seekers.

Universities/HEIs in Oman aim to establish a top-tier entrepreneurship education system, in line with the national priorities of the Vision Oman 2040 document. These priorities target education and lifelong learning that will lead to a knowledge-based society, the spotlight here being the nurturing of competitive national talents. The document's strategic orientation also focuses on enhancing the educational system at all levels and improving its quality, boosting national capabilities, and contributing to the progress of the country. Additionally, it places significance on economic diversification and fiscal sustainability with the strategic direction focusing on establishing a sustainable, technology-driven economy based on innovation while achieving fiscal stability (2040 Vision Oman, Vision Document, 2019). Currently, Oman is on the path of economic diversification with a focus on technology, knowledge, and innovation to reduce the dependence on the oil sector and raise the contribution of non-oil sectors to the GDP. This target justifies the need to develop national talents in innovation and creativity, encouraging entrepreneurship. This will result in accelerated economic development of various sectors and in turn to the development of an educational system that brings in a culture of entrepreneurship. Yet another priority of the vision document underscores the significance of the private sector, investments, and international collaboration. The strategic direction in this regard prioritizes a dynamic private sector that fuels Oman's economy and aligns it with the global economic landscape through diverse investment partnerships, ultimately contributing to a strong national economy.

After considering the essence of entrepreneurship education, especially in light of the national supportive initiatives like Vision 2040 of Oman, the researchers would now like to put forth another valuable global document that reiterates the standards of EE. This document is nothing but the 2030 Agenda for Sustainable Development which furnishes the 17 Sustainable Development Goals (UNSDGs) published by the United Nations (United Nations: Department of Economic and Social Affairs, 2023). These two documents necessitate the need for a global benchmark in EE.

One of the UNSDGs articulates the attainment of universal access to quality higher education and lifelong learning opportunities. Another goal in the list substantiates the need for a global network as it aims to achieve objectives such as sustainable economic growth and technological innovation by encouraging entrepreneurship. Additionally, the list identifies building a resilient infrastructure as one of the key determinants of economic growth and development. The last goal in the SDG series aims at global partnership for sustainable development (United Nations: Department of Economic and Social Affairs, 2023).

The objectives outlined in the SDGs provide substantial support for the priorities outlined in the Oman Vision document in particular and the very concept of EE concept in general. The entire idea presented so far on EE is reinforced by the visions laid out in the two key documents of Vision Oman 2040 and the 2030 Agenda for Sustainable Development (United Nations: Department of Economic and Social Affairs, 2023).

The world is more interconnected than ever, and therefore, universities too, are the major disseminator of EE. Inevitably, global partnership and cooperation initiatives by universities/HEIs will be instrumental in the creation of a redefined ecosystem that will accelerate the refinement of EE.

Therefore, it is the mission of the universities/HEIs to provide an entrepreneurial education that fashions the renewed ecosystem that brings in a paradigm shift to EE. Such an EE acts as a channel through which students develop varied competencies including technology for entrepreneurial purposes. The EE that students receive provides experiential learning through which they make efforts to materialize their creative and innovative entrepreneurial intentions into economic activities.

Based on the observations made so far on the current EE, and upon the analysis of the two important documents - the Oman Vision 2040 document, and the UN Agenda for 2030 - the researchers were able to get a closer and more critical look at the current EE.

Apart from the nature of the current EE with all its merits, the researchers specifically learned that the standards set, and the vision laid out in these two documents emphasize the need to come up with a robust EE embedded with real-time learning experiences. The strength of the present entrepreneurship education lies in its ability to incorporate some non-curricular elements, although its conventional curriculum falls short of meeting the comprehensive demands of EE and the broader economy. Hence, the researchers would like to determine the effectiveness of the EE curriculum in its current form and its impact on converting the entrepreneurial intentions of students into viable startups. Furthermore, the researchers are interested in evaluating the outcomes of co-curricular programs, or the 'ecosystem' or the 'Practices' element in the EEP, in its current but insufficient form on student startups. The researchers believe that the curricular and co-curricular programs exert a positive influence on students to start their entrepreneurial ventures.

Despite the positive impact of curricular and co-curricular programs, the impact of the latter is falling behind in its contribution to the EE. Therefore, the latter's contribution must be scaled up to realize the concept of EEP, which will then be the benchmark for enhancing the conversion of entrepreneurial intentions into successful student startups. As a result of the present research, a framework has been proposed for this purpose.

The study will benefit the universities/HEIs, researchers, and other interested parties. The insights can aid in enhancing the curriculum, planning co-curricular programs, or designing a comprehensive EEP that is aligned with the relevant national priorities in Oman Vision 2040, and the corresponding global goals identified in the UN Agenda for 2030.

The research involved establishing objectives and conducting an extensive review of the literature, which was then presented selectively. A questionnaire was designed to gather information on the impact of

curricular and co-curricular programs on student startups. Data was collected using questionnaires, and appropriate statistical analysis was done to understand the correlation between the two variables, coupled with a thematic analysis of an open-ended question. Finally, conclusions were drawn.

1.1   Cultivating Entrepreneurship Through Education

Entrepreneurship drives the nation's economic growth and social development. Universities across the globe are making efforts to provide entrepreneurship education to develop the skills and competencies required for entrepreneurship. The curriculum is meticulously designed, and co-curricular activities are well-planned to cultivate these skills and competencies. Students are encouraged to embrace creativity and innovative abilities, enabling them to effectively use technology for establishing new enterprises. All support and training are offered to empower students to turn their ideas into economically rewarding actions. The resulting startups thus stand evidence for the proposition that entrepreneurship can be taught and so it can be learned and executed.

In the era of the industrial revolution and technological advancements, the role of universities/HEIs in promoting entrepreneurship is constantly changing. It is moving from mere instructional methods of opportunity recognition to bridging the gap between classroom and industry. Universities/HEIs are applying the dynamics of developing potential business ideas through education, training, mentoring, and assembling resources to facilitate students' entrepreneurial performance. They have envisioned a framework of blended learning that integrates theory and practice through simulation to create startups (Santoso, R.T.P.B, et al., 2021). Besides, exposing students to a range of entrepreneurial journeys of successful entrepreneurs contributed to students' intentions for startups. Role models can stimulate individual self-efficacy through learning by observation and increase positive emotional reactions to entrepreneurship (Boldureanu et al., 2020) Moreover, universities are aiming to give students real-life experiences by collaborating with industries and simultaneously encouraging students to put the technical knowledge and the learning of entrepreneurship together. Furthermore, universities aim for students to achieve learning outcomes that involve innovation and the successful commercialization of their projects by industries. This environment can only be realized when universities build an infrastructure to breed entrepreneurship (Grecu and Denes, 2017)

In one of the studies conducted by Zhao et al., (2022), it was found that university students who took the entrepreneurial theory course as an elective or participated in other entrepreneurial activities were more likely to start a business, which made them eligible for the incubator facility on campus. The impact of theory and competition was specifically observed in the case of students with non-management backgrounds. However, incubation had a stronger impact on the operating performance of the nascent firms in terms of sales revenue and profit before tax. These results confirm the significance of entrepreneurship curriculum in

combination with co-curricular activities. A study by Arranz et al., (2016) demonstrates that both the curricular and extracurricular activities have a differing effect on university students; while the former creates a positive attitude and strengthens entrepreneurial intention, it is the latter that leads to start-ups.

Additional support can be found in the study conducted by Wang et al., (2022) which states that entrepreneurship education empowers students to make choices that lead to desired actions in terms of entrepreneurial intention and entrepreneurial creativity. Yet another study affirms the positive impact of entrepreneurship education on intentions of investing in new ventures. Here the students were made aware of government support in terms of funding sources and intellectual assistance which reinforced students' intentions as they felt a sense of financial self-efficacy (Khuram et al., 2022) Thus, entrepreneurship education becomes inspirational and has a strong positive correlation with entrepreneurial activity and creativity. Moreover, when an entrepreneurship curriculum is teamed up with startup-related co-curricular programs it serves as a lush green ground for students to practice entrepreneurship. The curricular programs strengthen entrepreneurial intentions and the co-curricular programs direct behavior towards startups. Together the two kinds of programs facilitate venture creation and enterprising competencies.

Students can realize their role as enterprising individuals and perform confidently in the surrounding ecosystem (Pocek et al., 2022). Ascertaining the impact of various co-curricular activities on college students' entrepreneurial abilities and in turn on entrepreneurial actions, Hua et al., (2022) stated that, entrepreneurship competitions, practical networking, entrepreneurial clubs, and guest lectures, on-site guidance by experts, research laboratories all help to cultivate students' talents and transform their ideas into entrepreneurial projects.

Furthermore, "Eclectic Entrepreneurship Education" is comprised of "Through" and "Embedded" types of education in which direct knowledge and practical learning provide a strong foundation for students to put their business ideas into action. The curriculum and the facilities received through incubators, internships, and funding are instrumental in bringing entrepreneurship skills to life. This compels the higher education decision-makers to re-think entrepreneurship learning and create a favorable university entrepreneurial ecosystem (Astuty et al., 2022).

1.2   Learning by Experience and Virtual Networks in Entrepreneurship Education

Yet another study (Lackéus and Middleton, 2015) states that the best way to become entrepreneurial is by learning through experience. This is achieved through entrepreneurial competencies, which are developed through innovative value-creation projects developed by students through an iterative process. These projects are then subjected to stakeholder feedback and repeated interactions leading to deep learning.

One of the studies (Jamshidi and Shafiee, 2023) in an agricultural university in Iran has revealed the positive impact of virtual networks on new startups through the internet, parents, and families, though the perceived influence of curriculum was minimal. Thus, indicating that the twin factors of a robust educational policy and the promotion of entrepreneurial skills will lead to the realization of startups.

Still, another research has observed that the current EE is mostly in scattered format, which results in ineffective implementation of it in theory and practice. Therefore, the author articulates a more holistic macro-integrative perspective, which is an innovative way to overcome this and thereby contribute to the improvement of entrepreneurship education and practices. The accelerated industrial revolution episodes that the world experiences warrant a methodological revolution in EE exercises through the macro integrative perspective. It targets EE for business and life skills to develop a culture to serve the local and global society that traverses the entire ecosystem. Moreover, it integrates disciplines of science, humanities, and ethics into EE. The entire process brings teaching and learning closer to reality, thereby challenging the conventional belief that HEIs are the transmitters of the cultural and intellectual wealth of nations (Wu and Gu, 2017).

Reviews of the above studies highlight that though entrepreneurial curriculum has a strong presence in universities and HEIs across the globe; it ends up merely in developing entrepreneurial intentions rather than leading to startups. This is the scenario despite the curriculum being reinforced by co-curricular aspects like role model inclusion, funding support, mentoring initiatives, internship and training opportunities, incubator facilities, value creation and commercialization of student projects, and many other realistic support programs by governmental and non-governmental agencies. This situation emerges as an unavoidable weakness inherent in the current EE and practices, which are loosely integrated.

The researchers conducted the study to improve current entrepreneurship education and practices, leading to the proposal of a robust model. This model elevates universities/HEIs to the status of autonomous entrepreneurial ecosystems.

2.   METHODOLOGY:

The study is quantitative, descriptive, and analytical. The data was collected from students at the College of Engineering at the National University of Science & Technology, Oman. Within the realm of entrepreneurship education, these students were exposed to different entrepreneurship curricula, including courses like Entrepreneurship Creativity & Innovation, International Business Strategy, Digital Entrepreneurship & Innovation, and Entrepreneurship Workshop & Seminars. The students were also provided with the opportunity to experience various support programs that are part of the entrepreneurial ecosystem.

2.1   Sample size:

The sample comprised 80 engineering students who studied entrepreneurship modules at the undergraduate level. Simple random sampling was used for data collection.

2.2   Survey Questionnaire Design:

The survey questionnaire used featured questionnaire items among two variables i.e., i) curricular programs and ii) co-curricular programs. It comprised 20 questionnaire items presented in statement style and followed a five-point rating scale of 'strongly agree' to 'strongly disagree'. 11 items were related to curricular programs and 9 items were related to co-curricular programs. The statements were alternatively arranged in the questionnaire.

2.3   Statistical tools:

Descriptive statistical measures such as mean, standard deviation, median, minimum, and maximum were used to present the data on a continuous variable. The composite scores of the curricular program and co-curricular program scores were obtained using the weighted average method. The higher the mean score, the higher the perception of the respective program aspect and vice versa. The inter-group comparison of means of continuous variables was done using analysis of variance (ANOVA). The correlation analysis was performed using Pearson's method. The underlying assumption of normality was tested before subjecting the average scores to ANOVA and Pearson's correlation analysis. The entire data was entered and organized in MS Excel before its statistical analysis. All the results are shown in tabular as well as graphical format to visualize the statistically significant difference more clearly. Further, a thematic analysis was done based on student responses to an open-ended question. The entire data was statistically analyzed using Statistical Package for Social Sciences (SPSS Ver 24.0, IBM Corporation, USA) for MS Windows.

In the entire study, the p-values less than 0.05 are considered statistically significant.

3.   RESULT AND DISCUSSION:

Quantitative Analysis Based on Student Responses to Questionnaire Items

The data was collected using a questionnaire. The percentages for the extent of agreement were calculated for each questionnaire item within the two categories (variables) of the curricular and co-curricular programs to understand the impact of each of these programs.

Figure: 1 Extent of agreement for curricular programs
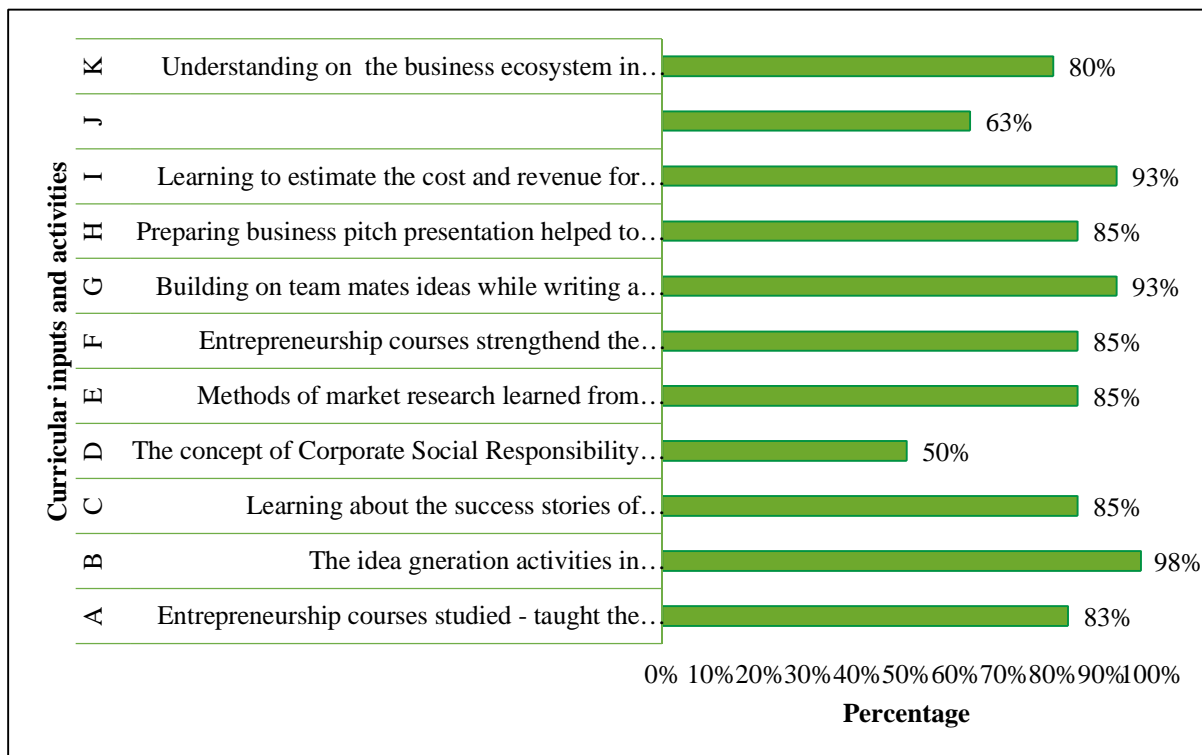
3.1   Findings related to the impact of curricular events and activities.

One of the significant findings of the study is that the respondents have found the exposure they got from the learning and preparation of the financial statements. There is no surprise that the respondents rated 93% of the item as 'learning to estimate the cost and revenue for the business had made the entrepreneurship courses more realistic and closer to a startup'.

Students were allowed to work in teams on a business plan in which they had to come out with robust projected financial statements from income statements to balance sheets for five years. This requirement takes them through the depth of business from concept to scaling and growth. It is in this stage they dare to review the theoretical aspects of the elements of the business plan cross-check with the more realistic and tangible financial projections and make necessary amendments, and alterations to see if the business idea is viable. Here are the gap fillers and identification of the deficiencies in planning and projections in the business plan.

Further to this, the respondents showed 93% the agreement for the item 'building on teammates' ideas while writing a business plan/business canvas reinforced the thoughts of starting a business. This is a realistic observation by the respondents in that they have been experiencing techniques like brainstorming, focus groups, experimentation, and prototyping right from the generation of business ideas, development of business plans, preparation of financial projections, and finally pitching their business ideas. This proves the

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consistency of the respondents in giving 98% to the item 'The idea generation activities taught in the entrepreneurship courses motivated me to think of viable business options.

The significant scores (85%) on items viz., 'methods of market research', 'unique selling propositions (USP)', and 'success stories of Omani entrepreneurs' point to the meaningful, realistic, and hands-on experience respondents had undergone in the entrepreneurship curriculum through interacting with millennial role models, conducting of market research, and branding of the USPs.

Yet another key observation of this research is the higher value (80%) ascribed by the respondents to the role of the ecosystem in the country in making their start-up aspirations tenable. The researchers strongly support this observation by the respondents as it is visible that the authorities are very particular in making the most of the ecosystem in Oman to the benefit of budding entrepreneurs. A fitting finale to this observation is the obvious rating of 83% by respondents to the significance of entrepreneurship curriculum in kindling the flame of entrepreneurship.

Furthermore, students have significantly shown a 63% agreement for item 'J' 'The alignment of entrepreneurship courses to UN sustainable goals and Vision Oman 2040 has prompted me to a startup'. This demonstrates that the students can see the broader application of their startups to UNSDGs and Vision Oman 2040 as they are aware of the significance of the goals such as decent work and economic growth, and the creation of sustainable cities. They have considered the positive impact of aligning these goals with the startup for getting returns that will fulfill national priorities and thereby give the startup all the support from the ecosystem.

Another major observation is that 50% of the students agree that the concept of corporate social responsibility (CSR) inspired them to a business startup. This reveals the realization that social responsibility is an asset. If they leverage on CSR early on it would be more appealing to the community and they can reap the benefits of these practices, establishing a more meaningful presence.

3.2   Findings related to the impact of Co-Curricular events and activities

A score of 88% assigned to 'networking' by the respondents underlines the value of this method of getting guidance from representatives of entrepreneurial support programs. To be precise, various mentoring, handholding, training, and counseling sessions that students experienced have accelerated the process of converting business ideas into actual business. Another interesting observation is that (85%) of respondents have valued the interaction with successful student entrepreneurs to have strengthened their ambition to continue with entrepreneurship as a career goal. All these observations endorse the impact exerted by co-curricular events and activities in moulding the student's minds to take steps towards capacity building and spring up with start-ups.
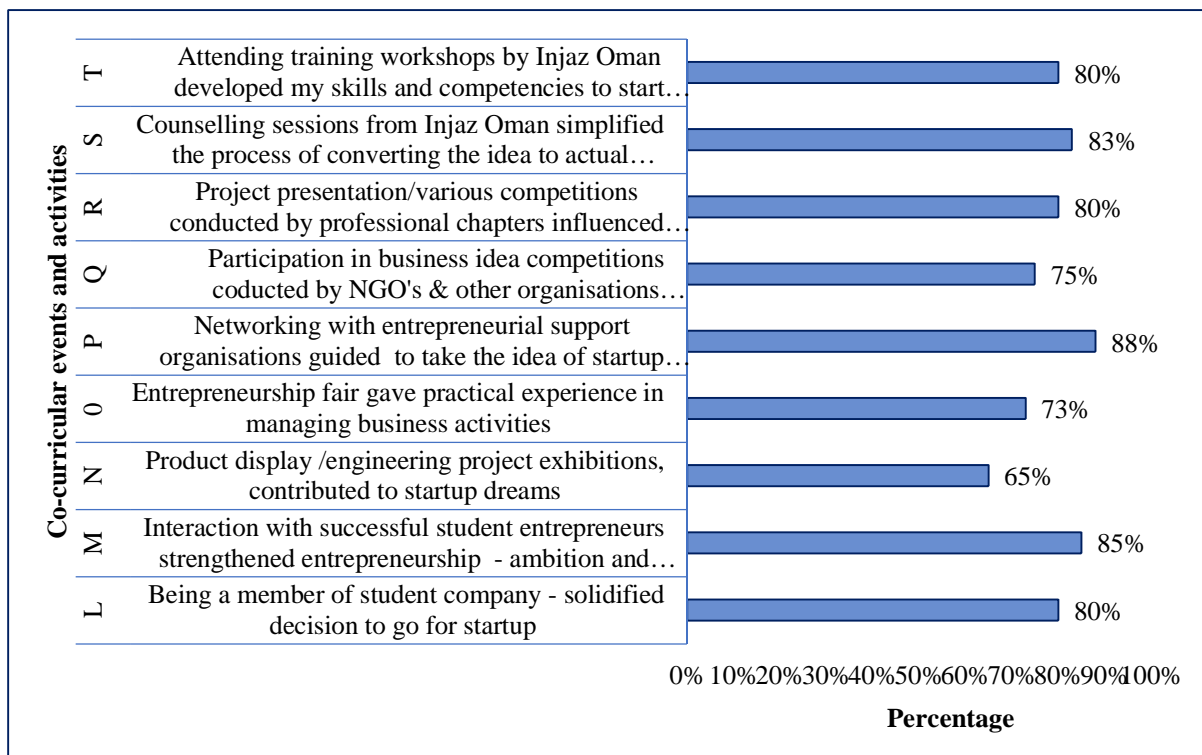
Figure: 1 Extent of agreement for co-curricular programs

One notable observation in this context is that the involvement in the 'student company' program solidified student's decision to go for a startup (85% agreement). This proves that the program of establishing student companies in collaboration with Injaz Oman, and the HEIs in the Sultanate has fueled the drive to transform the student community to be the entrepreneurs of the millennium. In addition, students responded positively (75%) to item 'Q' that participation in business idea competitions conducted by NGOs and other organizations contributed in a large way to their start-up dreams. Further, the score of 75% on the item 'O' at the entrepreneurship fair gave a practical experience in managing a business, and without doubt, has brought out the true entrepreneur from within. To sum up, other observations (rated 65%) such as engineering project exhibitions and displays have also influenced their start-up dreams

3.3   Interdependency between curricular and co-curricular programs

Pearson's correlation analysis indicates that Curricular programs score showed a statistically significant positive correlation with co-curricular programs score in the study group (P-value<0.05). In other words, higher curricular program scores are significantly associated with higher co-curricular program scores. This emphasizes that the two programs go well together. In essence, the smart blend of the two programs instills the spirit of entrepreneurship, moulds the mindset for entrepreneurial activities, and develops entrepreneurial skills. Table 1 and Figure 3 show the descriptive statistical measures such as mean, standard deviation, median, and minimum–maximum of composite scores of curricular and co-curricular programs in Promoting Student Startups.

Table 1: Descriptive statistics of composite scores of curricular and co-curricular programs in Promoting Student startups

		Descriptive statistics measures				
Score	**No. of respondents**	**Mean**	**SD**	**Median**	**Minimum**	**Maximum**
Curricular program score	80	4.11	0.49	4.18	2.36	5.00
Co-curricular program score	80	4.03	0.51	4.00	2.56	4.89
A higher mean score indicates a higher positive perspective/attitude towards the program and vice-versa.						
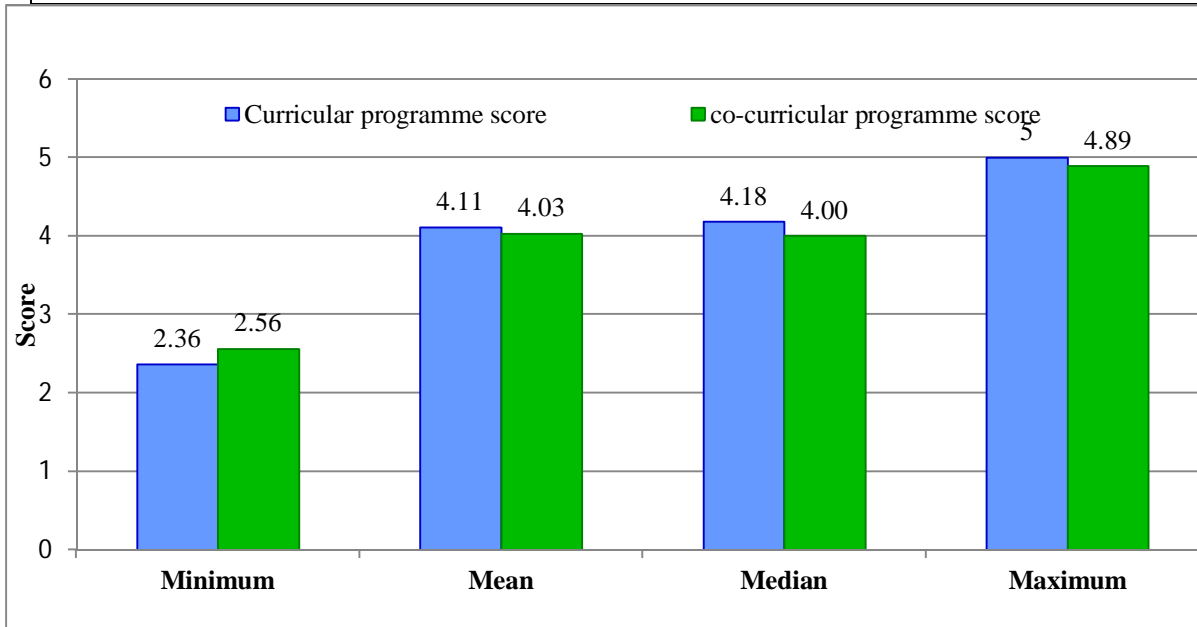
Figure 3: Descriptive statistics of composite scores of curricular and co-curricular programs in Promoting Student Startups

Table 2: Correlation analysis between composite scores of curricular and co-curricular programs in Promoting Student startups.

Correlation between	**R-value**	**P-value**
Curricular programs score and co-curricular programs score	0.775	0.001[***]
Correlation analysis by Pearson's method. P-value<0.05 is considered statistically significant. ***P-value<0.001.		

Table 2 and Figure 4 show correlation analysis between composite scores of curricular and co-curricular programs in Promoting Student startups.

Based on Pearson's correlation analysis it is seen that the score of the Curricular program showed a statistically significant positive correlation with the co-curricular program score in the study group (P-value<0.05).

Higher Curricular programs score is significantly associated with higher co-curricular programs score and vice versa.
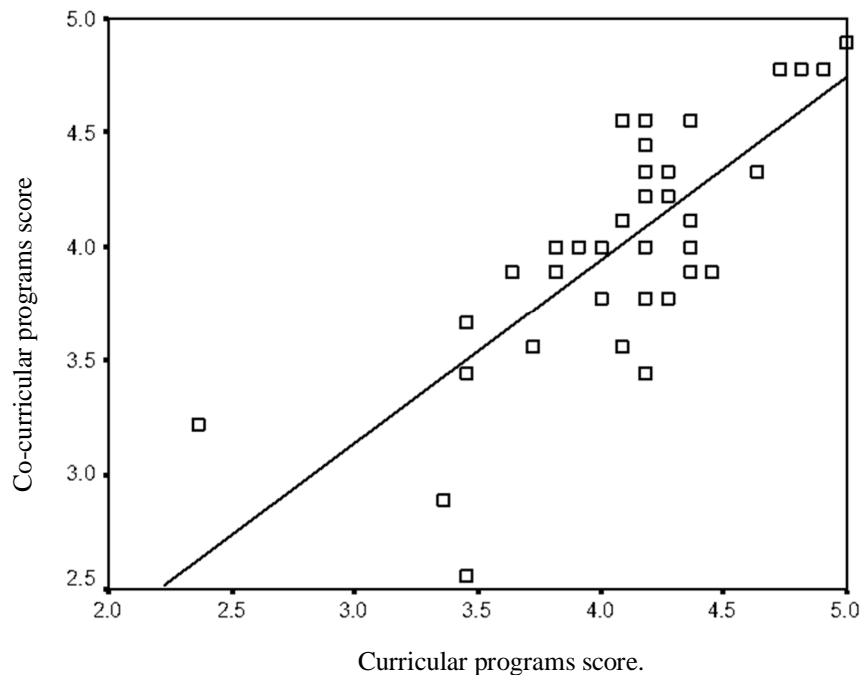
Figure 4: Scatter diagram showing the correlation

In Figure 4, the scatter diagram shows the correlation analysis between composite scores of curricular and co-curricular programs in promoting student startups. The line of regression between the two scores is also shown depicting the linearity trend and strength of correlation.

3.1 *Thematic Analysis Based on Student Responses to an Open-Ended Question*
The respondent gave very definite responses to the open-ended question, which aimed at their preferred resources that will realize start-up intentions. These preferences revealed the extent of their ambition to translate their entrepreneurial intentions into start-ups.

The researchers have classified this into the below given two categories below.

i) ***In-house based facilitative resources:***

This category covers material and service resources like research resources and training; human resources like research scholars, administration, and management; and financial resources like dedicated macro university funding, and micro-level investment partnerships.

ii) ***Ecosystem-based and collaborative resources:***

This category covers material and service resources like databases, equipment incubators, and networking opportunities; human resources like mentors and coaches; and sources of financial resources.

Associated Theme (i) (*In-house Based Facilitative Resources*)	**Associated Theme** (ii) (*Ecosystem-Based Collaborative Resources*)
• Faculty, Staff • Sponsors for financial/other resources • Training in general, and online marketing & e-commerce, finance, and costing projections. • Office space, labs, niche • Equipment for testing/creating product samples, and prototypes. • Entrepreneurship resource center • Display facility-product & prototypes • University-ecosystem micro-level network facility • Finance	• Opportunities to network with role models/ industry experts • Incubator • SME ecosystem assistance • Idea generation engagements • Mentors and coaches • Liaison with government agencies and organizations especially for legal consultations • Exposure to peers with start-ups • Dedicated support from successful entrepreneurs • Funding sources

3.2 *Designing the Entrepreneurship Education and Practices (EEP) Model*

Past research and studies have shown that though entrepreneurial curriculum has a strong presence in universities and HEIs across the globe, it ends up merely developing entrepreneurial intentions rather than leading to startups. This is the fact, despite the incorporation of co-curricular aspects related to the very ecosystem from role model inclusion to commercialization of student projects. The inevitable conclusion of all this is the prevalence of weaknesses and shortcomings inherent in the current EE and practices.

The way out from this is to design and propose a robust model that is the focus of the current study to bring a paradigm shift in the understanding and execution of current EE and practices especially in the light of the national need as furnished in the Oman Vision 2020 document. The same is articulated in the UN declaration 'Transforming Our World: The 2030 Agenda for Sustainable Development'. In consideration of all these elements, which consider both the local and global challenges to be addressed, the proposed EEP model visualizes the universities/HEIs to be elevated to the status of what the researchers would now designate as '***Entreversities.***'

This concept of '*Entreversities*' takes a three-stage model comprising 'Recognize', 'Construct', and 'Synergize' embedding in it the key aspects, covering the visions outlined in the two key documents of Vision 2040 of Oman, and that of the UN 2030 Agenda for Sustainable Development.'
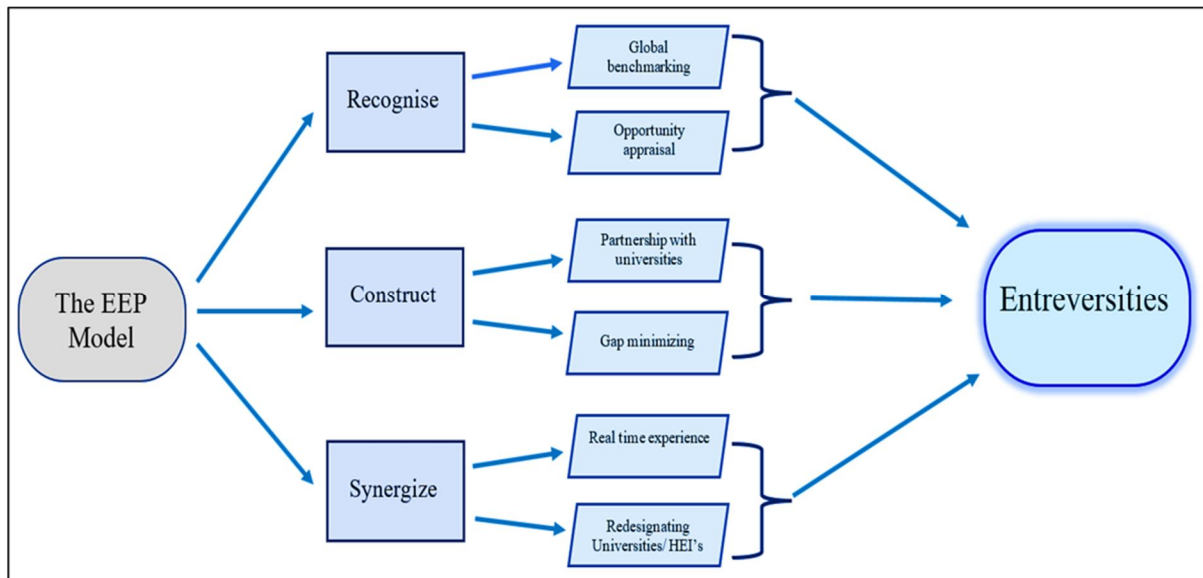
Figure 5: Components of the EEP Model

These three stages are explained in detail below, with corresponding components associated with each.

Recognize:

The process of EEP throughout this document will be discussed in the global context; the learner, the content, the learning experience, the assessment, and the wider ecosystem elements are all seen in a global context, well aligned with the regional and local needs and aspirations. This approach is in consideration of the current age of sustainable production, global society, and environment underlining the concept of the triple bottom line: people, planet, and profit.

The first stage of the EEP model 'Recognize' consists of the two components of the global benchmarking requirement of EEP and the opportunity search to this effect.

The two components of 'Recognize' are elaborated below.

- *Meeting the global benchmark*

The EE curriculum should be inclusive and collaborative incorporating the best practices across the globe, professionally accredited by global bodies, technology-driven, sustainability-embedded, and viability recognized.

The model, therefore, recommends EEP to be in line with the Oman standards as visualized in the national priorities of the 2040 Vision document (2040 Vision Oman, Vision Document, 2019).

One of the national priorities identified in the Oman Vision 2040 is 'education, learning, scientific research, and national capabilities. This priority demands an education that is modern and of international standards developing national capabilities, creativity, and entrepreneurial potential. The strategic direction related to this priority outlines lifelong learning leading to a knowledge-based society (2040 Vision Oman, Vision Document, 2019).

It also recommends EEPs that are aligned to the global standards as visualized in the 17 UNSDGs (United Nations: Department of Economic and Social Affairs, 2023), and therefore the global benchmark in EEP is inevitable. This benchmarking will be more justified with a closer look at the relevant SDGs.

Goal 4 of the UNSDGs includes the attainment of universal access to quality higher education and lifelong learning opportunities (United Nations: Department of Economic and Social Affairs, 2023). At the same time, Goal 8 of the UNSDGs promotes sustainable economic growth and higher levels of productivity and technological innovation by encouraging entrepreneurship. These two goals complement the Priorities discussed above and emphasize the relevance of global benchmarking in EEP.

As an inevitable supplement to the EE curriculum, the element called the 'ecosystem' which is the heart and soul of the EEP must also be benchmarked against global standards.

The second component of 'Recognize' is given below.

- *Opportunity Appraisal*

The global benchmarking discussion brings us to the point that the universities and HEIs need to conceive, develop, and realize a global network for a global standard EEP. Such a network should appraise all the given internal resource availability in terms of human, physical, financial, technological, and other relevant resources. The enrichment of these resources, especially through global partnerships with the support of the private sector will enhance the efficiency and productivity of EEP.

Such an opportunity hunt for a global network can be justified in consideration of the national priorities enshrined in the 2040 Vision document. One of the priorities stresses the need to strengthen the partnership between the academic and research institutions on the one hand and the private sector on the other (2040 Vision Oman, Vision Document, 2019). Therefore, universities/HEIs must identify and network with the governmental initiatives NGOs, and other mechanisms available to leverage the opportunity to firm up EEP.

Equally, Goal 8 of the UNSDGs promotes sustainable economic growth and higher levels of productivity and technological innovation by encouraging entrepreneurship. Therefore, universities/HEIs must identify and

network through the government and relevant UN agencies to identify the opportunities to add value to the EEP.

Construct:

Once global benchmarking and networking have been identified, universities/HEIs must find strategies to collaborate and build fruitful partnerships with other HEIs, MNCs, centers of excellence, institutes of repute, and organizations.

The second stage of the EEP model is 'Construct' which contains two components; strategies for building partnerships among universities/HEIs and similar entities, and for bridging the gap between entrepreneurial intentions and realizations, the gap which is in existence due to the imperfections in the current EE and practices.

The two components of 'Construct' are elaborated below.

- *Partnerships with other universities and entities*

The model, at this stage, is looking for fruitful partnerships with various stakeholders to make the EEP a robust one. Parent universities can have tie-ups with other universities/HEIs, and international organizations that have various initiatives promoting entrepreneurship and entrepreneurship education. Universities/HEIs can also have agreements with governmental and non-governmental agencies, business units, funding bodies, and other relevant organizations and initiatives in pooling resources, and expertise, and establishing business infrastructure to realize the building up of a solid and sustainable ecosystem within the parent university. Such an ecosystem is not limited to schools of business or commerce but across all the disciplines of learning and research in the university. Students must be given opportunities to global standard student startups through joint ventures, investment partnerships, and exchanges. Moreover, students must be given exposure to international rules and regulations, legal mandates, etc.

The national priorities of the 2040 Vision document give ideas to this effect. It stresses the need to strengthen the partnership between the academic and research institutions and the private sector (2040 Vision Oman, Vision Document, 2019). Another priority emphasizes economic diversification and fiscal sustainability, and the corresponding strategic direction outlines a sustainable economy that is based on technology, knowledge, and innovation in an integrated fashion. Simultaneously, Goal 9 of the UNSDGs aims at building resilient infrastructure, sustainable industrialization, and fostering innovation as crucial drivers of economic growth and development. Partnership between universities/HEIs and the private sector has a significant role here. This is well articulated by Goal 17 of the UNSDGs which corresponds to the need for a global partnership for sustainable development (United Nations: Department of Economic and Social Affairs, 2023).

Therefore, universities/HEIs must devise strategies to utilize the visions laid out in these documents to build effective partnerships with the above-mentioned international and national agencies to realize the purpose of EEP.

- *Minimizing the gap*

The above stage of the model reiterates the partnership between the academic and research institutions, and the private sector for a stronger infrastructure and educational system that encourages entrepreneurship, industrial revolutions, and fiscal sustainability leading to sustainable growth and development. This way the gap between EE and the practices can be minimized, and a strong EEP can be established. This means the curriculum and learning experience can be made more meaningful and realistic to produce entrepreneurial graduates with attributes leading to student startups quantitatively and qualitatively with a special thrust to viability. This can be achieved through some of the 'gap minimizing' measures that arise from collaboration with the external ecosystem like opportunities to network with role models, exposure to peers with startups, mentors and coaches, industry experts, dedicated support from successful entrepreneurs, the establishment of technology transfer units, and facilities for marketing and branding, well-developed incubator provisions, wider SME ecosystem assistance, liaison with government agencies and organizations especially for legal consultations and identifying regular funding sources. This gap can be minimized by some of the steps taken internally like the involvement of competent faculty and staff including sponsorship of financial and other resources, providing training facilities, labs, niches, equipment for testing/creating product samples, prototypes, entrepreneurship resource center, display facility-product & prototypes, utilizing the internal ecosystem-based network facilities, and funding from the university.

All these engagements in turn go a long way in firming up EEP and boosting the morale and enthusiasm of the students to make the most of their enriched learning experience resulting in the tapping of their entrepreneurial potential to the fullest.

Synergize:

The final stage of the EEP model proposes to find ways to reap the benefits of the combined efforts made in the first two stages of this model. This combined effect ought to be more than proportionate to the individual efforts taken. This synergy is an inevitable ingredient to realize a remodeled EEP which warrants the sustenance of these combined efforts. Hence this stage has been termed 'synergize'.

Therefore, universities/HEIs must make efforts to retain all the pooled contributions from the entities to materialize the synergy. This needs regular and dedicated reflections, monitoring, and follow-up.

The two components of 'synergize' are discussed below.

- *Confirmation of real-time experience*

In the second stage of the EEP model ways and means for constructive partnership with the external and internal ecosystem, and the gap reduction techniques between EE and its practices towards the establishment of a firmed-up EEP have been discussed.

The third stage of the model focuses on monitoring and follow-up of the planned strategies and measures taken to realize the partnership initiatives and gap reduction techniques.

Universities/HEIs need to make sure that students are making the most from the now available ecosystems presence and the consequent real-time experience which is the result of the synergy produced by the implemented strategies and measures. Synergizing is realized through regular and systematic monitoring and follow-up in terms of continued assurance of collaborative agreements, various project teams' qualitative sustenance, implementation strategy reviews, value creation and productivity evaluations, KPI appraisals, internal and external environment analysis, resource requirement appraisals, and impact studies.

The immediate outcome of this synergy will be that the renewed 'ecosystem' operates at the optimum efficiency level and therefore the conversion rate of the entrepreneurial intentions to realization will be phenomenal and will result in a viable and sustainable student startup.

This confirmation of the real-time experience that features in this component of the third stage of the model is destined to boost student startups, and scaling further beyond the university/HEIs horizon is well aligned in a wider context to the international cooperation and to the expectations of meeting the global demand as laid out in the priority and strategic direction of Oman Vision 2040 document (2040 Vision Oman, Vision Document).

In addition to this, this component of the model is aligned to UNSDG which aims to strengthen the means of implementation and revitalize the global partnership for sustainable development (United Nations: Department of Economic and Social Affairs, 2023).

- *It's no more universities, but rather 'ENTREVERSITIES.'*

Now that the discussion of the model has reached thus far, the researchers would like to come to the culminating point of the model furnished here. With all the elements of a new look EEP resulting in the creation of a state-of-the-art ecosystem with its cutting-edge features of global standards, international collaboration, and synergy, universities/HEIs can now be seen as 'micro industries' in themselves and cease to be addressed by the conventional term 'universities'.

Eventually, the Universities/HEIs are envisioned to be elevated to the status of unique entrepreneurial hubs.

To make this uniqueness more representative, the researchers would like to rechristen 'universities' as 'ENTREVERSITIES'. The power and impact of 'entreversities' will be so vibrant that it will bring a 360-degree change in the EE and practices (the new look EEP) to the extent that every entrepreneurial intention set will be transformed into a viable student start-up. Finally, the concept of 'entreversities' will have a visible and tangible local, regional, and global impact, completely rewriting the very concept of EE and practices.

4.   CONCLUSION:

The existing courses under entrepreneurship education (EE) and practices are highly valued by students, evident in the strong positive correlation between both the curricular and co-curricular programs. These findings endorse the visions outlined in the two key documents of 'Oman Vision 2040' and the UN document 'Transforming the World: The 2030 Agenda for Sustainable Development'. To continue making the entrepreneurial experiences more rewarding, the authors propose elevating the current EE and practices into a fully developed model, which they term EEP. This comprehensive EEP, featured by global benchmarks and international collaboration will contribute to a synergy within the University. Therefore, such a synergized approach must see universities evolving to '*entreversities.*'. These '*entreversities*' will then be a catalyzing force in boosting the morale and enthusiasm of the students to make the most of their enriched learning experience, and to convert their entrepreneurial intentions to viable start-ups. Through a series of such viable entrepreneurial ventures, which will contribute significantly to the local, regional, and global economies. This is vital for the diversification of their economy, fiscal sustainability, and accelerated economic growth and development.

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