Precess-oriented Algorithm Entrepreneurship Curriculum Design

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Abstract

Objectives: This study examines the views and entrepreneurship courses in the college of scholars at home and abroad for the entrepreneurship education through literature study, a survey based on the results. Methods/Analysis: This study measures the importance of individual subjects to a five-point scale to measure the importance of individual subjects, and second, individual subjects studied by measuring separately required, and to select the five major select each one. Findings: The commercialization of ideas is a virtuous tool to develop entrepreneurship and create economic foundation for this is acting as a key driver of the creative economy. The importance of entrepreneurship is and is growing, and also the number of school subjects to open entrepreneurship-related courses, but increased significantly, the design of the course; a combination of melting is insufficient process-centric reality. Application/Improvements: Subsequent research programs, including the operating linkage between curriculum content, organization of statistical research, subjects of entrepreneurship curriculum to complement the future if the survey is made even more likely to contribute to the systematization of entrepreneurship education.

1. Introduction

The creative economy has been characterized by ideas popularized commercialization. While the hardware device or vertices of the economic information became universal, creativity is the economic environment will have a competitive advantage. The commercialization of ideas is a virtuous tool to develop entrepreneurship and create economic foundation for this is acting as a key driver of the creative economy. These efforts should contribute to improving the quality of life by members of the economy, including the social and artistic values, etc. In addition to economic value\textsuperscript{12}. Convergence of creative thinking and planning has always emerged a lot of young people from the 20s. So entrepreneurship and entrepreneurship education of youth, culture and easy start-up led to some more talent in the way of new start-ups created by their products and services directly makes even a young and energetic economy\textsuperscript{3}. Such a wide range of system implementation and curriculum development to create a complete ecosystem with the economic situation is also very important. Systematic development of entrepreneurship education curriculum to promote convergence planning, complex thinking and creativity in the era of the creative economy is a top priority. Research on the development of process-oriented program to one based on theoretical and practical basis is required for convergence entrepreneurship education. This study examines the views and entrepreneurship courses in the college of

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scholars at home and abroad for the entrepreneurship education through literature study, a survey based on the results. Based on the results from the survey suggest a convergence of complex systems, entrepreneurship education curriculum.

### 2. Main Text

Start-up process can understand the Technology Entrepreneurship and Commercialization (TEC) and the establishment of a process-oriented training by comparing algorithms as shown in table 1. TEC Algorithm entrepreneurship education stage technology-product-market ideas based on science and technology as the basis of T-P-M, information gathering 1, two information collection, commercialization strategies, including commercialization execution consists of five steps. Undergo each step of the TEC proposed algorithm entrepreneurship education into entrepreneurship step decision-making and intellectual property through acquisition of additional development.

Such learning through repetition and practice, students can create more values of the three proposals, business model, and business strategy of their own that. Engineering students who have already studied their design, current account, you can cultivate the ability to commercialize the contents of such a comprehensive and humanities through an algorithm entrepreneurship education.

| Phase                        | Success courses          | Curriculum                                                                 |
|------------------------------|--------------------------|-----------------------------------------------------------------------------|
| The idea derived             | Founded preparation machine | Navigation and discovery of markets and technology, Creative techniques, Technical specifications, Product specification, Market Segments specification, Product Development |
| Step 1. Information Collection | Initial market          | Micro-macro understanding (technical, legal, market, organization, production, finance, etc.), Understanding the Information Economy, Strategic Management of Technology |
| Phase 2 Information gathering | Overcoming break         | Market Segmentation Product strategy analysis                               |
| Commercialization Strategy   | Early majority market    | Build a business model, Factor modification strategy                        |
| Commercialization Strategy Practice | Early majority market | Core assets, Complementary assets, configurations and practices established, Practice writing a business plan |
Based on the results of the university foundation courses operating linkage for the convergence curriculum is as follows:

Implications for entrepreneurship curriculum First, the literature and case studies entrepreneur competencies are more often than if acquired obtained a ride through the smoking, and therefore to the conclusion that the development of this important potential entrepreneurs through entrepreneurship education. Second, entrepreneurship education process should take this into account when developing school curricula on entrepreneurship and entrepreneurship education infrastructure, environment, entrepreneurship is very different. Note the programs of foreign universities, but a variety of programs and operations, and the phased introduction of a modified form considering the realities of domestic universities should be reviewed. Third, the need to secure a variety of programs for the development operations to a significant amount of time and effort to develop, utilize available training effect Improvement in the short term as many times as necessary until and educational content, research on systems that can be accumulated as foreign universities, in Korea Do.

Fourth, it is important to note that the operational programs to develop differentiated consideration of each school to have such competence in entrepreneurship education Analysis. Each school will leverage the strengths of its resources on major topics such as school founded by perspective, educational content, teaching methods, network, and support programs, major and minor system and program differentiation. Through a combination of interdisciplinary studies in conjunction with other programs, double major and minor structures, combined with major areas, it can be utilized as a way to increase academic acceptability and effects Do.

An implication for the operational linkages is first, there is a need for a process mainly due to the start-up step-by-step training module. Therefore, entrepreneurship education is needed to view this site practical training to validate expertise in the field and the market need for this step. Entrepreneurship courses is a series of steps to address the needs of potential consumers or inconvenience this process requires a module in entrepreneurship education by nature is not a step-by-step to get results in a short term training.

Second, entrepreneurship education is materialized through the constant practice. Experts, local industry, start-up support organizations for this purpose, and need active solidarity with the local authorities. With field trips and internships in connection with the local industry, students can enhance the realistic understanding. This connection can be a first step in training a real start-up process. In addition, entrepreneurship experts (consultants, accountants, lawyers, etc.), network support and entrepreneurship support organizations, local governments are supporting the necessary items for improving training effectiveness.

3. Discussion

3.1 Study Design

Study on the algorithm of the process-oriented entrepreneurship curriculum is reviewed through the statistic analysis with the survey. First, to compare the list of national and international university foundation study course curriculum Taxonomy and create a total of 38 world university course lists. Second, separating the courses that can be offered by the university curriculum as a common basis, the mandatory major and major course selection. Third, we present a step-by-step, algorithm-specific course. This study measures the importance of individual subjects to a five-point scale to measure the importance of individual subjects, and second, individual subjects studied by measuring separately required, and to select the five major select each one. Perform the start-up training and consulting services in the faculty that teaches entrepreneurship and production department and related subjects at university was constructed by professional consultants who are expert group. The expert group through the call in advance to explain the purpose of targeted surveys and questionnaires were sent out via e-mail. Out of 150 sent, 112 call were recovered, and the survey response rate was 74.6%.
3.2 Basic Statistics

Table 2 shows the statistics based on the importance of each subject. Overall, the basic foundation knowledge and practice related courses in entrepreneurship and management, entrepreneurship, business feasibility analysis; business plan was higher importance of such practices, marketing, and management Business Principles, and research methodologies such as Business Economics importance of basic skills, too higher.

Survey results indicate the fact that the show is giving the foundation and justification study metallurgy and fusion, complex subjects need, as well as a basic knowledge of business economics required for entrepreneurship education. We want to continue to show the close relationship linking the establishment of the Department of Business Economics Business Economics traditional school subjects and entrepreneurship in the algorithm process.

Table 2. Subject importance based on statistics

| Ranking | Subjects                    | Average | Standard Deviation |
|---------|-----------------------------|---------|--------------------|
| 1       | Entrepreneurship and Management | 4.85    | .721               |
| 2       | Entrepreneurship            | 4.73    | .719               |
| 3       | Feasibility Analysis        | 4.71    | .633               |
| 4       | Business Plan Working       | 4.69    | .766               |
| 5       | Venture Capital Management  | 4.65    | .731               |
| 6       | Research Methodology        | 4.62    | .866               |
| 7       | Marketing                   | 4.58    | .703               |
| 8       | Principles of Business Economics | 4.49   | .856               |
| 9       | Entrepreneur based law      | 4.37    | .936               |
| 10      | Founded resource/location   | 4.36    | .877               |
| 11      | Founded Finance/Accounting  | 4.34    | .939               |
| 12      | Valuation                   | 4.30    | .960               |
Table 2 Continued

|   | Creative Thinking and Organizational Leadership |   |   |
|---|-----------------------------------------------|---|---|
| 13|                                               | 4.29 | .822 |
| 14| Innovation Process Consulting                 | 4.27 | .897 |
| 15| Intellectual Property Law                     | 4.24 | .846 |
| 16| Commercialization Strategy                    | 4.18 | .921 |
| 17| Technology Commercialization                  | 4.15 | .852 |
| 18| Management of Technology                      | 4.12 | .839 |
| 19| Asset Economics                               | 4.10 | .866 |
| 20| Founded process                               | 4.09 | .987 |
| 21| Global entrepreneurship                        | 4.05 | .922 |
| 22| M&A                                           | 3.99 | .899 |
| 23| Case/Lecture                                  | 3.97 | .954 |
| 24| Commercial analysis/Site Selection            | 3.95 | .883 |
| 25| Funding                                       | 3.93 | .977 |
| 26| Design Practice                               | 3.87 | .821 |
| 27| Franchises                                    | 3.83 | .978 |
3.3 Subject Pedagogy And Critical Analysis

Table 3 is an analysis of the survey on teaching methods appropriate for the mandatory major courses and 10 courses that have opened such a need of 38 subjects. The subjects included the importance frequency is greater than or equal to 5 indicating the opinions of the experts to indicate a higher core subjects. By analyzing the frequency value, it was analyzed that the high need for entrepreneurship and management, entrepreneurship, business feasibility analysis, business plan working, venture capital management, including subjects such as entrepreneurship start-up finance/accounting should be opened with the required courses. In addition to entrepreneurship curriculum research methodology, marketing, Principles of Managerial Economics, and entrepreneurs based on laws that were to be included as a mandatory course.

|   |  |  |
|---|---|---|
| 28 | Strategic Management | 3.81 | .956 |
| 29 | Human Resources / Labor | 3.79 | .978 |
| 30 | Technology Strategy | 3.78 | .899 |
| 31 | Innovative thinking | 3.75 | .963 |
| 32 | Customers, Markets & Marketing(CMM) | 3.70 | .986 |
| 33 | Communication Strategy in Business | 3.69 | .921 |
| 34 | Consulting Methodology | 3.67 | .971 |
| 35 | Organizational Change Management | 3.62 | .967 |
| 36 | Capital market and IPO | 3.59 | .967 |
| 37 | Retail Management | 3.55 | .963 |
| 38 | Management of Small Business | 3.51 | .989 |
Table 3. Required Courses importance

| Ranking | Subjects                        | Fre | %     | Teaching Methods                                      |
|---------|---------------------------------|-----|-------|-------------------------------------------------------|
| 1       | Entrepreneurship Management     | 18  | 16.1  | Lecture &Case(13), Lecture(5)                         |
| 2       | Entrepreneurship                | 16  | 14.3  | Lecture &Case(13), Lecture(3)                         |
| 3       | Feasibility Analysis            | 13  | 11.6  | Lecture &Case &Practice(13)                           |
| 4       | Business Plan Working           | 11  | 9.8   | Lecture &Case &Practice(11)                           |
| 5       | Marketing                       | 10  | 8.9   | Lecture &Case &Practice(9), Lecture(1)                |
| 6       | Venture Capital Management      | 9   | 8.0   | Lecture &Case(9)                                     |
| 7       | Research Methodology            | 8   | 7.1   | Lecture &Case &Practice(9)                            |
| 8       | Principles of Business Economics| 6   | 5.3   | Lecture &Case(6)                                     |
| 9       | Entrepreneur based law          | 5   | 4.5   | Lecture &Case(5)                                     |
| 10      | Founded Finance/Accounting      | 5   | 3.6   | Lecture &Case(4)                                     |
|         | Others                          | 11  | 9.8   | Valuation(3), Leadership (2), Entrepreneurship Manager(2), Intellectual Property Law (2), Commercialization Strategy(2) |
|         | Total sum                       | 112 | 100   |                                                       |

There appears to be an emphasis on teaching methods that parallel the river, Case Study, practice, rather than one-sided lecture. Entrepreneurship education is actively raising the purposes of entrepreneurial activity, rather than just knowledge transfer, and to increase the success rate of entrepreneurship for training purposes. But in the teaching of entrepreneurship-oriented training with a purpose to increase the success rate of entrepreneurship teaching it is difficult to obtain the training effect. Therefore, domestic and foreign universities are trying to find an effective teaching method through experiments that utilize a variety of methods. Further teaching methods are also relevant to other factors affecting the class effect. That can be a variety of teaching methods, as well
as taking readiness and ability of the students to take their effect is therefore also vary such as teaching skills of faculty.

Table 4 is an analysis of the appropriate teaching and elective subjects 10 out of 38 subjects with established needs. Subjects included the frequency is greater than or equal to 5. By analyzing the frequency value electives valuation, creative thinking and organizational leadership, innovation, process consulting, commercialization strategies, intellectual property law, technology commercialization, to acquire the knowledge embodied in technology management, global entrepreneurship, M & A, examples/lectures, etc. emphasize subjects and showed that you can.

If this process and valuation, creative thinking and leadership, intellectual property law, including in the

### Table 4. The importance of the choice subjects

| Ranking | Subjects                                      | Fre | %    | Teaching Methods                                      |
|---------|-----------------------------------------------|-----|------|-------------------------------------------------------|
| 1       | Valuation                                     | 15  | 13.4 | Lecture & Case(12), Lecture(3)                        |
| 2       | Creative Thinking and Organizational Leadership| 14  | 12.5 | Lecture & Case & Practice(14)                         |
| 3       | Innovation Process Consulting                 | 13  | 11.6 | Lecture & Case & Practice(13)                         |
| 4       | Commercialization Strategy                    | 12  | 10.7 | Lecture & Case & Practice(12)                         |
| 5       | Intellectual Property Law                     | 11  | 9.8  | Lecture & Case(11)                                   |
| 6       | Technology Commercialization                  | 10  | 8.9  | Lecture & Case(10)                                   |
| 7       | Management of Technology                      | 9   | 8.0  | Lecture & Case(9)                                    |
| 8       | Global entrepreneurship                        | 7   | 6.2  | Lecture & Case(4)                                    |
| 9       | M&A                                           | 5   | 4.5  | Lecture & Case(5)                                    |
| 10      | Case/Lecture                                  | 5   | 4.5  | Case & Practice(5)                                   |
|         | Others                                        | 11  | 9.8  | Commercial analysis / Site Selection(2), Financing(2), Design Practice(2), Franchise(2), Strategic Management(1) |
|         | Total sum                                     | 112 | 100  |                                                       |
design being adopted by required courses, such courses must be shown that there is a need to be included in the elective. Thus it can be seen that such courses are very important subjects when designing a complex algorithm, convergence establishment process.

I've found that teaching is a parallel need a lecture, Case Study, practice, rather than one-sided lecture as required courses, the required courses was higher than the proportion of the Case Study, practice, etc. It is to emphasize the teaching of elective courses than Case, experiential learning exercises, such as compulsory subjects than the skill-related courses and specialized courses are sectoral analysis because it is a number.

4. Curriculum Design Direction

4.1 Basic Curriculum System

Will leave the joint foundation or major area or region subject, intensifying entrepreneurship courses based on developing consider the human and physical infrastructure of the school? Therefore, apply mutatis

| Division          | Entrepreneurship courses                                      | Business Economics courses                     | Sectoral subjects                                      | Didactics       |
|-------------------|--------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------|----------------|
| Co-based          | -Entrepreneurship and Management,                           | -Principles of Business Economics              | -Innovation Process                                    | Lecture        |
|                   | -Entrepreneurship,                                           | -Marketing                                     | Consulting                                             |                |
|                   | -Feasibility Analysis                                       | -Commercialization Strategy                    | Intellectual Property Law                              |                |
|                   | -Business Plan Working                                      | -Human Resources/Labor                         | Franchise                                               |                |
|                   |                                                               |                                                | -Communication                                        |                |
|                   |                                                               |                                                | Strategy in Business                                    |                |
|                   |                                                               |                                                | Technology Commercialization                             |                |
|                   |                                                               |                                                | -M&A                                                     |                |
|                   |                                                               |                                                | -Funding                                                |                |
|                   |                                                               |                                                | -Strategic Management                                   |                |
|                   |                                                               |                                                | -Capital Markets and IPO                                |                |
|                   |                                                               |                                                | -Innovative thinking                                    |                |
|                   |                                                               |                                                | Consulting Methodology                                   |                |
|                   |                                                               |                                                | -Entrepreneurial legal basis                             |                |
|                   |                                                               |                                                | -Start-up resources base                                 |                |
|                   |                                                               |                                                | -Start-up process                                        |                |
|                   |                                                               |                                                | -Selected commercial analysis and positioning            |                |
| Major Required    | -Venture Capital Management                                 | -Valuation                                     | -Communication Strategy in Business                     | Case Study     |
|                   | -Established Financial Accounting                            |                                                | Technology Commercialization                             |                |
|                   | -Creative Thinking and Organizational Leadership             |                                                | -M&A                                                     |                |
|                   |                                                               |                                                | -Funding                                                |                |
|                   |                                                               |                                                | -Strategic Management                                   |                |
|                   |                                                               |                                                | -Capital Markets and IPO                                |                |
|                   |                                                               |                                                | -Innovative thinking                                    |                |
|                   |                                                               |                                                | Consulting Methodology                                   |                |
| Select Course     | -Entrepreneurial legal basis                                 | -Management of Technology                      | -Design Practice                                        | Experiential   |
|                   | -Start-up resources base                                     | -M&A                                          | Innovative Thinking                                     | Learning       |
|                   | -Start-up process                                            | -Funding                                      | Consulting Methodology                                   |                |
|                   | -Selected commercial analysis and positioning                | -Strategic Management                          | -Innovative thinking                                    |                |
|                   |                                                               | -Capital Markets and IPO                       | Consulting Methodology                                   |                |
|                   |                                                               | -Innovative thinking                          | -Consulting Methodology                                  |                |
mutandis to the basic framework of the general university curriculum design and separated by a Table 5 and a joint basis, major required, as major selection.

4.2 Convergence Process, Entrepreneurship
The undergraduate university courses in entrepreneurship courses should be established to train potential entrepreneurs as shown in Table 6. Range of entrepreneurship courses should cover the establishment of a process-oriented curriculum that includes derived from the idea stage to the commercialization stage, as well as Start-up strategy. Namely entrepreneurship education in college should encompass the content of such property, which is the basic foundation of uncertainty and risk in the process, business management skills, and creativity/innovation.

Table 6. Convergence entrepreneurship curriculum

| Division          | The idea derived/Start-up based | 1-2 Step Information Collection/Start-up planning and Management | Commercialization Strategy and Action/New business strategy and commercialization |
|-------------------|---------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------|
| Risk Management   | -Feasibility Analysis           | -Start-up capital/location                                    | -Valuation                                                                     |
|                   | -Start-up finance/accounting    | -Funding                                                      | -Intellectual Property Law                                                     |
|                   |                                 |                                                               | -Capital Markets and IPO                                                       |
| Project Management| -Business Plan Working          | -Research Methodology                                         |                                                                                  |
|                   | -CMM                            | -Marketing                                                    |                                                                                  |
|                   |                                 | -Commercial analysis/Site Selection                           |                                                                                  |
| Leadership        | -Entrepreneurship               | -Creative Thinking and Organizational Leadership              | -Established Human Resources/Labor                                             |
| Innovation Strategy| -Established Business          | -Strategic Management                                         | -Communication Strategy in Business                                            |
|                   | -Venture Capital Management     | -Entrepreneurial legal basis                                  | -Organizational Change Management                                              |
|                   |                                 | -Innovation Process Consulting                                |                                                                                  |
| Virtual entrepreneurship |                                 |                                                               |                                                                                  |
5. Conclusions

The commercialization of ideas is a virtuous tool to develop entrepreneurship and create economic foundation for this is acting as a key driver of the creative economy. The importance of entrepreneurship is and is growing, and also the number of school subjects to open entrepreneurship-related courses, but increased significantly, the design of the course; a combination of melting is insufficient process-centric reality.

This study is significant convergence; it presented a survey based on a combination of statistical investigation process in entrepreneurship education curriculum for the professional group of experts who have insights into entrepreneurship studies. Subsequent research programs, including the operating linkage between curriculum content, organization of statistical research, subjects of entrepreneurship curriculum to complement the future if the survey is made even more likely to contribute to the systematization of entrepreneurship education.

6. Acknowledgments

This study was supported by research fund from Chosun University, 2016.

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