

Development of Social Market IT Competency Curriculum for Small Business

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Abstract

There is a need for a job culture of small businesses that can be sustained and grown. In particular, as the Fourth Industrial Revolution began, the productivity was maximized based on artificial intelligence technology, the boundaries between industries were blurred, and the importance of data utilization ability was highlighted. The ability of small business owners to utilize intelligent information technology is influencing the winning or losing of companies.

Accordingly, the following competencies and knowledge are required for small business owners in the digital commerce era. Understand and utilize the era of the 4th Industrial Revolution, intelligent information technology

In this study, we develop a curriculum to derive detailed capabilities based on IT competencies, media literacy, and creative convergence competencies, which are the core competencies of small businesses in the digital commerce era.

Keyword : Social Market, SNS Marketing, Open Market, Online Shopping, Analytics, Big Data

1. Introduction

The digital commerce of the G-20 has more than doubled in the last decade, The Internet Economy G20, BCG. Global e-commerce is expected to grow to \$ 4.1 trillion by 2020. The growth of digital commerce includes the development of ICT, the advancement of financial technology, the change of consumption method, and the reduction of transaction cost. According to the National Statistical Office, as of August 2018, online transactions accounted for about 22% of Korea's total retail business, surpassing those of hypermarkets and department stores. Domestic online shopping transactions amounted to 9.5 trillion won. Mobile shopping using smartphones, as of January 2019, amounted to KRW 6.81 trillion(27.7% year-on-year increase).

Mobile shopping accounted for 63.7%(Up 4.9% p year-on-year) of the total online shopping, and the volume and proportion of mobile shopping continued to rise [1]. In addition, there are a growing number of online shopping malls running offline stores. [Table 1] is Online transactions accounted.

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[Table 1] Online transactions accounted

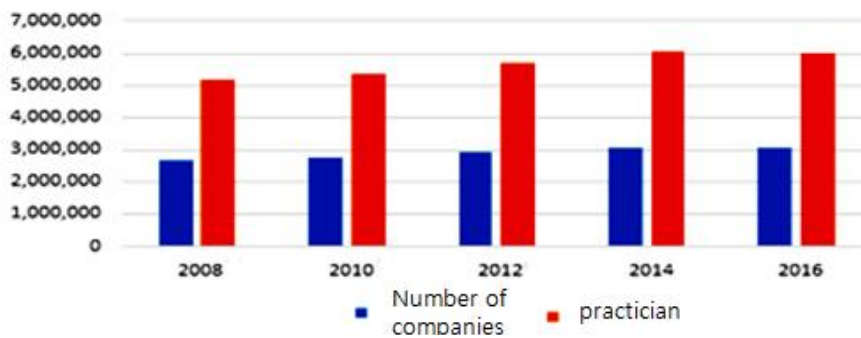
Business	online	big-Mart	Department store	Department store	traditional market	Convenience	Other	Total
weight(%)	21.8	17.9	10.4	10.0	7.84	6.65	25.4	100

The number of small business owners in Korea grew from 2,675,270 in 2008 to 3,072,104 in 2016, and the number of employees from 5,194,991 in 2008 to 6,008,534 in 2016, 14.8% and 15.7%, respectively [2]. [Fig. 1] is a picture of Mobile Shopping Growth Status Report.



[Fig. 1] Mobile Shopping Growth Status Report

As of 2016, the number of small business owners is about 3.07 million, which is 85% of the total companies, and the number of employees is about 6 million, which is 36% of the total employees. [Fig. 2] is a picture of Domestic small business trend. As such, small businesses have a large share of national and regional economies and are in charge of many employments.



[Fig. 2] Domestic small business trend

However, because of the small initial capital and easy start-up process, 57% of the small business owners failed to open the online store without special preparation. There is a need for a job culture of

small businesses that can be sustained and grown. In particular, as the Fourth Industrial Revolution began, the productivity was maximized based on artificial intelligence technology, the boundaries between industries were blurred, and the importance of data utilization ability was highlighted. The ability of small business owners to utilize intelligent information technology is influencing the winning or losing of companies [3].

Accordingly, the following competencies and knowledge are required for small business owners in the digital commerce era. Understand and utilize the era of the 4th Industrial Revolution, intelligent information technology (AI, IoT, Cloud Computing, Big Data, Mobile), media literacy to understand and utilize social media, and expand the market beyond the local business. In other words, it is the ability of creative convergence problem solving using ICT technology to discover the products desired by consumers and meet the demands [4].

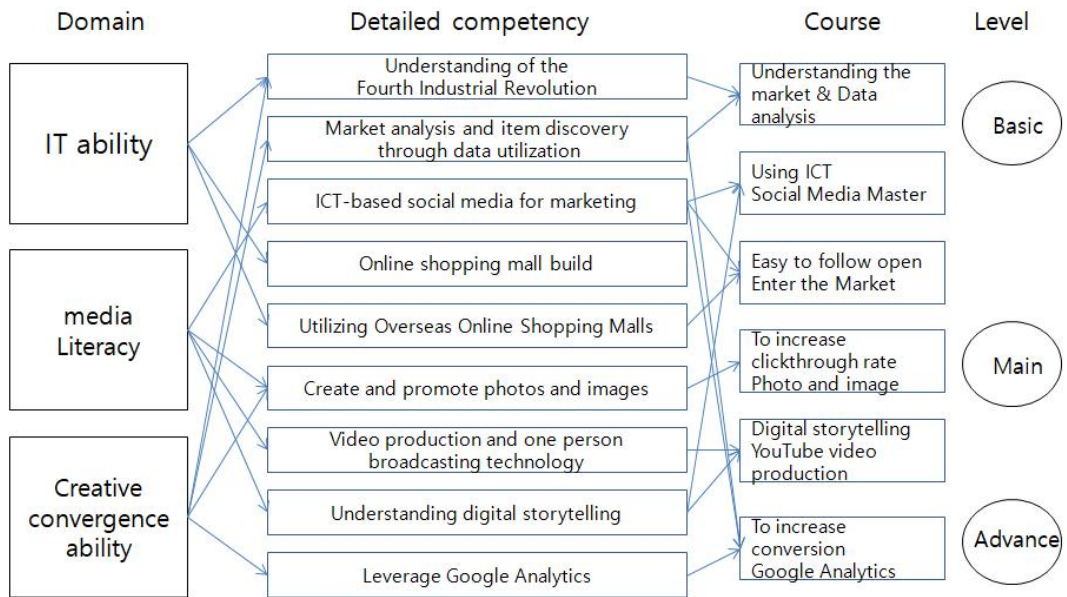
Currently, there are many programs focused on short-term attendance, and most of the free education provided by local governments is necessary for the start-up stage. In order to achieve short-term outcomes for educational demanders who lack knowledge of the learning path, a program designed in the form of a package with instructional design is required. Therefore, online education is more effective for small businesses because of time constraints and economic problems. Online education can maximize learning outcomes based on instructional design tailored to the subject, and can be distributed to many learners in the short term. If the government and local governments' small business support policies are classified by function, they can be classified into manpower, education, finance, innovation, technology, marketing, and infrastructure [5]. Manpower and education budgets are gradually increasing from 2014 to 2017, but it is hard to say that effective education is being provided to on-site users due to the limitation of attendance classes and contents [6].

The main subjects of study are about 450,000 small and medium-sized businesses in the two life cycles of the wholesale and retail industry, whose purpose is to reinforce the ICT competency required for their jobs. When smart stores are classified according to the age of the founders, those in their 30s are the largest with 36%, followed by those in their 20s with 34.3% [6]. The potential use is the strengthening of ICT capacity required for the jobs of about 1.8 million small business owners in the second life cycle. The average number of small business owners is 1.95, and voluntary education is difficult to expect because of the large proportion of the socially vulnerable [7].

In view of the share of small business in the national and regional economies, the increase in income from their capacity building is expected to have a positive impact on economic growth. Young entrepreneurs who are not able to raise capital have a positive effect on national statistics such as

increasing employment and decreasing unemployment. If small business owners 'ability to strengthen their exports from overseas markets and social markets increases, domestic consumers' profits from overseas fastballs will be offset. If small business owners 'ability to strengthen their exports from overseas markets and social markets increases, domestic consumers' profits from overseas fastballs will be offset.

In this study, we develop a curriculum to derive detailed capabilities based on IT competencies, media literacy, and creative convergence competencies, which are the core competencies of small businesses in the digital commerce era. [Fig. 3] is a picture of Curriculum composition.



[Fig. 3] Curriculum composition

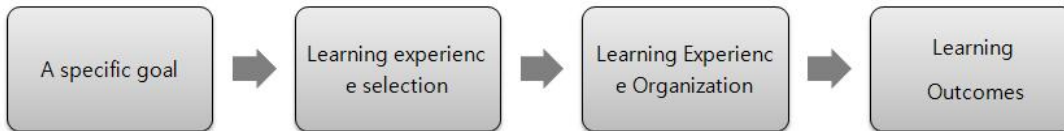
II. Curriculum Structure and Composition

2.1. Curriculum Development System

This study proposes a curriculum development system based on 'Tyler's curriculum development model'.

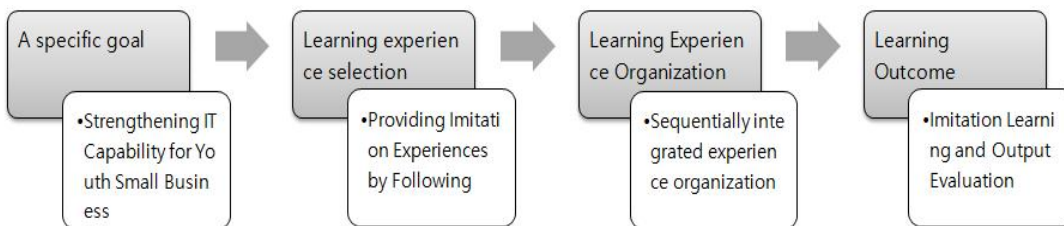
According to the survey on small business owners, “Six business owners, 67.6% of the start-ups, 7 out of 10 people are closed for a living. According to the Ministry of Small and Medium Venture Business, there is no other choice, and 68% of the small business owners are living. Only 25% of the

respondents answered 'because it's a good chance to succeed', and the average length of preparation for starting a business is 10 months. There are many small business owners. 74% of small business owners who experienced startups went out of business, with 31% being the most likely to be “low growth potential” and 21% to be the reason for “overcompetition among industries”. The average annual operating profit of small business owners was 32.3 million won in 2017, but 44% of small business owners said they had debt, and in 2017, the average debt reached 125.25 million won. [Fig. 4] is a picture of Tyler's Curriculum Development Model.



[Fig. 4] Tyler's Curriculum Development Model

As described above, the reality of small business is very dark, and the key keywords of the curriculum development system derived from the 'Tyler's curriculum development model' are as follows. [Fig. 5] is a picture of Key Keywords Based on Tyler's Curriculum Development Model.



[Fig. 5] Key Keywords Based on Tyler's Curriculum Development Model

First, the specific goal setting. We set specific goals that reflect the education target and the necessary competencies of 'cultivating social media IT professionals through strengthening the capabilities of young and small business. Selection of learning experiences provides learners with opportunities and experiences to develop IT skills. It provides an opportunity for imitation experiences for learners to try out by themselves through the “follow-up” process. The curriculum is organized in the order of 'basic → core → deepening', and provides learners with the experience of creating one product for each subject to feel a sense of accomplishment. Community-based interactions and interactions provide learners in the same curriculum to work together online.

Second is the organization of learning experiences. Basically, video lectures are provided for

continuous and repeatable learning. In order for the learners to understand the order in which the subjects should be taken, the 'Basic → Core → Intensive' stage can be intuitively understood. Complete all six individual courses in sequence to gain an integrated experience.

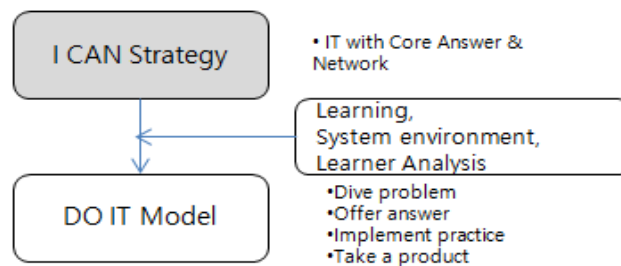
Third is the evaluation of learning outcomes. This is an area evaluating whether the learning objectives for each subject have been achieved. The quiz is used to evaluate the understanding of the contents of each parking. In addition, through imitation learning, assess whether the following is actually done. The evaluation elements are clearly presented for each subject and reflected in the evaluation, and the output is generated through the curriculum and evaluated.

2.2. Development strategy

This study derives and proposes “I CAN strategy” as a curriculum development strategy.

'I CAN Strategy' is a structural modeling to develop the actual curriculum before the 'DO IT Model', a teaching and learning model, which will be described later. [Fig. 6] is a picture of I CAN Strategy concept.

- ① IT with : Leverage IT
- ② Core Answer : To the core
- ③ Network : Solve through communication with the network



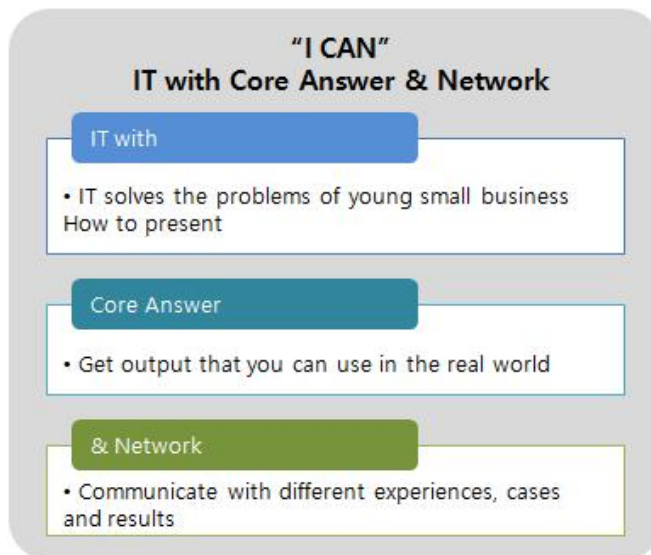
[Fig. 6] I CAN Strategy concept

In order to develop the curriculum of this study, we analyzed the problems of young business people in advance. As a result, the most important issues among young business people are as follows. Based on the lack of basic IT skills of small business owners, they did not actually organize their products systematically, but intuition or temporary measures. There are the following problems in the learning of small businesses. There is no way to answer questions about the blockage, and there is no communication window with peers, seniors and junior competitors who are in a similar situation, and they cannot confirm the specific success stories of young business owners. Based on these problems, the

curriculum development strategy of this study was derived as “I CAN strategy”. [Fig. 7] is a picture of I CAN Strategy Derivation Result. [Table 2] is “I CAN strategy”.

[Table 2] I CAN strategy

I (IT)	C (Core)	A (Answer)	N (Network)
- Take advantage of IT tools and media literacy	- Mention most important contents for young small business	- Suggest a solution to the blockage	- Induce interaction - Provide conversation path



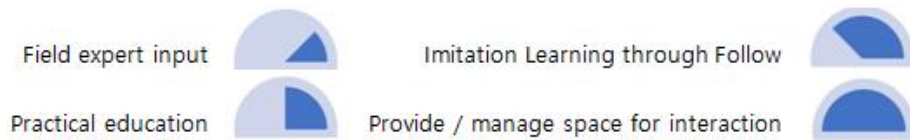
[Fig. 7] I CAN Strategy Derivation Result

This research uses 'I CAN strategy' as the basic development strategy, and the details of the development strategy based on 'I CAN strategy' are as follows.

- Create outputs for each subject, create outputs for the entire curriculum
- Active use of IT (use of technology and tools)
- produce real-world results
- Community management and social media use for communication

2.3. Development method

This study developed the actual curriculum using the following methods as the basic development strategy based on the “I CAN strategy” described above. [Fig. 8] is a picture of Development method concept.



[Fig. 8] Development method concept

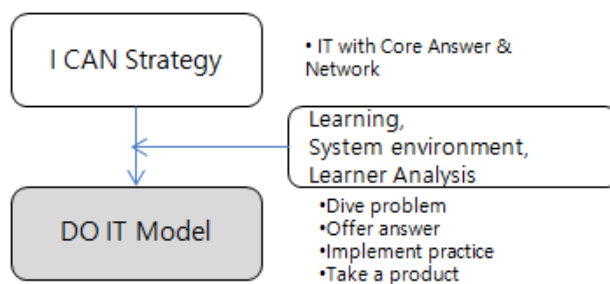
Imitation is the most basic teaching method in IT education. You can immediately check the contents of the lesson through hands-on practice and submit assignments based on the contents of the exercises. Images and exercises were organized to follow the defined problem-solving procedures and methods. The procedures and methods learned through the imitation were applied to the proposed application situation and submitted for assignment. By comparing and confirming the submitted assignments, it is possible to induce the internalization of the learning contents and to apply it to individual situations and problems, thereby improving the practical application ability of the field. The provision and management of space for interaction constitutes a community by rider through bulletin boards and cafes. It provides tools and formats for text interaction and utilizes a management portal such as Facebook.

2.4. Teaching learning model

As a teaching-learning model to be applied to the content class, this study derives and proposes a 'DO IT model' as follows. [Fig. 9] is a picture of DO IT model concept.

'DO IT Model' is a structural modeling to implement the 'I CAN Strategy' and method described above in the form of concrete content class.

- ① Dive : Jumping into the real problem
- ② Offer : Providing solutions to problems with IT
- ③ Implement : Practice and run
- ④ Take : Take output



[Fig. 9] DO IT model concept

The procedure for deriving the DO IT model is shown below. [Fig. 10] is a picture of DO IT Model Derivation Process Diagram.



[Fig. 10] DO IT Model Derivation Process Diagram

In order to implement the “I CAN development strategy” set in this study, there are environmental constraints that must be overcome. Among them, the most important constraints are the large number of learners and the diversity of learners. In addition, there is a limit to the use of interactive learning activities in which professors intervene.

Based on the “Key Point” described above, this study derives the teaching and learning model as “DO IT”. [Table 3] is learning model as “DO IT”.

[Table 3] learning model as “DO IT”

D (Dive problem)	O (Offer answer)	I (Implement practice)	T (Take a product)
<ul style="list-style-type: none"> - Context, context of common issues and examples - Motivation, induce attention 	<ul style="list-style-type: none"> - Present IT solution - Ideas, concepts presented 	<ul style="list-style-type: none"> - Based on the calculation result form the information presented - Imitation induction 	<ul style="list-style-type: none"> - Induce output application, mutual communication - Transition, application induction

III. Educational content development

The core IT learning tools that will be the basis for instructional design strategy and design are defined in the following table. [Table 4] Define teaching design strategies and core learning tools by subject.

[Table 4] Define teaching design strategies and core learning tools by subject

Content Name	Instructional Strategies by Content and Core IT Learning Tools
Common design strategy	<div style="text-align: center;"> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">Dive Problem</div> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Offer Answer</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Implement Practice</div> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Take a Product</div> </div> </div>
To understand the market Data analysis	<div style="text-align: center;"> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">D How will you read the market?</div> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">O Read the market through data analysis</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">I Mimic how to use data analysis tools</div> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">T Use cases of the youth actually successful</div> </div> <p style="text-align: center; margin-top: 10px;">☞ IT Learning tool : Excel, VBA(Visual Basic for Application)</p> </div>
Using ICT Social Media Master	<div style="text-align: center;"> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">D Trading on SNS?</div> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">O SNS Exposure Mechanisms and Methods</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">I Configure and follow SNS for the target</div> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">T Applying technology to make money with SNS</div> </div> <p style="text-align: center; margin-top: 10px;">☞ IT Learning tool : Social Media Management Program, SNS</p> </div>
Easy to follow Entering the Open Market	<div style="text-align: center;"> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">D The online mall is hard</div> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">O Smart Store Entry, Procedure</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">I Enter, operate and manage your smart store</div> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">T Bring success to your powerseller</div> </div> <p style="text-align: center; margin-top: 10px;">☞IT Learning tool : Naver smartstore</p> </div>
To increase clickthrough rate (CTR) Photo and image creation	<div style="text-align: center;"> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">D What photos are our customers attracted to?</div> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">O Detailed method of deriving branding concept</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">I Design of Business Models, Controls, and Information Structures</div> <div style="font-size: 24px;">→</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">T Get customer testimonials from SNS such as bands and Facebook</div> </div> <p style="text-align: center; margin-top: 10px;">☞ IT Learning tool : Photoshop, Powerpoint</p> </div>

<p>Digital storytelling and YouTube video production</p>	<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 20%; padding: 5px;">D</td> <td style="width: 60%; padding: 5px;">What's a good movie or drama these days?</td> <td style="width: 20%; padding: 5px;">→</td> <td style="width: 20%; padding: 5px;">O</td> <td style="width: 60%; padding: 5px;">Present story features that people can immerse</td> </tr> <tr> <td style="padding: 5px;">→</td> <td style="padding: 5px;">I</td> <td style="padding: 5px;">Anyone can make it, but no one can make it</td> <td style="padding: 5px;">→</td> <td style="padding: 5px;">T</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="padding: 5px;">I'm a Youtuber with a story now!</td> </tr> </table> <p>☞ IT Learning tool : smartphone, Video editing app</p>	D	What's a good movie or drama these days?	→	O	Present story features that people can immerse	→	I	Anyone can make it, but no one can make it	→	T					I'm a Youtuber with a story now!
D	What's a good movie or drama these days?	→	O	Present story features that people can immerse												
→	I	Anyone can make it, but no one can make it	→	T												
				I'm a Youtuber with a story now!												
<p>Leverage Google (Google Analytics) to increase conversions</p>	<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 20%; padding: 5px;">D</td> <td style="width: 60%; padding: 5px;">"Why are my customers ...?"</td> <td style="width: 20%; padding: 5px;">→</td> <td style="width: 20%; padding: 5px;">O</td> <td style="width: 60%; padding: 5px;">Present necessary tools and methods for each situation</td> </tr> <tr> <td style="padding: 5px;">→</td> <td style="padding: 5px;">I</td> <td style="padding: 5px;">Learn and mimic how tools work with menus and analysis types</td> <td style="padding: 5px;">→</td> <td style="padding: 5px;">T</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="padding: 5px;">"How are your customers?" Application and practice</td> </tr> </table> <p>☞ IT Learning tool : Google Analytics</p>	D	"Why are my customers ...?"	→	O	Present necessary tools and methods for each situation	→	I	Learn and mimic how tools work with menus and analysis types	→	T					"How are your customers?" Application and practice
D	"Why are my customers ...?"	→	O	Present necessary tools and methods for each situation												
→	I	Learn and mimic how tools work with menus and analysis types	→	T												
				"How are your customers?" Application and practice												

The motivational strategies to be applied in carrying out this project are as follows. The purpose of this study is to enhance the motivation of learning for adult learners of various ages and levels by applying the 'Dive Problem' strategy to each content. [Table 5] is Dive problem strategy.

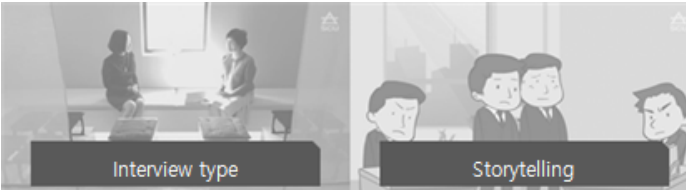


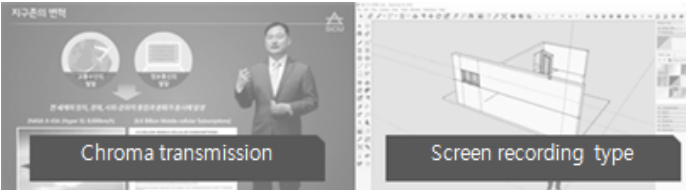
[Table 5] Dive problem strategy

<p>Adult Learner Features</p> <p>☑ Adult learners have the strongest motivation to learn when their learning is consistent with their concerns</p>	<p>→</p> <p>Things to consider</p> <p>☑ The existence learners with different levels and issues</p> <p>☑ Difficulties in Matching Problems</p> <p>→</p>	<p>Motivation Strategies</p> <p>☑ Use field experts to identify possible key and common problems</p> <p>☑ Promote personalization of problems by presenting universal questions and concerns</p>
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This study has a common structure by the 'DO IT' model. The content UI and design strategy to be applied are derived as shown below. The content area can be operated within the KOCW LMS page without displaying a separate content popup. If you open a separate pop-up, the window size is fixed, so it may be a barrier because the screen size is not adjusted in future mobile services. Video navigation in the order D → O → I → T allows the learner to go directly to the desired part. Provide the URL for the learning extension in the content for each parking. The 'DO IT' model is characterized

by a different context of the content to be delivered in each area. Therefore, the media design strategy for each content to be applied to this curriculum is as follows. [Table 6] is Media design strategy.

[Table 6] Media design strategy

Division	Major Media Design Strategy	
Fact (case)	<ul style="list-style-type: none"> • Transfer of facts • communication of problems • Pass the case 	
Concept (definition)	<ul style="list-style-type: none"> • Define problem by unit, deliver solution 	
Imitation (Procedure)	<ul style="list-style-type: none"> • Deliver comprehensive troubleshooting procedures 	
Principle (Guide)	<ul style="list-style-type: none"> • Recall the principle of problem solving • Provide guide 	

IV. Conclusion

The expected effects of the empowerment of the curriculum learners proposed in this study are as follows.

First, the learner curriculum of the company to expand its market in the horizontal conversion simple subsistence to small business after completion of the 4th Industrial Revolution technology and commercial areas across the alley to the understanding of the online commercial environment, and even the global commercial area is expected.

Second, you can increase your profits by expanding your stores online and discovering new items.

Third, the 4th Industrial Revolution-based intelligent information technology and media literacy will be

cultivated, and the profits will be improved by discovering, promoting and selling products that meet the needs of consumers. To take advantage of social media and promotional items are available and can be ipjeom shops in the domestic open market and a social market. It is also possible to shoot video and edit can be made for taking pictures and detailed design of the product page and posting sales of products in order to increase sales. It is possible to promote and market by using various SNS channels and one-person broadcasting.

Fourth, effective marketing to predict demand, reduce inventory, and increase sales through the acquisition of techniques to analyze and plan based on data. Big data analysis enables market analysis and proper item selection. Visitor analysis and sales increase are possible using Google Analytics.

References

- [1] M. H. CHA, "Study of the Role of Brand Voice in the Corporate Blog Management", *Journal of Next-generation Convergence Information Services Technology*, vol. 6, no 2, December 2017, pp. 1-9, doi: 10.29056/jncist.2017.12.01.
- [2] H. Ma, G. Shen, M. Ched and J. Zhang, "Technologies based on Cloud Computing Technology", *International Conference SoftTech 2015*, April 23-25, 2015, Suzhou, China, pp. 1-5, doi: 10.14257/astl.2015.82.01.
- [3] R. Pragaladan and M. Leelavathi, "A Study of Mobile Cloud Computing And Challenges", *International Journal of Advanced Research in Computer and Communication Engineering*, vol. 3, issue. 7, July 2014, pp. 7468-7472.
- [4] D. U. Cho, "Usage Analysis of Swearing Words on Web Board and Proposal of Problems Resolution Method", *The Journal of the Korea Contents Association*, vol. 3, No. 4, December 2013, pp. 1-10.
- [5] T. Mikolov, K. Chen, G. Corrado and J. Dean, "Efficient Estimation of Word Representations in Vector Space", *International Conference on Learning Representations 2013*, May 2-4, 2013, Scottsdale, AZ, USA.
- [6] A. M. S. Zunaitha Sultana, L. Clara Mary and A. Sangeetha, "Swot Analysis of Mobile Cloud Computing", *International Journal of Scientific and Research Publications*, vol. 3, issue. 8, August 2013, pp. 1-4.
- [7] N. Durlach and M. Slater, "Presence in Shared Virtual Environments and Virtual Togetherness", *Presence: Teleoperators and Virtual Environments*, vol. 9, issue. 2, April 2000, pp. 214-217, doi: 10.1162/105474600566736.