

## 학습부진 대학생의 학습역량강화를 위한 교육 프로그램 모델 및 콘텐츠 설계

노선혜<sup>1</sup> · 김경화<sup>2\*</sup><sup>1</sup>한국해양대학교 교수학습지원센터, <sup>2</sup>한국해양대학교 교직과

### A Model and Contents for Competency Enhancement Education Program of Underachieving College Students

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#### [요 약]

본 연구는 학습부진 대학생들의 학습역량강화를 위한 교육 프로그램 모델과 콘텐츠를 설계하는 데 목적이 있다. 이를 위하여 첫째, 학습부진 대학생 관련 선행연구를 고찰하고, 현재 대학에서 학업부진학생들을 위해 지원되고 있는 프로그램 현황에 대해 분석하였다. 둘째, 지방소재 K대학의 다단계, 양방향 접근식 학사경고 학생관리시스템을 기초로 사례연구를 실시하여 총체적 접근관점에서 학습부진 극복을 위한 프로그램 설계의 방향성을 도출하였다. 셋째, 자기주도적 완전학습을 지향하는 학습부진 학생 대상 교육 프로그램의 모델 및 콘텐츠를 설계하였다. 본 연구의 결과는 각 대학에서 학습위기에 처한 학생들을 위한 교육 프로그램 콘텐츠 개발에 도움을 줄 것으로 기대된다.

#### [Abstract]

The purpose of this study is to design an educational model and its contents for academically challenged undergraduates who need to sharpen their learning skills and competencies, develop in-depth knowledge of their field of studies, and be equipped with the required learning in general education. First, to accomplish such skills, we examined the review of literatures on academic probation students closely and also, under their prescribed programs, on what factors and consequences applicable to improve academic competencies. Secondly, by conducting a case study of a provincial K. public university, we learned that it has been managed a multifaceted, bi-directional approach of the monitoring students-at-risks to provide better academic service, yet required to offer more holistic approach to learning programs in order for them to lay the foundations to become better students. Thirdly, we present a design of an model and contents for them not only to overcome academic probations but to gear toward establishing self-directed, masters of life-long learning. We, then, suggest implementations on translucent contents for providing academic services that include learning consultation, application based synthesized learning system, peer-tutoring program, learning community, all of with which directed to formulate upward spiral of learning experiences until establishing the learning mastery.

**색인어** : 학습부진 대학생, 학습역량 교육프로그램, 학습역량 교육콘텐츠, 자기주도 학습경험, 완전학습모델

**Key word** : Underachieving college students, Learning competency education program, Academic contents to enhance learning, Self-reliant learning experience, A model of learning mastery

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## I . Introduction

In recent years, higher education institutions have received various assessments, and the need to enhance their competitiveness and effective quality management has been stronger than ever. One of the issues is the quality management of university students' learning outcomes[1, 2]. Research and development(R&D) program in universities came up with measures to support students with academic probation and lower than average performance[3]. They focus on preventing the students from academic probation and improving the condition of their learning environment, the quality of student life in terms of the preparation of institutional evaluations. With the increasing interest and support for this purpose, students' academic performance has emerged as an important concern in relation to their educational achievements[4]. The university has been strengthening support to improve students' academic performance through the implementation of various systems that reduce the rate of the under-achievers or drop-outs.

The preventative measures of academic probation, which is an important reason for the dropout rate of university students, was actively carried out by focusing on academic guidance and student management items/domains through basic competency assessment in the college accreditation assessment[3]. Since 2011, the university's institutional assessment certification standards have included measures for students with academic probation in the lower part of the academic management criteria[5], and the university's interest in management and support for the undergraduates has increased. An important implication of the development of support programs for them is to identify important variables related to educational support system and to seek concrete/tangible measures for educational intervention by exploring suitable education enhancement support programs for them.

School-led management to support for these under-performing students, and students of academic probation, puts emphasis on their unsatisfactory academic performance into academic satisfaction, and the operation of academic counseling programs has also focused on short-term external rewards of grading rather than on promoting internal motivation. Academically challenged students will have to lay the groundwork for self-directed learners to continue to perform autonomous learning activities through basic learning competency programs as well as external rewards. Therefore, education models that enhance the basic education competency of underachieving students need to be operated in conjunction with the overall student learning capacity enhancement

program model by checking the basic learning enhancement system through comparison and education programs. This is because individual students with academically challenged learning capacity understand the contents of the class and provide a theoretical basis for the basic learning enhancement program to improve their performance. With this connection, students will participate in a sense of continuum as well as ownership of the learning community and development. It is important task for underachieving students and for those who have difficulties in continuing their studies to establish learning management of their studies. The recent emphasis on competency-based education and on-going discussions of self-reliant learning in higher education is in line with the students' conscious awareness and active participation to amend education programs for the future rather than let these students playing the role of passive educational recipients.

The students also are able to set specific academic goals and objectives that enable them to be active participants in competency education provided by the schools. This suggestion directs not only intend to overcome their under-performance, but also provide sequential and step-by-step education programs. This enables them to know the practice specifically what and how students' academic activities to take place in university life. The future plan for mid- or long-term evaluation, schools need models of holistic education programs to realize the social accountability of university and the resilience of learning effects.

This study suggest an education model and its contents that support students under academic probation or students academically at-risks to improve and establish their basic learning skills and academic requirements. To delineate research questions, we conducted the review of literature on education programs on under-performing students' academic probation. Then, a case study of K. University located in Busan has been conducted to understand the characteristics and learning effectiveness of students in the academic probation. Based on this, research question were formulated as the following: First, Under what circumstances does the university management system for underachieving students has been operated? Second, what would be an ideal model of self-directed mastery learning program for underachieving students? Third, how should the academic competency program contents for underachieving university students be design?

## II . A Review of Literature

Academic probation, resulting from underachieving performance, is a warning to students who fail to meet the minimum required grading point set by each university[6]. Academic probation warning is usually intend to inform students of the minimum academic achievement and to help them to overcome their performance predicament if they fail to meet the set standards[7].

However, studies show that the academic warning system is not conducive to improving students' academic performance and adaptation to college life, even though it was designed to encourage them to do so [8, 9]. In this context, the reality of the academic probation, which has limited application to academic management, and the lack of students' academic performance improvement to overcome the probation. Therefore, overarching yet specific, if not prescribed, programs are needed for these students with the understanding of their reasons for dropping-out.

Students with academic probation have usually corresponding complications as they experienced low academic performance. Looking at the major variables that affect the academic background, learning motivation, interpersonal skills, and high school grades, etc[10, 11]. This means that academic probation undergraduates were found to have low academic motivation, lack the skills of interaction with peers and their seniors, professors. In particular, these students have lower self-efficacy, lack of learning strategy, lower satisfaction in their field of study and school life than those with higher academic performance[10, 12].

The lack of academic motivation, of efforts to cope with university life, and of support systems can be attributed to the academic probation[8, 13]. These factors are deeply related to university life adaptations and are highly correlated with the academic performance of university students. Compared with honors students, students with the probation are proven to be seen relatively low performance in terms of motivation, major satisfaction, learning skills and time management, and self-regulation ability. In addition, low motivation to study, low self-efficiency and attitude, lower economic background are characteristics of academic probation students [2, 14].

Studies that have developed and verified the effectiveness of improving academic probation students' performance focused on learning community program, resilience programs, learning capacity improvement programs, coaching programs, self-discovery programs, peer mentoring, and self-directed learning programs[6,15]. These programs evaluate variables such as academic performance, self-directed learning ability, self-efficacy, learning resilience, and career design in preparation for the program efficiency of each university's designated

learning support program[16], [20]-[22].

According to a study that tested the effectiveness of applying self-directed learning programs to prevent college students from being dropping out of school[16]-[21], participating university students reported improved self-directed learning skills, goal oriented planning and execution skills, and emotional self-control abilities.

In previous studies indicates the factors like students' affiliation and their history of school life are related to the characteristics of university drop-outs and academic probation[23,24]. In the study, which explored the preventability of the future dropping out students, the academic probation prediction model was explored by collecting and analyzing students' data accumulated in the university's LMS and Academic Affairs, and admission office so that they could be predicted early from a learning analysis perspective and prevented in advance through educational intervention.

Especially the students showed the less functional in the area of students' previous class register directory, indicating that factor alone can be a crucial characteristics of academic probation[25, 28,29]. There is a study of general information on learning as a characteristic of a students' college class[26] regarding the academic characteristics of college dropouts and academic probation. Despite the dissatisfaction with major and having difficulties in adopting to the university learning environment, which is different from that of high school, students with academic probation received less support that is not sufficient to amend the probation[15]. Among other university-related characteristics, it is possible to predict the number of college-related students depending on the students' school year. In other words, the study found that the higher the number of classes, the higher the degree of college life, and the higher the degree of academic performance[26], the more likely the semester is belong to the group of academic probations. Since freshmen with relatively low level of college life can be considered highly likely, this suggests that active intervention and support system at the university level need to be concentrated in lower grades. In addition, it is necessary to provide guidance on the educational environment of universities that are different from that of high school education and programs that enable them to adapt to new learning methods, etc.[27].

In recent years, it has been suggested that universities should focus on analyzing, predicting, mediating and assessing the learning situation of under-performing students who have difficulty learning to predict future performance or to identify potential problems in advance and provide students with immediate and individualized educational opportunities[27]. In

the same way as learning analytics, it can also be significant to seek out and take proactive treatment for undergraduates and under-achieving students. However, in order to enable them to achieve educational attainment beyond the forecasting modeling of academic probation, underachieving students should develop self-directed learning plans and put them to practice learning about their self-directed learning performance.

As we have seen above, it can be seen that an integrated and organic support system is needed to develop the academic competencies of underachieving students. This will enable practical academic circulation links to put underachieving students on the track to self-directed learning. This is in line with the direction of the underachieving student educational model that intends for mastery of learning in this study.

### III. Case Study

To identify the current status of the programs for students with poor academic records and to identify the conditions and problems of them at a more in-depth level, we have analyzed the operating cases of K. university located in Busan. Through the process, the direction of development of more realistic and applicable education model and contents were established.

#### 3-1. A Support System for Students of Academic Probation Program Status

In most universities, counseling and education programs aimed at enhancing the learning strategies and skills of undergraduate academic probation have been implemented for the purpose of “development and evaluation of intervention programs” since the cause of the academic probation were identified. These programs focus on time management, setting learning goals, self-directed learning strategies, understanding learning styles, academic guidance, overcoming test anxiety, and strengthening writing skills[15]. Focusing on students’ career counseling content and psychological characteristics, these programs focus on enhancing self-determination, self-control, self-esteem, motivation, and stress response. Personalized intervention programs for individual students are operated under such programs as group counselling, orientation for freshmen, and courses related to learning strategies[15].

Universities in the U.S. require undergraduate college students to participate in programs, requiring small groups or one-to-one programs to acquire learning strategies and skills, while Korean universities’ programs are being conducted with learning motivation improvement programs, self-discovery

programs, self-determination and stress control programs, resilience improvement programs, and self-directed learning skills[16], according to the diagnosis of the causes of poor learning among college students. This tendency was aimed at addressing academic probation or under-performance by focusing on counseling rather than learning, as the understanding and approach for under-performing students at local universities was conducted mainly by certain departments, such as the University Counseling Center or Center for Teaching and Learning, in the early 2000s. Recently, the number of programs that various departments of universities are in charge of problem-by-problem linking has increased, and the trend is to pursue growth programs that enhance learning flexibility and link students to employment and graduation so that the purpose of the program can be transformed into self-directed learners rather than just to overcome academic warnings[16]. The college-led education support program for students with academic probation is a must for students to participate in the program voluntarily because it has limitations in operating as a comparative program. To this end, students who are experiencing poor academic performance must come up with specific education support programs to overcome academic difficulties and operate them more easily to participate.

For Gangnam University, a three-stage ABA-Learning program is in operation to provide multi-tiered learning support to students’ needs and levels[30]. Based on the three-step learning support model of ALL, Before, and After, the program provide preventive education for under-achieving students and intensive education for those in academic probation. In the case of Korean Institute of Industrial Technology, with the intention of focusing solely on engineering knowledge-base, the school has implemented the Creative Project-based Community of Practice(namely, CP-CoP), starting in 2017 to derive operational performance internally and externally[31]. The CP-CoP activities are meaningful in that project-based learning activities are developed by expert feedback in each major activity leading to planning presentations, study seminars, intermediate presentations, result presentations, and exhibitions, and by actually producing knowledge learned through proper monitoring and theory of the sluggish team through creative study seminars and exhibitions. Catholic universities have customized programs for under-performing students by categorizing the characteristics of underachieving students[32], in the case of students with academic probation, the overall academic activity level is low and undergraduates lack an understanding of effective study strategies, while re-entering students have high motivation for studying, but are under pressure to adapt to school life, so they are identified in detail

by dividing their characteristics[33].

As examining the universities under-performing student support programs, some schools have already established a continuous management system by assigning them to a group of students within the model of the programs for all students. While most of the learning support programs are customized for granularity, however, there are not many cases of intensive preventive care system like Gangnam University. In order to make a self-directed learning project beyond the preliminary measure of academic probation, students need to guide into practice, an integrated and holistic, not to mention, preventative, model of education needs to be presented.

### 3-2. A Case Study of K. University

The reason why K university was chosen as the subject of case studies in this study is because it is possible to analyze the reflective view based on the researchers' operational experience. Since 2010, about 6 percent or less of K. university students have been determined academic probation, and the dropout rate is about 3 to 4 percent due to academic leave or discharge. The analysis of academic probation management system that operated in K. University in the first semester of the 2019 academic calendar year is as follows.

At first, diagnosis phase is initiated by the meeting with Faculty(department) academic guidance consultation. It is required for students with academic probation to have a academic guidance meeting with their respective academic advisor in the department. This is set for a mandatory meeting which participated 97.7 percent turnouts. According to the result of guidance meetings, the data analysis informed that the reasons for the under-achievement were "unfit for aptitude," "difference in learning difficulty," "school transfer preparation," "home-bound personal problems" and "small business preparation." After consulting with their academic advisory faculty, the preparation rate of professional counseling and tutoring programs offered by the university was relatively low at 33 percent. In particular, it was found that 67 percent of programs designated as "others(reasons)," which was not specified at all, therefore, make them less suitable for program matching.

Second, consulting management phase, namely Academic Counseling Program, is usually followed by departmental interviews with the students. But, with reasons such as low attendance records, minimal contact, no appearance after scheduled appointment, and refusal to receive further consultation, academic counseling program participation conducted by professional counsellors was low. Such the consultation program is operated for 10 sessions, participating students are required to complete a total of 10 sessions of counseling, but none of the courses have been completed.

Third is a management of learning monitoring phase. The alternative options for students with probation is peer tutoring program. The participation rate of the tutoring program was 21.1 percent, but the reason for non-participation was due to a leave of school or refusal to respond. Among the students who received two consecutive academic probations except for four students on leave, four students who took part in the study support program, the study-aid program, improved their grades by 72.4 percent compared to the previous semester.

The analysis of the implications of the operating case of K. University is as follows.

First, the structural education support system through appropriate learning support should be established and continued follow-up support should be provided to prevent students from dropping out of school and improve their motivation for learning underachieving students. The reality of Korean universities is that students who have been given leave of absence and transfer do not have the basis to strengthen their insufficient learning capacity and adapt to school life. For K university, 48(85.7%) of 57 students who continued their studies by registering for the first semester of the 2019 academic year have improved their average point scores. These results show that the difficulties experienced by lower grades in learning and in adapting to schools can be solved by programs such as counseling or tutoring, as the first and second years account for 39(81.2 %) of the academic-sustained probation warning students. In addition, nine(18.8%) students who improved their academic performance among third and fourth years are also encouraging when compared to four(7.15%) who had slightly poor grades. The result derived from the fact that even if student with academic probation, the grade points will improve for the next semester, and in many cases, they will be able to avoid the further academic probation.

Second, the pre- and post-care system for underachieving students should be introduced in order to prevent them from dropping out of the classroom and keep them from academic poor performance. Active intervention is needed for underachieving students often leading to leave of absence or transfer, suggesting the need to run programs on a proactive level. The current management system for students at the college of academic probation has a high rate of academic probation for those in the first and second years, and their leave and transfer rates are high. For example, if a academic probation students return to school after a leave of absence, a variety of motivational measures will need to be taken, such as support for learning and adaptation, restriction of applications for next semester to reduce the academic burden of the probation and increase the benefits of scholarships for students coping well with the probation.

Third, the program prescription should be properly linked after diagnosis and analysis of the reasons for the academic warning of students and consultation. In addition, it is necessary to provide customized programs for students whose study aid measures are placed in blind spots of care not taken within the academic warning student management system. As in the case of K. University, if post-consultation measures are classified as “other” and these students are managed on their own by each college or department, there are difficulties in verifying their effectiveness or overcoming academic warnings caused by the promotion of students’ learning or triggering their participation in academic activities. Counseling specialists conducted a total of 10 courses in the program, which can be a significant stress on students. Therefore, it will be necessary to adjust the number of counseling sessions and operation methods according to reality so that students participating in the program can complete the consultation process, and to operate group counseling as well as individual counseling. In particular, accurate guidance and promotion of each phase of the management system are also essential to ensure that students can participate in the program.

Fourth, the learning model for efficient management of underachieving students, including academic probation at the university level, requires a customized program for high-rises studies by grade and level through step-by-step program operation. In the case of K. university, the undergraduates of the academic probation who took part in the program generally improved their academic performances.

These results may be meaningful in that there is an institutional system in place that allows them to make more autonomous efforts to get out of the academic warning status by providing them with counseling and tutoring programs. However, it seems difficult to determine the effectiveness or professional counseling program. Thus, systematic learning management should be carried out to promote contiguous improvement of learning ability.

#### IV. An Education Model and Contents Design

The direction of education model and content design was derived from the main implications obtained through case study analysis. In this study, we intend to present the contents of the learning enhancement program for underachieving college students based on the learning mastery education program model.

##### 4-1. A Model Toward Mastery of Learning for Underachieving Students

The theory of learning mastery, which is a curriculum design and learning strategy that contains constructivism, can be achieved by most(90% or more) learners if conditions are met to improve learning that recognize individual differences. In this process, if a learner fails to achieve educational goal, he or she should re-do their mastery of education program so as to reach to the full understanding. Understanding learners’ individual differences is the cornerstone of improving the overall quality of education and preventing academic fallouts, which is also an important point of competency-based education that has been recently emphasized greatly in higher education.

Academically challenged students’ learning management program centered on capacity building means that they achieve learning skills or learning contents while properly adjusting their learning levels. This is how students to improve their academic competency while learning various academic skills accordingly by their level. In addition, this learning approach is linked to adult learners’ ability to help them solve the various problems they may encounter in real life[34]. Competency-based teaching methods are characterized by a more clearly structured approach in which learning is enhanced by mastery of learning, outcome-based learning, and master-novice or apprenticeship learning[35, 36, 37]. The overall purpose of capacity building learning is to realize learner-centered learning skills[38] as all students “demonstrate what they know, what they are able to do, and their level of expertise with special skill set.”[39] The mastery learning approach education model for academically challenged undergraduates is shown in Figure 1.

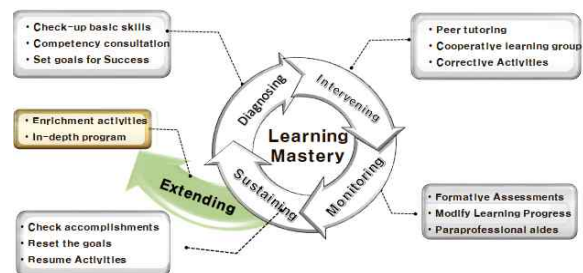


그림 1. 학습부진 학생 학업개선 교육모델  
 Fig. 1. Mastery Learning Cycle for the Underachieving

In order for an individual student to fully understand the specific tasks or concepts that he or she has learned in the class, he or she should take sufficient time to understand the learning materials and contents, taking into account that each student’s academic performance varies with the time as he or she invests in the learning process. Influencing the efficiency of cognitive

skills or study to improve learning is due to different variables such as each student's ability to learn, learning opportunities, learning sustainability, class comprehension, and sometimes the quality of the teaching they had in past schooling. Therefore, the shared emphasis of learning is to consider individual differences and time-spent in learning. In order to apply a mastery of learning to under-performing students, there must be given and fully understand at least five process of intervention elements. In the diagnosis phase, the goals are set for student' competency diagnosis, pre-teaching evaluation, and a clearly stated set goal. The next step is to actively interact with learning support to provide high quality corrective instruction service such as learning with peer tutoring and small group activities. If there is some progress in this step, it is necessary to confirm, modify and supplement the learning goals that has been set in the beginning with the mid-term evaluation assessment such as formative ones. In this case, the monitoring is carried out with a paraprofessional aides, such as graduate students with expert advice in their field of study. The next step requires a speculation of learning outcomes and confirmation of the completion of the learning goals, at which point, if there is insufficient improvement in the academic performance, they will continue to participate in the education programs to improve their academic performance. On the other hand, if a learning capacity improvement has been made, it can be induced in a direction to improve its continuing learning capacity by participating in advanced learning activities or in a deep learning support program.

**4-2. Learning Management Program Contents**

Recently, there has been a movement to provide students with individualized education services by analyzing their poor learning conditions or predicting their learning performance before getting into academic probation [23, 39]. They use a vast amount of academic data(class calls, extra-curricula activities, academic information and log, etc.) to predict who might be the possibly falls into academic probation each semester and thus, provide supportable services within the university. Using the LMS(Learning Management System) of universities, or data accumulated in academic probation, and admission information system, the exploration of these predictive models can carry out programs for academic continuity by giving warning signals to the possible students who have a high probability of failing poor grades. In order to achieve an educational sense of achievement beyond predicting the academic probation, underachieving students should develop self-reliant learning plans and know the result of self-directed learning program that can be implemented

throughout the undergraduate programs.

If the program for improving learning or supporting learning is properly operated on the underachieving students who need it, they can cultivate their learning capacity to show their ability to study the subject matters, and overcome the learning crisis, that is, academic probation, by improving their self-management in learning. Developing mastery of learning cycle that intend to gear upward spiral, therefore, support learning praxis link intending to design education program contents for academically challenged undergraduates.

The contents of education enhancement program for academically challenged undergraduates as shown in Figure 2.

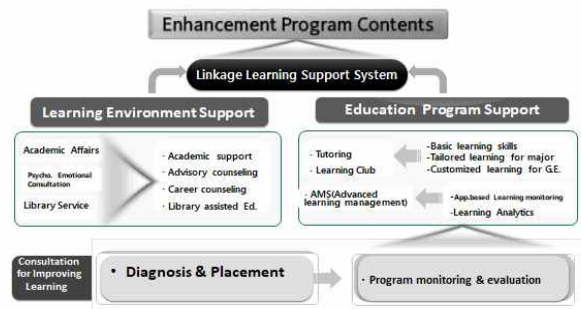


그림 2. 학업부진 학생 학습강화 프로그램 콘텐츠  
**Fig. 2. Education Enhancement Program Contents for Academically Challenged Undergraduates**

First of all, the contents for improving learning of underachieving students is via the learning community activities such as one-to-one consulting, peer consulting etc. Educational learning consulting programs consist of identifying and advising individual learner's learning environment, and directing learning improvement as each has different problems and learning styles, and supporting programs to enhance flexibility of learning recovery after analyzing students' problems and needs through diagnosis and individual consultation from various perspectives. Through the study consulting, customized diagnosis of under-performing students can be in need of guidance to the most appropriate learning resilience enhancement program by checking basic education skills, enhancing subject matters in their chosen major as well as studying knowledge based classes offered in general education.

Next, it will consist of a learning environment such as administration, counseling for psychological and emotional awareness, library assisted education through school library service system, education support program such as learning tutoring and learning circles, and a personalized learning integrated management system that enables mobile

application-based learning management. It is expected that this will enhance the resilience of underachieving students to recuperate from the under-performing cycle by participating in a better education program based on the aforementioned mastery of learning education model.

The program that intended to improve academic performance for underachieving students should be implemented in a step-by-step education program as well as a program for enhancing basic learning capacity linking majors and liberal arts classes to freshmen, which should be flexibly linked to mastery of learning support program operated by current education enhancement program in the university.

In supporting the learning environment that forms a upward spiral circle that link to academic administration, student counseling, career development, library education, etc., are linked to mobile app. base learning analytics that is integrated with the learning management system. This, then, connected with competency oriented curricula and education consulting program that reflect the characteristics of core competency development. The cycle, eventually and hopefully, enable to form students' life-cycle that ingrained to be a life-long learners toward the end of their college life. For instance, even those who experienced an academic probation can provide customized education programs based on analysis by learning analytics through integrated management system and other big data, such as learning behavior and adaptation to learning environment and learning methods.

## V. Conclusion and Suggestions

The education model for mastery of learning presented in this study is oriented towards five basic steps programs for underachieving students. For students with academic probation, a complete and holistic model of learning approach needs to be operated in conjunction with other competency building courses. In conjunction with major and general education curricula, the basic learning competency enhancement programs are carried out intensively and steadily to the underachieving students so that they can participate in the same learning competency enhancement programs so as to engage and participate education program with better performing students.

In practice, the theory of mastery learning can be applied to relative success outcome(e.g.,overcome academic probation) since academic intervention alone cannot reach them the normal course of study. Therefore, it is desirable to enhance basic learning skills with individualized education programs

rather than with personal treatment. Building basic competency learning skills and capacities, students with academic probation are properly educated, and then ultimately the self-directed learned be cultivated through an advanced learning program. Hence, it is necessary to diversify the on-demand basic education programs and to monitor the curriculum-related basic learning skills enhancement programs. This will allow students with academic probation to operate more efficiently by dividing them into groups: a group that needs to be re-entered the program or an exit group that engage with higher-level of learning activities.

The followings are the policy suggestions for the successful management of the education model presented in this study.

First, after operating the intervention programs for students with academic probation, it will be necessary to develop a scale or evaluation tools to rationalize the program to predict the academic success of university student with academic probation. With these measure, the factors and courses of overcoming the academic probation can be checked, as it can provide practical help in social support, resetting academic goals, time management, adjusting to the college teaching method, and taking general education courses related to the developmentally and cognitively appropriate for them. In other words, the institute need to continue to check on the conditions and needs for underachieving students that ultimately lead to suspension of academic studies. Highlighting the systematic issues that identify the characteristics and status of them not only can be of help them, but also can be of preventative and lessen to such students.

Second, higher education institutes should provide preventative care for under-performing students by regularly analyzing learning analytics through data-based learning management advancement. Current student-related data accumulated in universities are somewhat limited in their use to analyze individualized data analysis. This is because data collection from academic affairs and admission office system and LMS are simply for conducting administrative purposes rather than utilize them with students' learning or school life enrichment. Therefore, it is necessary to operate pre-support and post-managed preventative academic probation system that prevent from disenfranchisement through data-based Advanced Learning Management(AMS) so that the vast amount of student-related data collected and accumulated at the university level can be used educationally.

Third, a comprehensive management system for students with academic probation should be established. For instance, for students who are capable of learning but have negligent tendency, the tutoring with more competent learner, the peer



tutoring program can be more effective. On the other hand, for transfer students or foreign students who lack the language ability with the basic learning skill needs to improve academic Korean writing skill in particular. Therefore, we suggest that the preventative or intervention program for students with academic probations need to be considered context specific program. In particular, students have undergone academic hardship due to the environment factors are more fit to be in the close care system. Students with less time to study due to working part-time jobs to support themselves should be encouraged to utilize the programs, along with provide job opportunities in campus and guidance on scholarships or programs to supplement their resources by working on campus. In order for the financial support possible, students with academic probation or in academical hardship should be encouraged to talk with their faculty to find a proper methods of overcome the difficulties.

In addition, the reasons for the academic probation have been classified on the “other reasons” and no action has been taken since then. What make an education model and its’ designed contents program work is to let the students aware of the circumstances and provide support system accordingly.

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