A Study on Establishment an Information Platform Combining Remedial Instruction and Learning Guidance

Shu-Fang Lin and Yih-Jeng Lin

***Abstract*—The purpose of this study is to expand remedial instruction function on a comprehensive counseling platform. After the expansion work, school's goal of students learning guidance and the efficacy of remedial instruction can be realized effectively. Combination of a comprehensive counseling system and remedial instruction programs, the schools can benefit economically to prevent from establishing two different platforms. Teachers and students will be able to spend less time and efforts on their acquaintance with all kinds of information platforms. Most important of all is that teachers can have more complete understanding about students who will receive remedial instruction from students' academic and life performance which a counseling platform has already integrated. In this study, we demonstrate the model of expanding remedial instruction function on a comprehensive counseling platform by an example of a vocational school. Based on the study, we hope to establish an effective model to do remedial instruction works in schools efficiently and technologically.**

***Index Terms*—Remedial instruction, learning guidance, information platform, and the establishment of a platform.**

I. Introduction

A comprehensive counseling system can not only integrate all kinds of students' data but also all manpower in a school to increase the efficacy of students' guidance and counseling works. The schools can benefit economically on the combination of a comprehensive counseling system and remedial instruction programs since it prevent the establishing two different platforms. Teachers and students will be able to spend less time and efforts on their acquaintance with all kinds of information platforms. Most important of all is that teachers can have more complete understanding about students who will receive remedial instruction from students' academic and life performance which a counseling platform has already integrated.

This study tried to do is to propose a high C/P valued model of combining different information platforms both well functioned and economically. This empirical trial actually contributes to carry out effective remedial instruction programs and students' learning guidance.

Accordingly, this paper explores two questions namely;

1) What are the existing difficulties of remedial instructions?
2) How to design an effective information platform to solve the existing difficulties of remedial instructions?

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II. Literature Review

A. Learning Guidance

Learning guidance focuses on understanding and assessing students learning process and difficulties. The aim of learning guidance is to relieve or decrease the degree of students' learning disturbance and helps them to learn effectively. In a passive perspective, learning guidance work helps to decrease students' learning frustration; in a positive perspective, learning guidance works can contribute to help students develop learning potential and maintain positive learning motives [1].

As we know, students learning disturbance will result in difficulties physically, psychologically and social adaptation problems. Learning guidance is an important and emergency work. Tseng mentioned that the crucial factors to affect high IQ students' learning performance are their learning belief, attitude and behaviors according to the research findings. The most influential factor is students' learning behaviors [2]. Correspondingly, most of students who need remedial instruction might face the different degree of difficulties to hold positive learning belief, attitude and good learning behaviors. How to assess their learning disturbance or problems? Teachers will not only need to design interesting courses to attract students but also have more clear understanding of students' difficulties psychologically, physically and even their family background.

B. Remedial Instruction

The Ministry of Education in Taiwan has executed remedial instruction programs in elementary and junior high school since 2006. In the program, on-the-job teachers, retired teachers, university students or volunteers contribute themselves to offer free remedial instruction after school [3]. As 12-year fundamental education law passed, students are encouraged to complete their basic education years from 9 to 12. Students will not need to be academically screened strictly; therefore, more and more students with leaning disturbance enter senior high schools. In this condition, the Ministry of Education pushes senior high schools to execute remedial instruction programs for students in need. In essence, the remedial instruction programs are compulsory and schools have no choices but must carry out the programs effectively.

Actually, remedial instruction programs nowadays in Taiwan face lots of challenges. The difficulties includes, 1) The amount of students who need remedial instruction

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programs is about 20% ~ 25% and the remedial instruction works have already become a huge burden for teachers, administrators and students themselves. 2) Both the remedial instruction courses and the administration work are carried out in traditional model; most of the works increasing the administrators and teachers workload for too much paper work. 3) Remedial instruction courses now are taken after school and students are not willing to attend those additional learning activities. 4) The students who perform behind others in learning achievement usually have more than one remedial course to take. They need an effective schedule to reinforce their learning. 5) The factors influence learning performance are complicated and teachers need more information to get a clear picture of the cause.

Senior high schools need effective and useful solution to those problems. Without increase of manpower, the design and propose of an informational platform seems to be an alternative.

C. A Comprehensive Counseling Platform

During the three years of senior high school, a student will need guidance and counseling in various aspects of school life and therefore should be cared by a more comprehensive mechanism in accordance with the ideals of *teaching-disciplining-counseling* and of *three-degree counseling mechanism*[4], [5]. Before our work, no system exists to effectively integrate "*teaching, disciplining and counseling*" and that gives rise to the following problems.

1) Delayed understanding of students' background and academic learning
2) Scattered and ill-managed referral cases
3) Inefficient and delayed access to past counseling records
4) Imprecise identification of urgent cases
5) Inefficient management of student interview records
6) Inability to have timely access to counseling work by school authorities

The proposed "*comprehensive counseling platform*" can digitalize and *integrate* all students' data, which is considered more constructive and efficient for senior high schools.

It accommodates counseling data and enables to integrate administration system by means of digitalizing counseling work. Counseling is an essential link in education, which contributes to healthy and adaptive development on students. The counseling platform structure is able to successfully integrate administration system and counseling work so as to enhance the efficiency and efficacy in counseling work, including the decrease of the suspending and dropout rates. The integration of student counseling records and manpower can actually facilitate the implementation of counseling work to help students adapt themselves to school life.

III. Research Method and Procedure

The aim of this study is to expand remedial instruction on a comprehensive counseling platform. After the expansion work, school's goal of students learning guidance and the improvement efficacy of effective remedial instructions were realized. This research is practical in nature wherein the researcher proposed model of a combined learning guidance concepts with remedial instruction in an existed information platform. After literature review and reference to researchers' empirical experience, the researchers expand the function of a vocational senior high school's comprehensive counseling platform. The research procedure is shown in Fig. 1.

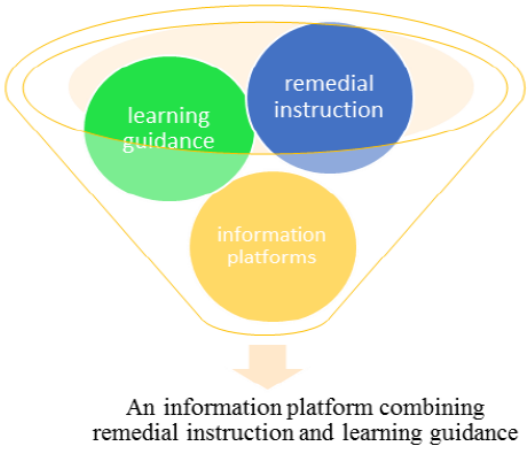

Fig. 1. Procedure of research.

IV. Result

A. The Establishment of a Comprehensive Counseling Platform

1) Status quo of counseling work in high schools

During the three years of senior high school, a student will need guidance and counseling in various aspects of school life and therefore should be cared by a more comprehensive mechanism in accordance with the ideals of *teaching-disciplining-counseling* and of *three-degree counseling mechanism*[4], [5]. At present, no system exists to effectively integrate "*teaching, disciplining and counseling*" and that gives rise to the following problems [6].

1) Delayed understanding of students' background and academic learning
2) Scattered and ill-managed referral cases
3) Inefficient and delayed access to past counseling records
4) Imprecise identification of urgent cases
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The proposed "*comprehensive counseling platform*" can *digitalize* and *integrate* all students' data, which is considered more constructive and efficient for senior high schools.

2) System structure

Fig.2. illustrates the structure of the comprehensive counseling platform in the form of VIEW table [7]-[9]. The platform regularly imports all data originally stored in the systems of academic affairs, student affairs and counseling records. Since the data stored in the platform are for retrieval only, new data cannot over-write old information and therefore will not interfere the operation of existing systems [6].

Following the structure of the platform, teachers can conduct academic support, life guidance, psychology counseling and career guidance with all these data. All

records are automatically digitalized and stored in the cloud. Fig. 3 shows the modularization of the platform [6].

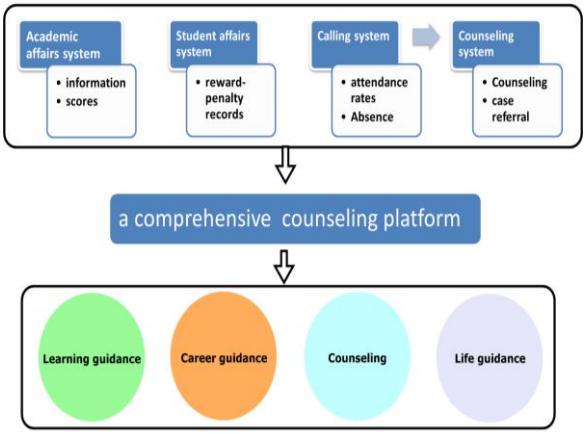

Fig. 2. Structure of the platform.

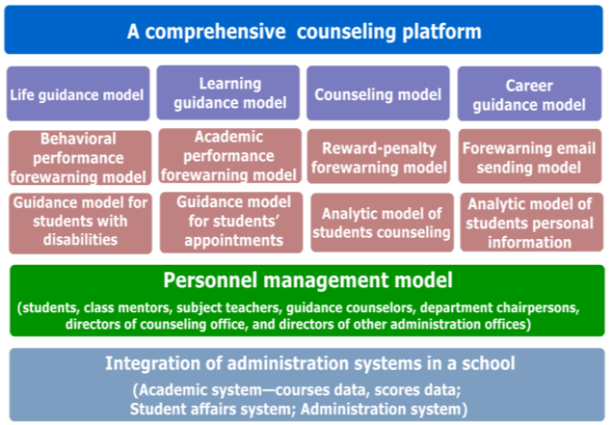

Fig. 3. Modularization of the platform.

ID numbers			
Birthplace			
Birthday			
Blood type			
Resident Address			
Mailing address			
Telephone numbers		Cell phone numbers	
Educational background			
Religion			
Height & Weight	First grade	Second grade	Third grade
Physiological defect			
Rare Disorders			

Fig. 4. Students' worksheet A (Personal information).

Favorite subjects	First grade	1.	2.	3.
	Second grade	1.	2.	3.
	Third grade	1.	2.	3.
Difficult subjects	First grade	1.	2.	3.
	Second grade	1.	2.	3.
	Third grade	1.	2.	3.

Fig. 5. Students' worksheet A (Learning condition).

Lots of lists were designed to collect students' data or offer teachers and counseling personnel to keep their guidance records. Fig. 4 and Fig. 5 in the appendix of this paper are "students' counseling worksheet A" that designed to collect their personal data and learning conditions. Fig. 6 (see appendix) is a sample for nuclear family structure helpful for teachers to have a clear picture of students' family background. Then after counseling, the counselors or teachers can use the counseling records (see Fig. 7 in the appendix) to fulfill their content or process of counseling or guidance. Those lists help teachers or counselors to require an overall understanding of existing counseling cases.

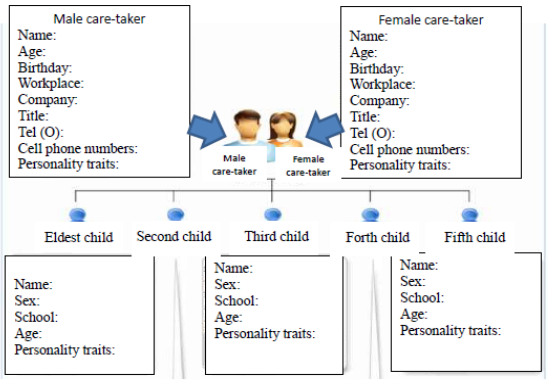

Fig. 6. Nuclear family structure.

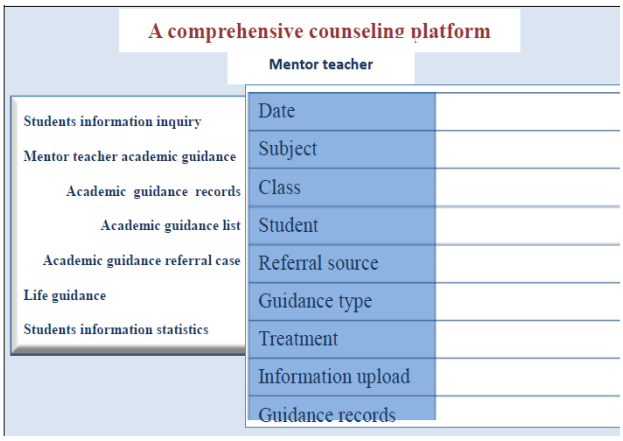

Fig. 7. Counseling records.

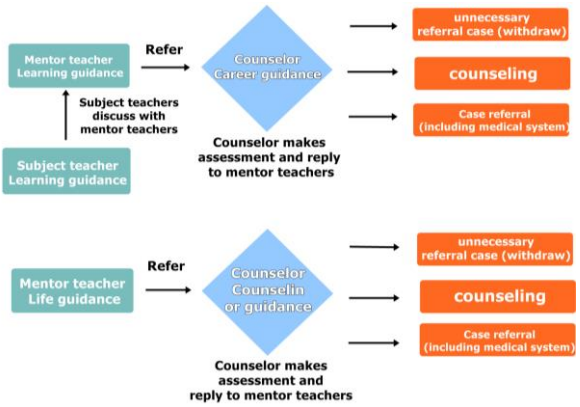

Fig. 8. Procedure of case referral.

A well-managed procedure for referral cases can keep cases from possibly forgotten or ignored due to improper procedures. The comprehensive counseling platform establishes case referral function online and allows class mentors to refer cases to guidance counselors.

When a guidance counselor is reviewing referral cases, he can access to all relevant data by means of the online system

and obtain a prompt understanding of these cases for subsequent counseling work. The referral procedure that can be used by the guidance counselor is shown in Fig. 8. In addition, a student can also make a counseling reservation to meet with a counselor of a teacher. Fig. 9 is a sample of the list of reservation.

Client			
Class			
Teacher	Type	Name	
Treatment			
Appointed time 1	DTAE	HOUR	Minutes
Appointed time 2	DTAE	HOUR	Minutes
Appointed time 3	DTAE	HOUR	Minutes
Contact phone numbers			
Email address			
Description	Enter text		

Fig. 9. A counseling reservation list.

The platform can identify cases in need of counseling and automatically send emails to relevant personnel to track students' development. A timely counseling interference can effectively prevent campus crisis incidents [10] and worsening students' problems [11]. The forewarning regulations are made by school administration. Table I shows an example of learning performance regulations and potential receivers of notification emails.

TABLE I: STUDENTS' LEARNING PERFORMANCE FOREWARNING REGULATIONS AND THE FOREWARNING E-MAIL RECEIVERS

No	Regulations	E-mail receivers
1	Students' flunked credits in periodic assessment I & II > 12 credits	Mentor, Counselor, Section chief of registrar, A chief of a subject、Directors of academic affairs and student counseling
2	Students' flunked credits in each semester > 12 credits	Mentor, Counselor, Section chief of registrar, A chief of a subject、Directors of academic affairs and student counseling
3	Students' flunked credits in an academic year > 32 credits	Mentor, Counselor, Section chief of registrar, A chief of a subject、Directors of academic affairs and student counseling, Principal

After the process of digitalization, the system can export required data in statistics tables. This allows all personnel and school authorities to obtain a complete understanding of student counseling work so as to adjust policies in academic affairs, students' affairs and counseling work.

1) The efficacy of a comprehensive counseling platform

a) The efficacy of digitalizing counseling work

After the platform is led in the administration system, all personnel are required to attend seminars on platform introduction and online operation. The implementation of the platform brings about the following advantages [6]:

1) Students' counseling worksheet A can be successfully completed online within a month. The digitalization of worksheet A allows class mentors to understand students' personal information, guidance counselors to consult the contents and the counseling office to accurately and promptly conduct statistical analyses.
2) The digitalization of students' counseling worksheet B can digitalize counseling records and allow all personnel and teachers with access authority to obtain relevant students' information from the platform and effectively conduct counseling work.
3) The platform can include all teachers (i.e. subject teachers) in the system and thus practically expand the coverage of counseling work to whole school and fulfill our objectives of achieving a full-scale counseling work. In particular, the digitalization of counseling records actually highly motivate teachers to fill in the records and that can greatly facilitate the implementation of counseling work and the collection of counseling records.
4) Since both forewarning function and student appointment function have been launched, this not only completes, but also enhances the operation of the counseling platform.

B. The Combination of a Comprehensive Counseling System and Remedial Instruction Programs

1) Status quo of remedial instruction in high schools

The difficulties of remedial instruction nowadays in Taiwan are as below.

1) The amount of students who need remedial instruction programs is about 20% ~ 25% and the remedial instruction works have already become a huge burden for teachers, administrators and students themselves.
2) Both the remedial instruction courses and the administration work are carried out in traditional model; most of the works increasing the administrators and teachers workload for too much paper work.
3) Remedial instruction courses now are taken after school and students are not willing to attend those additional learning activities.
4) The students who perform behind others in learning achievement usually have more than one remedial course to take. They need an effective schedule to reinforce their learning.
5) The factors influence learning performance are complicated and teachers need more information to get a clear picture of the cause.

2) The function of MOOCs system

The existing counseling platform just takes teachers and mentors as the executors in charge of students learning guidance. After platform function expanding, students will also receive forewarning mails and take responsibility for their own learning performance. In addition, the new function of remedial instruction programs will allow teachers to upload their remedial instruction programs anytime. Mentors are in charge of students learning guidance. Both teachers and mentors can have a clear picture of student data and background through the integration data which are already collected by the counseling platform.

We apply the concept of Massive Open Online Courses (MOOCs) to carry out the school's remedial instruction works. Teachers are professional course designers and mentors are manager, primary counselors. The professional

counselors will intervene to help students to improve their learning habits, behaviors and psychological problems if needed. By E-management process, school can perceive and solve students' learning problems. The function of MOOCs system is as Table II shows.

TABLE II: THE FUNCTION OF MOOCS SYSTEM

Item	Sub-item	Detail
MOOCs forms' management	Email for remedial instruction	1.List students who need remedial instruction programs 2.Inquiry function 3.Email sending (1) Mentor / list of students in a class who need learning guidance (2) Teacher / list of students in a class who need remedial instruction programs (3) A chief of a subject / list of all students in a subject who need remedial instruction (4) Directors of academic affairs or counseling ; principal / list of all students in a school who need remedial instruction
	Semester forms for teachers	Teachers can inquire their amount and content of their uploaded courses. They can also inquire the frequency of students' browse and the list of students who have taken the online courses and students' assessment online after courses.
	Semester forms for mentors	A mentor can inquire the amount and content of remedial courses that his or her students in class have taken. He or she can also inquire the frequency of students' browse and the list of students who have taken the online courses and students' assessment online after courses.
forewarning	regulations	1.Students' flunked credits in periodic assessment I & II > 12 credits 2.Students' flunked credits in each semester > 12 credits 3.Students' flunked credits in an academic year > 32 credits
	forewarning emails' inquiry	List of students' learning performance forewarning emails
Students data inquiry	Scores	Mentor can inquire his or her own class
	Personal data	Mentor can inquire his or her own class
Learning guidance records inquiry	Learning guidance records	Mentor can inquire his or her own class
Referral	Referral records	Mentor can inquire his or her own class

3) The efficacy of combining a comprehensive counseling system with remedial instruction programs

1) The information platform can detect and form the list of students who need remedial instruction programs.
2) Students can take good use of their own time to take the remedial instruction course flexibly after school through this information platform.
3) Decrease the administration workload effectively; more resources can save and invest in teachers' course design training or education.
4) Decrease the amount of real instruction in the classroom to lessen teachers' workload.
5) This model can combine and integrate all data and manpower to achieve the aim or goal of students learning guidance.
6) This platform can produce lists of students who take courses and students guidance records to enhance the quality and quantity of administrative management.

V. CONCLUSION

Teaching is an art. A teacher needs more clear understanding of students to implement effective instructions. Based on the findings of the study, the researchers concluded that expanding comprehensive information platform contributes to lessen school workload and enhance teaching, students learning guidance and administrative works quality essentially.

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