

# Strategies for Optimizing the Learning Effect of Online Courses through SNS Social Gene

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**Abstract**—As for the online learning, how to maintain the learners' motivation and keep them completing the study of all the knowledge points is the difficulty when we do the design and development of online courses. In addition to making good resources of teaching content, improving the integration of online courses is also an important aspect. In order to optimize the psychological environment of learners, who is studying the online course, and increase their interest in continuing use of the online courses, SNS social gene could be applied to the online learning process, which may achieve a multiplier effect. The ways that SNS social gene implanted in the online system include sharing with different people, proving the functions like “neighbor”, “competition”, “topic group”, “circle” and others, can attract more learners to study the whole online courses.

**Keywords**-SNS; online learning; online courses; social gene

## I. INTRODUCTION

Between online learning and traditional face-to-face teaching, the fundamental difference is the series of follow-up problems brought by the different information carriers and dissemination methods, such as the difference in teaching design, teaching scenarios, the emotional condition of learners, the way of communication, and so on. Currently, the focus of conflicts in the domestic and overseas, is so many complaints from both sides (the designers and users) of online learning platform. Whether it is an open class recorded based on video-on-demand model, or a micro course to aiming at a knowledge point, or a game learning mode, the common feeling of learners is too hard to continue the study if the learning motivation disappears quickly during the online learning, then it is easy to give up halfway.

Internet age is an open, sharing, and free era, which has brought massive learning resources, regretfully, so many learners participate in online learning, but very few of them finish the study eventually. After comparing the online education and traditional education, an important factor leading to this result is the emotional issue in online education has not been solved well. In the traditional teaching, it is a face-to-face process with teachers, classmates, and fun of communications. However, in online learning, what the learners always face is the cold machine with less interaction, and most of the time, the learners study the courses alone. No teachers or classmates remind the learners when they nap, and nobody encourage them when they do well, just one person in the study. As time passes,

learning passion fades gradually, and the learners may give up the online courses one day. On this issue, SNS social gene can be used to design the emotional communication of the learners and create a learning atmosphere with teachers, classmates, and partners. As is well-known, positive energy will guide people to overcome the difficulties and setbacks. If more about the factor of human emotion could be considered in the design and development of online courses, to let the learners feel the care, help, encouragement, joy, expectation through communicating with others, the whole learning process may become more attractive and interesting. The meaning of applying SNS social gene in online learning is to create a virtual learning classroom with “realism”, and make the information dissemination process of learning be closer to real life.

## II. ESSENTIAL FEATURES OF SNS SOCIAL GENE

SNS is short for Social Network Site. “Six Degree of Separation” proposed by Stanley Milgram (psychology professor of Harvard University) provides powerful theoretical ground for SNS. “Six Degree of Separation” can simply be understood as: “One person can get to know any stranger in the world by only six persons at most”. Through SNS, the social scope of individual can keep extending, and forms a large social network.[1]

In China, the main ways to communicate with others on the Internet are wechat, Qzone, microblog, Douban, Renren, etc. (The main representatives for SNS in China are wechat, Qzone, microblog, Douban, Renren, etc.) On the social network, the learners can share the feelings, life, diaries, see about others' feelings, photos, diaries and so on, comment or praise on other's sharing, share one's own happiness and sorrows, accept others' concerning invitation, form a virtual online social circle, and enlarge the scope by “the friends' friends”. With the growth of Internet, SNS has entered into a very broad field, generally means the information aggregation of specific group with the same interests and hobbies.

In January 2012, the Internet Flow Monitoring Organization- ComScore published a very interesting report named “It's a Social World”. It indicated in the report that there are about 1.2 million learners all over the world who visit the social network site, which takes up 82% of total global netizens. It's worth noting most that if the global netizens averagely spend 5 minutes on the Internet, 1 minute will be on the social network.[2] Nielsen as well reported

that American netizens spend 1/4 of time on social network when surf the Internet.[3]

The social network can deeply attract the learners, which depend on neither how fashionable it is, nor how florid the interface is, but on the motivation of sharing information with each other (but on mutual information exchange and sharing motivation). What the learners visit is not the Qzone, but the home he is in this virtual world, where there are the friends he cares about, something he takes interest in and his spiritual home.

### A. Learners' Sharing Mechanism

As a newly emerged medium, social network has broken the traditional bound between disseminator and receiver. Everyone had the right to speak. Everyone can release their thought and idea. On the web portals, most of the learners can only receive the information, and the spread is unidirectional, while the social network is reticular. In the SNS' product structure, network spread appears oblate. In other words, any network node can produce, release micro content, which can be spread among the network in nonlinear way.

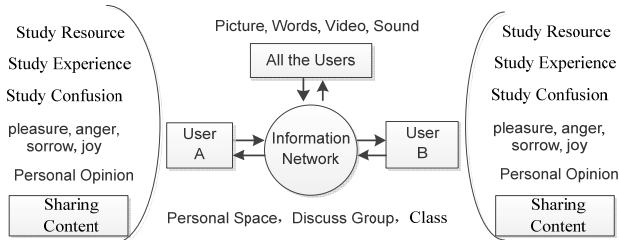


Figure1: Learner Knowledge Content Diffusion Network Diagram

One person's opinion represents one independent thought after all, only put the heads together, can we spark the light of wisdom. Social Gene Mode brings out not only the abundant content resource, but also the collision of various opinion sparks.

### B. Social Circle and Communication Mechanism

“Six Degree of Separation” says: Theoretically, we can get to know any one through 6 persons, build one's own friend circle and find the like-minded friends according to the common interests and hobbies. We can easily make one's one social circle through the Communication Mechanism provided by Social Gene.

Psychologically, we originally feel lonely, so we want to make friends, create the circle, and because it can make us gradually forget that we are lonely. Social network takes up 20% or even more of our online time, which also reflects our need for communication. On the social network, the learner can chat with the others, discuss about a topic, give his own opinion on others' sharing and reply to others. Multiple ways of information communication can keep two strangers talking about one issue all night. You can also leave a message to the learner whom you wish to make contact with, add him into your focus list.

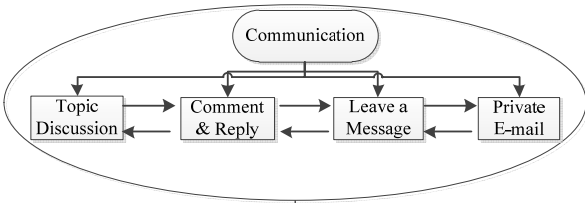


Figure2: Examples of Communication Method in Online Learning

### C. Competition & Comparison, Award & Stimulation Mechanism

Knowing that the learners like to compete and never easily to admit defeat, the social network designs the challenging and competitive activities for them to participate in, which on one hand increases the viscosity of the network course, and on the other hand increases the learners' interest. Award & Stimulation Mechanism mainly use some conditions to set up some activity, and then give the material or spiritual awards to the learners who participate in and meet the requirements. The performance forms are varied, for example, we can get a virtual medal by signing in every day, enjoy member experiencing service freely by logging in continually for 7 days, and also often combined with the Competition & Comparison Mechanism, take the Chinese Character Dictation Contest for example, the first prize is the iPad and winners are announced in the ranking list board.

## III. LEARNING MOTIVATION SUSTAINING ANALYSIS OF AFFECTING NETWORK LEARNING EFFECT

In order to study the psychological factors of affecting network learning effect, the writer and some online network learning website organized a survey, which randomly chose 200 learners among 50,000 registered learners as the sample, investigate the 200 objective learners through phone call and analyze the website data. It found out in the survey that course integrated completion rate = total amount of course completion/total amount of choosing course, and course integrated completion rate is only 0.62%. We also calculate by if they have learnt the courses or not, that is, it is assumed as complete the study as long as they have watched all the periods of one course, the completion rate turns out to be 4.53%, although higher than the first way of calculation, still indicates that many learners didn't finished the course. (Note: The course is composed of 10 chapters and has 54 periods).

Learning Progress	Before Start	Chapter 1-2	Chapter 3-4	Chapter 5-6	Chapter 7-8	Chapter 9-10	Complete
Rate %	1.8	41.6	22.1	10.8	12.5	6.7	4.5

Figure3: Completion Rate Table of Learning Progress

Most learners on the network basically conduct the study by themselves, lack the sharing with others. Many network courses offer such services as message board, e-mail communication, online discussion and so on, while the data shows that only few learners participate in the

communication and discussion, even if participate in, most are seek answers for questions. Thus make it impossible to achieve the purpose of collaborative learning and unable to let individual learner fit in the study activity circle, which makes it hard for the learner to persist in studying, meanwhile lack the necessary communication and encouragement. Giving up study is then inevitable. So study time has been a positive correlation factor of giving up study.

#### IV. STRATEGIES FOR APPLYING SNS SOCIAL GENE IN THE PROCESS OF ONLINE LEARNING

Based on the comprehensive consideration on the disadvantages and characteristics of online learning, to maintain the learning motivation, provide a good learning experience, and enhance the attractiveness of online courses, some communication mechanism of SNS social gene, such as sharing, questions and feedback, should be applied in the design and development of online courses. Detailed strategies are as follows:

##### A. Tracking the Learning Progress through the Electronic Records of Learners

In the process of developing online courses, the designer should pay more attention to the role of E-portfolio, do the data mining based on learning records, focus on the evaluation of the learning process, and provide objective and quantitative formative evaluation reports for the learners. Meanwhile, the learning progress could be tracked by setting the end time and calculating the required amount of daily study and review automatically. The learners could see the learning progress in the user interface and receive a learning reminder through e-mail, push messages and other ways.

When the learners login to the online courses for the first time, the system will show all the courses and require the learners to select the course chapter(s) they would like to study. After this, the learners may need to set a schedule that how long they plan to complete the learning of the whole course or one chapter. Then, the system will calculate the amount of daily learning based on the current time and will also record the daily progress automatically. If the learners do not complete the required learning, or they stop the learning for many days, the system will inform them of the learning progress by e-mail or push messages, and remind them to continue to learn the course.

##### B. Using the Push Notification Service to Supervising the Learning Progress

The online learning system could use the push notification service to send different messages, which are similar but different from SMS messages, to remind or encourage the learners. If the learning progress is behind the schedule, a reminder could be sent to the learners; if the learning progress is ahead of the schedule, a message with encouragement could be sent. The learners could also share the learning outcomes with their friends or public by clicking a button or link to support this function, which may be help to main the learning motivation.

##### C. Designing the Review Function According to the Ebbinghaus Forgetting Curve

A function of "Review Notes" could be designed according to the Forgetting Curve made by Ebbinghaus, a German psychologist. The "Review Notes" will automatically record the content of online learning in different period and sort the content in accordance with the requirements of strengthening memory. Then, remind the learners to review the content timely based on the Forgetting Curve, so that the learners can remember what they have learned efficiently.

##### D. Encouraging the Learners by Competition and Communication

Based on the learning records (such as progress, learning speed), the online learning system could award the Medal of Honor to the learners with initiative. Besides, the system could also rank all learners of the course according to the statistics recorded automatically. An Honor List could be viewed by all learners to check the learning progress and speed. The learners could also post their questions or outcomes in the Sharing Section and comment on the other learners' study. All the mentioned ways of social communication (such as Medal of Honor, Ranking, Honor List) could be help to encourage the learners to continue the learning, maintain the learning interesting and let them feel they are growing together with classmates.

UCAI is an online IT study website. It chooses the best learner of a knowledge point by weekly challenge Competition, and award the best learner the Champion of the week. Every week there will set one open-ended question according to one knowledge point. Every learner can participate in and give the best answer. Although it is just a virtual title, still give the learner a huge mental reward.

On February 13th, UCAI held an event. It set 10 questions of mission complete game according such basic knowledge points as loop structure, judgment, branch that are often used in the programming. In the game, the learner uses the programming knowledge to let the virtual character go through labyrinth and pick up the flowers. The event drew in thousands of learners to join in on that day, and greatly improved their learning enthusiasm for programming and made them use this website more frequently.

#### V. CONCLUSION

When design the process of online courses, SNS social gene should be considered to increase the interactive learning with study circles, and encourage the learners that study the same course to grow together. When design the process of online courses, SNS social gene should be considered to increase the interactive learning with study circles, and encourage the learners that study the same course to grow together. Meanwhile, the online learning system could perfect the push notification service according to the Forgetting Curve and let the process of information dissemination be more friendly and acceptable to the learners. It is also very important to pay more attention to the use of E-portfolio and the application of formative evaluation based

on the learning records. This is to expand the learning time and space, improve the integration of online courses to help learners complete the study of all the knowledge points. However, we must be clear that the online courses with SNS social gene is not a social networking site, its core essence is still online learning, to provide personalized service to meets the learners' needs of studying different online courses.

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