

# The Socla Project: an Attempt to Build an Innovative Study Environment through SNS Linkage of Second-Year High School Students and Working Adults

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**Abstract:** A two-week program “Socla Project” was conducted to provide academic support for 17 high school students by using iPad and Twitter to link them up with 10 university students and working adults (“supporters”). Students engaged in research on the themes related to the significance of work life or university. Supporters constantly plied them with questions and collected opinions from people outside with Twitter, which forced the students to reconsider the meaning of studying and to garner information of their future paths without ending up in superficial research. Although large amount of the written messages (100-200 on average) was not directly related to study, this online communication resulted in no dropouts. The analysis of the questionnaires showed there were no problems concerning the tool usage, and that the existence of supporters and other students was effective in continuing research. Surveys on study motivations and self-consciousness were affected by the “ceiling effect.”

## 1. Introduction

Micro-blogs, of which Twitter is perhaps the best-known example, represent one form of the latest Web2.0 technologies. The key to their success has been the fact that they make possible online communication through the use of brief written posts with a maximum of 140 characters, and anyone can “follow” the online comments. Such micro-blogs have been causing considerable excitement over the past several months (Ebner et al, 2010). Amidst this trend, several attempts have been made at giving a boost to learning and education through the use of Twitter (e.g. with articles appearing in *Beating*). However, most of these practical attempts have been limited to the university level, and there have been few instances of trying to use Twitter in actual educational experiments involving students other than college students, for example high school and junior high school students. Incidentally, at present Japan’s high school students are facing problems which transcend their areas of residence, amongst which we can cite “a dearth of opportunities to reach beyond their own generation to form ties.” On the other hand, although a declining birthrate means that nearly every qualified student should soon be able to go to college, the “university entrance test” competition remains as fierce as ever. With such conditions in mind, our project team sought to reconsider issues high school students are facing in choosing their future paths from the point of view of the students. As a result we discovered that high school students in Japan find themselves sadly lacking in the information required to answer their questions like: “What kinds of institutions are universities and corporations?” “Why should I go to college?” “Why should I go out into society anyhow?” and “If I should go there, what is likely to happen?” Even so these students must personally face questions that will decide their future course, such as what university they should enter, and what courses they should choose at college. The wrong answers to such questions can lead to unhappy outcomes not just of course for the high school students themselves, but also the universities and society in general.

## **2. The Study**

### **2.1 Background to Implementation**

Our project team at BEAT (the Benesse department of Educational Advanced Technology) in August 2010 initiated a project to use the social medium Twitter, which holds great potential for educational use, to link second-year Japanese high school students with university students and adults working in society as a means for assisting these high school students in their studies. The social learning program “Socla” developed by this project constitutes a problem-based learning approach. It involves basic learning based on providing each high school student with an iPad so that he or she can use Twitter to exchange messages with university students or working adult “supporters.” This project learning approach represents an attempt to let students get a taste of what it means to work in society or study at a university, and to use their mother tongue Japanese to communicate their own views and opinions in logical fashion in written form so as to acquire logical writing skills. This chapter describes the details and verified results of the project learning conducted in 2010 involving 17 high school students and around ten university students and working adults. Since the implementation of this project learning program finished in the period of January-February 2011, right now we are still engaged in analyzing the results. Incidentally, this Socla effort was the first extracurricular study program in Japan involving the use of Twitter and iPad.

### **2.2 Overview of Project Learning**

The participating high school students were offered two programs: the general program for the learning survey and a special program in which some of them also directly experienced work life.

#### ***(1) General Program -Overview and Period Involved***

By having the students experience a connected process of deciding on themes, such as those related to university life and employment, formulating related hypotheses, conducting investigations to prove these hypotheses, and subsequently revising the hypotheses, we were able to get students to give deep thought to advancement to the university level and their future working life. In this survey we thus researched enhancement of the learning effects for high school students through the use of an iPad for Internet searches and the use of Twitter for communications. The program was implemented during the two weeks from August 2-13, 2010. In the kickoff workshop held on August 2, project team members provided face-to-face explanations to the high school participants about the program as a whole, how it was to be conducted, points to bear in mind, and so on. At that time, the students were provided with an iPad and wireless router with Twitter accounts and TwitBirdPro preinstalled. In addition, the high schoolers were divided up into groups based on the group theme they had expressed interest in, and were encouraged to establish subthemes for individual use. After that, the high school students were permitted to take home their iPads and wireless routers, and asked to use Twitter and the Web to investigate their own hypotheses. At the midpoint report meeting on August 7, they were asked to meet again to present their research findings by team, and were provided guidance on what follow-up research they needed to conduct prior to the final presentation of findings on August 13. On this final day, the students individually presented summaries of their two-week research findings centered on their individual subthemes.

#### ***(2) Conditions concerning Involvement by High School Students***

Altogether 17 second-year high school students participated in the project. Since these were comparatively studious and serious students taking part in the program, they exhibited a sincere commitment to it, thereby enabling it to be carried out quite smoothly.

#### ***(3) Study Content***

**Phase 1:** Program themes and subthemes were established. Separate teams were organized based on each group theme, and then individual subthemes were established within this context. The individual students then carried out two weeks of research based on their own subthemes, and considered the content of their presentations. All of the themes were University Life, Careers and Employment, and Life Planning. Each theme had various subthemes.

**Phase 2:** The student participants wrote down their thoughts about their subthemes and what they wanted to

find out, and based on these formulated their hypotheses.

**Phase 3:** The students researched the information required to prove their theses. They employed the iPads they had been issued to gather information from Internet searches and used their Twitter accounts to communicate with other high school students and the supporters in order to more deeply pursue their research.

**Phase 4:** Individual teams made midterm presentations, while the final announcements took the form of presentations by individual students. Using the information garnered from their research, the students revised their hypotheses, and through repetition of the research process were able to pull together their findings for final presentation.

#### **(4) Support System**

**Supporters:** 6 individuals (2 graduate school students, 2 university students, 2 working adults). While conducting their individual research, the high school students were linked through Twitter for support.

**Facilitators:** 5 individuals (one university professor, 4 graduate school students), during the kickoff and midway workshops they were assigned to individual groups. They worked to facilitate the processes of hypotheses crafting, creation of materials for presentation, etc.

**The help line:** Established a 24-hour dedicated hotline (telephone) for emergency contact. Provided support concerning project content and technical difficulties.

### **3. Result and Discussions**

#### **3.1 Questionnaire**

##### **(1) Impressions concerning iPad/Twitter Project Learning**

Here we report on the questionnaires filled out by the student participants and the interaction through Twitter between the students and the supporters. On the final day of the project learning, the high school participants were asked to fill out a post-activities questionnaire concerning their impressions regarding the iPad/Twitter project learning. This binomial test included 15 questions, each with possible answers, namely: 1) Totally non-applicable, 2) Somewhat non-applicable, 3) Neither one nor the other, 4) Somewhat applicable, and 5) Totally applicable. (Within these five choices 1-3 were considered “No” answers and choices 4 and 5 were considered “Yes” answers.) The results are shown in Figure 1.

##### **(2) Discussions 1**

For the high school students participating in the project, iPad and Twitter were new learning tools. Nevertheless, they highly evaluated iPad for its ease-of-use, ability to gather information on the Internet, and other reasons (See items 3-1 • 3-2). On the other hand, they judged that as compared to being helpful in their learning process Twitter was more useful for interacting with others and familiarizing themselves with the various opinions of others (see items 3.3, 3.4, 3.5, 3.12), as well as enjoyable to use (see item 3.13). Furthermore, they received the impression that the study program itself was enjoyable (Item 3-14). In addition, as the study progressed and the student participants organized their impressions, it became clear that in terms of providing motivation for study, the existence of Twitter supporters was a definite plus (See items 3-6, 3-8 and 3-10).

##### **(3) Changes in Reasons for Study and Consciousness concerning Self/Others**

In the questionnaires conducted prior to and following the actual study, we asked the students to choose one of the five options for “reasons for studying” (24 items in all) and “self-consciousness” (18 items in all): 1) Totally non-applicable, 2) Somewhat non-applicable, 3) Neither one nor the other, 4) Somewhat applicable, and 5) Totally applicable. Incidentally, when creating the “reasons for studying” categories we consulted Ichikawa (1995) for study motivation benchmarks and Hiraishi (1990) for self-consciousness benchmarks. Responsive t-tests, conducted on the data that had been gained followed by comparisons of replies in pre and post studies, showed significant differences at both the 5% level and 10% level.

In “reasons for studying”, following five items showed significant differences: Q4) Because I enjoy seeing what I am capable of doing (pre- > post-  $p=.056$ ), Q9) Because I want to put to work what I learned in the future (pre- > post-  $p=.096$ ), Q16) Because the people around me were studying hard, I did too. (pre- < post-  $p=.056$ ), Q21) Because I was promised pocket money or other rewards if I achieved good results (grades). (pre-

< post-  $p=.083$ ), and Q24) Because a good academic record yields many advantages even in adult society. (pre- > post-  $p=.028$ ). Then “self-consciousness”, there was significant difference in Q8) I’m completely satisfied without anything on my mind. (pre- < post-  $p=.055$ ).

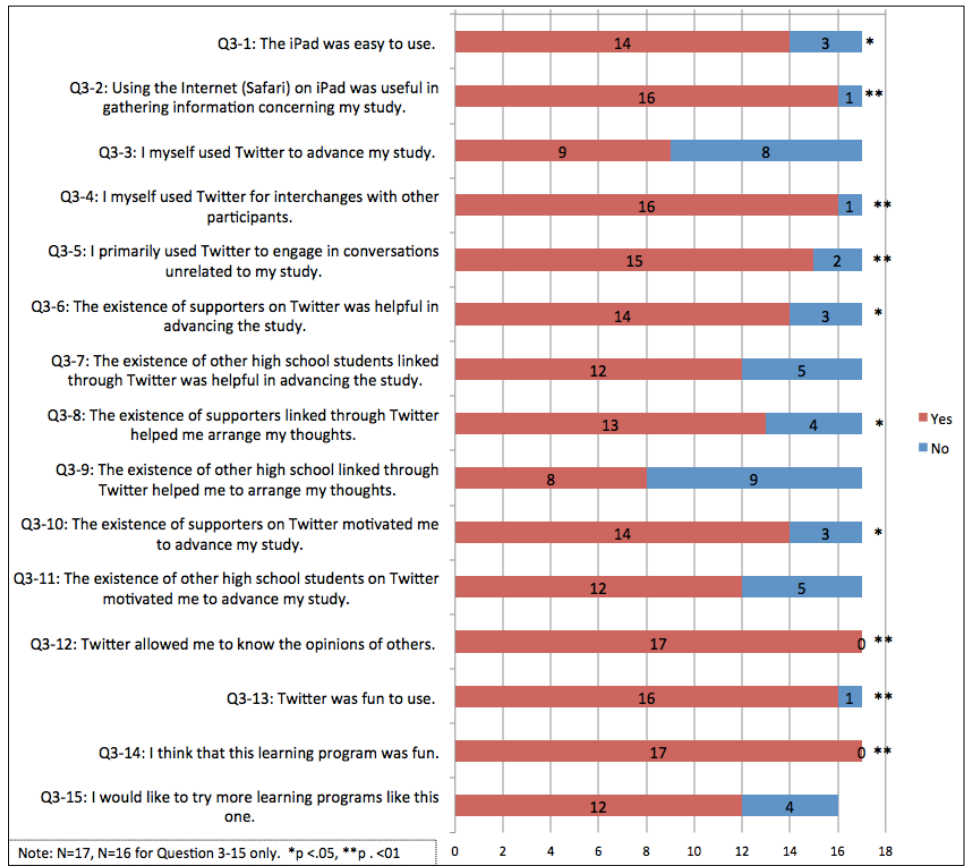


Figure 1: Questions concerning iPad/Twitter/Project Learning

(4) Discussions 2

First, as compared to the pre-study questionnaire the post- questionnaire showed a tendency among the students to be concerned about others when engaged in study activities (Q16), so we can conclude these answers indicate that in this study environment the “social networks united the students with those around them (i.e. the other students).” Even when students explained this situation in their own words, they offered explanations like “It was good to know what kind of progress other students were making,” and “I hung in there because I was aware of my co-participants.” Thus, we received answers indicating that consciousness of the existence of others proved a positive for participants in their making progress in their studies. Moreover, there was an increase in the response “Completely satisfied without anything on my mind” (Q8) in the post-study questionnaire. This well might be the result of the sense of accomplishment gained from completing the project study along with others. Next, we would like to draw attention to Q21. The mention of pocket money or rewards (Q21) can be taken to mean “compensation” or in a broad sense “good things.” Significantly, in the post assessment students recognized these “good things” benefited themselves. That was because they will likely provide a motive force for continuing with high school and university studies, even as the content becomes increasingly abstract.

On the other hand, the significance of academic record-oriented thinking that tended to emphasize the “good thing” stemming from the academic training was its addition to the student’s record (Q24) declined significantly in the post- questionnaire. By sincerely addressing the significance of the program on such things as their future career and study, the high school students involved deepened their thinking regarding the need to take into account the opinions of various individuals. This experience tended to “shake up” their ways of thinking about the future, and that sense may well have represented a major opportunity for their career development. In that

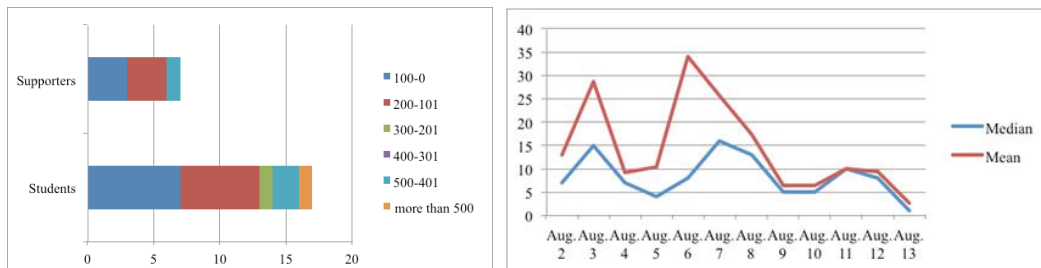
sense, even though the post-program questionnaire showed a decline in “wanting to put to work what I have learned in the future” (Q9) and “enjoying seeing what I am capable of doing” (Q4) as reasons for studying, we can conclude that there was a major shake-up (reorientation) in how they relate their studies to the image of what they will be like in the future. Since on this occasion the time lag between the pre-study and post-study questionnaires was only about two weeks, there were only a few categories in which change was clearly visible. In the future longer studies will probably be needed. Moreover, in terms of the benchmarks employed, we should use more responsive standards than those for the project study used this time (e.g. benchmarks related to career education and advancement/employment), while we also continue to conduct more detailed analysis of the results obtained from this study.

### 3.2 Volume of Twitter Usage and Interaction

For the general program of the Socla project learning, Twitter was used to carry out the project learning based on support for the students and working adults (supporters). Here we report on the conditions surrounding Twitter use in the general program.

#### (1) Volume of Twitter Usage during the Study Period

Twitter usage involves the sending of written messages (= information dispatches) referred to as “tweets” by various users. Here we will attempt to evaluate the volume of Twitter usage based on the number of “tweets” generated during the study period. Figure 2 shows the distribution for total “tweets” from the August 2 kickoff until the final presentations on August 13. Most of the supporters and students sent less than 200 tweets during this 12-day period. During that same 12-day period, only four students and one supporter wrote more than 200 tweets, but we can say these individuals were comparatively enthusiastic in their use of Twitter. Furthermore, concerning the number of tweets per day for the student participants, we have added up the average value and median value, which are together shown in Figure 3. Twitter use clearly surged immediately after the kickoff (August 2), before and after the midterm presentation meeting (August 7), and before the final presentation meeting (August 13).

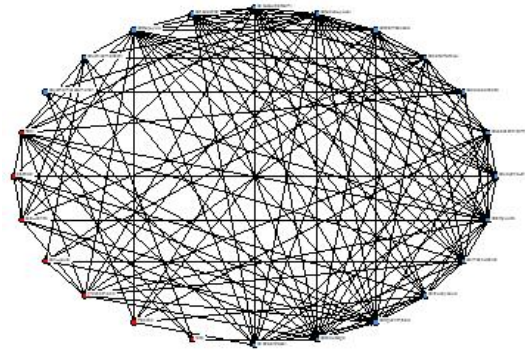
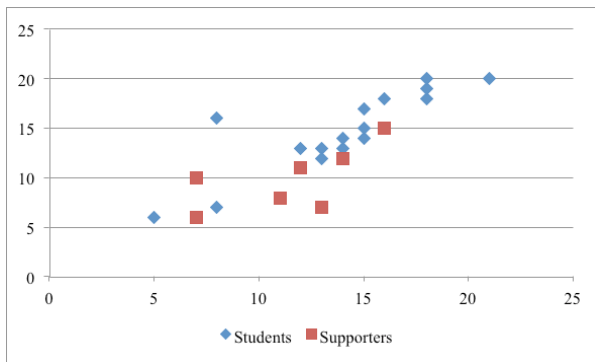


**Figure 2:** (Left) Distribution of Total Number of Tweets during the General Program (Unit: per person)

**Figure 3:** (Right) Representative Values for the Number of Tweets by Students on Each Day

#### (2) Interaction among Participants using Twitter

Twitter includes a “Mention” function which allows the user to send a tweet only to selected recipients by entering “@ID” identifiers. Here we consider the number of dispatches and receptions of mentions (replies) made in order to study the interaction among participants through Twitter. In Figure 4, the horizontal axis shows the number of people to whom mentions were sent (during the period of the general program to how many individuals mentions were sent), while the vertical axis gives the number of individuals sending mentions (during the period of the general program from how many individuals mentions were received). We found that there is a strongly positive correlative relationship between the number of individuals to whom mentions were sent and the number of originators of mention dispatches ( $r= .82$ ). We also discovered that those individuals who sent tweets to a large number of recipients and clearly identified those recipients also sent the largest number of tweets, and engaged in the most interaction via Twitter. While on the one hand the majority of students engaged in interaction with more than 10 individuals, there was tendency for supporters to limit their interaction to only those students they were responsible for plus a handful of others. Figure 5 visualizes a network diagram for interaction based on mentions. This network diagram has high density, but as you can also verify from Figure 4 the relative density for supporters is lower than for student participants.



**Figure 4:** (Left) Distribution Diagram for Number of Individuals Who Sent and Received Mentions  
**Figure 5:** (Right) Network Diagram Showing Interactions among Participants (blue: students, red: supporters)

### (3) Discussions

As far as Twitter use was concerned, a portion of the participants displayed a particularly enthusiastic commitment. This was a general phenomenon not limited solely to Twitter use. Especially prior to and following offline events, there was a pronounced tendency for use to become more active. From this, we can infer that holding offline activities can serve as an effective method for invigorating online activities. Based on the above evidence, in the general program of the Socla project learning we can identify a structure in which students interact positively on Twitter, while supporters assist the students from the sidelines. Actual Twitter usage proved to be greater than the project team had originally foreseen. Although tweet content to a large extent was not concerned with the actual learning program itself, but rather consisted of general conversation, this still represented valuable interchanges among the participants, and we believe that they helped to mutually reinforce the commitment to study. Supporters for their part re-tweeted (forwarded) the questions from the students to their own “followers,” collecting answers from a variety of individuals, and otherwise did what they could to help the students. As a result, we believe that the participating high school students enjoyed opportunities to consider their individual themes from diverse standpoints. The supporters too were able to engage in frank contacts with the high school students and enjoyed good communications.

## 4. Future Study

We have identified three issues for future study. First, regarding the period during which the project is to be held, because of conflicting events (such as open campus opportunities and visits to companies), many high school students were unable to participate in the program. Second, insufficient groundwork was done to get the students fully immersed in the study. We found that the high school students only showed a low degree of commitment to the themes. We believe that instilling more motivation regarding these investigations therefore is essential. Finally, we have concluded that there are certain topics which lend themselves to Twitter investigations and others that do not. In the future we will have to consider how to better match study methodology and content.

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