

A Comparison between School Life Activities and GPAs under a New Educational E-portfolio System in University

Noriko Hanakawa, Hannan University, Japan
Masaki Obana, Osaka Institute of Technology

The European Conference on Education 2015
Official Conference Proceedings

Abstract

Educational e-portfolio is important for Japanese University. Educational e-portfolio accumulates various educational information such as lecture materials, reports, examination results, and lecture notes. However, students spend time not only educational activities but also school life activities such as part-time job, club activities, job hunting, and hobby. These school life activities may influence students' education results.

Therefore, we have developed a new e-portfolio system including educational e-portfolio and school life e-portfolio. Then we compared GPA (Grade Point average) with school life activities. The values of GPA are collected from educational e-portfolio data, school life activities are collected from school life e-portfolio data. As a result, values of GPA in freshmen are related with lecture time and hobby time. In addition, job hunting success is not related with one factor such as GPA, or job hunting time.

Keywords: e-portfolio, SNS, GPA, School activity, educational data analysis

iafor

The International Academic Forum
www.iafor.org

Introduction

Educational e-portfolio is important for Japanese universities. The educational e-portfolio accumulates lecture materials, reports with teachers' comments, examination results, and lecture notes. Students and teachers review their education record and historical data in the educational e-portfolio. The educational e-portfolio is useful to keep high quality education in Japanese universities (R. Brian. von Kinsky and O. Beverley(2012), P. Kim, C. Kee Ng, and G. Lim (2010)).

However, students usually spend not only educational activities but also school life activities in universities. School life activities are part-time job, club activity, guidance activity, volunteer activity, hobby, and job hunting. Especially, students have to spend a lot of time for job hunting activity in last year in university. Job hunting is a most important event in their school life. Of course, we can easily expect that school life activities may influence students' educational activities and scholastic attainments. For example, when a student's scholastic attainments are going down in educational e-portfolio data, a teacher imagines that the student may be busy for job hunting. However, this imagination is an unfounded inference.

Therefore, we try to explore relationship between school life and GPA (Grade Point Average). Values of GPA can present scholastic attainments. We set up two research questions as follows;

Q1: Which activity greatly influences values of GPA ?

Q2: What factors lead smooth success of job hunting?

In order to answer the two question, we have developed a new e-portfolio system that include educational data and school life data with smartphones. The school life e-portfolio system is a new function with shared database with conventional educational e-portfolio system. We explore these questions through a new e-portfolio system that include educational data and school life data.

Section 2 shows our approach, outline of the new e-portfolio system. Related works are described in section 3. Section 4 shows collected data through the new e-portfolio system, and analysis results. We discuss a potential of the new e-portfolio system in section5. Section 6 shows summary and future work.

Related works

Various e-portfolios for university education have been proposed and applied. Lopez-Fernandez studied to analyze descriptively the undergraduate students' perceptions, attitudes and behavior when using an e-portfolio to support their learning and assessment in practice based courses at two traditional Spanish universities (O. Lopez-Fernandez and J. Luis Rodriguez-Illera (2009)). As a result, the students had positive opinions and self-efficiency through the e-portfolio as a tool to manage their learning and assessment during a semester, especially from the second month of use.

Chang studied to use e-portfolios to enhance university students' knowledge management (KM) performance (C. Chang, K. Tseng, C. Liang, and T. Chen (2013)). The research results revealed that the experimental group outperformed the control group in the performances of overall KM and five KM aspects (knowledge sharing, innovation, acquisition, application, and accumulation). This showed that e-portfolios significantly facilitated KM performance.

Carol developed an e-learning system that couples a blog with a learning e-portfolio (N.L. Carroll, R.A. Calvo, and L. Markauskaite (2006)). They adapted the system to

the first year course education. Because the e-portfolio system is based on web-blog system, massive blog data was accumulated in the system. Rodriguez shows usefulness of e-portfolio in university professional education (S. Rodriguez-Donaire, B.A. García, and S.O. del Olmo (2010)). They claimed that (1) e-portfolio is a complementary tool for student's assessment, (2) e-portfolio is a perfect follow-up device to check student's competences development throughout their degree studies. The other researches also claim benefit of e-portfolio system and analysis data. Shroff analyzed students' behaviors in examinations using e-portfolio system (R. H. Shroff, C. C. Deneen, and E. M. W. Ng (2011)), Alexiou studied beneficial e-portfolio system in university education (A. Alexiou and F. Paraskeva (2010)). These studies are conventional education e-portfolio system. The usefulness and effects of educational e-portfolio have already been clear. Therefore, we try adding a new function of the school life e-portfolio to the conventional education e-portfolio in order to support the whole of university school life for students.

Approach

In order to answer the above two questions (Q1 and Q2), we have developed a new e-portfolio system with smartphone. The new e-portfolio system is based on the conventional educational e-portfolio system. School life e-portfolio has been added to the conventional educational e-portfolio system. The database are shared among educational e-portfolio and school life e-portfolio. Figure 1 shows an image of the new e-portfolio system.

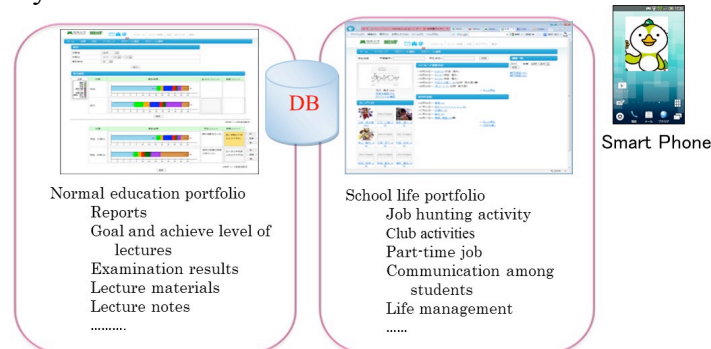


Figure 1 An image of the new e-portfolio system

Next, we compare scholastic attainment with school life data for Q1 (Which activity greatly influences values of GPA?). Figure 2 shows an image of the comparison of scholastic attainment and school life data. Scholastic attainment means GPA values that are derived from the educational e-portfolio system, school life data is collected from through the school life e-portfolio system. Then, in order to clarify the relationship between GPA and school life activities, we use correlation analysis technique and clustering analysis techniques.

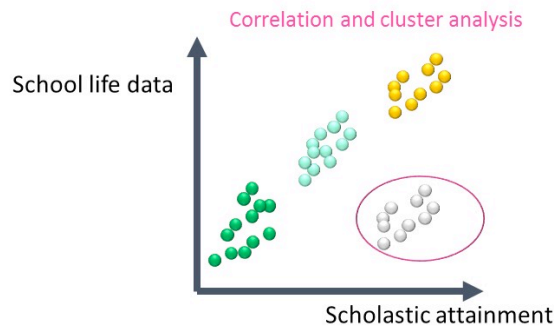


Figure 2 An image of the comparison

After that, for Q2 (What factors lead smooth success of job hunting?), we analyze school life data of fourth year students (See Figure 3). We pick up factors that we expect to cause job hunting success. For example, the factors are GPA (examination results), Part-time job, home study time, and job hunting time. The data of these factors is collected from the school life e-portfolio system. In addition, job hunting success is also collected through the school life e-portfolio system.

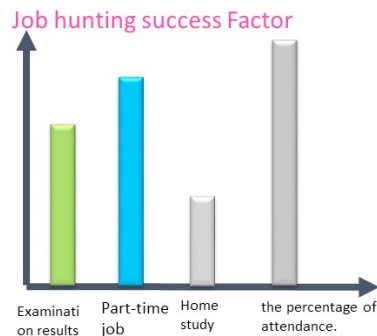


Figure 3 An image of job hunting success factors

The new e-portfolio system

In this section, we explain the new e-portfolio system. The new e-portfolio system has four major features. The first feature is that a concierge “Hapinan” in smartphone asks students such as “How are your job hunting?” every day. The concierge select a question based on accumulating data of the school life data. For example, if a student is fourth year, the concierge asks about job hunting. If a student is absent from lectures recently, the concierge asks “Why are you absent from lecture?” Various patterns of the questions will be prepared. However, now, we have prepared basic questions such as “How long are your home study today?”, “How long is your hobby time today?”, and “How long is your part-time job today?”

Second feature is that students can easily answer the questions through smartphone’s speaking recognition function. Students only speak the answers to their smartphones, the school life data is accumulated to the data base of the school life e-portfolio system. Otherwise, students can easily select pull-down menus about the answers in the smartphone.

Third feature is that school life data is accumulated like social network system such as Face book web site. When students use personal computers, or tablet PCs, students can input daily activities as their school life data similarly SNS web sites. Of course,

the school life web sites can connect to friends and teachers. The School life web site is a kind of powerful communication tool in our university.

Fourth feature is a comparison function between educational e-portfolio data and school life e-portfolio data. Because the educational e-portfolio database is shared with school life e-portfolio data, we can easily analyze relationships between educational data and school life data. For example, GPA can easily be compared with various school life data such as home study time, hobby time, and club activity time. Teachers and school advisors can see students' problems in their university life.

Collecting Data for analysis

Using the new e-portfolio system, we collected data in two phases. The first phase and the second phase as follows;

- First phase
 - Period: April 2013 – September 2013.
 - Target: Fourth year students who have to do job hunting.
 - Num. of target students: 11
- Second phase
 - Period: April 2014 – September 2014.
 - Target: First year students.
 - Num. of target students: 1296 (all freshmen in our university)

The number of target is small in the first phase because the new e-portfolio system was not completed yet in April 2013. Therefore, this phase is trial version. In contrast, the second phase' target is large because the new e-portfolio system was completed in April 2014. Target was all freshmen in our university.

An analysis result for the first question

Q1 : Which activity greatly influences values of GPA?

In order to answer the Q1, we have compared values of GPA with school life data using the new e-portfolio system. The results shows Figure 4.

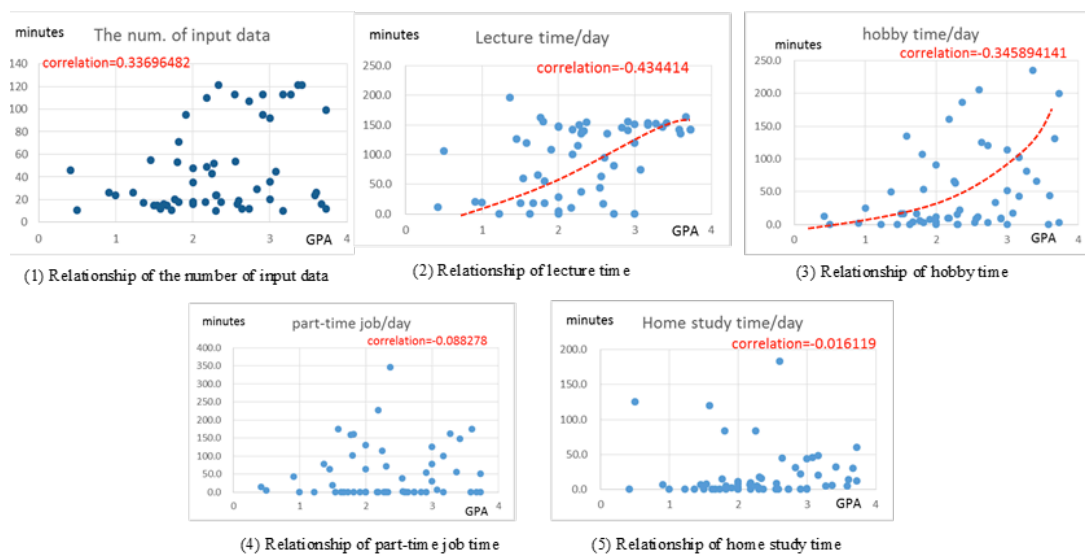


Figure 4 Comparisons between GPA and school life data

We have compared values of GPA with for school life activities;(1) frequency of input school life data, (2) lecture time, (3) hobby time, (4)part-time job time, (5)home study time.

(1) Relationship between GPA and the number of input school life data

At first, we compared GAP with the number of input school life data. The number of input school life data means students' frequency of inputting school life data to the new e-portfolio system. We expected that earnest students for learning are earnest about inputting school life data. The values of GPA have weak a relationship with the number of inputting school life data. The value of correlation was 0.34. As our expecting, earnest students for learning are earnest about inputting school life data.

(2) Relationship between GPA and lecture time

Next, we compared GPA with lecture time. Lecture time means average time of taking lecture a day. For example, if lecture time is 3 hours, the student takes lectures 3 hours every day. Teachers easily expect that GPA is better as lecture time is more. As their expectation, values of GPA had weak relationship with lecture time. That is, earnest students for lecture have better GPA.

(3) Relationship between GPA and hobby time

We compared GPA with hobby time. Hobby time means time that students spend leisure such as sport, reading books, fishing, picnics, and driving by car. We expected that leisure prevents students from learning, because leisure is not directly related to learning. However, values of GPA had weak relationship with the hobby time. That is, students who play hobby much time have better GPA. This is a result unlike our prediction.

(4) Relationship between GPA and part-time job

Next, we compared GPA with part-time job time. The part-time job time means an average time of part-time job a day. For example, if the value of the part-time job time is 1 hour, the student spend 1hour for part-time job every day. Our expectation is that long part-time job prevents students from learning. However, there is no clear relationship between GAP and part-time job. A student who spend much time for part-time job does not always have low GPA.

(5) Relationship between GPA and home study time

Of course, we expected that home study time greatly influences GPA. We think that home study is important for every students. However, relationship between GAP and home study time was not clear. A student who spend much time for home study does not always have high GPA.

In summary, we found that students who earnestly take lectures, and earnestly play hobby have good values of GPA. Part-time job and home study do not clearly influence values of GPA. Here, we reconfirm a limitation of this analysis result. The target is freshmen in our university, moreover, the period from April to September is first season of the freshmen. In limitation of starting new school life for freshmen, these analysis results are available.

An analysis result for the second question

Q2 : What factors lead smooth success of job hunting?

At first, we explored actual condition of students' job hunting activities. Using data accumulated in the school life e-portfolio, we investigate (1) how long do students spend time on job hunting?, (2) relationship between total time of job hunting and job hunting success, (3) relationship between GPA and job hunting success.

(1) How long do students spend time on job hunting?

We investigated time on job hunting. Students spent about 40 hours a week at job hunting peak period. A student spent 100 hours a month for job hunting. The maximum time on job hunting was greatly over our prediction.

(2) Relationship between total time of job hunting and job hunting success,

Next, we investigated relationship between total time of job hunting and job hunting success. We found that total time of job hunting was not related with job hunting success. For example, a student who spent maximum time on job hunting did not succeed in his job hunting. Of course, he get a job, however, the job was not his favorite job. And he succeeded his job hunting at late period of the fourth year. Therefore, a student who spends a lot of time on job hunting does not succeed his job hunting.

(3) Relationship between GPA and job hunting success.

We easily expected great relationship between GPA and job hunting success. However, there was no clear relationship between GPA and job hunting success. For example, a student who had a high value of GPA did not succeed his job hunting. In contrast, a student who had a low value of GPA succeeded his job hunting at early period of fourth year. A good value of GPA did not always lead job hunting success.

Therefore, we did not find clear factors of job hunting success. Of course, the number of the target is 11 in the first phase. The number of the target is too small. However, we found difficulty of finding job hunting success factors. One factor does lead job hunting success. At least, a simple factor such as GPA, job hunting total time does not lead smooth success of job hunting. We found that complicated relations among several factors may lead job hunting success. We have to continue investigating the factors for job hunting success using accumulated data in the new e-portfolio system.

Works in future

The new e-portfolio has been just started at April 2014. Accumulated data is not sufficient. If the new e-portfolio system continues running for four years, we will see individual historical data of not only educational data but also school life data (See Figure 5). When a student becomes fourth years in our university, the student can see change of GPA for four years. For example, at a later half period of second year, GPA was lowest. The student can review how he spent time in school life in the historical data. The student found his problems in his school life. For example, because he spent a lot of time for part-time job, he was frequently absent from lectures. Therefore, GPA was low. In contrast, at fourth year, his GPA improved. Because he faced his job hunting activities, he earnestly studied in lectures. His historical educational data and school life data present in such charts. Teachers and school advisors can also advice students with the historical charts. Problems of students in university life will be shared among students, teachers, and school advisors.

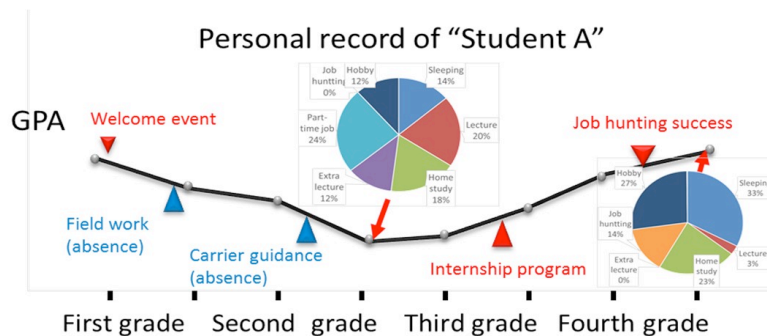


Figure 5 Historical data of education and school life

Conclusion

We have developed a new e-portfolio system including educational data and school life data for university education. A feature of the new e-portfolio system is a concierge in smartphone. The concierge asks students various questions every day. Students can easily input their school life data every day. In order to clarify relationship between GPA and school life, we have collected educational data and school life data in two phases. Within the limits of freshmen, students who earnestly take lectures, and earnestly play hobby have good values of GPA. In addition, students spend 40 hours on job hunting a week, maximum time on job hunting was 100 hours at the peak period. At least, a simple factor such as GPA, job hunting total time does not lead smooth success of job hunting. Complicated relations among several factors may lead job hunting success.

In future, we will present individual historical charts including educational data such as GPA and school life data. Teachers and school advisors will be discuss improvement of students' school life with students using the historical charts in the new e-portfolio system.

References

- R. Brian. von Kinsky and O. Beverley(2012). The iPortfolio: Measuring uptake and effective use of an institutional electronic portfolio in higher education, *Australasian Journal of Educational Technology*, Vol.28, No.1, pp.67-90.
- P. Kim, C. Kee Ng, and G. Lim (2010). When cloud computing meets with Semantic Web: A new design for e-portfolio systems in the social media era, *British Journal of Educational Technology*, Vol.41, Issue 6, pp.1018-1028.
- O. Lopez-Fernandez and J. Luis Rodriguez-Illera (2009). Investigating university students' adaptation to a digital learner course portfolio, *Computers & Education*, Vol.52, Issue 3, pp.608-616.
- C. Chang, K. Tseng, C. Liang, and T. Chen (2013). Using e-portfolios to facilitate university students' knowledge management performance: E-portfolio vs. non-portfolio, *Computers & Education*, Vol.69, pp.216-224.
- N.L. Carroll, R.A. Calvo, and L. Markauskaite (2006). E-Portfolios and Blogs: Online Tools for Giving Young Engineers a Voice, *Information Technology Based Higher Education and Training*, 2006. *ITHET '06. 7th International Conference on*, pp.1-8.
- S. Rodriguez-Donaire, B.A. García, and S.O. del Olmo (2010). e-Portfolio: A tool to assess university students' skills, *Information Technology Based Higher Education and Training (ITHET)*, 2010 *9th International Conference on*, pp.114-124.
- R. H. Shroff, C. C. Deneen, and E. M. W. Ng (2011). Analysis of the technology acceptance model in examining students' behavioral intention to use an e-portfolio system, *Australasian Journal of Educational Technology*, Vol.27, No.4, pp.600-618.
- A. Alexiou and F. Paraskeva (2010). Enhancing self-regulated learning skills through the implementation of an e-portfolio tool, *Procedia - Social and Behavioral Sciences*, Vol. 2, Issue 2, pp.3048-3054.