

## Curriculum Reform in Library and Information Science Education by Evidence-based Decision Making

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### ABSTRACT

The student surveys are conducted to better understand the student's views and help restructure curriculum. This article explored characteristics of students of the College of Knowledge and Library Sciences (KLIS) at the University of Tsukuba in Japan. The KLIS conducted two kinds of student surveys in 2009 and 2010: a) a standardized survey and b) internal surveys. The results of the surveys showed many students attended the KLIS to major in library and information sciences. Students expressed a high level of satisfaction with the academic program and the general quality of classes provided. The surveys also revealed that students of the KLIS had confidence in their academic performance during high school and believed they could enter their first-choice college. While few of the younger students were aware of the importance of computer competency, the importance of computer courses becomes more apparent in more senior years, indicated by lower dissatisfaction in higher grades. Based on these student surveys, the KLIS has already reformed its curriculum started in 2007. The authors hope that their ideas will progress by combining a standardized student survey with a specialized one. This will lead to a better understanding of who the students are and what they want, and such efforts can maintain the students' high satisfaction levels and their assessment of the high quality of classes.

**Keywords:** Curriculum; Standardized Student Survey; Self-efficacy; evidence-based reform; Student evaluation

### INTRODUCTION

The student surveys are conducted to better understand the student's view and to help curriculum restructure. In other words, evidence-based decision making can guide college education reform. Recently we have observed that the majority of the students studying Library and Information Sciences are fond of reading, do not miss their classes, and are very serious in their classes. Many are not studying with the explicit goal of pursuing a career as librarian, though most entertain the thought of becoming one. This fuels the question as to whether these characteristics have been formed as a result of the efforts of the faculty itself. In order to assess this student surveys were conducted to better understand the student's views and help restructure our curriculum. This article explored characteristics of students of the College of Knowledge and Library Sciences (KLIS) at the University of Tsukuba in Japan.

### OUTLINE OF SURVEYS

The KLIS conducted two kinds of student surveys in 2009 and 2010: a) a standardized survey: Japanese Cooperative Institutional Research Program Freshman Survey (JFS), and b) internal surveys (conducted at KLIS only): General Self-Efficacy Scale College survey (GSES) and student evaluation of the KLIS curriculum. All the surveys were questionnaires. The internal surveys were conducted on-line.

### JFS

The JFS is a Japanese version of the Cooperative Institutional Research Program Freshman Survey conducted at the Higher Education Research Institute at UCLA. The first JFS was conducted by the Higher Education and Student Research Center at Doshisha University in July, 2008, and had approximately 150 participating universities. The survey covered a wide range of student characteristics.

This article discusses some characteristics of the KLIS students, as ascertained by the 2009 JFS. The KLIS survey was conducted in a class of the freshman seminar, a required

course for all freshmen at the University of Tsukuba. The questionnaire was distributed, filled in, and collected at the end of the class. Of 102 freshmen, 99 students answered (97.1%), as shown in Table 1. In Japan, the new academic year starts in April. The survey was conducted in June.

**Table 1: Number of Respondents of JFS 2009**

	National		KLIS	
	N	%	N	%
Male	3387	48.5	42	42.4
Female	3398	48.7	56	56.6
NA	196	2.8	1	1.0
Total	6981	100.0	99	100.0

### **Internal survey**

In addition to the JFS survey, a KLIS internal survey was conducted in April of 2009 and 2010. The survey consisted of evaluation of the KLIS curriculum and measurement of optimistic self beliefs using the General Self-Efficacy Scale. While the JFS reveals overall satisfaction levels with university curricula in addition to the self-image of students, it does not provide details specific to our institution. Since this information is required to help reform our curriculum a separate internal survey was conducted. This survey also allowed us to ascertain our student's eagerness to learn, since we have noticed some students have become slugging in behaviour. The survey was web-based and password protected to avoid multiple responses by a single person.

While Self-efficacy defined by Bandura is well known, in this study, we ascertained the emotional triggers for learning eagerness and positiveness using the General Self-Efficacy Scale (GSES) characterised by Sakano and Tohjoh (Sakano and Tohjoh, 1986).

This article discussed some GSES results conducted in April, 2010. The survey questions were identical to the 2009 and in general the pattern of the respondents was similar. The response rate for sophomores was 76.5% (78 out of 102), 81.6% for juniors (80 out of the 98) and 86.3% for seniors (101 out of 117 seniors). The average response rate was approximately 80%.

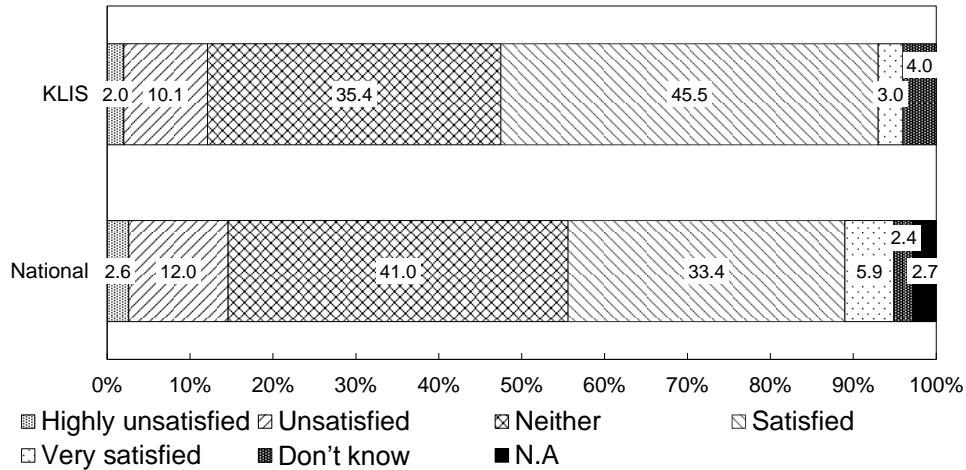
## **JFS RESULTS**

### **Reasons and Satisfaction**

Many students attend our college to major in "library and information sciences" or "knowledge sciences", both disciplines that are hard to find at other universities. Students have expressed a high level of satisfaction with the academic program and the general quality of classes provided. When asked 'what the most important reasons for attending university are?', the three most important factors (responses of "strongly agree" and "agree") at the national level in 2009 were: (1) "I can obtain a qualification" (73.8%), (2) "I can get a university degree" (72.2%), and (3) "I want to enjoy student life" (67.6%). At KLIS however, students responded as follows: (1) "I was interested in the curriculum" (81.9%), (2) "I can obtain a qualification" (75.7%), and (3) "I can get a university degree" and "I want to enjoy student life" (68.7%). While the KLIS responses are similar to the national responses over 80% of students enter KLIS based on the learning content. Since there are only two other departments that offer "Library and Information Science" as a major in Japan, a high percentage of our students come to KLIS with the intention of specialising.

Next we asked how KLIS students evaluated their college education. 43.9% of respondents answered 'very satisfied' or 'satisfied' in the national survey, compared to 53.5% in the KLIS survey. When asked about the content of academic program for freshman, a total response rate of "Very satisfied" and "Satisfied" at the national level was 36.1% compared to 53.6% in the KLIS survey, suggesting KLIS students are more satisfied than students overall in Japan.

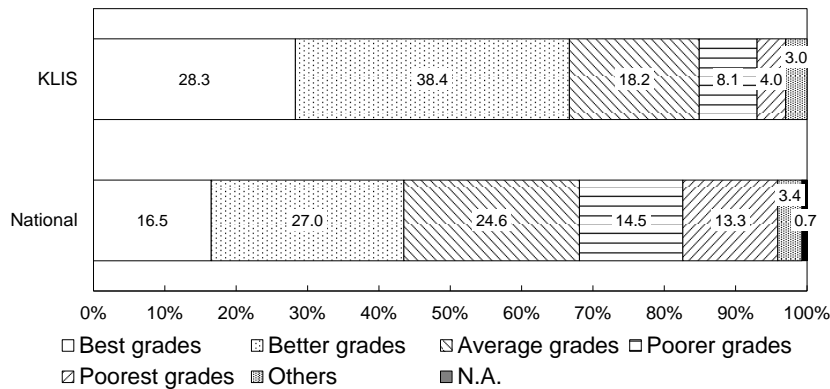
Figure 1 shows the satisfaction with overall quality of class. While a total response rate of “Very satisfied” and “Satisfied” at the national level is 39.3%, this is higher at KLIS at 48.5%. To summarize, KLIS students are more satisfied with college education at the University of Tsukuba than students overall in Japan.



**Figure 1: Satisfaction of overall quality of class**

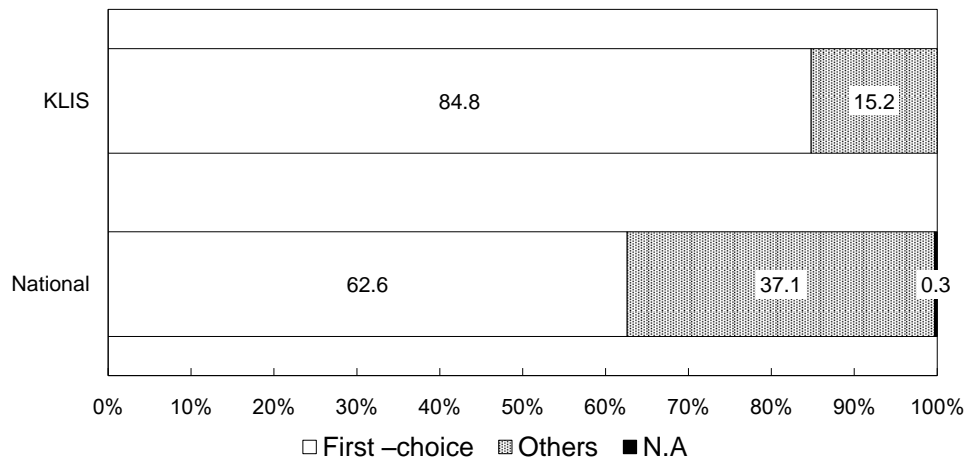
**Students' Self-Image**

The survey revealed that students of KLIS had confidence in their academic performance during high school and believed they could enter their first-choice college. On academic performance at high school, a total response rate of “the best grades” and “the better grades” was about 45% at the national level, compared to 70% for KLIS students (See Figure 2).



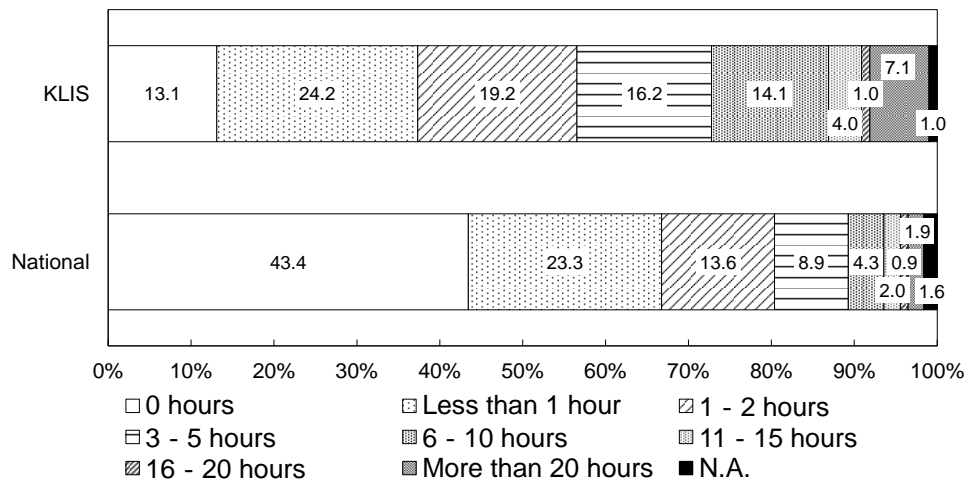
**Figure 2: Academic Performance at high school**

About 60% of the students entered their first-choice college at the national level, while 80% of KLIS students did (See Figure 3).



**Figure 3: Rank order of College Choice**

Compared to the average student, KLIS students enjoy reading and spend more time on? reading. As shown in Figure 4, at the national level more that 40% of students do not read books as a hobby (zero hours), while for KLIS students less than 15% of respondents do not read books.



**Figure 4: Reading as a hobby**

This indicates that our students are very familiar with reading. This is not surprising since most of our students enter KLIS to learn library and information sciences, with the intention to become a librarian in the future.

The students of KLIS have some confidence in their “writing expression capacity” and “capacity for reading” which may be strongly associated to reading books as a hobby, while their general self-image is quite low. In other words, perceived level of general abilities is very low. Positive attitudes such as “Competitive spirit” and “Morale” are poor and they do not show confidence in “Cooperativeness” and “Physical health.” This suggests that there may be many students who prioritize being alone over actively being with others, which may limit both their perspectives and experiences. It is important for us to try and expand our students’ perspectives through our curriculum.

We were interested in understanding how students view themselves and thus looked at the ratio of students who evaluate their ability as “I am above average” and “I am in the top 10

%. The JFS asked the respondents about a total of 24 abilities in 2009. Only four abilities were of a higher ratio for KLIS students compared to the national level. These were "Academic achievement" (national 17.4%: KLIS 27.3%), "Confidence in intellectual ability" (national 17.0%: KLIS 21.3%), "Writing expression capacity" (national 16.6%: KLIS 30.3%), and "Capacity for reading" (national 20.7%: KLIS 40.4%) suggesting that our students are confident in these areas.

On the other hand, there were four abilities for which the difference between the national and the KLIS was over 10%, with the KLIS students being lower. There were "Competitive spirit" (national 36.4%: KLIS 20.2%), "Cooperativeness" (national 34.7%: KLIS 21.2%), "Morale" (national 39.8%: KLIS 27.3%), and "Physical health" (national 42.6%: KLIS 29.3%). These four abilities were lower for both years. This suggests that KLIS students have less confidence than the average student in these abilities.

## INTERNAL SURVEY RESULTS

### *Curriculum Evaluation*

When asked to assess the KLIS curriculum of the previous academic year, the students evaluated using a six-point scale system from five points ("Strongly agree") to zero point ("Strongly disagree"). Average points were calculated for each academic grade. Total average point was 3.13 suggesting a general positive impression of the curriculum.

For example, on "There were many courses which I wanted to take," the sophomores evaluate relatively low (2.56) and the juniors evaluated 2.98. It means the evaluation is improved and the difference was statistically significant ( $p=0.037$ ). The seniors evaluated more highly (3.30) than juniors, however the difference was not statistically significant.

On "There were many library courses" and "There were many mathematics and computer courses", the sophomores evaluated 1.79 and 3.88 suggesting that sophomores felt that the types of courses offered are not balanced. Freshmen were asked the same question one day after the entrance ceremony (N=107). They responded 3.83 on "There are many library courses" and 3.89 on "There are many mathematics and computer courses." This suggests that new KLIS students perceive the courses offered to be well balanced. Once the student progresses on the course however there is a shift in attitude, likely causing dissatisfaction for students who see library courses as being the important course for working in a library. In fact, understanding digital resources and library management is an essential part of the learning process. While few of the younger students are aware of the importance of computer competency, the importance of computer courses becomes more apparent in more senior years, indicated by lower dissatisfaction in higher grades.

Rather surprisingly, despite complaining about the balance of courses sophomores evaluate 3.46 on "I could get competence to use computer" and 3.47 on "I could get practical competence by laboratory courses." This suggests that students are aware that are gaining skills even though they complain. This point associated that the evaluation of "I could study from basic" and "I could understand the contents of the courses well" improve as their grade in college advanced.

**Table 2 Average Score of Students' Evaluation**

	Sophomore	Junior	Senior
Preparation and review were necessary to get credits	3.53	3.29	2.98
Curriculum was coherent	3.23	3.21	3.06
I could learn a variety of points from humanities and sciences	3.37	3.61	3.38
I could gain a deep cultured mind	2.79	3.31 <sup>†</sup>	3.04
I could study the basics	3.09	3.15	3.24
I could get competence to explore information	3.40	3.61	3.62
I could get competence to use computer	3.46	3.38	3.57
I could get practical competence by laboratory courses	3.47	3.46	3.61
I needed the required courses	3.03	3.14	3.08

Quantity and contents of elective courses were sufficient	2.87	3.29*	3.13
There were many courses which I wanted take	2.56	2.98*	3.30
There were many library courses	1.79	2.68†	3.34†
There were many mathematics and computer courses	3.88	3.03†	2.89
Class size was acceptable	3.36	3.19	3.09
Equipments of class were fulfilling	3.25	3.10	3.13
Teaching methods were well	2.79	3.04	3.23
I could understand the course contents well	2.73	3.13*	3.32
My understanding level of the course contents was equal to my academic achievement	3.14	3.38	3.18
GPA gave an indication of learning achievement	2.69	2.67	2.29
Career education was sufficient	2.61	3.15†	2.44†
Average	3.05	3.19	3.14

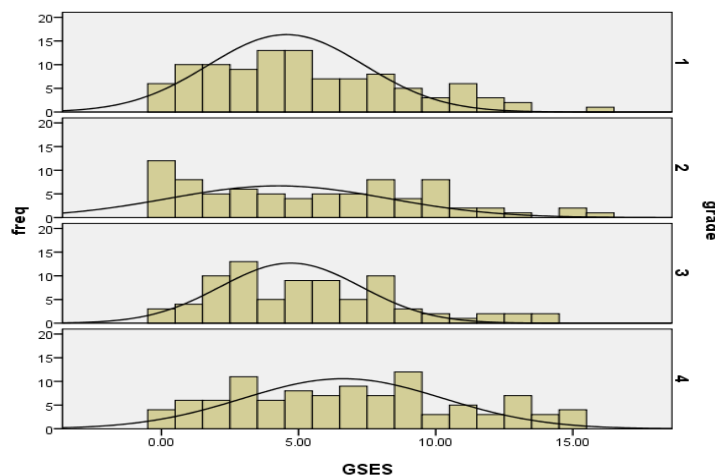
(\* significant at 5%, †: significant at 1%)

### GSES

The GSES was included in the above survey, and the score of the GSES is shown in Table 3. The GSES survey for freshmen was conducted on the day after the entrance ceremony, as mentioned earlier. According to Sakano, who developed the GSES, the average score for college students is 6.58. The KLIS freshman score was comparatively low, with all items scoring lower than Sakano's score. However, the scores from the seniors were comparatively better suggesting that self-efficacy improved as the student began to specialise more. We should pay attention that a distribution of the score has long tails. It is also important to point that there are two peaks for sophomores; a group of zero point and one of 8-10 points. This suggests that some sophomores may be demotivated during the freshman year at the KLIS.

**Table 3: Average Score of GSES**

	Freshman N=103	Sophomore N=78	Junior N=80	Senior N=101
GSES	5.32	5.46	5.41	6.91



**Figure 5: Distributions of GSES**

### Curriculum Reform

Based on these student surveys, we have already reformed our curriculum started in 2007. At first, KLIS provides an academic program that integrates the humanities and sciences to build a

new Library and Information Science. In order to ensure a basic academic competence and provide practical skills, we also set many core courses and laboratory ones during the earlier stages of the course. Our results reveal that this may have led to student confusion, with some students feeling that they are studying more math and computer science courses, while they are taking "Philosophy" simultaneously. Students are often unable to understand why they are learning such courses and therefore, we have to repeatedly explain our curriculum system in full. With these explanations, the students can understand the new academic discipline and its curriculum.

Secondary, before 2008, no library science courses were opened to freshman level. However, based on the students' evaluation, some library courses were added to the freshman level.

In addition to the above curriculum reform, a new course was introduced. We have implemented a two-week internship program in domestic libraries and companies during the junior year. Many students take this internship program and enjoy their experience. Since we face rapid globalization in Japan, we have also opened an International Internship program in 2009. Our hope is that this will encourage students to study various kinds of libraries, and that this program will promote positive attitudes in our students.

## CONCLUSION

We are developing a new and innovative curriculum of "Library and Information Science", paying attention to the student surveys. We hope that our ideas will progress by combining a standardized student survey with a specialized one. This will lead to a better understanding of who our students are and what they want. We believe that such efforts can maintain the students' high satisfaction levels and their assessment of the high quality of classes.

On the other hand, we know that our students tend to enjoy being alone and that sometimes this tendency may lead to the development of mental problems. Therefore, we would like to improve the students' self-efficacy and try to help develop positive attitudes through our curriculum.

## ACKNOWLEDGMENT

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## REFERENCES

- Ishii, H., Mizoue, C., Toshimori, A., Uda, N., Hasegawa, H., Matsumoto, M., and Nakayama, S. (2009). Restructuring library and information science education toward knowledge informatics education: A case of the undergraduate program at the University of Tsukuba. *In Proceedings of the 3rd Asia-Pacific Conference on Library & Information Education and Practice (A-LIEP 2009)*, pp. 145-151, Tsukuba, Japan.
- Mizoue, C., Matsumoto, M., Nakayama, S., Ishii, H., Joho, H. (2010). Ideas for the international collaboration in the LIS education and research at Tsukuba. *In Workshop on Global Collaboration of Information Schools (WIS2010)*, Queensland, Australia. <<https://sites.google.com/site/wischool2010/>>, <accessed 2010/8020>.
- Sakano, Y. & Tohjoh, M. (1986). The General Self-Efficacy Scale (GSES): Scale development and validation. *Japanese Journal of Behavior Therapy*, 12(1), 73-82 (in Japanese).