

# Analysis of Internet Resources Utilization by University Students in Hong Kong during Projects Elicitation

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**Abstract** — The present study aims to investigate the relationship between personal factors of university students in Hong Kong, Internet resource utilization and ability of validation. Questionnaire has been distributed and total 172 valid questionnaires has been collected. The observation shows that gender does not influence on the utilization of Internet resources.

**Index Terms** — e-learning, Internet resources, university student, project elicitation

## I. INTRODUCTION

Nowadays, as the advanced information technology provides easier access to a great deal of resources and information, the sharing and obtaining information via the Internet has been common for public especially for students.

In university, students are required to complete an individual or group project to fulfill the course requirement. In order to provide for authority and enhance persuasiveness, some key statements are supported by different kinds of reference included in the list of bibliography.

Furthermore, due to convenience of Internet that can be accessed at any time in anywhere, students in the university are used to searching the useful and relevant resources through it to finish their course projects. They prefer to make use of the Internet rather than find the true copy of sources in the traditional libraries to extract the information what they need. According to D'Esposito and Gardner, their study indicates that almost all students in the university prefer to search related documents instead of classical libraries for their academic works provided that Internet resources are available to be accessed [3].

The diversity of Internet resources also contributes to the acquirement of information; therefore, it increases the intention of using Internet resources when conducting their projects. A wide variety of electronic resources include but

not limited to search engines, online database, e-book, website assignments, e-journals, online libraries, online encyclopedias and e-news. University students are permitted to access many sources in e-library. The universities in Hong Kong cater for various sources in electronic so that students are available to access the electronic resources and acquire beneficial information for academic purpose.

Nevertheless, some misleading information still exists in the Internet resources owing to its high accessibility. The reliability and accuracy of the information have to be validated carefully with a view to filter fake or wrong information.

In order to investigate the use of Internet resources by university students, research hypotheses in this paper are defined that (1) the relationship between gender and the diversity of Internet resources that students choose, (2) the relationship between level of students and the ability to extract reliable information.

## II. LITERATURE REVIEW

There are some characteristic differences between men and women in terms of biological and social difference. Extensive research stated the role of gender differences on students' motivation to use Internet resource [6]. Various studies observed that using computer is a male dominant activity and males have positive attitudes towards using technology as opposed to females [2,5,9]. In addition, girls perceived themselves has the right to be part of computer culture as boys but boys still stand a dominate role in using computer [2]. In other words, the students' preference on the use of various Internet resources for their project elicitation varies with their gender.

Aside from self-perception and cultural influence, past research found that females are less confident in using technology for eliciting Internet resources [8,10]. Li and Kirkup also mentioned that male students coming from Chinese or British were more confident in using Internet technology than females. They also agreed that using computer was a male-dominant activity and males generally have stronger computer skills than females [9]. Kahveci observed that male students have a higher perceived personal ability to extract the electronic information for their project elicitations than female students. [6]. Owing to less confidence, female students lose their perceived ability of using technology [7].

In terms of male-dominant activity, confidence and

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perceived personal ability, gender is one of important factor affecting on varieties of Internet resources which students make use of. Consequently, we hypothesize:

H<sub>1</sub>: Gender is dependent on utilization of Internet resources.

Ersot and Aktay conducted a study and pointed out that teachers investigate the Internet resources carefully from the point of the reliability for assignment and project preparations [4]. As teachers are probably more experienced than senior students, and seniors are more experience than juniors, there is a significant relationship between the hierarchical level of study and ability to distinguish reliable Internet resources in order to get more achievements from assignments and projects. In view of this, higher level of study implies more experience gaining from previous courses to validate the reliability of accessed online information. Hence, we hypothesize:

H<sub>2</sub>: Senior-level student has a stronger ability to validate the reliability of Internet resources than junior-level student.

### III. METHODOLOGY

Questionnaire survey is chosen as the research method in this study. It contains a set of questions and aims to gather survey data which are responded by sample of people about the beliefs, attitudes, thoughts, behaviors, and so on. By compiling the data collected in a population, researchers are allowed to know that group as a whole thinks or behaves [1]. Questionnaires are distributed via the internet of printed copy. Each question is ensured to be fully completed by respondents. In the other words, incomplete observation in the questionnaire is deemed as invalid data.

This approach is widely adopted in different fields, such as educational planning to collect the feedback about school system or political research to collect the thoughts toward particular issues of the public. In this research, self-administered questionnaire was used to collect the data of behaviors of them towards Internet resources among university students in Hong Kong. The factor of using each Internet resources is represented by a binary variable (Refer to TABLE I). Student having used the particular Internet resource should answer “Yes”, otherwise “No”. Another factor, Ability of validation, consists of five questions and its measurement follows 5-points Likert scale (See TABLE II) to indicate how students agree with the key statement, i.e., “1” represents “Strongly Disagree” while “5” represents “Strongly Agree”.

Pilot study was carried out prior to distributing to respondents in a large scale so as to conduct a preliminary analysis before committing to a full-blown study or experiment and know how much the degree of respondents understanding the questionnaire without any explanation. The participants were asked to give feedback of the questionnaire one by one so that the questionnaire can be improved accordingly.

Having conducted pilot study and finalized the question design, questionnaires were distributed to university students

in Hong Kong who access the internet resources to work on their academic project.

In total, 193 questionnaires were distributed and 184 copies were returned. Therefore, the response rate was:

$$= \frac{\text{collected samples}}{\text{total numbers of questionnaires distributed}} = \frac{184}{196} \times 100\% = 93.88\%$$

TABLE I  
ITEMS OF QUESTIONNAIRE (Utilization of Internet Resources)

Question	Items (Internet Resources)	Response
1	Search Engines	Binary (Yes / No)
2	Online Databases	Binary (Yes / No)
3	E-Books	Binary (Yes / No)
4	Website Assignments	Binary (Yes / No)
5	E-Journals	Binary (Yes / No)
6	Online Library	Binary (Yes / No)
7	Online Encyclopedias	Binary (Yes / No)
8	E-Newspapers	Binary (Yes / No)

TABLE II  
ITEMS OF QUESTIONNAIRE (Ability of validation)

Question	Items	Level of agreement
1	Crosschecking the accuracy of online information	5- points Likert Scale
2	Confidence of information from the Internet	5- points Likert Scale
3	Attention of website domain containing “gov” and “edu”	5- points Likert Scale
4	Quoting latest sources with checking date	5- points Likert Scale
5	Identifying the author of Internet sources	5- points Likert Scale

### IV. RESULTS

In the responded questionnaires, twelve of them were found to be incomplete and thus eliminated from the sample. The remaining and valid 172 questionnaire are used for further statistical analysis. 42.4 % of them are returned by male students while 57.6% of them are female. Regarding the academic level, 3.5%, 26.2% and 48.3% of bachelor students in the academic year 1, 2 and 3 respectively are treated as junior-level students. The senior level students studying bachelor in the final year, postgraduate or above occupy 29.7% of total.

The utilization of each type of Internet resources is summarized in TABLE III with the dimension of gender. To determine the relationships between gender groups and use of Internet resources, chi-square test is used to test the hypothesis mentioned in Section III. The corresponding *p*-value is also computed under  $(2 - 1) \times (2 - 1)$  degree of freedom and shown in TABLE IV.

TABLE III  
Summary statistics of utilization of Internet resources

Internet Resources	Gender	Used (Yes)	Not used (No)
Search Engines	Male	73	0
	Female	99	0
Online Databases	Male	67	6
	Female	96	3
E-Books	Male	54	19
	Female	80	19
Website Assignments	Male	47	26
	Female	73	26
E-Journals	Male	52	21
	Female	75	24
Online Library	Male	60	13
	Female	86	13
Online Encyclopedias	Male	60	13
	Female	80	19
E-newspaper	Male	60	13
	Female	86	13
Emails/Social Networks Tools	Male	45	28
	Female	62	37
Online Forums	Male	29	44
	Female	41	58

TABLE IV  
Chi-squared test for each Internet resources between male and female group

Internet Resources	Chi-squared, $\chi^2$	p-value
Search Engines	N/A	N/A
Online Databases	2.281	0.131
E-Books	1.141	0.286
Website Assignments	1.743	0.187
E-Journals	0.445	0.505
Online Library	0.716	1.324
Online Encyclopedias	0.053	0.096
E-newspaper	0.716	1.324
Emails/Social Networks Tools	0.017	0.896
Online Forums	0.050	0.824

Aforementioned, five questions are designed to assess the students' ability of validating the Internet resources. As a result, total five scores of are found in the single observation of survey. By taking the mean of the five scores, the mean perform the magnitude of the factor, ability of validation. TABLE V is constructed to show the statistics of ability of validation in the group of junior and senior level.

TABLE V  
Summary statistics of ability of validation

Level of Education	N	Mean	S.D.
Junior Level	121	3.39	1.099
Senior Level	51	3.65	0.973

In order to determine whether senior group has a stronger ability than junior one, independent T-test is conducted under the assumption of different variance of these groups and the results are presented in TABLE VI.

TABLE VI  
Independent T-Test for ability of validation between junior and senior level

Factor	t	p-value
Ability of validation	-3.045	0.999

## V. DISCUSSION

Based on the hypothesis testing result in TABLE IV, all *p*-value exceeds 0.05 and this implies there is independent relationship between gender and utilization of each Internet resources. As a consequence, the research hypothesis,  $H_1$  is totally rejected and thus gender is independent with use of Internet resources.

The contradiction with the studies mentioned previously and this study exists in the present study. The Internet technology has advanced rapidly and improved. It causes that more user-friendly interface and powerful function can be delivered to the user, not just male. Therefore, making use of various types of internet resources for university students' project elicitation is no longer difficult, no matter what their genders are. It is believed that most of people are able to search information and learn via Internet nowadays especially youngster.

Referring to TABLE V, it is observed that the means of ability are 3.39 and 3.65 for junior and senior students respectively. This indicated that juniors are more capable to validate the reliability of accessed Internet resources than seniors. According to the results of independent T-test (Refer to TABLE VI), *p*-value is greater than the significant level, 0.05. Hence, students in higher level of study do not show a stronger ability to validate the reliable resources and  $H_2$  is also rejected.

The finding in the study is different from the study conducted by Ersot and Aktay [4]. It might be due to the difference of target group in the study. The target of previous study mainly focused on the students who were studying major in elementary education. Nonetheless, the respondents mainly are the students with engineering major. The project requirements vary with different majors. As a student from engineering college, their project requires reliable resources and references to support and prove their arguments no matter how much level of study. Junior engineering students are necessary to complete their projects with Internet resources and pay attention to the reliability of that during project elicitation.

## VI. CONCLUSION

It can be concluded that the two hypotheses in this paper are all rejected. As a result, the factor of gender is independent on the utilization of Internet resources and senior-level university student in Hong Kong does not show a stronger ability of validating than junior level.

The limitations of this study are that uneven distribution of education level. If sufficient resource is provided, the sample size is enlarged which the education level will be more evenly distributed.

Apart from the factors of gender and level of study, future studies can be conducted to investigate other different factors, for instance, age as well as academic performances.

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