First-Year Student Satisfaction with Lectures, Assessments, and Academic Services

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Abstract—This study aims to find out first year student satisfaction at the Faculty of Engineering, Yogyakarta State University (FT UNY) on lectures, assessment of learning outcomes, academic services, and their effects on learning motivation. This ex post facto research was conducted from January 2019 to July 2019. The population of this study was 689 first year students from nine Study Programs at FT UNY. The research sample was 312 first year students, taken by proportional random sampling technique. Each Study Program is taken 4 Basic Courses (2 courses in odd semester, and 2 courses in even semester) in a purposive manner. Data collection using questionnaires and interviews. Instrument validation uses expert judgment. Instrument reliability estimation based on research data obtained alpha Cronbach of α = 0.84. Research data were analyzed descriptively, and regression analysis. The results showed that in general student satisfaction with lectures, assessment of learning outcomes, academic services and learning motivation was in the category of Good. These three variables, both individually and as a whole significantly influence the Learning Motivation. The three independent variables have a positive and significant effect on learning motivation. The regression line equation is obtained Y = 1.586 + 0.341 X1 + 0.130 X2 + 0.454 X3. All three variables contributed an effect of 53.1% on learning motivation.

Keywords: first year, satisfaction with lectures, assessments, academic services

I. INTRODUCTION

Education has a very big role in developing human resources. Higher Education (HE) is a level of education after secondary education organized by tertiary institutions. Higher education is very important for national development, and is designed to alleviate poverty, improve health and improve the economy of the community [1]. The Faculty of Engineering of Yogyakarta State University (FT UNY) is a university whose main purpose is to prepare graduates to become educators, both in the field of vocational secondary education and training in the business world [2]. In accordance with the development of the community and existing policies, some graduates of FT UNY work not as educators.

First year student experiences a transition from being a high school/vocational student to students at HE. The student must be able to adapt and adjust to life on campus, such as ways of learning, thinking, communicating, socializing, and other related matters. The ability of students to adapt to the atmosphere on campus, both in academic and non-academic activities, greatly influences their sustainability and success in studying at HE.

The inability of new students to adapt to the conditions at HE will potentially experience various problems. Not a few new students did not continue their studies in the second year, or transfer to another HE which is considered more suitable. Students who are not able to adapt well, and still survive in college, have the potential to become low-achieving students, or need more time to complete their studies.

Higher Education must understand the condition of these new students. The main task of HE is to provide services to students, both academic and non-academic services. Services for new students, such as services in the lecture process, use of facilities, communication, information, health, talents and interests and other related matters will affect the comfort and satisfaction of students in participating in academic activities on campus. New students will more easily adapt and feel more comfortable in taking part in activities on campus if they get satisfying service as expected.

Service is one of the main indicators of a high quality HE. The concept of quality in higher education can be viewed from four aspects, namely quality as purposeful, exceptional, transformative, and accountable [3]. Quality as purposeful relates to higher education products and services in accordance with the vision/mission, goals, requirements, accreditation, and standards set. Quality as exceptional leads to an extraordinary level of service and university products, meaning a level of excellence that cannot be achieved by most other universities. The quality of the transformative aspects means that the services and products of higher education provide positive changes to students, including...
affective, cognitive, and psychomotor, as well as professional potential. The quality of accountable aspects is related to the accountability of the use of facilities, services, and higher education products to all related parties (stakeholders).

Quality of service in higher education as the difference between students’ expectations about what they will get from higher education and their satisfaction with expectations that are realized. There are several main reasons why it is necessary to look at students’ opinions, expectations and satisfaction: (1) get evidence that students have the opportunity to comment on the situation, and use this information in improving the services of higher education institutions; (2) encouraging students to reflect on their knowledge acquisition process; (3) allows institutions to establish quality criteria and to create indicators that can contribute to the reputation of their institutions in the market; (4) gives students the opportunity to express their satisfaction with their academic experience [4].

Academic institutions are becoming increasingly aware of the importance of student satisfaction. Satisfaction is the level of one’s feelings after comparing the performance/results he feels with his expectations. If the performance is less than expected, then the customer will be disappointed. Conversely, if the performance matches or is more than expected, then the customer will be satisfied. Student satisfaction positively influences their students’ decision to continue their education at the institution concerned, and it is possible to attract prospective students [5]. Student satisfaction also affects student motivation, their presence, and an increase in the income of educational institutions.

Lecturers have a very important role in the implementation of the entire educational process, especially in learning/lectures and assessment of learning outcomes. In Higher Education, there are no supervisors who specifically monitor and nurture lecturers in lectures. Lecturers seem to have excessive authority in designing and implementing learning, as well as assessment of learning outcomes. Coaching conducted by majors/study programs and leaders in the Faculty or Higher Education is carried out more on the administrative aspects. The quality of lectures at FT is suspected to not be able to fully meet the expectations of new students.

Student learning outcomes are determined by several factors, including lecturers, student potential and learning motivation, infrastructure, and other supporting facilities. The performance of lecturers in learning largely determines learning outcomes. The contribution of lecturers in learning success is quite large. Some potential weaknesses of lecturers in learning include: preparation of learning, teaching/reference materials, mastery of the material, ability to teach, and appropriateness of assessment.

Lecturers who are competent to carry out their main duties are lecturers who have pedagogic, professional, personal and social competencies needed in the practice of education, research, and community service. Effective learning is learning that can improve the achievement of student competencies in such a way that can support the success of students in the future [6]. The learning process is developed according to the characteristics and objectives of the curriculum. The Learning Process should be conducted interactively, fun, motivating students to participate actively, in accordance with the talents, interests, and the physical and psychological development of students. For this reason, each school plans learning, implements the learning process and evaluates the learning process to improve the efficiency and effectiveness of the achievement of graduate competencies. Assessment is an important thing that must be done, and integrated with learning activities.

The quality of learning greatly influences learning outcomes. Effective learning is learning that can improve the achievement of student competencies in such a way that can support the success of students in the future. One of the characteristics of vocational education is that learning must be related to certain tasks or jobs in the world of work [7]. The learning process must be held interactively, fun, motivating students to participate actively, in accordance with the talents, interests, and psychological development of students.

The role of lecturers is very important in learning. Lecturers are very influential on student attitudes and behavior, as well as academic achievement [8]. The effectiveness of learning is higher for lecturers who prepare learning plans than lecturers who do not prepare learning plans [9]. The use of strategies in learning has a positive impact on student learning outcomes [10]. The results of studies of several studies of lecturer motivation indicate that lecturer motivation is one of the main factors that influence student learning motivation, and determine the effectiveness of learning [11].

Motivation is an impetus that can trigger a sense of enthusiasm and is also able to change the behavior of humans or individuals to lead to things that are better for themselves. Motivation is the overall driving force within students that gives rise to learning activities, which ensures continuity of learning activities and which gives direction to learning activities, so that the goals desired by the learning subject can be achieved [12]. Motivation is a change in a person or person that is marked by the emergence of feelings and reactions to achieve goals. Students who have learning motivation will pay attention to the lessons delivered, read the material so they can understand it, and use certain learning strategies that support. In addition, students also have intense involvement in these learning activities, high curiosity, looking for materials related to understanding a topic, and completing assignments given. Learning motivation is a process that encourages learning, direction, and persistence in behavior.

Lecturer performance in learning is very important for students, especially for prospective teachers. Students must not only master the material taught, but also must master how to teach correctly. Inaccuracy of lecturers in carrying out learning will leave an impression on the student's memory. This will be repeated when students become teachers and carry out learning.

New students (first year) are expected to be able to adjust to life on campus, including in participating in academic activities. The campus is expected to provide the best academic services to students. There are still quite a lot of students who have not been able to take part in academic activities due to student ignorance, or the lack of optimal academic services to students. Student motivation is closely related to the environment or physical, social, and academic
conditions, including lectures and assessment of learning outcomes on campus, and internal conditions college student. Some first-year students do not attend lectures as they should. Even some students no longer attend lectures without clear information.

II. RESEARCH METHOD

This ex post facto study aims to determine first-year student satisfaction with lectures, assessment of learning outcomes, and academic services, and their relationship to student motivation. The population of this study was 689 first-year students at the Faculty of Engineering, Yogyakarta State University, Academic Year 2018/2019. A sample of 312 students was drawn from the nine proportional randomly selected study programs.

Research data obtained through questionnaires and interviews limited to students. Instrument validation is done through expert judgment. The questionnaire uses a Likert scale with options 1 to 5. The Student Satisfaction variable questionnaire consists of four aspects, namely: (a) Explanation of Objectives, Scope and Mechanism of Lectures / Learning, (b) Lecturer Mastery of the Material and Submission, (c) Interaction in Lectures, and (d) Assignments. The Student Satisfaction Variable Questionnaire for Learning Outcomes Assessment consists of four aspects, namely: (a) Explanation of Scope and method of assessment, (b) Appropriate assessment implementation with lectures, (c) Contextual/academic assessment, and (d) Feedback/utilization of assessment results. Academic service variables consist of six aspects, namely: (a) Educational Facilities, (b) Lecturers and Academic staff, (c) Responsiveness, (d) Treatment of Students, (e) Understanding of Student Interests, and (f) Academic Information System Services & Ease. Student Learning Motivation variable questionnaire consists of five aspects, namely: (a) Perseverance in learning, (b) Level of effort in facing difficulties, (c) Interest and sharpness of attention in learning, (d) Desire to excel in learning, and (e) Independence in learning. Data were analyzed descriptively and by inference (Regression). The categories of data analysis results can be seen in Table 1.

Table 1. Categories of Data Analysis Results

| Aspect | Mean | Category   |
|--------|------|------------|
| Mi + 1.5 Sbi < X ≤ Mi + 3.0 Sbi | 4.00 – 5.00 | Very Good |
| Mi < X ≤ Mi + 1.5 Sbi | 3.00 – 4.00 | Good |
| Mi – 1.5 Sbi < X ≤ Mi | 2.00 – 3.00 | Low |
| Mi – 3.0 Sbi < X ≤ Mi – 1.5 Sbi | 1.00 – 2.00 | Very Low |

III. FINDINGS

A. Student satisfaction with lectures

Based on the results of data analysis about student satisfaction with lectures, the mean value was 3.93; and standard deviation (SD) of 0.69. Average values and standard deviations per aspect can be seen in Table 2.

Table 2. Results of Student Satisfaction with Lectures in Every Aspect

| Aspect | Mean | SD  | Category |
|--------|------|-----|----------|
| A. Objectives, Scope and Mechanism of Lecture | 3.88 | 0.78 | Good |
| B. Lecturer Mastery of the Material and Submission | 4.03 | 0.75 | Very Good |
| C. Interactions in Lectures | 3.99 | 0.69 | Good |
| D. Assignments | 3.67 | 0.86 | Good |
| Lecture | 3.93 | 0.69 | Good |

In general, student satisfaction with the lecture implementation process was classified as good (Mean = 3.93; SD = 0.69). Lecturer mastery of course material is very good (Mean = 4.03; SD = 0.75), and is the highest score compared to the other three aspects. Lectures which are assessed by students are courses in semester 1 and semester 2. These courses are basic subjects, which are generally relatively easy to understand. Explanation of the objectives, scope and mechanism of lectures are classified as good with Mean = 3.88 and SD = 0.78. This aspect is very important because it gives an initial description to students about the material and how lectures will be carried out. Interaction in lectures is classified as good (Mean = 3.99 and SD = 0.69). The results of this assessment generally provide an indication that students are actively involved in lectures.

The results of this study are in accordance with the results of the study which confirms that an effective teacher or lecturer must meet, among others, mastering learning materials and strategies to achieve learning objectives, understanding student characteristics, being able to communicate and interact with students properly, mastering the use of media, being able to monitor learning progress students, and are responsible for student learning outcomes [13]. Thus, student satisfaction with lectures at the Faculty of Engineering at UNY is encouraging information, although improvements still need to be made. A good level of satisfaction from students will arouse enthusiasm and motivation to learn so that optimal learning outcomes can be achieved.

The assignment aspect, although included in both categories (Mean = 3.67 and SD = 0.86) but is the lowest rating of the three other aspects of assessment. When viewed from the results of the assessment of each item, the items of lecturers returning the tasks that have been checked to students get the lowest score and with less categories. This needs serious attention from all lecturers, especially in providing feedback on assignments given to students.

B. Students satisfaction with Learning Outcomes Assessment

The results of data analysis about student satisfaction with Learning Outcomes Assessment showed that the mean value (Mean) was 3.82; and standard deviation (SD) of 0.75.
Average values and standard deviations per aspect can be seen in Table 3.

| Aspect | Mean | SD | Category |
|--------|------|----|----------|
| A      | 3.85 | 0.9| Good     |
| B      | 3.92 | 0.9| Good     |
| C      | 3.76 | 0.9| Good     |
| D      | 3.71 | 1.0| Good     |
| E      | 3.72 | 0.6| Good     |
| F      | 3.70 | 0.7| Good     |

In general, student satisfaction with the implementation of learning outcomes was classified as good (Mean = 3.82; SD = 0.75). Likewise, in every aspect, it is classified as good. The average value of the suitability of the implementation of the assessment with lectures is among the highest among the three other aspects, namely Mean = 3.92. This is very good because the assessment and learning are essentially integrated. This is in line with the notion that assessment should be directed as an integrated part of learning activities so as to support student learning activities [14]. The assessment and lectures are carried out in an integrated manner. The results of the assessment (formative) are used to strengthen or improve the lecture process (assessment for learning).

The teacher is expected to be able to know accurately about the development progress and achievement of student learning outcomes, as well as what needs to be done for further student development. This is done through an appropriate assessment process. Assessment greatly influences the effectiveness of learning [15]. Thus, student satisfaction with the assessment of learning outcomes so far has been quite encouraging. Nevertheless, related to the average score on the aspects of Feedback / Utilization of Assessment Results which is still the lowest, and student satisfaction with lectures, especially in providing feedback on assignments that are still inadequate, the Lecturers still need to perfect the implementation of formative assessment (assessment for learning, and assessment as learning).

C. Student satisfaction with Academic Services

The results of data analysis about student satisfaction with Academic Services showed that the mean value was 3.69; and standard deviation (SD) of 0.52. Average values and standard deviations per aspect can be seen in Table 4.

| Aspect | Mean | SD | Category |
|--------|------|----|----------|
| A      | 3.50 | 0.7| Good     |
| B      | 3.76 | 0.5| Good     |

The results of student assessment of Academic Services are classified as good (Mean = 3.69; SD = 0.52). Likewise, every aspect of academic services is classified as good. Educational facilities, which include, among others, adequate classrooms, laboratories and workshops and other supporting facilities, although classified as Good, but the average value is the smallest compared to other aspects, namely Mean = 3.50 and SD = 0.73. Lectures on first-year students, including practical courses, are still basic, and facilities for equipment & materials for actual practice are available. Some things that still become obstacles include student access to laboratories and workshops that are relatively limited, and some practice equipment is limited in number.

Services of lecturers and academic staff, according to students are good. Problems related to the service of lecturers and academic staff are the lack of student consultation time to lecturers outside the lecture schedule. In general, the treatment of students is good. The lecturers and academic staff treat students well, both in lectures and outside lectures. Services and convenience of information system according to students in general are also quite good. Some notes that according to students need to be improved include: the signal (wifi) provided for students is still relatively weak and sometimes experiences errors.

Academic services at tertiary institutions are very important and affect the loyalty of students to continue attending the tertiary education. The results showed that service quality has an important role in maintaining student loyalty [16]. For students, excellent service will provide satisfaction and trust so that loyalty at the university can be built. In addition, considering the first-year students come from various ethnicities and regions, as well as a relatively diverse culture. Higher education must be able to understand this diversity and strive in such a way that they can provide the best possible service to students [17].

D. Student Learning Motivation

Based on the results of data analysis about student motivation, the mean value was 4.13; and standard deviation (SD) of 0.57. Average values and standard deviations per aspect can be seen in Table 5.

| Aspect | Mean | SD | Category |
|--------|------|----|----------|
| A      | 3.76 | 0.5| Good     |
Student learning motivation in general, including very high (Mean = 4.13). This is very encouraging because with high learning motivation, it is likely to achieve maximum learning outcomes. This is consistent with the results of research that show that student motivation significantly influences learning achievement [18].

Almost in every aspect, including very high, except for independence in learning that reaches high categories. Based on the results of interviews with students, most of the students felt that they were still rather unfamiliar with the pattern of learning in Higher Education because it was different from learning when they were still in high school / vocational school. To do individual tasks, students still feel confused and lack of confidence. Students also feel reluctant to consult with lecturers outside of class hours.

E. Effects of Lectures, Assessment of Learning Outcomes and Academic Services on Learning Motivation

To test the extent of the influence of student satisfaction in lectures, the assessment of learning outcomes and academic services on learning motivation is carried out a regression analysis. Test requirements including normality, linearity, and multicollinearity of these variables have been carried out and meet the requirements, so that the regression analysis can be continued.

Regression analysis was conducted to examine the effect of student satisfaction in lectures (X1), assessment of learning outcomes (X2), and academic services (X3), both individually and jointly on the motivation of student learning in the first year (Y). Summary of the results of the regression analysis can be seen in Table 6.

Table 6. Summary of Regression Analysis Results

| Aspect | Mean | SD   | Category       |
|--------|------|------|----------------|
| A      | 4.19 | 0.69 | Very Good      |
| B      | 4.29 | 0.65 | Very Good      |
| C      | 4.28 | 0.70 | Very Good      |
| D      | 4.28 | 0.66 | Very Good      |
| E      | 3.68 | 0.67 | Good           |

Learning Motivation

| X1 | Y  | 0.46 |
|----|----|------|
| 2  | 157| 0.00 |
| 0  | 1  | 3.68 |

| X2 | Y  | 0.10 |
|----|----|------|
| 7  | 22.1| 0.00 |
| 5  | 2.39| 0.28 |
| 2  | 6   | 4.13 |

Note:
X1 = Student Satisfaction with Lectures
X1 = Student Satisfaction of Learning Outcomes Assessment
X1 = Student Satisfaction of Academic Services
Y = Student Learning Motivation

Based on the results of the study according to Table 6, each independent variable, namely satisfaction with lectures, satisfaction with the assessment of learning outcomes, and satisfaction with academic services significantly influence learning motivation, both individually and as a whole of these variables.

Together, the three independent variables have a positive and significant effect on learning motivation. Regression equation lines obtained Y = 1.586 + 0.341 X1 + 0.130 X2 + 0.454 X3. All three variables contributed an effect of 53.1% on learning motivation. Individually, student satisfaction with lectures has an effect on student motivation. Regression equation lines obtained Y = 1.982 + 0.464 X1, with a contribution of 35.1%. Satisfaction of the assessment has a positive and significant effect on student motivation, with the equation of the regression line Y = 2.339 + 0.286 X2. This variable contributed 10.7%. Academic services also influenced learning motivation, with the regression line equation Y = 1.490 + 0.651 X3, and contributed 46.3% to learning motivation.

Based on the results of the analysis, it can be emphasized that student satisfaction with learning, assessment, and academic services is very important and influences student motivation. The better student satisfaction with these variables, the higher the student's motivation to learn. The results of similar studies indicate that the most important factors of the learning environment that are connected with motivation and the enjoyment of education are the perception of the usefulness of the studied topics, a feeling of autonomy, and teacher support [19].

The contribution of student satisfaction to the assessment of learning outcomes turned out to be the least compared to the contribution of other variables, namely only 10.7%. This is quite interesting to discuss. However, regardless of the contribution of each variable to learning motivation, Higher Education should provide the best academic, lecture, and assessment services to students. Information about student satisfaction is very useful feedback as well as a reference to continue to make improvements, both in terms of lectures, assessments, and academic services. By providing opportunities for students to articulate their expectations,
lecturers and employees can use these responses for constructive dialogue and work towards a more positive alignment between perceived expectations and the level of student satisfaction with their experiences [20].

IV. CONCLUSION

Based on the results of the study, it can be concluded as follows:

Student satisfaction with lectures, assessment of learning outcomes, and academic services significantly influence learning motivation, both individually and as a whole of the variables. This means that the motivation for first-year student learning can go up or down, depending also on how universities provide services to students.

Lecturers play a very important role in providing services to students. Qualified lecturers are lecturers who are able to meet the academic needs of students in accordance with specified guidelines. If students' learning motivation is high, their learning achievement also tends to be high. High learning achievement achievements also have the potential to increase learning motivation.

Student learning independence is very important to be continuously improved. Learning independence will lead to the ability of students to learn how to learn. Independence is one of the main keys for students to continue learning, exploring, learning various sciences, even those directly related or less related to their field of science.

REFERENCES

[1] Oxford University 2015 International Trends in Higher Education (Oxford UK: University of Oxford International Strategy Office)
[2] Fakultas Teknik UNY 2014 Kurikulum 2014 Program Studi Pendidikan Teknik elektro (S1), Pendidikan Teknik Mekatronika (S1), Teknik Listrik (D3) Jurusan Pendidikan Teknik Elektro (Yogyakarta: FT UNY)
[3] Schindler, L, Puls-Elvidge S Welzant H & Crawford, L 2015 Definitions of Quality in Higher Education: A synthesis of the literature, Higher Learning Research Communications, 5(3), 3-13.
[4] Douglas J Douglas A Barnes B, Measuring student satisfaction at a UK university, Quality Assurance in Education Vol 14 Iss: 3, (2006): 251-267 Douglas J Douglas A Barnes B “Measuring student satisfaction at a UK university”, Quality Assurance in Education, Vol. 14 Iss: 3, (2006): 251-267
[5] Harrison Walker L J When opposites detract: Student (dis)satisfaction in higher education and the importance of compatibility management, Academy of Educational Leadership Journal, Volume 18, Number 1, (2014)
[6] Coe, Robert et all. 2014. What makes great teaching? Review of the underpinning research. Durham University.
[7] McCrone T O’Beirne C Sims D and Taylor A 2015 Review of Technical Education (Slough: NFER)
[8] Blazar David 2016 Teacher and Teaching Effects on Students’ Academic Performance. Attitudes, and Behaviors. Doctoral dissertation, Harvard Graduate School of Education. Accessed January 4, 2018 2:42:39 AM EST
[9] Beatrice W. N., Gathu A., & Bomett J. E. (2015). Influence of Monitoring and Evaluation by Principals on Effective Teaching and Learning in Public Secondary Schools in Githunguri District. Journal of Education and Practice. Vol.6, No.9, 2015.
[10] Westbrook J, Dunnari N., Brown R., Orr D., Pryor J., Boddy J., & Salvi F. 2013 Pedagogy, curriculum, teaching practices and teacher education in developing countries. Final Report. Education rigorous literature review. Department for International Development (DFID), London, UK.
[11] Jiying H., & Hongbiao Y.2016 Teacher motivation: Definition, research development and implications for teachers.Cogent Education (2016), 3: 1217819 http://dx.doi.org/10.1080/2331186X.2016.1217819
[12] Sardiman, A.M. 1990. Interaksi dan Motivasi Belajar Mengajar. Jakarta : Rajawali
[13] James K., Pamela S, & Linda B.. 2016. Effective teaching. Education Development Trust; Reading, Berkshire RG1 4RU
[14] Lindstrom, G., Taylor, L., & Weleschuk, A. (2017). Guiding Principles for Assessment of Student Learning. Calgary: Taylor Institute for Teaching and Learning at the University of Calgary.
[15] Dylan, Wiliam, (2013). Assessment: The Bridge between Teaching and Learning. Voices from the Middle. Volume 21 Number 2, December 2013. The National Council of Teachers of English. From https://www.ncte.org/library/NCTEFiles/Resources/Journals/VM/0212-dec2013/VM0212Assessment.pdf
[16] Untung Usada, Luqman Hakim, and Anita T. Kurniawati 2016 Analisis Pengaruh Kualitas Pelayanan Akademik Terhadap Loyalitas Mahasiswa Unusida Dengan Pendekatan Partial LeastSquare (PLS). Journal Of Research And Technology, Vol. 2 No. 2 Desember 2016P-Issn: 2460 – 5972E-Issn: 2477 – 6165
[17] Jonathan N. & Nick H. 2017 Student Academic Experience Survey. United Kingdom: Higher Education Academy
[18] Adedeji Tella, 2007.The Impact of Motivation on Student’s Academic Achievementand Learning Outcomes in Mathematics among Secondary School Students in Nigeria. Eurasia Journal of Mathematics, Science & Technology Education, 2007, 3(2), 149-156
[19] Radovan, Marko; Makovec, Danijela: Relations between students’ motivation, and perceptions of the learning environment - In: CEPS Journal 5 (2015) 2, S. 115-138 - URN: urn:nbn:de:0111-pedocs-109994 in cooperation
[20] Crisp, Geoffrey; Palmer, Edward; Turnbull, Deborah; Nettelbeck, Ted; Ward, Lynn; LeCouteur, Amanda; Sarris, Aspa; Strelan, Peter; and Schneider, Luke. First year student expectations: Results from a university-wide student survey, Journal of University Teaching & Learning Practice, 6(1), 2009. Available at:http://ro.uow.edu.au/jutlp/vol6/iss1/3