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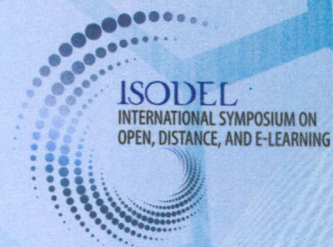
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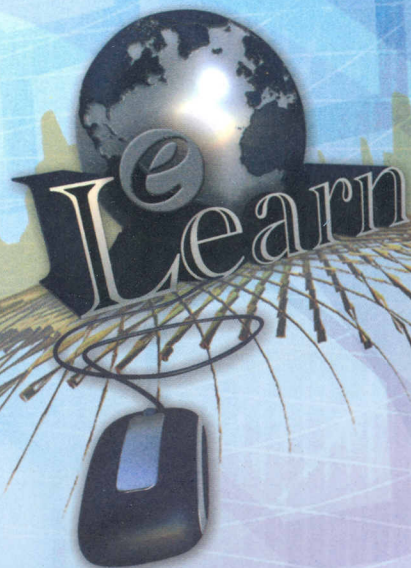
International Symposium on Open, Distance and e-Learning

Yogyakarta, Indonesia, December 8 - 11, 2009

EDUCATION IN DIGITAL ERA:  
CONTINUOUS PROFESSIONAL DEVELOPMENT FOR  
ICT-BASED LEARNING



  
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## **Students Perception on Written Material (Modules) In PJJ PGSD**

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### **Abstract**

*This paper discusses evaluation on written materials (modules) used in universities which serves hybrid mode in delivery courses. 210 students from 10 of 23 universities were selected as sample in this study. Four modules which were evaluated by students are 1). Introduction to Distance Education; 2). Self Learning; 3). Basic ICT; and 4). Learning Skill. The result showed that all modules were responded positively by the students. Students from Java/Bali and outside Java/Bali, agreed that the modules are easy to be read or understood. Only for Basic ICT, the students from Java/Bali and outside Java/Bali had difference. Young students and old students also had difference ability in studying Basic ICT.*

### **Introduction**

One policy of Indonesian government is that every teacher in elementary school must have bachelor degree (Sarjana S1). In fact most of the teachers have not had sarjana degree yet. Teachers have to find a way in upgrading their degree to be sarjana. Problem for these teachers is they still work as teachers but they are also students. These two jobs have to be done simultaneously.

Since 2006, Indonesia has already had prepared some Universities to educate teacher to be sarjana in-service Training. These universities offer undergraduate program (S1) for elementary school teachers. Teaching-learning process in these universities is hybrid learning. Basically students learn from modules and interact with tutor from internet. Most of the time, students spend their time to learn each course from modules by themselves. For a certain length of time in each semester students come to university and stay there for some weeks to follow tutorial program. This period of time is vacation day for students. While the students are in their vacation, the teachers visit the university to do face-to-face tutorial. The rest of the time students-teachers study by themselves (selve-learning).

To realize its policy, government offers scholarship for 100 student-teachers for each university. Students who follow this program are selected by local government. Teachers who passed the selection will receive scholarship for 5-6 semesters, including tuition fee and living allowance.

When students do self-learning, they can learn in a study-group or discussion group in internet with other students. But they need to read the modules/written materials first before discussing the content in a study-group. The question is “how good is the module?”

### Theoretical Framework

Distance education opportunities have become increasingly common in higher education (Rooney et al., 2006). In 2005, about 62% of the 2- and 4-year higher education institutions offered distance education courses (Rooney et al., 2006), up from 56% in 2001 (Waits & Greene, 2003).

In response to the growing demand for a clear definition of quality in distance education, different organizations have provided guidelines and standards (American Distance Education Consortium, 2003a, 2003b; American Federation of Teachers, 2000; Chickering & Gamson, 1987, as cited in Chickering & Ehrmann, 1996; Phipps & Merisotis, 2000; J. C. Moore, 2004; The Quality Assurance Agency for Higher Education, 1999; Western Cooperative for Educational Telecommunications Project, 2003). A review of the published standards reveals a high degree of congruence among them (Twigg, 2001b). A successful education is associated with a number of factors. The quality of the learning experience, and the expectations that learners bring to the table are among the most important ones (Rooney et al., 2006).

Quality in distance education has been analyzed extensively using a top-down approach: one that considers the infrastructure, the design of the course, the support services available to students, and other hygiene factors conducive to help students complete their degrees (Ortiz-Rodriguez, Telg, Irani, Roberts, & Rhoades, 2005). Other studies have concentrated on analyzing the learning as a result of online dialogue (Haavind, 2004). Clark (2001) and Kozma (1994) propose a focus on effective and efficient ways to provide quality in distance education, which have little to do with the delivery mechanism, and more to do with teaching strategies designed to encourage analysis and understanding.

Simonson (2005) points out that if distance education is to enter the mainstream, quality must be in the mainstream as well. Delivering quality e-learning represents a considerable monetary investment for the institution that offers it, and requires faculty willing to invest time to use it effectively.

A common mistake when measuring quality in distance education is to equate success with increased enrolments. Quantity is not quality (Ström, 2004; U.S. National Commission on Libraries and Information Science, 2001). Concentrating on quantity will inevitably lead to commoditization of the education provided. If commoditization occurs, competition will focus on price, not on quality, which will undoubtedly have devastating consequences for those institutions that don't operate at the lowest cost in the market (Weigel, 2000).

Hemlata (2005) asserts that the four main issues encountered by administrators when implementing online education at their institution are sustainability, quality, organization, and learner support system. Administrators seem to agree to a systematic approach to online learning, one that must begin with a careful analysis and further strengthening of the mission statement of the organization.

According to Evans & Lockee (2008), instructional design (ID) offers a systematic process for ensuring the development of effective learning environments. The creation of learning solutions through ID is typically based on a model that serves as a framework for the design and development process. In the world of distance education, the application of such processes are as important, if not more so. While distance education reflects a specific context for which instructional programming is produced, it maintains inherent features that require a customized model to guide development for this delivery approach. As stated by Head, Lockee, and Oliver (2002), distance education presents a myriad of different (and sometimes new or difficult) parameters regarding how the instructional program has to be delivered. Simply considering the delivery technologies that may be employed for distance courses gives insight to the types of challenges that need to be planned for designing such instruction. What if a particular system of providing distance education has limited (or nonexistent) face-to-face interactions? Do time delays exist among members of the learning community? Is the targeted class synchronous, asynchronous, or a blend of both? Professors teaching in distance education environments are aware that there are other complexities as well: what technologies are available, how easy are they to use, what are the uses; what is possible, probable, unlikely, or impossible to do? These considerations should factor into how instruction will be organized, developed, presented, delivered, and ultimately designed and evaluated for maximum learning effectiveness.

In fact, students mostly will learn from written materials. All materials for courses should be in the modules. Readability of modules should be good to help students learn the materials easily. It is expected that students will have good preparation before they involve in residential activity (face-to-face tutorials).

### The Purpose of Study

This study is aimed to investigate modules (written materials) quality base on students perception. Four modules which are 1) Introduction to Distance Education; 2) Self Learning; 3) Basic ICT; and 4) Learning Skill were evaluated by students.

### Methodology

Students as respondents were selected from 10 of 23 universities which run hybrid learning in Indonesia. The respondents were chosen in face-to-face tutorial process. 42 statements in questionnaire were developed to measure students' perception on four modules. Respondents were asked to answer the statements with 1= not-satisfied-at-all, 2=not-satisfied, 3=satisfied, and 4=very-satisfied.

Beside evaluation on written materials, students' perception from universities in Java/Bali and outside Java/Bali were also compared. Comparison between sexes and between ages on students' perception were also studied.

Data were analyzed by using analysis factor and manova. Analysis factor (confirmatory) was to factorized statements for each module. Meanwhile manova was used to see the differences on students' perceptions on the quality of modules between universities in Java/Bali and outside Java/Bali; between male and female students; and also between groups of ages.

### Research Design

Modules	Locations		Sex		Ages		
	Java/Bali	Outside Java/Bali	Male	Female	Young	Adult	Old
Intro. to ODL	$\bar{X}_{11}$	$\bar{X}_{12}$	$\bar{X}_{13}$	$\bar{X}_{14}$	$\bar{X}_{15}$	$\bar{X}_{16}$	$\bar{X}_{17}$
Self Learning	$\bar{X}_{21}$	$\bar{X}_{22}$	$\bar{X}_{23}$	$\bar{X}_{24}$	$\bar{X}_{25}$	$\bar{X}_{26}$	$\bar{X}_{27}$
Basic ICT	$\bar{X}_{31}$	$\bar{X}_{32}$	$\bar{X}_{33}$	$\bar{X}_{34}$	$\bar{X}_{35}$	$\bar{X}_{36}$	$\bar{X}_{37}$
Learning Skill	$\bar{X}_{41}$	$\bar{X}_{42}$	$\bar{X}_{43}$	$\bar{X}_{44}$	$\bar{X}_{45}$	$\bar{X}_{46}$	$\bar{X}_{47}$

### Research Questions

1. Is there any difference on students' perception in the quality of the four modules between universities in Java/Bali and outside Java/Bali?
2. Is there any difference on students' perception in the quality of the four modules between male and female students?
3. Is there any difference on students' perception in the quality of the four modules between students' age-groups?

### Hypothesis

$$H_0 : \mu_{i1} = \mu_{i2} , i = 1, 2, 3, 4$$

$$H_1 : \mu_{i1} \neq \mu_{i2}$$

$$H_0 : \mu_{i3} = \mu_{i4} , i = 1, 2, 3, 4$$

$$H_1 : \mu_{i3} \neq \mu_{i4}$$

$$H_0 : \mu_{i5} = \mu_{i6} = \mu_{i7} , i = 1, 2, 3, 4$$

$$H_1 : \text{not } H_0$$

### Result and Discussion

Respondents were collected from 5 Universities in Java/Bali and 5 universities from outside Java/Bali. The number of students was 210 consisted of 96 male and 114 female. 6 respondents did not fill their age, 42 respondents were 20-30 years old (young), 78 respondents were 31-40 years old (adult) and 84 respondents were more than 40 years old (old).

N in table 1 showed that not all respondents filled the information in the questionnaire, only 89 respondents filled the information completely. Mean value of Students' GPA was 2,945 with standard deviation 0,428.

For the statements no.8 – 42 (started from “konsep PJJ” in table 1) in this study, the mean values  $\leq 2,5$  was considered to be “bad” and mean values  $> 2,5$  was considered to be “good”. There was no information which showed “bad” response.

Statement “BA membosankan” or “module is boring” in statement no. 40 had mean value of 1,88. This is a negative statement which has reverse meaning. Therefore all statements were responded positively by the students.



Tabel 1. Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Umur	204	20	55	38,46	8,254
IPK	143	2,15	3,85	2,9447	,42820
konsep pjj	207	1	4	3,22	,471
pembelajaran pjj	205	1	4	3,19	,429
media pemb pjj	206	2	4	3,27	,465
evaluasi pemb. pjj	206	2	4	3,12	,407
konsep bljr umum	209	2	4	3,16	,502
bljr mandiri	207	2	4	3,28	,469
konsep diri	203	1	4	3,05	,469
identif. konsep diri	206	2	4	3,20	,501
motivasi?	209	2	4	3,39	,508
ident. motiv. diri	208	2	4	3,31	,483
self-efficacy	199	2	4	2,93	,546
ident. sef-ef ficacy	196	1	4	2,95	,562
gaya belajar	208	2	4	3,21	,485
gaya belajar sendiri	205	2	4	3,29	,517
komputer+kompon	194	1	4	3,07	,493
m.opr.kan komp	195	1	4	3,07	,570
m.opr.kan internet	195	1	4	3,04	,621
m.olah informasi	188	1	4	2,96	,602
m.buat e-mail account	190	1	4	3,07	,667
komunikasi v ia e-mail	193	1	4	3,10	,637
susun jadwal	208	2	4	3,43	,524
membaca dgn ef isien	209	1	4	3,36	,564
membuat catatan	207	1	4	3,32	,562
belajar efektif	207	1	4	3,36	,529
persiapan ujian	207	1	4	3,30	,528
menulis referensi	207	1	4	3,04	,533
peta konsep belajar	208	2	4	3,22	,468
mtk B.M bermanfaat	210	3	4	3,65	,479
sarana memadai	206	1	4	3,03	,708
kesiapan mhs PJJ	210	2	4	3,50	,529
sumber belajar lain	210	2	4	3,35	,543
tugas ditambah	208	1	4	2,92	,734
BA membosankan	209	1	4	1,88	,672
waktu latihan kurang	205	1	4	2,52	,711
BA sangat teoritis	186	1	4	2,59	,636
Valid N (listwise)	89				

Table 2 shows the result of multivariate test. The four modules, based on students' perception were tested simultaneously on locations, sexes and ages.

Table 2. Multivariate Test

Multivariate Tests<sup>c</sup>

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.062	1.581 <sup>a</sup>	5.000	120.000	.171
	Wilks' Lambda	.938	1.581 <sup>a</sup>	5.000	120.000	.171
	Hotelling's Trace	.066	1.581 <sup>a</sup>	5.000	120.000	.171
	Roy's Largest Root	.066	1.581 <sup>a</sup>	5.000	120.000	.171
UnivLocation	Pillai's Trace	.123	3.370 <sup>a</sup>	5.000	120.000	<b>.007</b>
	Wilks' Lambda	.877	3.370 <sup>a</sup>	5.000	120.000	<b>.007</b>
	Hotelling's Trace	.140	3.370 <sup>a</sup>	5.000	120.000	<b>.007</b>
	Roy's Largest Root	.140	3.370 <sup>a</sup>	5.000	120.000	<b>.007</b>
Sex	Pillai's Trace	.061	1.555 <sup>a</sup>	5.000	120.000	.178
	Wilks' Lambda	.939	1.555 <sup>a</sup>	5.000	120.000	.178
	Hotelling's Trace	.065	1.555 <sup>a</sup>	5.000	120.000	.178
	Roy's Largest Root	.065	1.555 <sup>a</sup>	5.000	120.000	.178
AgeGroup	Pillai's Trace	.180	2.397	10.000	242.000	<b>.010</b>
	Wilks' Lambda	.823	2.463 <sup>a</sup>	10.000	240.000	<b>.008</b>
	Hotelling's Trace	.212	2.527	10.000	238.000	<b>.007</b>
	Roy's Largest Root	.195	4.718 <sup>b</sup>	5.000	121.000	<b>.001</b>
UnivLocation * Sex	Pillai's Trace	.038	.938 <sup>a</sup>	5.000	120.000	.459
	Wilks' Lambda	.962	.938 <sup>a</sup>	5.000	120.000	.459
	Hotelling's Trace	.039	.938 <sup>a</sup>	5.000	120.000	.459
	Roy's Largest Root	.039	.938 <sup>a</sup>	5.000	120.000	.459
UnivLocation * AgeGroup	Pillai's Trace	.079	.992	10.000	242.000	.451
	Wilks' Lambda	.922	.990 <sup>a</sup>	10.000	240.000	.453
	Hotelling's Trace	.083	.988	10.000	238.000	.455
	Roy's Largest Root	.064	1.549 <sup>b</sup>	5.000	121.000	.180
Sex * AgeGroup	Pillai's Trace	.079	.996	10.000	242.000	.447
	Wilks' Lambda	.922	.990 <sup>a</sup>	10.000	240.000	.453
	Hotelling's Trace	.083	.984	10.000	238.000	.458
	Roy's Largest Root	.055	1.331 <sup>b</sup>	5.000	121.000	.256
UnivLocation * Sex * AgeGroup	Pillai's Trace	.020	.497 <sup>a</sup>	5.000	120.000	.778
	Wilks' Lambda	.980	.497 <sup>a</sup>	5.000	120.000	.778
	Hotelling's Trace	.021	.497 <sup>a</sup>	5.000	120.000	.778
	Roy's Largest Root	.021	.497 <sup>a</sup>	5.000	120.000	.778

a. Exact statistic

b. The statistic is an upper bound on F that yields a lower bound on the significance level.

c. Design: Intercept + UnivLocation + Sex + AgeGroup + UnivLocation \* Sex + UnivLocation \* AgeGroup + Sex \* AgeGroup + UnivLocation \* Sex \* AgeGroup

From table 2, it can be seen that there were some differences on four modules in students' perception between university locations and between age group. There was no differences between sex. Statistics also showed that there was no interaction effect. Further analysis in table 3 show in what factors (modules) they were differed.

Table 3

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	ODL Factor	14.432 <sup>a</sup>	10	1.443	1.570	.121
	SelfLearning Factor	5.065 <sup>b</sup>	10	.506	.533	.865
	ICT Factor	21.090 <sup>c</sup>	10	2.109	2.294	.016
	LearnSkill Factor	5.153 <sup>d</sup>	10	.515	.494	.891
Intercept	ODL Factor	2.006	1	2.006	2.183	.142
	SelfLearning Factor	.501	1	.501	.527	.469
	ICT Factor	4.888	1	4.888	5.318	.023
	LearnSkill Factor	.008	1	.008	.008	.931
AgeGroup	ODL Factor	.534	2	.267	.291	.748
	SelfLearning Factor	.110	2	.055	.058	.944
	ICT Factor	9.327	2	4.664	5.073	.007
	LearnSkill Factor	1.326	2	.663	.636	.531
Sex	ODL Factor	3.208	1	3.208	3.491	.064
	SelfLearning Factor	.020	1	.020	.021	.885
	ICT Factor	.550	1	.550	.598	.441
	LearnSkill Factor	1.366	1	1.366	1.311	.254
UnivLocation	ODL Factor	4.413	1	4.413	4.802	.030
	SelfLearning Factor	1.838	1	1.838	1.934	.166
	ICT Factor	9.709	1	9.709	10.562	.001
	LearnSkill Factor	.022	1	.022	.021	.884
AgeGroup * Sex	ODL Factor	1.645	2	.822	.895	.411
	SelfLearning Factor	.500	2	.250	.263	.769
	ICT Factor	.866	2	.433	.471	.625
	LearnSkill Factor	.366	2	.183	.176	.839

AgeGroup * UnivLocation	ODL Factor	2.053	2	1.027	1.117	.330
	SelfLearning Factor	.639	2	.320	.336	.715
	ICT Factor	2.188	2	1.094	1.190	.307
	LearnSkill Factor	.423	2	.212	.203	.817
Sex * UnivLocation	ODL Factor	1.014	1	1.014	1.103	.295
	SelfLearning Factor	.085	1	.085	.089	.766
	ICT Factor	1.181	1	1.181	1.285	.259
	LearnSkill Factor	1.505	1	1.505	1.443	.232
AgeGroup * Sex * UnivLocation	ODL Factor	1.237	1	1.237	1.347	.248
	SelfLearning Factor	.040	1	.040	.042	.837
	ICT Factor	.020	1	.020	.022	.882
	LearnSkill Factor	.021	1	.021	.020	.888
Error	ODL Factor	128.658	140	.919		
	SelfLearning Factor	133.051	140	.950		
	ICT Factor	128.693	140	.919		
	LearnSkill Factor	145.926	140	1.042		
Total	ODL Factor	143.189	151			
	SelfLearning Factor	138.189	151			
	ICT Factor	149.784	151			
	LearnSkill Factor	151.079	151			
Corrected Total	ODL Factor	143.091	150			
	SelfLearning Factor	138.116	150			
	ICT Factor	149.784	150			
	LearnSkill Factor	151.079	150			

- a. R Squared = ,101 (Adjusted R Squared = ,037)
- b. R Squared = ,037 (Adjusted R Squared = -,032)
- c. R Squared = ,141 (Adjusted R Squared = ,079)
- d. R Squared = ,034 (Adjusted R Squared = -,035)

ICT factor become the only factor which had differences in university location and age groups (significant at  $\alpha < 0,01$ ). From Table 4, it can be seen that perception on ICT Factor from students in Java/Bali is higher than students' from outside Java/Bali. Java/Bali has more facilities in electricity and in IT infrastructure. Students who live in these two islands have more access to those facilities than students who live in outside Java/Bali.

Young students' perception on ICT was also higher than older students. In fact, ICT is always developed from time to time. When people do not follow this new technology, he or she will be left behind. This information showed that young people is more diligent in following the development of ICT, including young teachers. In other courses, there is no difference between age groups or between university locations..

Table 4. Mean Value of ICT-Factor Based on Location

**ICT Factor \* University Location**

ICT Factor

University Location	Mean	N	Std. Deviation
Java/Bali	.2990612	52	.85043861
Outside Java/Bali	-.1205518	129	1.03300602
Total	.0000000	181	1.00000000

Table 5. Mean Value of ICT-Factor Based on Age Group

**ICT Factor \* Age Group**

ICT Factor

Age Group	Mean	N	Std. Deviation
Young	.3502583	35	.85334475
Adult	-.0503490	72	.99324410
Old	-.1090681	69	1.03237249
Total	.0062966	176	.99302343

## Conclusion

Written materials (modules) as one of sources for the students to achieve a certain level of competencies in reaching sarjana degree (S1) should have at least good quality. Although developing written material involved many expertises in content and design, students as users are still needed to evaluate its quality based on their perception. As users, students always read modules when they are studying. Process in reading modules will give experiences in how hard or easy the module is. Students' experienced in studying from modules will influence students' perception in evaluating modules.

In general, all students gave positive perception for written material (modules). This is a good sign from the users' perspective. Although the modules quality is good but there are some differences between students perception. Students' perception showed the difference in Basic ICT. Students from Java/Bali had better perception than students from outside Java/Bali.

Distance education is usually dominated by adult students. Young people most likely will choose face-to-face university. However, young people who are in distance education in this study showed that they learn ICT more easily than old students.

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