A Study of Student's Perception of Teaching and Learning in Instructional Design and Technology

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Abstract

The study aims to determine students' perceptions on activities related to their learning experiences and the correlation to their grades. For that purpose questionnaires were distributed to students to elicit their responses to a variety of learning experiences. The study samples consisted of 67 students from group W who took the instructional design and technology course for semester 2, 2009/2010 at Universiti Pendidikan Sultan Idris. The result shows that students responded positively to the learning experiences. The study also finds that there was a significant correlation between students' acceptance of a variety of learning experiences and their achievements in meeting the learning outcomes of the course. The implication of the study shows that students' positive response to the diversity of their learning experiences was crucial to their successful achievement in accomplishing intended learning outcomes. In conclusion, there is a need for a variety of instructional activities in conducting the instructional design and technology course in order to achieve the intended learning outcomes.

**Keywords**: learning experience - teaching learning activities - learning outcome

1. Introduction

Any teaching model requires planned learning experiences to students. Therefore, designing effective learning experiences is paramount as it will impact on students' motivation for enhancing their knowledge, skills and attitudes (Dick et al., 2005, Butcher et al., 2006). Thus learning experience becomes a key factor for a successful teaching and learning process. Hence, planning and implementing various learning experiences are requirements for teachers to motivate their students to learn. The experience gained is expected to help students to optimize their knowledge in the course they undertake. This paper specifically focuses on the course called Instructional Design and Technology(IDT), one of the major courses in the field of education. It is a compulsory subject for students intending to earn the Bachelor of Education Degree. As an instructor of the course I was interested in understanding the relationship between students' learning experience and their achievements in the related course. This is in order for them to receive maximum benefit from the course. It was for that purpose that study was conducted. A tertiary level course, in particular, requires the constant review of its various aspects so as to determine its effectiveness.

The main barometer for its effectiveness is in measuring students success in attaining the intended learning outcomes specified in the course. To further facilitate our discussion please refer to the framework below (Figure 1). This diagram shows the flow of interaction between the learning outcomes and learning experience (or teaching and learning methods) in the implementation of a course. In essence, learning outcomes determine the basis for the selection of teaching methods by the instructor. Determining the method of implementation is, therefore, critical in order to ensure the satisfactory achievement of learning outcomes. Based on the flow given changes can be made immediately if there are feedbacks that highlight areas for further improvement. Thus, feedback is essential in determining changes to the design of the course. Feedback should, therefore, be seen as a professional activity and should be done deliberately for the purpose of determining the alignment of learning outcomes with teaching methods. Feedback, as a form of assessment, should be responded to immediately upon completion of a teaching activity. The emphasis here is on the immediacy of responses to feedbacks because to linger means to lose sight of its effectiveness. Feedbacks and responses are also a constant feature of the course and should not be seen as a mere one-off activity.

In the framework given in Figure 1 there are two responses that are considered. The first is the response to the achievement of learning outcomes. The second response is in receiving feedback from the teaching method or activity among students. Feedbacks on the lessons can be given on an ongoing basis during the teaching or at the end of a sub topic discussed. Assessments may be conducted through the submission of certain measuring instruments such as tests or question and answer in line with learning outcomes.

Figure 1: The Relationship Flow of Learning Outcomes and Learning Experience
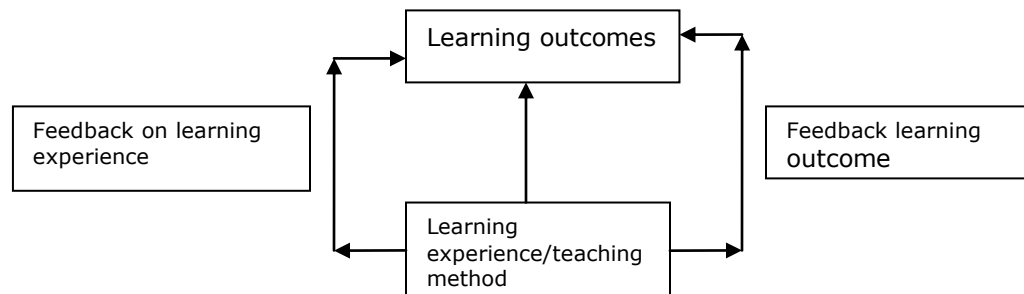
The focus of this paper is to obtain feedbacks on the teaching methods that have been conducted. Feedbacks to the methods used are important activities so that the designer can make according changes to the teaching methods. Seen from this perspective, feedbacks provide three forms of action that can be taken-(1) either to continue with the existing methods, (2) to modify or (3) to design new plans considered appropriate. There are strong justifications for an instructor to get feedback from students on the teaching methods applied. First, students are the target of the particular method of teaching and learning and they are directly affected by the success or failure of the method used. In the constructive approach to teaching and learning process students' suggestions are important in determining the achievement of learning outcomes. Second, active participation requires students' acceptance in terms of behavior and mental readiness to interact with and respond to the learning environment provided.

It is only appropriate that the target group for a course is given the chance to express their opinions about their learning experiences as they undergo a course. With the feedbacks given the designer can improve on the quality of his or her courses. Students' acceptance of the learning experiences is to give effect to the overall sense of achievement of the course. Acceptance is reflective of the experience they gained in all the learning activities they have experienced during the semester. The experience can be described by words or in writing. However, in writing their learning experience students are likely to give a true and honest assessment of their experience. Students' statements may be either positive or negative.   Descriptions that indicate 'like', 'enjoy' or 'feel compelled to do something' should be accepted as positive receptions. Responses that indicate 'feeling unhappy', 'burdened with no purpose' or 'difficult to perform' are alternatively considered negative receptions.

The study seeks to answer the following questions:

a) how are students' acceptance of a planned learning experience conducted through various activities of teaching and learning?
b) what is the level of students' acceptance toward the activities of teaching and learning?
c) is there a relationship between the students' level of acceptance toward the activities of teaching and learning with their final grade?

2. Method

This study refers to actual students' experience who went through Instructional Design and Technology (KPT2063) course in the second semester of the 2009/2010 session. This course had six learning outcomes. Each learning outcome had a specific learning experience. For the purpose of achieving learning outcomes, methods had been chosen as an integrated approach to design. In this study, students were asked to write a reflection on the experience with reference to the diversity of methods that had been carried out. The results reflect the students' acceptance level vis-à-vis the methods of teaching and learning activities. It is important in all models of instructional design that the delivery method is clear. Necessary considerations should be taken in selection of model made by the instructional designer to ensure that proper learning is achieved. The intended learning outcomes of the instructional design and technology course are mapped as in Table 1 below:

Table 1: Relationship between Learning Outcomes and Learning Experiences

Learning outcome	Learning experience
By the end of the course, students will be able to: 1. (HP1) describe several instructional design models focussing on the classroom, instructional approach in the planning system, the principles of construction materials, selection criteria and evaluation of instructional materials 2. (HP2) explain the theory of communication, theories of learning experience for Dale, the concept of ICT and e-learning. 3. (HP3) explain the concept diffusion and innovation in education and the role of educational resource center and network	KA) Lecture method: direct teaching. Lecturer communicates and explains or describes the purpose of teaching material, definition of instructional design and technology, and the purpose of communication in teaching and learning. Course materials have been uploaded in MyGuru (a descriptive and instructional site). (KB) method of information search and review of scientific literature: students have been asked to find articles related to instructional design and technology. Students are asked to read, write reviews and make an important presentation of the findings in the classroom. The presentation material, which was in the form of PowerPoint, would then be uploaded to Myguru.
4 (HP4) apply instructional design model in the production of instructional materials. 5.(HP5) produce instructional materials and be able to use the tools and technology-based teaching materials. 6.(HP6) receive educational innovation in the process of instructional and learning environment.	(KC) plan and prepare teaching materials: students in groups of 2-4 people choose topics as school subjects on the syllabus. By using the ASSURE model of instruction students' plans include appropriate instructional media. (KD) Students are asked to present their plan in the classroom. They will explain the integration of the use of teaching methods and media in their teaching plans. (KE) MYGuru. Students use Internet-based integrated systems interact in the forum.

In the table above, the outlines of teaching and learning methods have been clearly mapped to ensure the satisfactory realization of learning outcomes. Basically, the learning outcomes are divided into two categories. Learning outcomes HP1, HP2 and HP3 are grouped under the knowledge and understanding of learning category. While learning outcomes HP4, HP5 and HP6 are grouped under the high application synthesis and analysis category. HP1, HP2 and HP3 are to be achieved through two methods known as the KA and KB. HP4, HP5 and HP6 are to be achieved by means of KC and KD. The various methods selected are intended to provide different learning experiences for students. The experience of learning follows a predetermined set: it starts from a lecture to a search for information from libraries, reading and analyzing literature, and finally to plan an instructional material integrated with technology.

3. Findings

3.1 Students' responses to the lecture method
Below are students' responses to the lecture method (KA). The responses of five respondents were randomly selected from 65 students. Their views of their experiences are categorized into three categories: positive, negative, and suggestions for improvement.

3.1.1 Positive category: on lecture method
Students' positive responses:
a. Clear and concise explanations
b. Teaching materials are also readily available
c. Lecturer often indicates the use of internet technology
d. Students can solve problems posed by the lecturer
e. I can still understand the lecture although the material presented is considerable
f. I love to learn the subject as indicated in the syllabus
g. I obtained the cooperation of colleagues when making assignments

h. Acquisition of knowledge gained is to increase my knowledge

i. The delivery of lectures were fun because the information provided was readily available in MyGuru

j. Through this course I can gain and enhance my knowledge, especially in the use of technology for teaching

k. Lecturer emphasizes on the definition of design that is to gain knowledge and new technologies

l. I was glad to learn this course

m. This course is interesting and important for students (future teachers) inthe production of teaching aids in terms of their attractiveness and effectiveness

n. This course will enhance my knowledge about technology in education and indirectly I also know what is meant by technology

o. I am pleased and excited by learning this as the lecture is good at delivering lectures

p. Lecturer is also able to explain the purpose of material definition and design. Materials that have been uploaded in MyGuru also facilitates students' extraction of learning materials

q. Delivery of lectures have increased my knowledge in this subject

r. I enjoy taking this course because its delivery methods and my exposure to teaching and learning through technology

t. I like the lectures delivered through the use of teaching materials

u. Like: lecturer teaching infused with humor.

v. Love: video and photo slideshow

The findings indicate that there is no response under the negative views and suggested improvements categories. All respondents expressed a positive opinion under the positive category. Suffice to say, the lecture method (KA) is well received by all students as a learning experience that is beneficial to their learning process.

There are six aspects to be emphasized that clearly reflects the positive reception of students: (a) the clarity and relevance of course delivery, (b) increased knowledge, (c) applicability of courses for prospective teachers, (d) accessibility of course materials and (e) fun of the course through humor and (f) aid of latest technologies.

3.1.2 Students Response to the Information Search and Scientific Writing Activity

Information search and scientific writing (KB) activity. In implementing this activity, students were asked to find articles relating to the subject of instructional design and technology. Journals should be accessed from the university library whether in the form of printed or online material. Students are then asked to read and share information obtained through a PowerPoint presentation by providing scientific reviews of at least two articles. Material in the form of PowerPoint slides should be uploaded to MyGuru for reference by other students. As Table 1 shows the KB aims to achieve the HP2 and HP3 learning outcomes.

3.1.3 Positive Responses to Information Search and Scientific Writing Activity

Students give positive feedbacks on information search and scientific writing activity. Below are some of the students' responses indicative of the positive category.

a. I enjoyed doing this work because I can understand articles on instructional design and technology

b. I like to do this assignment

c. This task has been instrumental in increasing my knowledge

d. I obtained the cooperation of colleagues

e. I like to do to reviews on the articles

f. I can find out what are the really relevant courses that have been studied by others

g. I got the cooperation of partners to provide a display for presentation in class and review articles

h. I agree that this course require a review of journals. Lecturers provide guidance in the preparation of reviews. This will provide an understanding for the students to find important content of journal articles selected.

i. This will give me the experience to find information in journals.

j. Fun and happy despite the difficulty to get the journal to be reviewed. I really liked this assignment as well as to increase knowledge, I also can enhance the quality of reading materials from other countries.

k. Scientific information seeking writing reviews are very good and something new. Then pretty good in the PowerPoint presentation, the other friends to share with one another.

l. My knowledge of instructional design and technology has always increased. This I can use in teaching and learning at school later.

3.1.4 Negative Responses to Information Search and Scientific Writing Activity

There were only three negative responses from students in the Information Search and Scientific Writing Activity. The very few negative responses reflect students' perception that information seeking activities are a worthwhile learning experience. The negative responses are as follows:

a. Do not like searching for scientific journals because a lot of IT journals are in English.
b. It is difficult to understand the article because the language used is too high.
c. Difficult to make a presentation about the review articles.

3.1.5 Suggestions for Improvement to Information Search and Scientific Writing Activity

a. Improvements that can be done are to increase the number of articles so that students can make comparisons as well as adding information
b. There should be a uniformed guidance in producing this work. This is because the students are a bit fuzzy on what to do
c. Search of journals only restricted to English journals
d. When using MyGuru there are various problems such as difficulty in uploading comments. Internet network is not satisfactory. I hope this can be improved and the network be upgraded to the latest internet search capability in the world of education continues to be emphasized.

3.1.6 Reflection

It is clearly shown that positive response category far outnumbers the negative and suggestions for improvement categories. Thus it can be concluded that the method of information search and scientific writing has been well received by the students. Most of them state that this method had a positive impact on their learning experience in terms of a) detecting information, b) analysing the content of the writing in the form of research, and c) increasing knowledge in the area of the course. Students have benefited from the experience of information seeking methods and scientific writing. This method has provided useful learning experience in finding information, reading, summarizing and presenting key issues that can be shared with other students. Generally, the constructive approach undertaken here was to explore students' freedom of searching for information in this field. There does not exist a uniform pattern of directions that are expected to restrict their creativity. There was, of course, some views that reflect the difficulty of task undertaken the tedious nature of the assignment given especially in scientific writing and information search activity. This view may be due to attitudinal problem and the desire to find the easiest way out. However, in general positive responses were more prevalent indicating students' desire to improve future performance as indicated by their suggestion to increase the number of journals reviewed.

3.1.7 Students' Responses to the plan lessons and prepare teaching materials (KC) and presentation (KD) methods

Method C (KC) is planning lessons and preparing teaching materials: Students in groups of 2-4 choose their own topics according to subject-based school curriculum. By using the ASSURE model of instructional design, student do lesson plans including appropriate instructional media. In method D (KD) students are asked to make presentations in classrooms. Generally, methods of KC and KD were aimed at producing students who can interpret the instructional design model in the application form. Students will translate the interpretation into the implementation of curriculum requirements that take into account the requirements of appropriate technology.

3.1.8 Positive Responses: respondents give positive outlook on method of planning lesson and preparing instructional media (KC) and presentation (KD)

Here are presented some of the students' positive responses about their experiences while performing this task.

  a. There are challenges to do this task and it is quite complicated because there are many steps that need to be followed
  b. Prior to teaching media, I think it is very difficult to make. While making it, I feel much challenged with a little knowledge of technology, I ask and learn with other peers. Finally, I feel happy. Should teach the use of instructional media such as this. It is very interesting, meaningful and provides quick knowledge to students.
  c. Give me the knowledge and experience to create my own instructional media.
  d. Lecturers have emphasized the models 'ASSURE' to do this courseware

e. I enjoy doing this task because a lot of new knowledge acquired. In the future, I can make my own teaching and learning more interesting and easy.
f. I personally liked the design, graphics, and color done. And this will be a motivation for students.
g. I am very interested in the production module.
h. This method can increase my knowledge in the production of modules and can be used as a teaching aid for future
i. Increasing knowledge in the use of technology
j. Good cooperation with partners
k. My knowledge is increasing with the number of computer applications that I had never known before
l. In this lecture, I really like the activities of the presentation. This is to be able to provide opportunities for students to present work as well as generate a variety of ideas from students of diverse
m. Following this lecture also increased my knowledge about this subject. For example, a better understanding of instructional design.
n. I get that soft skills are as cooperation in groups, problem solving, etc.
o. Learn methods of organizing strategies and develop P & P on this task are very exciting
p. Soft skills such as to solve problems, team work and cooperation can be nurtured through the use of this method

3.1.9 Suggestion for Improvement Category

Respondents did not make any negative response. Some of them gave opinions on how to improve the methods associated with the work on planning lessons and preparing teaching materials. There are three views in the category to improve the activities of planning lesson and preparing instructional media (KC) and presentation (KD). They are as follows:

a. The proposal is necessary to add both these tasks to provide a course specifically to expose how to create instructional media, such as to make the site suitable and not suitable for viewing students (R5)
b. I recommend this class done in a small number of students to facilitate two-way communication to be more effective (R15)
c. Proposal: make presentations in front of actual students (R40)

3.1.10 Summary of responses to the KC and KD method

This study found that planned learning experiences that require students to use instructional design model to plan and prepare lessons and instructional media, followed by a presentation was well received by the students. Students' positive responses make it clear that students can follow the course satisfactorily. Their deep involvement in various activities of teaching and learning, especially involving the design and construction of instructional media contribute to the achievement of the specified learning outcomes.

3.2 Acceptance of Learning Experience

Here are some of the students' responses to their experience during this course. Basically, they responded to a five-point scale questionnaire. The highest scale of agreement is "strongly agree" with a score of 5, and the lowest is "strongly disagree" with a score of 1.   Table 2 shows Item 1 with a score of 86.6% with a mean 4.32 for the conduct of lectures that can increase student's interest in studying the course. Item 2 scores 87.2% with a mean 4.36 for teaching activities to stimulate students to think critically and creatively. All items receive a higher mean score of 4.31. Thus, the questionnaires showed that students agree that the courses conducted had an impact on their learning. The findings of this survey are consistent with their writings, as presented above.

Table 2: Statement of learning experiences and responses of students

	Statement of learning experiences	Mean Score	**Percent (%)**
1	Method courses have increased student's learning interests	4.32	86.6
2	Method of carrying out the course was to stimulate students to think critically and creatively.	4.36	87.2
3	The composition of the course content helps students' comprehension.	4.37	87.5
4	Learning materials are useful to help students' comprehension of course content.	4.34	86.9
5	Methods courses have helped students' understanding of course content.	4.25	84.9

3.3 Relationship between Respondents' Levels of Acceptance to Methods Used With Final Grades.

This study is necessary to observe the relationship between the acceptances of students with the various methods or teaching and learning activities with their final grade. Final grades reflect the overall performance of the students, including grades earned from course works and final examination. This analysis will facilitate the instructor to predict the impact of teaching and learning activities to the fulfillment of learning outcomes.

Table 3 shows the level of acceptance is equivalent to using a five point scale according to the level of agreement of respondents in the questionnaires. Where S5 is the highest level S1 is the lowest level of agreement or acceptance. Final exam grades are categorized according to a five-point scale, where S5 is the highest category for grade A and A-, S4 for grades (B + and B) and S3 for grade (B-) and so on. The table shows the distribution of the final grade with 19.4% (grade A and A-), 73.1% (grade B + and B). No students are under grade B-, with a mean score of 4.1. The correlation between the level of acceptance of the course methods (increased interest) to the final grade ($r = 0.73$, $p < .05$), and (stimulate thinking) with the final grade ($r = 0.76$, $p < .05$). The correlation analysis showed that there was a significant correlation between the level of acceptance of the course methods with final grades. Thus, the level of acceptance of a variety of methods undertaken received high acceptance levels (mean> 4.0) among students and has a strong correlation with final grades.

Table 3: Correlation between Acceptance Levels of Course Methods With The Final Grades

Acceptance Level	Course (increased interest)		Methods (stimulate thinking)		Final Grades		
	N	%	N	%	Grade	N	%
S5	26	42.6	26	42.6	A and A-	13	19.4
S4	29	47.5	31	50.8	B+and B	49	73.1
S3	6	9.8	4	6.6	B-	5	7.5
	Min 4.32		Min 4.36		Min 4.1		
	r=0.73		r=0.76				

4 Conclusion

In general, students were positive about their learning experience while undergoing the course. They clearly agreed that the activities undertaken contributed to their acquisition of knowledge and skills. Acceptance of students is supported by the finding of a high level of agreement from respondents. The study also found there was a relationship between the level of acceptance to the teaching and learning activities with students' final grades. These findings provide reassurance that teaching and learning activities provided in this course have benefited students and contributed to the achievement of learning outcomes. Although the study was conducted specifically for IDT course, it may also be applicable to other courses by using a variety of activities to ensure a fruitful learning process. Further studies should be conducted to establish a computer-based system of student's feedback of teaching and learning. This would allow faster adjustment and achievement of the learning outcomes.

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