

Developing an online peer assessment system of digital photography course for college students

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Abstract: The purpose of this study was developing an online peer assessment system of digital photography course for college students. In this study, the researchers reviewed some literatures about peer assessment strategies, and the current situation of digital photography teaching. Moreover, the researchers analyzed the possibility of using the strategy of peer assessment in the digital photography courses of university, and established the system. This system provides multifunction to the learners, such as upload creations, peer review, learning process, and gain feedback from peers, which could help learners enhance the effectiveness of learning digital photography. In other words, the characters of this system have to easy review, anonymity, easy conduct, and quickly evaluate, which support for college students save time of evaluate the photography-related courses creations for peers. However, the proposed assessment system will be verified in the future.

Keywords: Online peer review, digital photography course, college students

1. Introduction

In recent years, photography activities and digital photography courses of school education were growing so fast, and digital photography related courses had become more popular among the public. However, from the assessment point of view, it's not appropriate that assessment methods of different subjects were suitable for photography courses [1]. Gardner [2] indicated that if we want to make a assessment of art subject, we should use assessment methods which were suitable for art subject. Lazear and Dickinson [3] also pointed out that teachers should use proper multi-assessment methods to make assessments, when they conducted on evaluation of different subjects. Besides, Huang [4] reported that if we want to carry on the curriculum and instruction of art subject, we should use multiple assessment methods to assess the learning condition of students instead of using only traditional test methods. Peer assisted learning referred to the people of same group with the equal/similar identity and status learned knowledge and skills via mutual assistance and supporting within group, and thus achieve the learning objectives and promote the efficiency [5]. Linn and Gronlund [6] concluded that we should not just take the whole teaching environment into consideration when we carried on the assessment, we should also gather data from various viewpoints and ways, so that we could help students learn and fully understand the learning status of students. Based on the above descriptions, diversified assessment rise, and peer assessment strategies are one of these [1]. In the future, we can

expect that the further investigation on learning efficiency of college students can be done using the optimum peer assessment system for digital photography courses. Thus, the purpose of this study is to develop an online peer assessment system for digital photography course to aid the college students in digital photography learning.

2. Literature Review

2.1 Digital photography course

Photography courses are classified as one category in art education field, and thus the corresponding assessment methods are naturally different from the other subjects due to its unique characteristic. Therefore, it is not appropriate to employ the other subjects' assessment methods directly for photography courses [1]. Yang [7] indicated that the multiple assessment should be recognized, not just focused on traditional and summarized assessment when art subjects (courses) were assessed. Lu [8] also mentioned that multiple assessment strategies should be included in the assessment for art subjects, in addition to the application of formative and summarized assessments methods. Therefore, multiple assessment methods based on the essence of the courses should be employed, and the principles of formative and summarized assessment methods needed to be taken into account, when photography courses were assessed.

2.2 Online peer assessment

Previous study [9, 10] defined peer assessment as the learners assessed other learners with similar backgrounds, which involved mainly the procedure of learners' assessment of each other and the process of learners becoming assessors. Hsu, Tsai and Chen [11] also indicated that the peer assessment was one of assessment and learning strategy, which was derived from multiple assessments. In order to take multiple, formative and summarized assessments' principles into account, the peer assessment was then chosen in this study for the photography courses.

Jonassen [12] indicated that network peer assessment could make the evaluation without constraint of time or space, and could further promote the efficiencies of both assessment and learning [13]. Furthermore, the network peer assessment is easier than traditional one when anonymous assessment mechanism was used. Both the pressure of peer assessors and probability of unfair grading could be reduced, thus the reliability and validity of assessment results could be improved [13, 14]. However, no online peer assessment systems has been developed and reported so far, although it is recognized as a critical and essential issue for the assessment of photography courses. Therefore, we develop an online peer assessment system for internet usage without borders.

3. System overview

We develop an online peer assessment system of digital photography course. We provide a web server for hardware construction; furthermore, we provide web service (Apache) and database service (MySQL) for the software structure of this system. Figure 1 showed a framework of this system, According to users' identities (login status), the system allows identities of teacher and student. Moreover, we also provide system administrator identity for system administration.

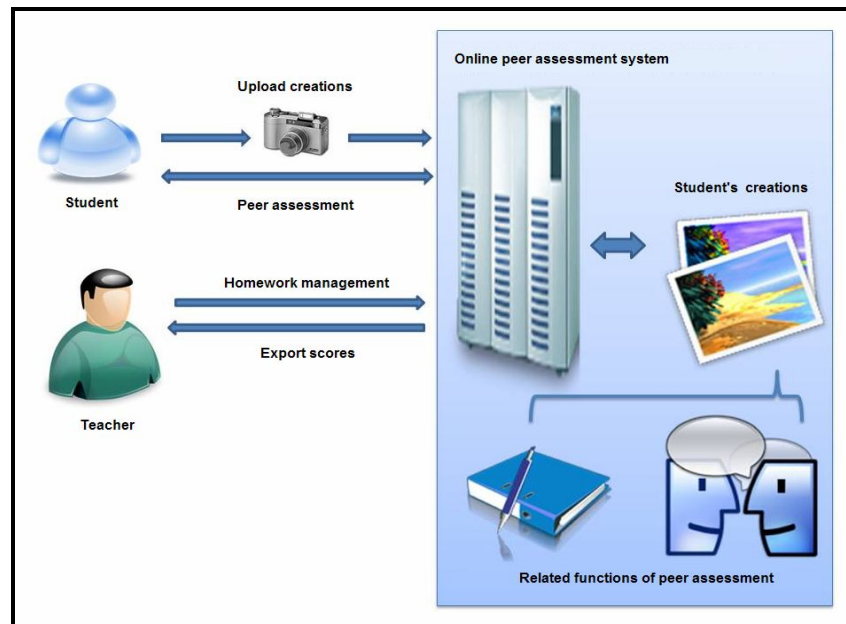


Figure 1. The Framework of online peer assessment system

Figure 2 showed all menus of online peer assessment system. All menus includes: 1. Teacher's main menu; 2. Student's main menu; and 3. Menu of peer assessment. As showed in figure 2a, all users (both teachers and students) can login the system through this page. Figure2b showed teacher's main menu, and this menu includes: 1. homework management; 2. view the students' creations; 3. view the students' feedback; and 4. export scores. Figure 2c and Figure 2d showed the student's menu of peer assessment, relating functions includes 1. Upload creations; 2. View the feedback; 3. Peer assessment; and 4. Reference material.

a. User login page

教師管理選單	
作業管理	繳交狀況
查看同儕互評	匯出成績

b. Main menu for teacher

學生功能選單 (填寫問卷)	
作業繳交	查閱評量結果

c. Main menu for student

同儕互評選單	
同儕互評	參考資料

d. Menu of peer assessment

Figure 2. All menus of online peer assessment system

Figure 3 showed that relating functions of management for teacher, it provides homework management (as showed in figure 3a), view the students' creations (as showed in figure 3b), export scores (as showed in figure 3c) and view the students' feedback (as

showed in figure 3d). In this system, teachers can use management menu to assign photography homework and provide a platform for student homework uploading. In the function of homework management, teachers can revise homework title, homework requests and assessment standards. Teachers can also open and close the functions of student online peer assessment. After teachers assign homework, they can search for the condition of student homework uploading via the function of view the students' creations. In this way, teachers can decide whether to remind students to upload homework or not. Furthermore, teachers can gain raw data of assessment results (file type: Microsoft office excel) through the function of export scores after students finish online peer assessment activities. After students upload their homework, teachers can look for the condition of online peer assessment via the function of view the students' feedback. After doing so, it's convenient for teachers to register scores or analyze results. Through above functions, teachers can effectively assign homework, administrate system, and seek information of assessment.

目前所在位置：教師管理選單(主選單) > 作業管理				
退出系統 回主選單 作業管理 作品評量 提交作品 匯出成績				
項次	狀態管理	作業名稱	作業說明	上傳
01	顯示作業 隱藏作業 (允許修改) 關閉繳交	03/17 外拍課作業 (國語)	請同學繳交03/17外拍課所拍攝的一張照片, 我自己認為最棒的作品 (國語)	未開放上傳 [設定]
02	顯示作業 隱藏作業 (允許修改) 關閉繳交	03/31學習單 (國語)	請同學繳交學習單後並上傳照片(上傳即可不需上傳圖片)。學習單下載網址: http://140.133.13.43:8000/bsu/B/0331B25AD0B0B2E7BEP020ES906AE.doc (國語)	未開放上傳 [設定]

a. Homework management

stu22	蔡秉軒	親子	
stu23	郭修甫	focus	
stu24	鄭逸華	枝上的花	

b. view the students' creations

匯出評量成績(Excel 格式)

指定作業：請選擇作業名稱

請選擇作業名稱

03/17 外拍課作業

03/31學習單

04/07學習單

04/07外拍課作業

04/14學習單(4/28關閉繳交)

[匯出成績]

c. Export scores

以受評者進行查詢

受評者帳號：[]

[送出查詢]

以評量者進行查詢

評量者帳號：[]

[送出查詢]

d. View the students' feedback

Figure 3. Teacher's functions of online peer assessment system

Figure 4 showed relating functions of student. The four functions of students are 1. Upload creations; 2. Peer assessment; 3. View the feedback; and 4. Reference material. In the first function, it is to support the student to upload their creations of digital photography course (as showed in figure 4a). In the second function (peer assessment), related functions are support the student to review and assess creations of peers (as showed in figure 4b and 4c). After students finish online peer assessment activities, all students can view the feedback of their creations through function of view the feedback (as showed in figure 4d).

目前所在的位置：學生功能選單(主選單) > 作業繳交				
登出系統 回主選單 作業繳交 查詢評量結果				
項次	作業名稱	作業說明	上傳	查詢評量標準
01	03/17 外拍課作業	請同學繳交03/17外拍課所拍攝的一張照,挑自己認為最佳的作品	<input type="button" value="繳交作業"/>	<input type="button" value="查詢評量標準"/>
02	0331學習單	請同學繳交學習單後直接將WORD檔上傳即可(不需上傳圖片)。學習單下載網址: http://140.133.13.43:8000/ben/B/0331%E5%AD%A8%E8%82%92%E5%96%AE.doc	<input type="button" value="繳交作業"/>	<input type="button" value="查詢評量標準"/>

a. Upload creations

作業清單			
作品名稱	作品相圖	開始評分	評分狀況
尚未繳交	無相圖	無法評分	未評量
光線在人上		<input type="button" value="開始評分"/>	未評量
臉		<input type="button" value="開始評分"/>	未評量
陽光照耀		<input type="button" value="開始評分"/>	未評量
所露表情		<input type="button" value="開始評分"/>	未評量

c. Select menu of creation

目前所在的位置：同儕互評選單(主選單) > 同儕互評			
登出系統 同主選單 參考資料			
項次	作業名稱	作業說明	評量
01	03/17 外拍課作業	請同學繳交03/17外拍課所拍攝的一張照,挑自己認為最佳的作品	<input type="button" value="進入"/>
02	0331學習單	請同學繳交學習單後直接將WORD檔上傳即可(不需上傳圖片)。學習單下載網址: http://140.133.13.43:8000/ben/B/0331%E5%AD%A8%E8%82%92%E5%96%AE.doc	<input type="button" value="進入"/>

b. Main menu of peer assessment

攝影課程作品評量標準表									
評量 項目	評量 標準	評量項目(滿分)						評量項目(滿分)	
		滿分	5	4	3	2	1		
構圖	<div><input type="checkbox"/></div> 1. 作品畫面分割清楚,能吸引觀者視線焦點或完整攝影主題。	評分: <input type="text"/>						1. 作品畫面分割模糊,無法吸引觀者視線焦點或完整攝影主題。	
	<div><input type="checkbox"/></div> 2. 選擇合適取景角度,作品視覺感受與攝影主題配合。	評分: <input type="text"/>						2. 取景角度不合適,作品視覺感受與攝影主題不合。	
	<div><input type="checkbox"/></div> 3. 妥善安排前景背景畫面以增強畫面層次感。	評分: <input type="text"/>						3. 背景安排不當,造成畫面混亂或干擾主題,喧賓奪主。	
	<div><input type="checkbox"/></div> 4. 善用透視法近大遠小造成畫面空間感。	評分: <input type="text"/>						4. 作品透視感運用失當,畫面失調。	
評量標準: (計算方式: 項目分數 ÷ 加權總分 × 100%)									
總分: <input type="text"/>									
備註: 本表供評量者參考,實際評量時,應根據作品實際情況,進行適當調整。									

d. View the feedback

Figure 4. Student's functions of online peer assessment system

4. Conclusion

In this study, we presented an online peer assessment system of digital photography course for college students. This system could provide an assist learning applied peer assessment strategies for college students. To summarize, the system has advantages, such as easy review and conducting, quick evaluation, as well as anonymity. The suitability of this system will be also verified in the future.

Acknowledgements

Financial support was provided by the National Science Council (NSC) and Ministry of Education, Taiwan, ROC, under Contracts No. NSC 99-2631-S-011-002, NSC 99-2631-S-006-001, MOE 99-ICT innovative school plan, NSC 100-2631-S-006-002, NSC 100-2511-S-006-014-MY3 and NSC 100-2511-S-006-015-MY3.

References

1. Wu, J.-H., *The Comparative Study about the Effects of Using Online Teacher Assessment Mechanism and Peer Assessment Mechanism on College Students' Performance of Photography Course*, in Department of Education, Master program of Technology Development Communication 2011, National University of Tainan: Tainan city. p. 152.
2. Gardner, H., *Multiple intelligences : New horizon in theory and practice* 2006, New York: Basic Books.
3. Lazear, D., G. and D. Dickinson, *Eight ways of teaching: The artistry of teaching with multiple intelligences* 2002, Thousand Oaks, CA Sage.
4. Huang, M.J., *Appreciate Art* 1992, Taichung: Department of Education, Taiwan Provincial Government.

5. Topping, K.J. and S.E. Ehly, *Peer-assisted learning*. Journal of Educational and Psychological Consultation, 2001. **12**(2): p. 113-132.
6. Linn, R.L. and N.E. Gronlund, *Measurement and assessment in teaching*1995, Englewood Cliffs, NJ: Prentice-Hall.
7. Yang, F.R., *From Subject to Objective--How Carry Out the Evaluation of Visual Arts*2009, Taipei city: National Taiwan arts education center.
8. Lu, C.H., *An Examination of the Educational Policy in Arts and Humanities Learning Domain and It's Practice: The Case of Ching Sing Elementary School in Yunlin County*. The Journal of Aesthetics and Visual Arts, 2009. **1**.
9. Topping, K.J., *Peer assessment between students in colleges and universities*. Review of Educational Research, 1998. **68**: p. 249-276.
10. Su, Y.N., et al., *Developing a Chinese writing Learning Environment based on Peer Review Strategy for Junior High School Students*, in *The 15th Global Chinese Conference on Computers in Education (GCCCE 2011)*2011, Zhejiang University: China.
11. Hsu, Y.C., C.C. Tsai, and M.J. Chen, *A pilot study on mathematical creative analogy activities with networked peer assessment*. Journal of National Taiwan Normal University, 2002. **47**(1): p. 1-14.
12. Jonassen, D.H., *Computers as mindtools for schools : Engaging Critical Thinking*. 2nd edition ed2000, New Jersey: Merrill.
13. Wu, K.-T., *Effects of high level prompts and peer assessment on learner reflection in a web-based learning environment*, in *Department of Information Management*2007, National Sun Yat-sen University: Kaoshiung city.
14. Falchikov, N., *Peer feedback marking: Developing peer assessment*. Innovation in Education and Training International, 1995. **32**: p. 175–187.