

**RESEARCH PAPER**

**PEER ASSESSMENT IN GRAPHIC DESIGN STUDIO:  
COMMUNICATION DESIGN STUDENTS' PERSPECTIVES**

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**ABSTRACT**

*Large class-sizes have become a common feature in almost all higher education institutions in developing countries. Consequently, educators have to implement innovative pedagogies and assessment practices to deal with the current challenges in education delivery at that level. The purpose of this study was to examine students' perceptions of their attitudes during peer-assessment practice in graphic design studio in higher education. The study was conducted with 94 students at the Kwame Nkrumah University of Science and Technology, Kumasi, Ghana. The results showed that the students had a positive experience and perception of the peer assessment process. They also held positive views of the task worth of peer-assessment just like their perception of peer-assessment as an aid to learning. The results revealed that peer learning and objectivity are significantly related to task worth. The findings of this study have confirmed the advantages associated with the use of peer-assessment in higher education instead of a teacher-centered approach and reaffirmed the existing unequivocal views held by similar studies.*

**Keywords:** *Peer assessment, students' perceptions, studio pedagogy, graphic design*

**INTRODUCTION**

Assessment is used in education as a measure of student's learning (Braun *et al.*, 2006) and motivation for learning (Drew and Shreeve, 2005). The requirements and use of assessment have made its practice restrictive on student's learning (Black and William, 1998; Bain, 2010). A study by Black and William (1998) found that the use of formative and peer-

assessment practices have many benefits and these concepts redefine student's learning style. Some studies have argued that teacher-centered assessment practices have the tendency to lead to surface learning (Wood and Kurzel, 2008).

One pedagogical area that is supporting and delivering the 21<sup>st</sup> century employment-driven skills in higher education curriculum is innova-

tive assessment practices (Boud and Associates, 2010). The challenge most educators from developing countries are faced with is how to depart from the age-old non-responsive traditional pedagogical approach, which is teacher-led and teacher-centered (Schweisfurth, 2011; Akyeamong, 2002). There has been a call for a paradigm shift in the methods for teaching and learning in the Ghanaian school system since current educational practices breed rote-learning and robotic graduates (Akeamong, 2002; Haffar, 2014 and Sakyi, 2014).

Recent studies on learning strongly advocate for the involvement of the learner in all the major activities of the teaching and learning process in the classroom (Mussawy, 2009; Ali and El-Din, 2015). Braun and Kanjee (2006) contend that assessment policy and practices are critical to any successful educational improvement strategy and for that matter students involvement in assessment practices (Bain, 2010). Mussawy (2009), looking from the perspective of the student, noted that assessment often defines student's study and learning practices as further studies have shown that students learn more seriously during examinations. This situation according to Struyven *et al.* (2005) buttress the perception of what assessment is, for students, as far as learning for examination is concerned.

Over the last three decades there has been a global trend toward greater use of innovative assessment practices at almost all levels of the education ladder and disciplines. Popular amongst them is peer assessment. An earlier study by Brown *et al.* (1994) revealed that using peer assessment with other methods such as self-assessment proved very effective. Ballantyne *et al.* (2002) considered peer assessment as an illuminating activity which empowers learners to mirror their own particular work and shifts students' role from passive recipients of teaching to more self-directed learners (Sivan, 2002). It has also proven to be useful, and comparatively effective with many different teaching /learning approaches (Cestone *et al.*, 2008;

Falchikov and Goldfinch, 2000; Papinczak *et al.*, 2007). A study by Papinczak *et al.* (2007) shows that peer-assessment enhanced students' willingness and ability to become active members of a group of learners.

Dochy *et al.* (1999) hinted that the view that "assessment of students' achievements is solely something which happens at the end of a process of learning is no longer tenable." According to Brown *et al.* (1994) students involvement in assessment does not only help students to gain more insight into their own performance but also helps them to develop the ability to make judgments, a skill necessary for study and professional life (Russell *et al.*, 2006).

Despite the acclaimed benefits discussed above, it is worth noting that the success of such assessment strategy is contingent on how it is implemented (Langan and Wheeler, 2003). It is recommended that students should be adequately prepared before the introduction of peer assessment into the pedagogy and they should be aware of their roles and responsibilities in the peer assessment practices (Dochy *et al.*, 1999). Brindley and Scoffield (1998) noted that students' lack of objectivity (potential bias) is top on the list of potential factors that could affect the efficacy of peer-assessment, while Cassidy (2006) doubts the competencies of students and White (2009) notes that students are not comfortable and lack confidence in peer assessment. Other factors such as stress (Pope, 2005), large class-size (Eshun, 2011), psychological safety and the interpersonal factor of trust (Cheng and Tsai, 2012) could impact negatively on peer assessment practices. Nitko and Brookhart (2007) and Willmot *et al.* (2008) reported "free-riding" which is especially common with group assignments and the timing of assessment practice (Brown, 2004).

Ellmers *et al.* (2008) noted that graphic design education could also benefit from project-based (problem-based) learning. Graphic design education provides creative competencies including novelty, originality and flexibility in idea-

tion skills, visual literacy competencies (concerning the socio-cultural conditions of visual language use) and problem-solving competencies (related to the functional use of research resources and creative process). The extent of these intellectual and professional skills outcomes place a huge challenge on the assessment practices (Ellmers *et al.*, 2008) necessitating the need for a more pragmatic approach to assessment in design education.

Fuhrmann *et al.* (2008) emphasised the practice and features of studio-critique as an indispensable part of the graphic design education, within which learners examine examples, conduct lengthy design projects in the company of others doing similar projects, and offer and receive frequent peer and expert feedback on the execution of design projects. Consequently, the studio environment and studio critique process offer an amazing platform to introduce innovative assessment practices. This will capitalize on the studio features to provide a perfect assessment for the learning environment as the teacher and peers get the opportunity to witness the progress of students.

Allen and Coleman (2011) identified that changing the assessment practices could support the assessment of creativity development. Eca (2002) argues that using assessment models used in other academic disciplines could not provide full-proof valid way to achieve fairness in the visual arts, since assessment of special learning outcomes are required. Eca sharpened and extended this point by indicating that the creative process is iterative and not linear in progression and is constructed on interaction of the thinking process and experimentation. Consequently, a simple assumption on the assessment model and practice cannot offer a holistic approach that reflects on the process, realities and the importance of intangibilities.

#### **Purpose of the study**

The purpose of this study was to explore student's perceptions of peer assessment i.e. peer learning, objectivity and task worth and how

these influenced their learning.

#### **Research questions**

The following research questions helped to direct the study:

- (a) To what extent do students believe that peer assessment aids peers in their learning?
- (b) To what extent do students let interpersonal relationships with peers affect their assessments of peers?
- (c) To what extent is peer assessment regarded by design students as a valuable learning experience?

#### **METHODOLOGY**

The study was conducted in the Department of Communication Design at the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana. It was initiated in the first semester of the 2014/2015 academic year as a pedagogical intervention in design studio. This introduction of peer-assessment in some studio-based courses was a retooling strategy to manage large class-sizes. Since the introduction of peer assessment in the department started, no evaluation has been carried out to determine its effectiveness. An evaluation of the new assessment practice will shape its future development.

#### **Study design**

This study adopted the descriptive survey approach. The specific survey method used in this study is the questionnaire survey. The study attempts to investigate the students' perceptions of the peer assessment environment.

#### **Sampling and sample size**

A purposive sampling method was used for the study. The sample consisted of 94 University students of the Communication Design programme in KNUST, Kumasi, Ghana. The students were asked about their peer assessment experience (peer learning, objectivity and

task worth). The questionnaire was distributed among both male and female students who registered and participated in the selected studio course (DAD 251: Graphic Design I) in the Department of Communication Design for the first semester of the 2014/2015 academic year.

#### **Data collection and analysis**

The instrument used was adopted from Lew *et al.* (2008) for measuring three types of achievement goals when using peer assessment i.e. peer learning, objectivity and task worth. The study employed the descriptive analysis as a way of interpreting the data captured. The questionnaire was clearly explained to the respondents who completed the questionnaire after a studio session under the supervision of teaching assistants, who did not interfere with the answering process. The questionnaire took 10 minutes to complete and they were unmarked to ensure confidentiality.

#### **The Instrument**

The instrument contained demographic information and eleven statements. The eleven statements were structured so as to collect information based on three important factors: peer learning, objectivity and task worth (refer to Table 1). The statements under peer learning peers in their learning. Those under objectivity sought to find out the extent to which the students let interpersonal relationships with peers affect their assessment of peers (Falchikov and

Goldfinch, 2000). Lastly, those asked under task worth were meant to find out the extent to which the students believed peer-assessment aids their which peer-assessment is regarded by the students as a valuable learning experience. The statements were rated on a five-point Likert scale ranging from 1 which represents “strongly disagree” through to 5 which represents “strongly agree”. Respondents were expected to choose from the list the one that most reflects their response to each of the statements.

#### **Analyzing the data**

The survey responses were manually scored by the researchers (strongly agree = 5, agree =4, neutral =3, disagree = 2, strongly disagree = 1) and inputted into the Statistical Package for the Social Sciences (SPSS) version 17. Unfinished questionnaires were excluded from the final compilation. Responses to the items were then sorted and grouped into the three themes: perceived peer learning, objectivity and perceived task worth and the results were averaged to create perceived peer learning, objectivity and perceived task worth variables. A Pearson correlation coefficient was then calculated for the relationship between participants’ reported levels of task worth, objectivity and reported levels of learning using peer assessment. Parameters such as descriptive statistics and correlation were used to determine the answers to the research questions.

**Table 1: The Description of questionnaire dimensions**

<b>Dimensions</b>	<b>Description</b>
Peer Learning	The extent to which students have attentive interest in studio activities and believe that peer assessment aids peers in their learning.
Objectivity	The extent to which students let interpersonal relationships with peers affect their assessments of peers.
Task worth	The extent to which peer assessment is regarded by students as a valuable learning experience.

**Reliability**

In the study by Lew *et al.* (2008), they found satisfactory internal consistency and discriminant validity between 0.86 and 0.88 for the factors. The measures were valid predictors of peer learning, objectivity, and task worth measures of learning. This study also yielded an appreciable internal consistency level of 0.73 for the same factors.

**RESULTS AND DISCUSSION**

Ninety-four undergraduate students, made up of 65 males, representing 69.1% and 29 females, representing 30.9% duly completed the questionnaire. The respondents were between 19 and 21 years of age with mean age of 20.3. A one-sample t-test was conducted in order to examine students' perception of peer-assessment in design studio.

**RQ 1: To what extent do students believe that peer assessment aids peers in their learning?**

To examine research question 1, one-sampled *t*-tests were performed on these scores (i.e. test value of 0) and the results are presented in Table 2. The results showed that the respondents do perceive peer-assessment as an aid to their peers' learning. Scoring a mean of 3.94 with standard deviation of 0.66 on a 5-point scale, we can comfortably conclude that the respondents held the positive belief that peer-assessment helped their peers in their learning. Regarding their objectivity during peer-assessment, the result from Table 2 shows that the students were nearly uncertain of their objectivity during peer- assessment. Scoring a

mean of 3.01 with a standard deviation of 0.76 on a 5-point scale, we can conclude that they admit to being objective during peer-assessment, though not as forcefully as we see in the case of their perception of peer-assessment as an aid to their peers' learning. The results of this study also indicate that the respondents generally have positive perceptions of peer- assessment as a worthy task. Descriptive statistics resulted in a mean of 3.80 with standard deviation 0.63 on a 5-point scale, which is positive. Consequently, we can assume that the respondents believe peer-assessment is a task worth undertaking and contribute to their studio practices and learning.

Further descriptive statistical analysis was used to answer the first research question: Which dimension (s) of peer assessment environment that students perceived to have helped them most in their Graphic Design studio? Table 3 shows the descriptive statistics of perceived peer assessment environment scales, that is the mean scores and standard deviations of individual items of each scale of assessment environment. The item for peer learning scale that obtained low mean score shows that the respondents could not declare emphatically how their peers benefited from the peer assessment, although they are convinced about their positive and constructive feedback to peers. Conversely, the items of peer learning scale that obtained high mean scores indicated that the practices (the statements) were helpful to the students. In terms of actual environment, students perceived that the following practices (or statements) fre-

**Table 2: Factor descriptive statistics and one-sampled t-values**

Factors	Mean	SD	t-value	Percentage of agreement
Peer learning	3.94	0.66	57.456	75.2
Objectivity	3.01	0.76	38.191	36.1
Task worth	3.80	0.63	58.340	66.5

Note. \**p* < .01 (2-tailed)

Table 3: Means and standard deviations of individual items of each scale

Dimensions	Statements	M	SD
<b>Peer Learning</b>	<i>The peer-assessment enables me to give feedback to my peers concerning what they did well or did not do so well during the exercise.</i>	4.05	.767
	<i>I assess my peers fairly because my peer-assessments can help them improve on their learning.</i>	4.04	.747
	<i>The peer-assessment does not help my peers to improve on their learning.</i>	3.72	1.15
<b>Objectivity</b>	<i>I assess my peers better than they actually performed on a particular exercise.</i>	3.14	1.09
	<i>I am generally lenient with my peer-assessments because I want to help my peers.</i>	3.16	1.11
	<i>I don't feel comfortable making negative judgments about my peers' performance.</i>	3.33	1.08
<b>Task worth</b>	<i>When my team mates don't contribute well during the exercise, I assess them accordingly in my peer-assessments.</i>	2.43	.945
	<i>I find it overwhelming having to assess my peer's performances during every studio session.</i>	2.53	1.04
	<i>Doing the peer-assessment is a waste of time.</i>	4.05	1.23
	<i>I treat the peer-assessment seriously.</i>	4.21	.802
	<i>Doing the peer-assessment is not waste of time.</i>	4.38	.869

quently took place in their Graphic Design studio.

**RQ 2: To what extent do students let interpersonal relationships with peers affect their assessments of peers?**

The Pearson Product-Moment Correlation Coefficient was used to answer the second objective of the study. Table 4 shows that there is a significant positive correlation between students' perceptions of peer learning and task worth ( $r = .537$ ,  $n=94$ ,  $p<0.01$ ). When the peer learning increased, the task worth also increased. Peer learning emphasizes on the feedback and cooperation among students. The significant positive correlation shows that students are more likely to work on studio assignments with peers rather than individually. They like to work with peers not because of the satisfaction obtained working with peers, but significantly in a large studio class-size, receiving feedback and critique from the instructor is scarce (Appiah and Cronjé, 2013). Peers come in handy and they are a resource base for the technically and artistically challenged students.

There was significant positive correlation between students' perception of peer learning and students' objectivity ( $r = .289$ ,  $n=94$ ,  $p<0.01$ ). This indicates that as students' involvement in peer learning increased, the objectivity of the students increased, that is, it was a positive relationship. This situation occurred may be due to several reasons. For instance, as the students improved their understanding of the content and basic concepts of the course thoroughly, appreciation in the use of assessment rubric increased peer-to-peer respect gained from previous trial practice of peer assessment and they were able to provide the needed feedback devoid of mediocrity and selfishness to peers. The involvement of students in the peer assessment improved peer learning and objectivity among students, hence correlated well with task worth.

**Table 4: Correlations among questionnaire factors (N = 94)**

	Peer learning	Objectivity	Task worth
Peer learning	-		
Objectivity	.289**	-	
Task worth	.537**	.263*	-

\*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

**RQ 3: To what extent is peer assessment regarded by design students as a valuable learning experience?**

There was a significant positive relationship between peer learning and task worth ( $r=.537$ ,  $n=94$ ,  $p<0.01$ ), with students devoting more time for the peer assessment exercise benefiting from peer feedback, and more importantly the seriousness they attached to the exercise which replaces the non-functioning studio critique due to the large class size. There was also significant positive relationship between objectivity and task worth ( $r=.263$ ,  $n=94$ ,  $p<0.01$ ). The students admit that the more objective they are in their critiques and feedbacks the more useful the peer assessment exercise becomes.

**DISCUSSIONS**

The results clearly reveal that the application of peer assessment in graphic design studio is as effective and practicable as experienced in other academic curricula. For instance, the findings of this research corroborate the view held by Lew *et al.* (2008) that students generally have a positive perception of peer-assessment. The fact that the students strongly agree that peer-assessment supports their peers in learning corroborates the view held by Struyven *et al.* (2005) that peer-assessment does not only help students to gain more insight into their own performance but also aids them to develop the ability to make judgments (de la Harpe and McPherson, 2012). Again, their strong favourable perception of peer-assessment as a valuable learning experience also goes a long way

to back the claim by Dippold (2009) that peer-assessment has the potential to develop students' understanding of standards, to initiate peer feedback, and to engage the student in the process of learning and assessment. With regards to students' objectivity, the findings of this study cannot emphatically dispel the fears of authorities such as Topping *et al.* (2000) that students do not trust themselves when it comes to giving helpful comments and fair marks; that students are uncomfortable and find it difficult to assess their peers. While the students were quite emphatic in their positive perception of peer-assessment, task worth as an aid to peer learning and as a valuable learning experience (Struyven *et al.*, 2005), they were almost neutral when it came to the issue of their objectivity during peer-assessment.

**CONCLUSION**

The purpose of the study was to find out from the students, their general perception of the concept of peer-assessment activities and the evaluation of their peer assessors in graphic design studio courses. The study specifically aimed at finding out the extent to which the students perceived peer-assessment as beneficial to their peers' learning experience in graphic design. It also sought to find out how objective students are while taking part in peer-assessment and finally the extent to which the students believe peer-assessment is a valuable learning experience. A descriptive statistical analysis was used to answer the research questions. To achieve these aims, a validated ques-

tionnaire containing eleven items was administered to 94 students of the department and the results obtained were analyzed.

This paper sought to present an investigation into design students' perceptions of the peer assessment in their studio learning environment. The study aimed to answer the research question that looked at students' perceptions of positive and negative factors of the peer assessment in studio learning environment. This study confirmed the benefits of using peer-assessment in design studio learning environment in higher education. The findings of the study have reaffirmed the views held by other authorities on the issue of peer-assessment in design studio. It has proved again the need for serious reforms in the assessment strategy used in art and design education in higher education, since art and design education are typically project-based.

Further research is needed in order to establish a direct relation between the use of peer assessment and school achievement. A number of issues present themselves for consideration in future research. Despite the fact that students are not experts in instructional related issues, their participation and input into assessment for learning are worth noting and should be perfected in future studies. This would be most helpful to them in their future professional practice. A study should also be conducted into the improvements in students' peer-assessment abilities over a period of time.

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