Frontiers of Architectural Research (▮▮▮▮) ▮, ▮▮▮–▮▮▮

HOSTED BY

Available online at www.sciencedirect.com

ScienceDirect

www.elsevier.com/locate/foar

Frontiers of Architectural Research

RESEARCH ARTICLE

Difference in grading parameters in architectural schools and its impact on the competency rating of future professionals

Oluwole A. Alagbe[1], Adedapo Adewunmi Oluwatayo*, Peter A. Aderonmu[2], Gbenga M. Alalade[3]

Department of Architecture, Covenant University, Ota, Ogun State, Nigeria

Received 31 October 2014; received in revised form 25 May 2015; accepted 2 June 2015

KEYWORDS
Architectural education;
Competency rating;
Creative work;
Jury system;
Nigeria

Abstract
Architectural education in Nigeria is divided into at wo-tier training system of four and two years for undergraduate and postgraduate study, respectively. After the completion of postgraduate study, a student is deemed competent to take the professional practice examination. Success in this examination qualifies a student to be registered as an architect. The competency rating of future professionals in architectural schools in Nigeria is determined through a jury system of scoring based on predetermined grading parameters. However, the grading parameters adopted by assessing authorities (academic professors and practitioners representing the professional body) differ. The difference in the grading parameters employed by the two approved assessing authorities in Nigeria was investigated in this study. Covenant University in Nigeria was used as a case study. The grading parameters and scores for the 2013 academic session were compared to determine similarities and differences, which might have affected the competency rating of students. Descriptive statistics was employed to analyze the data obtained. Results showed a significant difference in scoring by the two authorities. This difference had a significant consequence on the competency rating of students.
© 2015 The Authors. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

*Corresponding author. Tel.: +2348032487108.
E-mail addresses: oluwole.alagbe@covenantuniversity.edu.ng (O.A. Alagbe), dapo.oluwatayo@covenantuniversity.edu.ng (A.A. Oluwatayo), peter.aderonmu@covenantuniversity.edu.ng (P.A. Aderonmu), gbenga.alalade@covenantuniversity.edu.ng (G.M. Alalade).
[1]Tel.: +2348054577730.
[2]Tel.: +2348140993901.
[3]Tel.: +2348059648599.
Peer review under responsibility of Southeast University.

http://dx.doi.org/10.1016/j.foar.2015.06.001
2095-2635/© 2015 The Authors. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Please cite this article as: Alagbe, O.A., et al., Difference in grading parameters in architectural schools and its impact on the competency rating of future professionals. Frontiers of Architectural Research (2015), http://dx.doi.org/10.1016/j.foar.2015.06.001

1. Introduction

Architecture has played a substantial role in the development of the built environment, a view alluded to by *Martha Thorne*, Executive Director of the Pritzker Prize, who believes that architecture exists to create the physical environment in which people live (Shah, 2012). Adewale and Adhuze (2014) observed that architecture enhances the esthetic quality of the environment and the functional efficiency/structural integrity of city structures. They further noted that architecture is utilized to promote national identity and the pride of the society that produces it. These statements imply that architects play a significant role in sustainable community development. As a professional, an architect is described as an agent of social change and an advocate for systems and ecological thinking (Glyphis, 2001). As a result, architects are responsible for creating the community of which they are a part or with which they work (Chansomsak and Vale, 2009). The professional role of architects dovetails into the realm of the study of other professions and professionals in the built industry. In other words, architects are generalists who, out of necessity, must have areas of specialization (Glyphis, 2001).

As a field of learning, architecture maintains a unique and enviable position in the sense that it is both an art and a science. As a discipline, architecture encompasses knowledge in all vast areas of human endeavor, ranging from psychology, economics, management, politics, and sociology to other areas. This special attribute bestows on architects the essential role of leaders in the building industry. Consequently, an architect has to be knowledgeable in every sphere of learning, must have a vision, and must be able to facilitate the work of other professionals. This understanding has to be infused into the architectural education of students (future professionals) because the quality and safety of the built environment depend on their expertise and competency. The goal of architectural education must therefore be aimed at cultivating in students not only the values and attitudes but also the knowledge, skills, and understanding required for a successful professional practice. Yorgancioglu (2013) advocated that the emphasis of architectural education must be on the personal development of students as much as on their professional development. She argued that aside from the ultimate goal of preparing students for the architectural profession, architectural education must also facilitate their development as open-minded, socially responsive, and creative individuals who can think and act in a critical and reflective manner. The quality of architectural education in architectural schools is therefore crucial to the training of future professionals and to the sustenance of the profession.

The core of architectural education is the design studio. In recent years, calls have been made for the establishment of more reliable assessment criteria (Webster, 2007). A future professional is certified fit for the profession after he has successfully completed his master's degree program. The degree program is assessed on the basis of certain grading parameters, which jurors rarely reveal to students. Jurors [a set from the accrediting professional institution of the Nigerian Institute of Architects (NIA) and a set from the academia] often have different grading parameters; this difference is assumed to affect the competency rating of future professionals.

Despite the importance of assessment in certifying the competency rating of future professionals, only a few studies have addressed the impact of different grading parameters on competency rating. Several studio assessments have been alleged to focus on the product, ignoring the process and vice versa. At other times, students even allege that they do not know the criteria used in assessing their design studio. Most studies have focused on assessment and grading (Andersen and Cozart, 2014). De la Harpe and Peterson (2008) described a model that encompasses a broad set of indicators to guide and inform the assessment of architecture, art, and design studios. Ehmann (2005) argued that assessment remains squarely focused on the design or creative outcome rather than on the process of producing the creative outcome. Rust et al. (2003) observed that the continued emphasis on the explicit articulation of assessment criteria and standards is insufficient to develop a shared understanding of "useful knowledge" between staff and students and therefore reveals the necessity of socialization processes for tacit knowledge transfer to occur. However, insignificant attention has been given to the differences in grading parameters across architectural schools, particularly in Nigeria, and their effect on determining the competency rating of future professionals.

In view of the above, this study investigates the effect of different grading (assessment) parameters on the competency rating of future professionals. Such an investigation is performed by suggesting the relevance of having standardized grading parameters as a basis for a unified system of assessment for the competency rating of future professionals across all architectural schools in Nigeria.

2. Literature review

2.1. Architectural design studio: core of architectural education

Architectural education is different from other disciplines because it is anchored on apprenticeship (Alagbe et al., 2014a). The bulk of architectural education (apprenticeship) revolves around the practice and interaction in the architectural design studio. The importance of the design studio to architectural education has been underscored in literature by various scholars (Oh et al., 2013). For instance, the design studio lies at the heart of architectural education (Adeyemi, 2012). It is the pivot and gathering point of all knowledge and skills acquired throughout the architectural curriculum (Mostafa and Mostafa, 2010); it is home to many architecture students because it is where they actually spend most of their time to work, study, eat, and even sleep (Adeyemi, 2012). Within the walls of the design studio, future professionals learn the values, attitudes, knowledge, skills, and understanding required for the practice of the profession. Architectural education in all architectural schools in Nigeria is structured in line with the Roman architect Vitruvius' principles of good architecture in his treatise on architecture, *DeArchitectura*, which emphasizes *firmatis* (durability/structural integrity), *utilitas* (utility/functionality), and *venustatis* (beauty/esthetics). As a result, the pivotal courses in Nigerian architectural schools are centered on these principles. The training aspects of these principles are by

Please cite this article as: Alagbe, O.A., et al., Difference in grading parameters in architectural schools and its impact on the competency rating of future professionals. Frontiers of Architectural Research (2015), http://dx.doi.org/10.1016/j.foar.2015.06.001

Table 1 Tripod courses in architectural schools.

Level	Course title	Semester	Architectural schools			
			Unilag units	ABU Zaria units	Covenant units	FUTA units
200	Design	1st	4	3	4	4
		2nd	4	3	4	4
	Structures	1st	2	2	2	2
		2nd	2	2	2	2
	Components	1st	1	2	3	3
		2nd	1	2	3	3
300	Design	1st	4	3	4	5
		2nd	-	3	4	5
	Structures	1st	2	2	2	
		2nd	-	2	2	3
	Components	1st	2	2	3	3
		2nd	-	2	3	3
400	Design	1st	6	3	4	6
		2nd	6	4	4	
	Structures	1st	2	2	3	3
		2nd	-	2	3	
	Components	1st	2	2	3	3
		2nd	2	2	3	
MSc1	Design	1st	10	4	6	
		2nd	10	4	6	
	Structures	1st	2	2	3	
		2nd	-	2	3	
	Components	1st	2	2	3	
		2nd	2	2	3	
MSc 2	Design	1st	10	4	10	
		2nd	16	4	10	
	Structures	1st	-	-	-	
		2nd	-	-	-	
	Components	1st	-	-	-	
		2nd	-	-	-	

building structures, architectural design studio, and building components and methods, respectively. Through this tripod courses, an architecture student is supposed to exhibit and demonstrate his competence in all other subjects learned in the higher institution. Table 1 shows the commonality of this tripod courses in three foremost architectural schools in Nigeria and the importance attached to them in terms of the number of credit units, which is a reflection of the number of contact hours per week.

Table 1 reveals that the architectural design studio is the most important of the courses. Architecture students are expected to take the course from their proper admittance into an architectural school (second year) to their terminal year (master's class) for those willing to be registered as practicing professionals with the Architects Registration Council of Nigeria (ARCON) after passing the professional practice examination of NIA. Available evidence acquired over time shows that not all students who were admitted into architectural schools ended up being registered as architects. For this reason, the architectural education program in Nigeria, though fashioned after the Royal Institute of British Architects, was restructured in 1968 into a two-tier system that offers Bachelor of Science and Master of Science degrees in architecture (Adegbile, 2012). This system was established to enable students who are unwilling to go ahead with the master's program to discontinue. Table 1 also reveals that the higher one goes in architectural education, the more emphasis is shifted to the architectural design studio, particularly at the master's level, as can be seen by the number of credit units allotted to it. The master's thesis, upon which the competency rating of future professionals is assessed, is based essentially on the architectural design studio.

2.2. Assessment method of architectural design studio

Webster (2007) defined assessment as a set of processes used to measure the outcomes of student learning. Three core areas are measured; they are knowledge, skills, and abilities. Findings in literature reveal that the parameters for the assessment of creative work in design studio have been a subject of debate. For instance, Ellmers (2006) argued that the assessment of creative work is difficult and sometimes impossible because of the creative nature of the outcome. Cowdroy and Williams (2006) acknowledged that their assessment of creative work is based on the reliance on self-intuitive understanding of what creative ability is. Thus, they assume that their students will understand what they understood through their creative ability and their tendency to assess the creative ability of students on the basis of what teachers like about the creative work presented for the assessment. Conversely, Harman and Meeks (2000) and Ramsden (2003) noted that despite the claims of good practice in teaching, defined criteria for assessing creative ability are lacking. Therefore, the main issue confronting the effective assessment of creative work is whether to focus on the process, person, or product (De la Harpe et al., 2009).

Over the years, the architectural jury system has been a medium and an assessment tool for the work of students in most architectural schools worldwide (Alagbe et al., 2014b). This system as a traditional educational ritual was adopted in 1795 by the French “Ecole Des Beaux-Arts” as part of an evaluation process that continued to evolve as both an assessment and learning tool (Salama and El-Attar, 2010). The jury system traditionally focused on what is produced rather than on the process that led to it (Ellmers, 2006; Quinlan, 2004). This system is useful in enhancing the intellectual growth of students through constructive criticism (Salama and El-Attar, 2010). It is the backbone of architectural design studio assessment with ambiguous assessment criteria Utaberta et al., 2011). It also provides a context for the critical analysis of a studio design project in addition providing a broad learning opportunity for both students and staff (Alagbe et al., 2014b).

Webster (2007) also observed that design jurors are often drawn from both the academia and practice. In Nigeria, the professional bodies (ARCON and NIA) assess final-year students (bachelor's and master's degrees) as a requirement for program accreditation. Differences have been observed in the parameters used by these categories of assessors. In spite of the

Please cite this article as: Alagbe, O.A., et al., Difference in grading parameters in architectural schools and its impact on the competency rating of future professionals. Frontiers of Architectural Research (2015), http://dx.doi.org/10.1016/j.foar.2015.06.001

broad spectrum of literature to underscore the significance of the jury assessment system in the competency rating of architecture students, no relevant study has been conducted on the differences in grading parameters and their impact on the competency rating of future professionals. Consequently, this study investigates the impact of differences in grading parameters on the competency rating of future professionals.

2.3. Purposes of assessment

Student assessment serves two purposes according to Webster (2007). One is to guide, motivate, and reinforce student learning, and the other is to ensure academic standards. For these reasons, Webster (2007)advocated that assessment parameters should be objective and transparent. This author, however, noted that the assessment of design cannot be completely objective. In relation to design studio, two distinct types of assessment are often identified in literature (Andersen and Cozart, 2014). They are assessment *of* learning and assessment *for* learning. Assessment *of* learning involves measuring what and how much students have learned tied to specific learning outcomes, which are derived from the graduate profile. This assessment type answers the following questions. What exactly do students need to demonstrate that they know and can do as a result of teaching and learning? How confident is the institution that the student has mastered the graduate profile on program completion? Assessment *of* learning requires attention on the validity, reliability, utility, consistency, and equity of measures, grading, and marking.

a. Validity – The assessment should be "fit for the purpose." It should sample fairly the objectives and content of the course, be free of ambiguity, and have clear and appropriate marking criteria for the task and level of students.
b. Reliability – Marking practices should ensure consistent interpretation of assessment criteria by different markers. Students should not be graded on merely a piece of work unless student performance can be gauged in stages.
c. Utility – The nuts and bolts of assessment include timing, managing feedback to students, and tracking student progress.
d. Consistency – The definition of consistency is consistent with that of reliability, that is, giving an accurate representation of each student's performance and fairness by using methods that treat all students similarly.

Assessment *for* learning focuses on using assessments to help students improve and move forward in their learning. This assessment type requires academic staff to assess in a manner that will allow them to identify what types of improvements are needed and communicate this information to students. Is the student being told what to do to improve and master the graduate profile? These objectives are what the jury strives to meet.

2.4. Components of design studio assessment

Assessment in design studio is conducted through criticism. A student pins up his drawings and presents these to examiners who criticize the work, giving the student opportunities to clear gray areas. The process also serves as an avenue for students to learn. Çıkıs and Çil, 2009 described assessment in design studio as authentic because it focuses on the ability to use relevant knowledge instead of merely the knowledge for its sake. Different criteria have been employed to assess design studio. These criteria include oral presentation, concept, functionality, drawing, and model (Kvan and Jia 2005). Other criteria include effective use of design principles and originality or creativity. Functionality is assessed in terms of the likelihood that the spaces provided would serve the purposes for which they are designed, without deficiencies. Design principles are often stated in design data books. Students are expected to be familiar with these principles in allocating and positioning spaces. Creativity connotes the ability of students to produce a design that is novel, original, and flexible (Demirkan and Afacan 2012). Although these criteria are defined, they still depend on the subjective judgment of the assessor. For instance, Demirkan and Afacan (2012) noted that the assessment of creativity depends on the cognitive and affective perception of the assessor. The aspects of creativity that assessors often look out for include novelty, elaboration, and application of design principles.

3. Research methods

The results of architectural theses of master's students for the 2012/2013 session were utilized as the data source. Two sets of results were employed; one was from the representatives of the professional bodies (NIA and ARCON), and the other was from university-appointed external examiners who were professors of architecture. Departments provided the template used by the external examiners. The representatives of the professional bodies used another template developed by these bodies.

4. Results and discussion

Table 1 reveals several discrepancies in the parameters used to assess students. A major area is in the assessment of creativity and functionality. The professional body focused on design functionality and disregarded the assessment of creativity, which the academia allocated 20% of the total score to.

The results of this study suggest that the assessment of design studio may not be as ambiguous as suggested by Utaberta et al. (2011) because of the presence of established criteria on which the assessment of design studio is based. However, the exception is the assessment of creativity, which has been said to be intuitive (Cowdroy and Williams, 2006) because no consensus exists as to what creativity means (De la Harpe and Peterson, 2008; Ramsden, 2003). The representatives of the professional body have therefore played down on the assessment of creativity. They have spread the scores for creativity over functionality and structural integrity. Several scholars have also argued that the jury process focuses on the product rather than on the process. The research and understanding of the brief and philosophy, as well as the application of relevant design principles and standards, may be regarded as part of the process because they represent the thoughts that go into designing spaces. The scores allocated to the parameters in Table 1 tend to support the opinions of scholars such

Please cite this article as: Alagbe, O.A., et al., Difference in grading parameters in architectural schools and its impact on the competency rating of future professionals. Frontiers of Architectural Research (2015), http://dx.doi.org/10.1016/j.foar.2015.06.001

Table 2 Allocations of scores according to grading parameters.

Grading parameters	External examiners (academia)	Assessors (professional body)
Research	30	-
Understanding of brief and philosophy		
Interpretation of brief and concept development	-	10
Case studies and analysis	-	15
Presentation	10	
Oral presentation and appearance		5
Graphics	-	5
3D presentation		
Model and/or perspectives	10	5
Functionality	15	
Application of relevant design principles and standards	-	10
Adequacy of provisions	-	5
Operational and functional relationship	-	20
Creativity	15	-
Structural integrity		
Sections and details	20	-
Working drawings and detailing	-	25
Total	100	100

as Ellmers (2006), Ehmann (2005) and Quinlan (2004). In both assessments, these parameters were allocated 30% and 35% by the examiners from the academia and professional bodies, respectively. Hence, although the focus of the assessment is more on the product in both cases, the representatives of the professional bodies paid slightly more attention to the process. This result is unexpected because the academia should know how students arrived at the product, which is the final design. Meanwhile, the score allocated by both parties to presentation is the same (10%).

The score allocated to the presentation criterion by examiners from the academia and assessors from the professional body is the same (10%) as that found to have been used by instructors for architecture students in China by Kvan and Jia (2005). The instructors in the study of Kvan and Jia (2005) allocated 40% to the functionality criteria, which is close to the score (35%) allocated to the same criteria by assessors from the professional bodies in the current study. However, the external examiners from the academia allocated less than half of the score (15%) to the functionality criterion. The current study also found that while the examiners from the academia measured the design concept in the creativity concept and allocated 15% to the criterion, those from the professional bodies allocated 10%, which is significantly lower than the 30% found in the study of Kvan and Jia (2005). Thus, although assessors in Nigeria acknowledge the place of concept in design studio, other factors weigh more.

The raw scores given to each of the 23 students by both the external examiners and professional body were considered the variables in this study. The scores of the students from the two assessments were compared using the paired sample t-test (repeated measures). The results in Table 2 show a statistically significant difference between the scores of the representatives of the professional body and those of the external examiners [t (22)=5.90, $p<0.001$], with a mean difference of −7.78.

Table 3 reveals that the mean score of the external examiners (M=61.17, SD=5.94) (Table 4) is significantly higher than that of the representatives of the professional body (M=53.39, SD=4.68). The effect size is also large (Eta squares=0.61), according to the guideline provided by Cohen (1988), 284–287.

The results show that the assessors from the professional body allocated higher marks to functionality and structure than the examiners from the academia. However, they, awarded a lower mark to 3D presentations and no mark to creativity. Although the students obtained proportionately lower marks in functionality and structural integrity from the assessors from the professional bodies, the fact that no score was allocated to creativity may have contributed to the lower scores they obtained when compared with the scores they obtained from the examiners from the academia. In addition, structural integrity, from the point of view of external examiners from the academia, was assessed from the sections and details. The assessors from the professional bodies, however, looked at the working drawings of the students. Observation of the presentations made by the students indicated that although the students presented working drawings, they were not as detailed as what was expected by the assessors from the professional bodies. This condition is probably due to the fact that the studio mentors of the students never placed emphasis on these. Therefore, several aspects of design that were considered important by the academia were not considered important in practice.

The fact that these scores may have an effect when students are to register with professional bodies makes the issue worrisome. Students may be rated as less competent than their schools rated them to be. An issue noticed during the assessment by the professional bodies is that students were not assessed according to the knowledge already imparted but according to expectations in practice. This issue probably puts a question mark on the employability ratings of students. This issue may also come to play at the

Please cite this article as: Alagbe, O.A., et al., Difference in grading parameters in architectural schools and its impact on the competency rating of future professionals. Frontiers of Architectural Research (2015), http://dx.doi.org/10.1016/j.foar.2015.06.001

Table 3 Results of the paired sample *t*-test on the scores of representatives of the professional body and external examiners.

Paired sample test									
		Paired differences					*t*	df	Sig. (two- tailed)
		Mean	Std. deviation	Std. error mean	95% confidence interval of the difference				
					Lower	Upper			
Pair 1	Professional body Score - external examiner score	−7.78	6.33	1.32	−10.52	−5.05	−5.90	22	0.000

Table 4 Statistics of the comparison of scores awarded by representatives of the professional body and those by external examiners.

		Paired sample statistics			
		Mean	*N*	Std. deviation	Std. error mean
Pair 1	Professional body score	53.39	23	4.68	0.98
	External examiner score	61.17	23	5.94	1.24

point of registration of the students because the variance in assessment may suggest that architectural schools are probably not training the students for the skill that practices require. The parameters graded by the assessors from the professional bodies are in areas where students have learnt in the course of their training. Therefore, both the academia and professional bodies should work out agreeable criteria.

5. Conclusion

This study investigated the different parameters utilized by examiners from the academia and architectural professional bodies to grade architecture students. The findings reveal that different parameters are used; even when the parameters appear to be the same, different scores a real located. The fact that the scores awarded to the students by representatives of the professional bodies are low may suggest that the architectural school considered in this study may not have focused on the areas that practice is keen on. To produce graduates that are relevant to practice, the grading parameters should be harmonized to ensure that areas of competency that practices look out for are addressed. The two categories of assessors must harmonize the parameters used. Asking persons in the academia who are active in the professional setting to act as professional assessors may also be useful. The current professional assessors do not use the hindsight of the knowledge that the students have already obtained to assess them.

Another observation is that the areas assessed by the representatives of the professional bodies were taught in the course of study of the students but were explicitly assessed in design studio. Reviewing the modes of assessment of the concepts taught in other courses may be necessary so that students are encouraged to practice what they have learned in theory. A limitation of this study is that only one set of students in one institution was investigated. Further study that broadens the scope of study is needed to make generalizations.

References

Adegbile, M., 2012. Nigerian architectural education in a sustainable age. In: Proceedings of the Sustainable Futures: Architecture and Urbanism in the Global South Kampala, Uganda, 27–30 June.

Adewale, P.O., Adhuze, O.B., 2014. Entry qualifications and academic performance of architecture students in Nigerian Polytechnics: are the admission requirements still relevant? Front. Archit. Res. 3, 69–75.

Adeyemi, E.A., 2012. In the Making of an Mrchitect: the Zaria Experience. Covenant University Press, Ota.

Alagbe, O., Aderonmu, P., Opoko, A., Adeboye, A., Akinjare, O., Izobo-Martins, O., 2014b. Comparison of design studio and jury systems in architectural schools in southwest Nigeria. In: Proceedings of the 3rd World Conference on Design, Arts and Education. DAE-2014, 02–03 May, 2014, Dubrovnik, Croatia.

Alagbe, O., Aderonmu, P., Opoko, A., Oluwatayo, A. Dare-Abel, O., 2014a. Relevance of manual drafting in design studio education in Nigeria: Covenant University Architecture Students Perspective. In: Proceedings of EDULEARN14 Conference. 7th–9th July 2014, Barcelona, Spain, pp. 1588–1594.

Andersen, H.L. and Cozart, S.M., 2014. Assessment methods and practices in higher education in Denmark. Working paper. Available on ⟨http://www.dun-et.dk/media/120513/assessment methods-and-practices-andersen-cozart-2014.pdf⟩.

Chansomsak, S., Vale, B., 2009. The roles of architects in sustainable community development. J. Archit./Plan. Res. Stud. 6 (3), 107–136.

Please cite this article as: Alagbe, O.A., et al., Difference in grading parameters in architectural schools and its impact on the competency rating of future professionals. Frontiers of Architectural Research (2015), http://dx.doi.org/10.1016/j.foar.2015.06.001

ARTICLE IN PRESS

Çıkıs, S., Çil, E., 2009. Problematization of assessment in the architectural design education: first year as a case study. Proc. Soc. Behav. Sci. 1 (1), 2103–2110.

Cohen, J., 1988. Statistical Power Analysis for Behaviour Sciences, 2nd ed. Earlbaum, Hillsdale NJ.

Cowdroy, R., Williams, A., 2006. Assessing creativity in the creative arts. Art Des. Commun. High. Educ. 5 (2), 97–117.

De la Harpe, B., Peterson, F., 2008. A model for holistic studio assessment in the creativedisciplines. ATN Assess. 1 (1).

De la Harpe, B., Peterson, J., Frankham, N., Zehner, R., Neale, D., Musgrave, E., McDermott, R., 2009. Assessment focus in studio: what is most prominent in architecture, Art and Design? Int.l J. Art Des. Educ. 28 (1), 37–51. http://dx.doi.org/10.1111/j.1476-8070.2009.01591.x.

Demirkan, H., Afacan, Y., 2012. Assessing creativity in design education: analysis of creativity factors in the first year design studio. Des. Stud. 33, 262–278.

Ehmann, D. (2005. Using assessment to engage graphic design students in their learning experience. In: Proceedings of the Evaluations and Assessment Conference. 30th November–1st December, 2005 University of Technology, Sydney.

Ellmers, G., 2006. Assessment Practice in the Creative Arts: Developing a Standardised Assessment Framework Teaching and Learning Scholars Report. Faculty of Creative Arts, University of Wollongong, Wollongong NSW Retrieved on June 18, 2014 from https://www.uow.edu.au/content/groups/public/@web/@cedir/@man/documents/doc/uow013284.pdf.

Glyphis, J. P. (2001. How can the architect contribute to a sustainable world? In: Proceedings of a second Nature Education for Sustainability Conference at Wingspread Conference Center. 24–26 2001, Racine, Wisconsin.

Harman, G., Meeks, V.L., 2000. Repositioning Quality Assurance and Accreditation in HigherEducation. DETYA, Canberra.

Kvan, T., Jia, Y., 2005. Students' learning styles and their correlation with performance in architectural design studio. Des. Stud. 26 (1), 19–34.

Mostafa, M., Mostafa, H., 2010. How do architects think? Learning styles and architectural education. Arch.-Int. J. Archit. Res. 4 (2–3), 310–317.

Oh, Y., Ishizaki, S., Gross, M.D., Yi-Luen Do, E, 2013. A theoretical framework of design critiquingin architecture studios. Des. Stud. 34 (3), 302–325.

Quinlan, A., 2004. Connecting enquiry, process, and community: student design studio learning. UNSW Compend. Good Pract. Learn. Teach. 1, 62–74.

Ramsden, P., 2003. Learning to Teach in Higher Education 2nd ed. Routledge Falmer, London.

Rust, C., Price, M., O'Donovan, B., 2003. Improving students learning by developing their understanding of assessment criteria and processes. Assess. Eval. High. Educ. 28 (2), 147–164.

Salama, A.M., El-Attar, M.T, 2010. Student perceptions of the architectural design jury. Arch.-Int. J. Archit. Res. 4 (2–3), 174–200.

Shah, V., 2012. The role of architecture in humanity's story. Thought Economics, Monday 18 June2012. ⟨http://thoughteconomics.blogspot.com/2012/06/role-of-architecture-in-humanitys-story.html⟩.

Utaberta, N., Hassanpour, B., CheAni, A.I., Surat, M., 2011. Reconstructing the Idea of CritiqueSession in Architecture Studio. Proc. Soc. Behav. Sci. 18 (2011), 94–102.

Webster H., 2007. The Assessment of Design Project Work (Summative Assessment) CEBE Briefing Guide Series. Available at ⟨http://www.hear.ac.uk/assets/documents/rc_import/BriefingGuide_09.pdf⟩ (accessed 24.05.2015.).

Yorgancioglu, D. 2013. Toward a more integrative learning: reconsidering the scope and value ofliberal education in architectural curricula. In: Proceedings of the International EAAE Conference-Workshop-Exhibition Educating the Future: Architectural Education in the International Perspective. 21–23 March 2013, IKU, Istanbul, pp 43–49.

Please cite this article as: Alagbe, O.A., et al., Difference in grading parameters in architectural schools and its impact on the competency rating of future professionals. Frontiers of Architectural Research (2015), http://dx.doi.org/10.1016/j.foar.2015.06.001