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Impact of accreditation on improvement of operational inputs after two cycles of assessments in some Ghanaian universities

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ABSTRACT

The study assesses the influence of accreditation, after two cycles of evaluation on some selected Ghanaian universities. This was done by examining the changes that had occurred in specified indicators, mainly because of the implementation of suggestions for improvement made by the previous cycle's evaluators. The study employed quantitative research methods in analysing the changes (for better or for worse) that had occurred in the selected indicators from one cycle of assessments to the other and as observed in the reports of the evaluators. The results showed varying degrees of improvements in the selected indicators at the subsequent assessments over the previous ones.

KEYWORDS

Accreditation; assessments; curricula; staffing; library facilities; physical facilities

Introduction

The programme accreditation procedure in Ghana involves the assessment of specified indicators by panels of experts constituted for that purpose by the external quality assurance agency. Information obtained from the agency's (unpublished) manual, *National Accreditation Board (NAB) Manual* (2011), and the agency's assessment instruments, showed that the indicators evaluated for accreditation were mainly in the areas of curriculum, academic staffing (qualifications and experience), student-staff ratio, library facilities, physical facilities and funding (NAB, 2014). Professionals (not necessarily academics) in those areas, using specified criteria, undertook assessments of physical facilities and funding. The accrediting agency selected experienced academics, usually professors, as external evaluators for the other indicators mentioned in this study.

The intention of this study was to determine whether the processes of accreditation have had any influence on the selected institutions, after having undergone two or more cycles of assessments for accreditation, going by subsequent

reports. The study examined the latest reports (up to the year 2015) of a cycle's evaluations to determine whether suggestions for improvements made by evaluators in the previous report had been implemented and certified as such in the subsequent evaluation report. The assumption underlying the study is that, evaluators' observations of improvements in the specified input indicators at a second cycle assessment, would signal that their suggestions (for improvement) made in their earlier, first cycle, report had been implemented by the assessed institutions. The accreditation procedure, for which the evaluators worked as agents, would therefore have had an impact on the quality of those specified input indicators. This assumption of impact cannot emphatically rule out any presumption that an institution would not have made changes in the said indicators without prompting from the evaluators. In subsequent assessments, however, evaluators were requested by the accreditation procedure to comment on the state of implementation of recommendations made in previous assessment reports. The importance of the role played by the specified operational input indicators in ensuring quality outcomes in higher education is discussed under the methodology section of this article. The emphasis of this study is not on the quality of learning or outcomes but rather inputs. In developing countries, such as Ghana, accreditation is in its not only nascent stages but also doubles as a quality assurance and enforcement mechanism. It is important, therefore, to focus on the management of the inputs to the quality of the education process to build the base for future understanding of how these inputs make an impact on teaching and learning outcomes. Indeed, the conviction is that input measures are critical in building the foundation for quality improvements especially in higher education institutions in developing countries.

The study thus sought to answer the main question: has accreditation had influence on the quality of specified input indicators in Ghanaian universities after two or more cycles of assessments?

Developments in African higher education

The massive enrolments in higher education in the developed world in the 1980s through to the 1990s and the consequent increased budgetary provision culminating in governments introducing various quality control measures have been well documented in the literature (Scott, 1995; Kogan & Hanney, 2000; World Bank Report, 2002; Westerheijden *et al.*, 2006). The African continent has had its share of this global trend. Figures cited by Materu (2007, p. 9) showed that between 1985 and 2002, the number of tertiary education students in Africa increased dramatically from 800,000 to 3 million; an annual average growth of about 3.6 per cent. The rapid growth in student enrolments created problems with regard to educational quality. This was mainly because the growth had not been accompanied by a corresponding expansion in existing human, financial and physical facilities in the existing institutions. Ghana, for instance, witnessed a 400 per cent growth rate in higher education enrolment from the 1991–92 figure of 11,857 to 63,576

in 2003–4 (World Bank Report, 2008). In Nigeria, the number of universities grew from six in 1970 to about 200 (24 of them privately owned) in 2006 with an enrolment of over 1.5 million (Okebukola, 2006). The quality of teaching and learning suffered profoundly in both countries consequently, necessitating concerns and complaints from stakeholders including parents and employers. With public investments unable to keep pace with this development, African governments, mostly under donor influence, resorted to the liberalisation of provision to include private providers. Materu & Righetti (2010, p. 4) quoted a 2009 World Bank Report showing private participation in higher education accounting for 20 per cent of enrolments in some African countries. This had significantly reduced, but not eliminated, the pressure of social demand for higher education.

Private provision of higher education in Africa, mainly sponsored by faith-based organisations and private businesspersons, is a relatively recent development. There was also a perception that the profit motive of these providers made them relax on the rigours of quality demanded of higher education institutions (Materu, 2007, p. 9). Most of the faith-based institutions claimed to be not-for-profit but their admission of large numbers of students, including those who had not met the set minimum requirements, as recently found by the Ghanaian accrediting agency's academic audit reports, cast doubt on such claims (Ghana Business News, 2012).

African governments thus established quality assurance agencies mainly in response to complaints about the quality of higher education and the fear of compromise in quality provision in the effort to expand enrolments (Materu & Righetti, 2010, p. 4). The agencies' main assigned task was to put in measures to reverse the decline in quality and to regulate the new providers. In that pursuit, public higher education institutions would be directed to stick to their core mandate of fostering a highly educated population while private providers would also be prevented from letting their profit motive cloud the quest for the provision of quality higher education. Harmonisation with global trends, to ensure and maintain comparability, and therefore, continued recognition of qualifications and awards worldwide, were to be kept in focus by the agencies.

Research studies on quality impact

Assessing the impact of quality on higher education has attracted the attention of researchers over the years. Some researchers have focused on national quality monitoring by external agencies. An example is the research by Stensaker *et al.* (2010) that indicated a moderate to high positive impact of external quality monitoring on Norwegian higher education institutions.

Most of the other research on quality impact or effect of quality measures has tended to focus on whether recommendations by evaluators of institutions and their programmes had been implemented. The expectation had been that any action taken on the evaluation results would enhance quality improvement and better-quality education.

For instance, studies in Dutch higher education institutions indicate an active usage of recommendations from external quality assurance systems (Frederiks *et al.*, 1994; Weusthof, 1994; Frederiks, 1996; Westerheijden *et al.*, 2006). Weusthof (1994), for instance, found that 87 per cent of faculties sampled, used recommendations in external evaluation reports. Westerheijden *et al.* (2006) again cited the setting up of internal monitoring systems for quality of the educational process as an outcome of the external evaluation system that had resulted in the establishment of systems for the constant update of curriculum overviews.

Shah (2012) concluded from discussions with 40 workshop participants and detailed analysis of audit reports that external quality audits in Australia played a key role in improving quality assurance processes in universities' core areas. The external audit process provided the impetus for rapid change in areas of the university requiring improvement.

Similar studies in Sweden and Finland had indicated results of varying degrees of impact of external quality monitoring (Askling, 1997; Välimaa *et al.*, 1998; Massy, 1999; Wahlén, 2004). Askling, for instance, concluded that several factors influenced institutional quality and internal monitoring. External quality monitoring, however, was a key element among those factors in an institution's quality improvement efforts. From studies in the UK, New Zealand, Hong Kong and Sweden, Dill (2000) listed several effects of academic audits, including increased institutional attention towards teaching and learning.

However, other studies could not link significant improvements in higher education directly to external quality monitoring or evaluation. An international survey of the views of academics on the impact of evaluations on teaching quality found such evaluations not relevant in the participants' scheme (Wright, 1995). Horsburgh (1999) similarly concluded from her study of the role of external processes on transformative learning that quality monitoring might have to focus on more than systems, inputs and outputs to enhance its effectiveness.

The works cited above show that external quality monitoring and evaluation might be regarded as one of many causes of quality improvement in higher education institutions. It would be farfetched, at least for now, to attribute quality development wholly to effects of external quality monitoring or evaluation.

Hypothesis

This study focuses on specific indicators that were reviewed and passed either as having met threshold standards, where they existed, or close to meeting such standards before programme accreditation was granted. It seeks to find whether a review of the critical factors that had to be in place before programme accreditation was granted to the selected institutions had been or were being improved, at the time of the second cycle assessment especially because of suggestions made to that effect in earlier reviews.

It was the assumption of the authors that with the professional and academic backgrounds of the evaluators, there would be some consistency in their views on the changes in the selected indicators. It was expected that the professionalism and experience of the evaluators would not make their judgments subjective. Thus, the researchers refrain from making any value judgments about the objectiveness of the external evaluators and the reports they submitted that were utilised in this study. After all, most of the evaluators were also academics who taught on some of the assessed programmes by colleagues from other institutions. For purposes of this study, we safely make the assumption that all the evaluators were interested in making the accreditation procedure work for the improvement of the institutions and their programmes.

The hypothesis tested for the study is: input indicators assessed for accreditation in universities will improve from one assessment cycle to a succeeding one.

Methodology

The study examines the influence the accreditation process has had on the quality of input factors (curriculum, academic staffing, student-staff ratios and library facilities) in the course of two cycles of assessments. The process consisted of the initial cycle of assessments; to consider, essentially, whether the institutions had met specified minimum standards to merit accreditation. A succeeding cycle of assessments, three-to-five years later followed; when the expectation of the institutions would be a fully tuned up one that had gone beyond the meeting of minimum standards to achieve quality development with regard to the indicators to be assessed. The study employed both descriptive and explanatory research design.

Curriculum was chosen as a key indicator for the study as it is very important for determining the quality of academic programmes offered in any education institution and one of the key determinants for defining the quality of teaching and intended learning outcomes. Curriculum specifies modes of teaching and learning and forms of student assessment (Massy, 2003). Dill (1992) and Massy (2003) therefore included curricula in their respective quality process design and implementation models. In Dill's 'Academic Quality Framework', curricula were seen as teaching carried out through a designed programme that features specific educational processes, including the sequencing of various academic programme components, to make for more effective student learning.

In academic circles, the library is traditionally seen as 'the heart of the university' although this notion has lately been subjected to criticism for not reflecting institutional realities (Brophy, 2001; Virkus & Metsar, 2004). It must, however, be noted that the criticisms do not negate the centrality of the library's place in the university but rather make suggestions to strengthen that position. Suggestions for improvement, including recruitment of qualified librarians, provision of facilities such as information communication technology, access to current journals, supported

by adequate budgetary provision will, no doubt, contribute to strengthening the library's position in the centre of learning in the university.

A prevalent conventional wisdom seems to emphasise that it is much more beneficial for postsecondary education institutions to have small class sizes (Van den Berg & Hofman, 2005; Monks & Schmidt, 2010). Indeed, the *U.S. News and World Report* (2015) college rankings formula lists class size in two of its fifteen inputs. In Africa, mention has already been made of the effect rising student numbers without corresponding increase in resources (including human resources) has had on the quality of tertiary education provision. Accrediting bodies, set up to assure minimum standards in tertiary education, have therefore established norms (benchmarks) on student-staff ratios for different study programmes, as key indicators for the assessment of institutions for the grant of accreditation.

The accrediting agency in Ghana assesses the relevant academic courses, resources and facilities to ensure they meet set minimum standards before granting accreditation for the running of a programme. The indicators looked at, in this regard; include key ones such as the curriculum structure, staffing and student-staff ratios and library facilities. Panels of experienced academics and professionals evaluate the programmes and the facilities that go with them and write reports detailing deficiencies detected and suggestions for remedies and improvements. It is the expectation of the accreditation procedure that implementation of panels' recommendations would help ensure the improvement of the quality of indicators by the time of the next cycle of assessments for reaccreditation (usually between 3 and 5 years) are held.

Sixty-four academic programmes from the seven oldest public universities and the four oldest private universities, in Ghana, that had undergone, at least, two cycles of assessments-for-accreditation between the years 2005 and 2012, were selected for the study (Table 1).

The study collected data on changes (improvement or deterioration) that had occurred in the specified indicators (curriculum, staffing (academic), library and student-staff ratio) between two cycles of assessments as reported by evaluators.

The accreditation procedure assessed curricula of programmes on key components such as structure and presentation, details of course content and course descriptions vis-à-vis objectives of the programme and their suitability for the level of programme being taught (undergraduate or graduate). Other thematic areas usually covered by the evaluators in their assessment reports of curricula were course details (quality and aptness, sequencing, titles, codes), designation

Table 1. Selected programmes.

Type of programmes	No. of programmes	%
Business	15	23
Other humanities	18	28
Science and allied health science	16	25
Technology and engineering	15	23
Total	64	

of core and elective courses and credit allocations. Data were collected and analysed from the textual reports of the evaluators along these thematic areas noting the frequencies of the occurrence of deficiencies in each of the programmes to make for an objective comparison in the report from one cycle of assessment to the succeeding one. Many senior academics who also served as the accrediting body's evaluators, were consulted to rate the thematic areas on their importance to the quality of a curriculum and the extent to which they affected their recommendations on accrediting decisions to the agency. Their ratings thus reflected average weights placed on the thematic areas of the curricula assessed by the various evaluation panels for accreditation (Table 2). They signalled how serious deficiencies affected their views of quality of a study programme.

The weights assigned to academic staff correlated directly to their ranks. Thus, the maximum weight of three (3) was assigned to a professor while an associate professor was assigned a weight of 2.5. The rest were: senior lecturer 2, lecturer 1.5 and assistant lecturer 1. For part-time academics, the study utilised the accreditation procedure's norm that equated three part-timers to one full-timer to determine the weights for such staff. This study used the assigned weights to determine the improvements that had occurred between the two assessment cycles.

Data analysis

Evaluation reports from two consecutive assessment cycles were analysed to bring out commonalities of identified issues in the indicators. Thus, the presentation of results begins with descriptive statistics (mainly frequencies of similar issues raised) on the various indicators. Tests, with respect to the mean and spread measures such as standard deviation, showing changes in the indicators, from one assessment cycle to a succeeding one, are presented in Tables 3–5(b). The transformation function: $x' = -1/(x + 1)^2$ was used to correct the positive/right skewness or upward skew of the curriculum data using a modification of Tukey's ladder of transformations, where x is the original score of an identified issue in a report on

Table 2. Weights placed on features of curriculum by evaluators.

	Feature	Ave
a.	Course content/details	6.6
b.	Structure and presentation	6.2
c.	Other important courses missing	5.8
d.	Course description omitted	5.8
e.	Sequencing of courses	5.4
f.	Redundant courses (to be expunged)	5.4
g.	Splits in courses and mergers	5.0
h.	Change in course titles	5.0
i.	Content replication/ overlapping	4.8
j.	Elective to core & vice versa	4.8
k.	Credit allocation	3.8
l.	Course codes	1.6

Notes: 7 = highest level of importance; 1 = least level of importance.

the curriculum and x'' is the transformed score. The reported means (in Table 4) is a performance index $([100 - \text{average deficiency score}]/100)$ of the indicator, meaning that a higher index suggests a better performance or provision of that indicator.

Results

Curriculum evaluation

The recurrent issues noted by the various evaluating panels in both cycles of assessments were mostly in connection with content inadequacy, overload or irrelevant material in content; bad course sequencing, lack of relevant courses and lack of clarity in course descriptions. Other issues raised related to credit allocations and course names (Table 3).

During the first cycle assessments, evaluators raised higher numbers of issues in thematic areas in the curricula such as inappropriate assignments of core and elective courses and course specifications. Other issues that attracted greater evaluator attention were course overlaps or duplications and lack of proper descriptions for some courses.

In the succeeding cycle of assessments, evaluators raised a higher number of issues on aspects of the contents of the curricula such as, course sequencing; course splits (mainly resulting from overloads) mergers; redundant courses; course

Table 3. Changes in the curriculum indicator between the first and second cycles of assessments.

		Mean (SD)		Paired samples test		
	Changes associated with curriculum	First assessment	Second assessment	Mean differences	<i>t</i>	Sig. (1-tailed)
<i>Major aspects of curriculum assessed</i>						
Pair 1	Details of content	-.73 (.44)	-.61 (.49)	-.12	-1.42	.081
Pair 2	Course sequencing	-.92 (.27)	-.62 (.48)	-.29	-4.55	.000
Pair 3	Missing courses	-.65 (.48)	-.59 (.49)	-.06	-.90	.187
Pair 4	Credit overload	-1.00 (.00)	-.91 (.29)	-.09	-2.55	.006
<i>Others</i>						
Pair 5	Elective & core courses	-.89 (.31)	-.91 (.29)	.02	.30	.383
Pair 6	Content duplication/overlapping	-.98 (.12)	-1.00 (.00)	.02	1.00	.161
Pair 7	Credit allocation	-.94 (.23)	-.92 (.27)	-.02	-.39	.349
Pair 8	No course description	-.98 (.12)	-1.00 (.00)	.02	1.00	.161
Pair 9	Course titles	-.95 (.22)	-.75 (.43)	-.20	-3.02	.004
Pair 10	Redundant courses	-.97 (1.5)	-.69 (.46)	-.28	-4.63	.000
	Overall curriculum scores	-.45 (.50)	-.19 (.39)	-.26	-2.91	.003

Note: A higher negative mean difference shows that additional issues had been raised in relation to the item in the second assessment.

Table 4. Improvements in the library facilities indicator between the two cycles of assessments.

		Mean (SD)		Paired samples test		
	Deficiencies associated with:	First assessment	Second assessment	Mean differences	t	Sig. (one-tailed)
Pair 1	Currency of books	.984 (.027)	.986 (.026)	.002	.444	.329
Pair 2	Adequacy of books	.977 (.024)	.985 (.022)	.008	2.270	.014
Pair 3	Availability of books	.996 (.017)	1.000 (.000)	.004	2.049	.023
Pair 4	Currency of journals	.991 (.021)	.996 (.014)	.005	1.760	.042
Pair 5	Adequacy of journals	.986 (.021)	.993 (.017)	.007	2.311	.012
Pair 6	Availability of journals	.997 (.013)	.997 (.013)	.000	.000	.500
Pair 7	Photocopier	.997 (.011)	.999 (.007)	.002	1.350	.091
Pair 8	Entire library facilities	.927 (.061)	.955 (.062)	.028	2.870	.003

Note: Mean (Performance index) = $((100 - \text{Deficiencies score})/100)$, where 100 percentile represent zero defect.

descriptions and missing courses. The rest were in the areas of course names and credit allocations.

Library evaluation

The various programme evaluators had more issues with regard to the currency and relevance of textbooks in the departmental libraries in the second cycle assessments than in the previous cycle. For the first cycle assessments, evaluators noted more cases of inadequate texts than in the succeeding cycle. Further, in the first cycle, evaluators recorded five cases of programmes that had no relevant books but recorded no such issue in the succeeding cycle. In the case of journals, evaluators found more deficiencies with regard to outdated or lack of relevant materials in the first-cycle assessments as against the second. Where they existed, evaluators found more cases of inadequate numbers of copies in the first cycle as against the second. During the first-cycle assessments, evaluators recorded more cases of non-availability of relevant journals than in the second.

Six institutions, as against three in the second cycle, registered lack of reprographic equipment in the first-cycle assessments. Evaluators also noted inadequacy of library space in twelve institutions in the first-cycle assessments while they recorded none in the second cycle.

Student-staff ratio evaluation

Taking the accreditation procedure's norm (benchmark) on student-(academic) staff ratios into consideration, figures collected by the evaluators indicated that the ratios had been increasing (deteriorating). While in the previous cycle 73 per

cent of the selected programmes had student-staff ratios within the prescribed norms, this had fallen to 59 per cent in the succeeding assessment cycle. The class sizes ranged from 33 to 290 with an average class size being 127.

Test of hypothesis: input indicators assessed for accreditation in universities will improve from one assessment cycle to a succeeding one

Tests of comparison between scores in one assessment cycle followed by the other were utilised to determine changes in the indicators: curriculum, library and staffing. In the case of the student-staff ratio, the applicable norms were utilised to determine improvements or otherwise.

Improvements in the curriculum indicator

Improvements in the curriculum indicator was the most difficult to measure, taking into consideration the evaluators' recorded changes from the first assessment cycle to the succeeding one. The accreditation procedure required institutions to meet specified minimum standards to earn an initial grant of accreditation to operate. Subsequent assessments for accreditation expected universities to go beyond minimum standards in order to achieve full accreditation. What this meant was that in subsequent rounds, evaluators adopted higher standards in assessing the curriculum and thus were inclined to raise more issues than they had done for the initial assessment for accreditation. Thus, it would appear that determining improvements or deterioration in the curriculum indicator, solely by comparing the number of issues raised in one assessment cycle to another, might not be very accurate. Additional issues raised by the evaluators at the second-cycle assessments, therefore did not necessarily reflect deterioration in the curriculum. These additional issues might have been raised for the purpose of ensuring further improvements in the curriculum.

The paired sample *t*-tests indeed indicate the raising of a lot more issues in the curriculum indicators in the second-cycle assessments over the first assessment cycle ($t = -2.91, p = .003 < .05$). The tests reveal that components in the curriculum such as course sequencing; course overload, as well as issues with redundant courses showed significant changes at the second-cycle assessments ($p < .05$). Based on the argument raised in the previous paragraph, conclusion cannot be drawn from the test results as to whether these changes were for better or for worse in the overall curriculum. From the distribution of the original scores and in reference to the skewness correction function, it would appear however, that the institutions implemented several suggestions for improvement by the evaluating panel in the previous assessment cycle.

Improvements in the library indicator

Test results on the library facilities indicator reveal significant changes between the two cycles of assessments ($t = 2.87$; $p = 0.003 < .05$) with the mean values showing improvements in the second assessments over the previous cycle (Table 4). Similarly, components of the indicator such as adequacy of journals, existence and adequacy of relevant books had improved at the succeeding assessment cycle ($p < .05$) over the previous one. Although the mean differences appeared minimal, the improvements noted at the second cycle assessments did not occur by chance, as shown by the tests of significance (Table 4). Other components such as availability of journals, currency of books and journals and reprographic equipment did not show any significant changes between the two cycles of assessments ($p > .05$). Overall, however, the test results supported the hypothesis.

Improvements in the academic staffing (including the student-staff ratio) indicator

The accrediting body in Ghana required all programme departments to employ an initial full-time academic staff complement of three to commence the running of a study programme. At least, one of the three would be expected to hold a minimum rank of senior lecturer to provide academic and administrative leadership for the department. It was the expectation of the agency that the staff numbers would double at the end of each academic year until the full complement for the establishment was attained to assure acceptable student-staff ratios.

An analysis of the evaluators' reports on the quality of academic staff in the 64 programmes studied showed that the raw numbers of academics increased by almost 80 per cent from 625 in the first-cycle assessments to 1128 in the second cycle. There were nominal increases in the number of (full) professors working full-time in the institutions, from 19 (first cycle) to 27 (second cycle). The number of part-time professors increased from five to 12; full-time senior lecturers, from 99 to 146; full-time lecturers, from 277 to 484 and part-time lecturers, from 154 to 325 (Table 5).

The number of full-time associate professors, however, decreased from 30 in the first cycle to 29 in the second-cycle assessments. Nonetheless, taking into consideration the proportion of academics in each rank, the percentage changes were minimal between the two cycles of assessments. For example, the first-cycle assessments of the 64 programmes recorded 425 full-time academics, which represented 68 per cent of all academic staff in the selected institutions. With 61 per cent staff (686 academics) during the second cycle, this indicator did not change significantly. One might observe that the first-cycle assessments recorded an average number of eight academics per programme, when one applied the full-time equivalency measure, while the succeeding assessments recorded 13.

Table 5. Staff strength in the first and second cycles of assessments.

Rank of academic staff	First cycle of assessment				Second cycle of assessment			
	No.	%	FTE	In no. of programmes	No.	%	FTE	In no. of programmes
Full-time professors	19	3.0	19	15	27	2.4	27	18
Part-time professors	5	0.8	2	4	12	1.1	4	10
Full-time associate professors	30	4.8	30	19	29	2.6	29	20
Part-time associate professors	5	0.8	2	5	16	1.4	5	10
Full-time senior lecturer	99	15.8	99	36	146	12.9	146	47
Part-time senior lecturer	36	5.8	12	17	89	7.9	30	23
Full-time lecturer	277	44.3	277	55	484	42.9	484	59
Part-time lecturer	154	24.6	51	42	325	28.9	108	35
Total	625		492		1128		833	

Note: FTE = Full-time equivalent.

Note should be taken of the fact that the Ghanaian accreditation procedure computed student-staff ratios using a full-time equivalency measure of three part-time academic staff to one full-timer. This yielded a full-time equivalency of 833 in the second assessments, representing a 33 per cent improvement over that of the first cycle. This change is significant ($t = -3.663$, $p = .0005 < .01$) (Table 6) and thus supports the hypothesis.

In assessing compliance with the prescribed norms of the accreditation agency (which required the head of a programme department to be of a senior lecturer rank or better), the study found that 30 per cent of the programme departments were headed by full professors in the first-cycle assessments. A slightly lower proportion (28 per cent) of academics of the same rank headed programme departments in the succeeding cycle (Table 7). Associate professors headed seventeen per cent of departments in the first-cycle assessments as against 23 per cent in the second cycle, while senior lecturers headed 31 per cent of departments in the first cycle as against 41 per cent in the second cycle. Thus, taking the cumulative figure of academics permitted to head a department (senior lecturer to full professor) into consideration, 92 per cent (as against 78 per cent in the first cycle) of study departments met the norm in the second cycle. This situation appeared to be an improvement, in a country where staff of that calibre was not easy to come by due to the attraction or 'brain drain' of such staff to developed countries. The situation would however, appear to have slightly deteriorated in the second-cycle assessment if the ideal of having a full professor to head a department is considered.

Table 6. Improvements in staffing using full-time equivalency (FTE) measure.

Staff (FTE)	Mean	SD	Mean diff	<i>t</i>	<i>p</i> -value
FTE_1	7.68	5.0	-5.33	-3.663	.0005
FTE_2	13.02	13.4			

Table 7. Headship of programme between the two cycles of assessments.

	First cycle assessment	%	Second cycle assessment	%
Professor	19	30	18	28
Associate Professor	11	17	15	23
Senior Lecturer	20	31	26	41
Lecturer	14	22	5	8
	64		64	

Further analysis of the quality of staff and student-staff ratio indicated that although there had been increases in staff numbers over the two cycles of assessments under review, the associated student-staff ratios for all the programme categories were still high (Table 8).

The sciences and the allied health sciences recorded the largest increase of 111.8 per cent. Next were the technology and engineering programmes that recorded an increase of 98 per cent over the initial figure recorded in the first assessment. A high proportional increase in staff full-time equivalency had a direct relation with a low student-staff ratio value. For example, science and allied health science programmes that recorded the highest proportional staff increases resulted in the lowering of their student-staff ratios to 52:1. The increase of 97.9 per cent for the technology and engineering programmes resulted in the lowering of their student-staff ratio to 88:1. Business programmes that recorded the lowest increase (of 19.7 per cent) had the highest student-staff ratio of 140:1, which is approximately seven times above the prescribed norm. The student-staff ratio levels of the other programmes in the humanities were no better, 135:1, while the sciences and allied health sciences recorded figures almost three times above the prescribed norm of 18:1. In sum, the student-staff ratio values were rather far above the prescribed norms of the accreditation agency (Table 8).

Table 8. Changes in staff quality and SSR.

	Staff (FTE) at first assessment	Staff (FTE) at second assessment	% increase in staff (FTE)	Current SSR
Business	147	176	19.7	140:1
Other humanities	138	232	68.4	135:1
Science & allied health science	110	233	111.8	52:1
Technology & engineering	97	192	97.9	88:1
All programmes	492	833	69.3	127:1

Notes: FTE = Full-time equivalent; SSR = Staff-student ratio. Norms: Business 27:1; Other Humanities 27:1; Science and Allied Health Science 18:1; Technology and Engineering programmes 18:1.

Conclusion

Earlier definitions of the concept of accreditation had tended to stress the attainment of certain predefined minimum or threshold standards by an institution or a study programme for that status to be conferred on them (Sursock, 2001; Hamalainen *et al.*, 2004; Harvey, 2003). Contemporary discussions however, appear to be putting more stress on moving the concentration of accreditation from the stress on threshold standards to quality assurance and quality improvement even if this latter development appears to be an afterthought as seen by some authors (Stensaker & Harvey, 2010; Westerheijden, 2013; Eaton, 2016). Indeed, in Ghana, where the study took place, while the accreditation procedure granted accreditation status to institutions that met the specified minimum standards in the first cycle, such institutions were expected to move above such standards at subsequent assessments to merit full accreditation (of five years). Depending on the gravity of the deficiencies identified at a subsequent assessment, a university and or its programme of study might have its period of accreditation shortened or directed to cease the admission of fresh students by the accrediting agency. What the foregoing analysis shows is that all the universities selected for this study had either maintained the threshold standards at the second-cycle assessments or improved upon them. The conclusion is that most universities implemented the evaluators' suggestions for improvement.

While not all separate indicators showed improvement from the first-cycle assessments for accreditation to the second cycle, overall, library and staff aspects seem to indicate support for the hypothesis. The results suggest that the studied institutions had largely implemented recommendations for improvement made at the previous evaluation exercises. This suggestion gives an indication that the accreditation procedure in Ghana was having a positive influence, at least in maintaining standards in university education.

Indeed, it was notable, from the further suggestions for improvement (after reviewing the status of the implementation of the previous cycle's recommendations) by the evaluators in the second-cycle assessments, that the evaluators did not concern themselves only with minimum standards. They obviously brought their knowledge, in the dynamics involved in running higher education programmes, to bear on their assessments of the indicators to ensure quality improvement. In follow-up interactions with some of the chairs of the panels of evaluators, it came to the fore that correction of the identified deficiencies (from the previous cycles' assessments) did not form the only basis for their judgments. At a second-cycle assessment, they expected more from the institutions as they regarded such institutions as more mature and expected them to go beyond the minimum standards required for purposes of accreditation. This was especially true in the case of the curriculum and the library indicators, where constant revision to reflect current trends (in the curriculum) and current reading material and modern equipment (for the library), were mostly required.

The accreditation procedure's influence was very apparent in ensuring that only qualified academic staff taught in the universities. It would appear that the agency was however less successful in maintaining student-staff ratios within the stated norms. This was due to the vast increase in student numbers (by about 14 per cent between the 2011–12 to the 2012–13 academic years) that had not been matched by equal increases in academic staff numbers.

Linking the overall results of this study to the reviewed literature, it would not be easy to conclude whether the changes observed from the first-cycle evaluations to the succeeding ones arose out of expected rewards or changing policies and structures, as posited by Brennan & Shah (2000). It could however, be safe to state that the evaluated institutions were aware that attracting students to enrol in them depended on their accreditation status. Positioning the institution to make it attractive in the competition for students was essential, especially for the relatively young institutions or newly introduced programmes. Information from the accredited institutions indicated that most of them subsisted mainly on student fees and none of them, as at the time of the study, had folded up for lack of students in adequate numbers. It may be assumed, therefore that the institutions achieved some rewards for complying with accreditation requirements in the form of the attraction of resources including those earned from students in the form of fee payments.

Some of the suggestions made for improvement in the assessed indicators would also certainly require changing policies and structures in the institutions to make an impact. Examples include the insistence on the institution of policies on peer review of courses and the external moderation system for examinations. These would be attributable to the external quality monitoring procedure as shown by the results of this study.

Overall, Brennan and Shah's (2000) classification of impact through expected rewards and policies would account for the assessed institutions' striving to implement the recommended measures for improvement. The consequence of inaction on their part could have been the non-renewal of their accreditation status.

This study, like earlier ones conducted by Weusthof (1994); Frederiks *et al.* (1994); Frederiks (1996); Westerheijden (1997); Westerheijden *et al.* (2006) was based on the assumption that implementation of recommendations by evaluators would necessarily result in quality improvement of the programmes run by institutions. Indeed, the results from all the indicators, especially those of library and staffing, in this study corroborate the findings of the cited authors.

As a modest beginning in a relatively young quality evaluation system, this research was limited to the assessment of input factors and this may not give a full picture of the quality status of the institutions and their evaluated programmes. Indeed, one may recall the relevance of Horsburgh's (1999) conclusion from her study that quality monitoring might have to focus on more than systems, inputs and outputs to enhance its effectiveness, here. Nevertheless, the results, from the

evaluators' reports indicated implementation of recommendations suggested in earlier assessment reports.

In conclusion, the overall findings on the curriculum, library and staffing indicators provide an affirmation that accreditation in Ghana has had influence on the quality of those specified indicators in Ghanaian universities after two cycles of assessments. This is so even if the conclusion on the curriculum was less clear-cut.

Disclosure statement

No potential conflict of interest was reported by the authors.

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