Spring 4-12-2016

MIGRATING FROM PAPER-BASED TO ONLINE LECTURER EVALUATION IN DEVELOPING COUNTRY HIGHER EDUCATION INSTITUTIONS: AN ACTIVITY THEORY PERSPECTIVE (27)

Ibrahim Osman Adam
University of Ghana, ioadam@uds.edu.gh

John Effah
University of Ghana

Richard Boateng
University of Ghana

Follow this and additional works at: https://aisel.aisnet.org/ukais2016

MIGRATING FROM PAPER-BASED TO ONLINE LECTURER EVALUATION IN DEVELOPING COUNTRY HIGHER EDUCATION INSTITUTIONS: AN ACTIVITY THEORY PERSPECTIVE

Ibrahim Osman Adam, John Effah & Richard Boateng,
University of Ghana Business School,
Dept. of Operations and Management Information Systems,
Legon, Accra, Ghana.
Email: ioadam@uds.edu.gh; ioadam@st.ug.du.gh

Abstract

The purpose of this study is to understand how a developing country Higher Education Institution migrated its paper-based lecturer evaluation to an online one. Information systems research on lecturer evaluations has focussed more on the paper-based evaluations as well as the cost, benefits and factors that contribute to the evaluation process. Less attention has been paid to how online evaluation evolves from paper-based evaluations. To address this research gap, this study employs activity theory and an interpretive case study methodology to investigate how an online lecturer evaluation evolved. The findings show a contradiction within and between students, evaluations guidelines and tools of the lecturer evaluation activity system and how this was used as a source of development and how changes in the elements of the activity systems over time affected the evolution.

Keywords: Lecturer evaluation, Higher Education Institution (HEI), Activity Theory, Paper-based, Virtual, Developing Country

1.0   Introduction

The purpose of this study is to understand how a developing country Higher Education Institution (HEI) migrated its paper-based lecturer evaluation to an online one and how this shaped the evaluation process. Lecturer evaluation is the most commonly used method of assessing lecturer effectiveness because it offers important opportunities for feedback and development (Risquez, Vaughan, & Murphy, 2015). Lecturer evaluations has been routinely used in HEIs to inform curricular change and assess lecturer performance (Hatfield & Coyle, 2013). Lecturer evaluations are either paper-based or conducted online. Conventionally, lecturer evaluations are administered in class at the end of the semester through the use of paper evaluation forms (Capa-Aydin, 2014). It is the paper-based evaluations that are widespread despite limitations such as financial costs, scanning-related problems and time limitations (Morrison, 2013; Spooren, Brockx, & Mortelmans, 2013) that have been cited in the literature. However, many HEIs are moving towards online evaluations where students have to go online and fill an online evaluation form (Morrison, 2013; Risquez et al., 2015).

Paper-based evaluations have been cited to have problems such as the vulnerability of lecturers influencing students on the day of the evaluation by their presence or otherwise (Dommeyer, Baum, Hanna, & Chapman, 2004; Stowell, Addison, & Smith, 2012).This is because the presence of the lecturer when the students are conducting the evaluation may create an intimidating environment which may influence what the students put on the evaluation forms. There is also the tendency of lecturers throwing away evaluations that are negative about them. However, the security of the evaluation process is to an extent a guaranteed benefit of digitisation.

To achieve the purpose of the study, the study sought to answer the question: How does an evolution from a paper-based lecturer evaluation to an online lecturer evaluation shape lecturer evaluation process?
The paper answers this question using a coalescing of activity theory and empirical evidence that was derived from an interpretive case study approach.

The rest of the paper is organized as follows: Section 2 reviews the literature on lecturer evaluations. Section 3 presents the theoretical foundation that underpins the study. Section 4 presents the research the methodology. Section 5 presents the description of the findings. Section 6 presents the analysis and discussion of findings. Finally, Section 7 concludes the paper with its contribution, implications and suggestions for future research.

2.0   Lecturer Evaluations in HEIs.

The most common means of evaluating teaching in higher education typically include course evaluations, letters from students, peer evaluations, the receipt of teaching awards, course materials and texts and evidence of innovative strategies and practices. Each of these measures brings its own restrictions. This is why most institutions rely on more than one form of evidence to develop a complete understanding of a lecturer's teaching contributions (Gravestock & Gregor-Greenleaf, 2008). However, lecturer evaluations is one of the most common tools used to assess teaching (Denson, Loveday, & Dalton, 2010; Wright, 2006). Student evaluations of lecturers is one of the most controversial and highly-debated measures (Hobson & Talbot, 2001). Nonetheless, they are still widely used and many have argued that there is no other option that provides the same sort of quantifiable and comparable data (Falchikov, 2013).
Largely, lecturer evaluations are used to make personnel decisions such as promotion and renewal of teaching contract based in part on a student's evaluation of lecturer's teaching effectiveness. The collected data, in particular the qualitative responses, are also used by lecturers and other teaching support offices to provide feedback intended to facilitate improved teaching and course development.
Much has been written about the problems with lecturer evaluations (Gaillard, Mitchell, & Kavota, 2011). Researchers have examined issues of bias and concerns regarding the statistical reliability of evaluations of lecturers and have questioned their ability to accurately gauge the teaching effectiveness of staff. In addition, some have argued that the feedback provided by lecturer evaluations does not effectively promote change in lecturer's behaviour. However, a significant majority of researchers consider student evaluations to be a useful measure of the instructional behaviours that contribute to teaching effectiveness (Falchikov, 2013; Gaillard et al., 2011).

Whilst student evaluations has largely been conducted physically using paper-based evaluation forms, many educational institutions are migrating to online evaluations (Anderson, Cain, & Bird, 2005; Davison & Price, 2009). HEIs could rely on the advantages that an online evaluation brings. This is because student evaluations are seen as a very important yardstick in the retention, promotion and tenure decisions of lecturers in HEIs (Kember & Ginns, 2012). With these importance, many academic staff are concerned that a migration to an online evaluation may have effects that can change the whole evaluation process. Lower response rates by students have been cited as one of the effects (Rienties, 2014). Though there is less research on online lecturer evaluations and its implementation in the developing world, several institutions in the developed world have successfully implemented online student evaluations (Dommeyer et al., 2004; Nulty, 2008).

Despite the widespread implementation in the developed world, many HEIs and academic staff still question their value (Bennett & De Bellis, 2010; Crews & Curtis, 2011). Several advantages have been cited in the literature for the migration of paper=-based evaluation of lecturers to online evaluations. The quick turn-around of student evaluations is one of the mainly cited advantage. This provides academics more rapid feedback to refine the curricula or the overall educational design (Bennett & De Bellis, 2010; Crews & Curtis, 2011; Stowell et al., 2012). Bennett and De Bellis (2010) cites the ease for students to write their reflections of the learning experiences on a keyboard than by hand.

The research on lecturer evaluation is widely dominated by literature on students' experiences (Dommeyer et al., 2004; Stowell et al., 2012). However, in a recent study by Crews and Curtis (2011) on the migration from paper to online evaluations, it was found that most lecturers still preferred traditional paper-based evaluations. The lecturer's perception was that the paper-based methods resulted in higher response rates (Fike, Doyle, & Connelly, 2010). Others have mentioned lower response rates in online evaluations because it involve out-of-class time and students can be distracted and not remember to fill the form or they may simply choose not to do it (Laubsch, 2006). Technical glitches in accessing the online forms (Anderson et al., 2005), the issue of anonymity of online responses (Dommeyer et al., 2004; Layne, DeCristoforo, & McGinty, 1999).

3.0   Activity Theory

Activity Theory is a theoretical framework for the analysis and understanding of human interaction and relationships through the use of tools and artefacts and with other influences within a social setting (Engestrom, 1987; Leont'ev, 1978; Vygotsky, 1978). Activity theory has been applied in Information Systems for more than two decades. Kuutti (1991) it has been used as a methodological framework in different areas of IS research, including technology use in education (Isssroff & Scanlon, 2002), evaluation of learning technologies (Scanlon & Issroff, 2005), computer-supported cooperative work (Kuutti, 1996), information system development (Korpela et al., 2004; Mursu, Luukkonen, Toivanen, & Korpela, 2006) and so on.

Activity theory views activity as the unit of an activity consists of a subject, and an object which are mediated by a tool. The basis of the theory is activity which consists of a subject (actor), and an object (objective) which are mediated by a tool (Leont'ev, 1978). Activities occur within a social context which consist of a community, rules and division of labour to support the collective sense of the activity's environment.

All the different elements of an activity and its context exist in a network called an activity system ([Engestrom, 1987](#)) shown below.
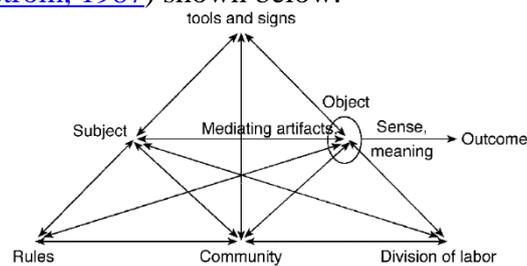
Figure 1:The Structure of an Activity System (Engestrom, 1987)

One of the central tenets of activity theory is the concept of tool mediation. Tool mediation is based on the notion that human activity is facilitated by the use of tools ([Vygotsky, 1978](#)). Tools can be both enabling in transforming and manipulating different objects, and constraining when the objects are manipulated and perceived within the limitations set by the tools ([Mwanza & Engeström, 2005](#)). Through mediation, three levels of relationships can be seen. First, tools mediate the relationship between subjects and object. Second, rules mediate the relationship between subject and community and third, division of labour mediates between community and object.

In this study students are the subjects in the evaluation process (activity) and they interact with the object of evaluating lecturers and the courses they teach in order to achieve the desired outcomes of informing curricular change and assess lecturer's performance. Whilst the object is the same in both the paper-based and the online evaluation, the tools may differ. Activities do not exist in isolation neither are they static. They are dynamic and are influenced by other activities and its environment. These influences may sometimes cause imbalances. In activity theory the term contradiction is used to indicate imbalances or anything within the system that opposes the overall motive of the system ([Engeström, 1987](#)). Contradiction are seen as the driving forces in development ([Engeström, 1987](#)). Contradictions may occur within a single element of an activity (primary) and this is the basic source of instability and development ([Engeström, 1987](#)). The second is secondary which occur between the constituent elements of the activity system. The third is tertiary, which arises between an existing activity and what is described as a more advanced form of that activity. The last is quaternary contradictions which are between the central activity and the neighbouring activities.

The digitisation of the lecturer evaluation process is an activity that involves the interaction between technology and human activities. This makes activity theory appropriate for this study since the theory can help in explaining the human and the technological aspects of an information system within a context ([Ditsa, 2003](#)). Also, the unit of analysis in this study is an activity and this is consistent with activity theory which see activity as the unity of analysis.

Activity theory was selected because of its appropriateness to offer rich insight into the complex and sociotechnical nature of the digitisation of the lecturer evaluation process. The theory is particularly relevant to study of this case because through contradictions and tensions that emerge from the migration, the phenomenon can best be explained.

4.0   Research Setting and Methodology

4.1 Research Setting

The fieldwork for this study was conducted at the University of Ghana in close collaboration with the Academic Quality Assurance Unit (AQAU). The AQAU was established in May, 2005 to oversee the standards of academic work in the university. The AQAU has several mandates one of which is to conduct student evaluation of courses and lecturers. The evaluations are conducted on every course and teaching staff every semester.

In 2014, the University implemented the online evaluation of lecturers and courses. Before this implementation, evaluation had purely been paper-based where evaluation forms were distributed to students. The evaluation forms were taken for processing by the AQAU. The cost of administering the survey was high and the analyses were cumbersome using a lot of man hours. These challenges triggered the need to migrate the paper-based evaluation to an online one.

4.2 Research Methodology

The study followed qualitative interpretive case study methodology (Barrett & Walsham, 2004; Walsham, 2006). To understand reality in the   social and organisational context, interpretive researchers assume that knowing the reality can only be through social constructions such as language, consciousness and shared meanings (Myers, 1997; Myers, 2013) which brings out the understanding of the phenomena through the meanings that people assign to them (Orlikowski & Baroudi, 1991). Interpretive case study is therefore considered appropriate for investigating information system that are situated and shaped by its real-life context. This study seeks to understand the virtualisation of lecturer evaluation process not as a given but as a phenomenon within a context that is interactive with its environment, and this makes interpretive case study the appropriate research approach.

4.3 Data Sources and Collection

Fieldwork for data gathering occurred over a four-month period from December 2014 to March 2015. During this period the second researcher was attached to the Academic Quality Assurance Unit (AQAU) of the University as part of his PhD experiential learning. The researcher gained access to the University and the AQAU easily because he was already part of the University as a PhD candidate. Endorsements and familiarity (Shenton & Hayter, 2004) were some of the strategies used to gain access to some participants.

In line with interpretive case study approach, the researcher gathered qualitative data from multiple sources. These included semi-structured interviews, document analysis and participant observation (Myers, 2013). In all, the researcher conducted semi-structured interviews with 19 participants of the University. The participants included: 5 lecturers, 2 administrative staff, 1 technical staff and 11 students. The interview numbers were arrived at heuristically. This means the researchers only stopped interviewing when nothing new was being gathered from the interviews (Baker, Edwards, & Doidge, 2012; Guest, Bunce, & Johnson, 2006; Mason, 2010).   The lecturers, administrative and technical staff were selected through purposive sampling and the students were selected through both random and snowball sampling (Patton, 2005). Potential participants were initially contacted by the researcher to brief them about the research and inviting them to take part in the interview. The potential

participants then gave a time for the interview if they could not participate on the initial day of meeting. If they agreed for the interview to commence on the day of the first meeting, the researcher then explained the consent process, obtained their consent before conducting the interview. The interview guides were designed using a framework informed largely by the concepts of the activity theory in an open-ended questions form to allow and encourage the participants to delve deeper in their responses. The average duration of the interviews was between 25 to 30 minutes. All the interviews were audio recorded after gaining participant's consent. Out of the 19 participants who were interviewed initially, 2 follow up interviews were conducted. The number of participants was not limited to a particular number but continued until a number was arrived at heuristically. This meant the researcher only stopped interviewing when it was realised that nothing new was being gathered from the interviews. The interviews were digitally recorded and transcribed. The transcribed interviews were numbered instead of using the identities of the participants. This was done to maintain the anonymity of the participants.

Additional data was gathered from observation and analysis of documents and the web page for the online lecturer evaluation of the University. The second researcher took part in the lecturer evaluation process and also observed 2 students conducting the evaluation. Further data came from past evaluation reports, academic quality assurance policy documents, the paper-based evaluation form and the online evaluation pages on the University website.

4.4 Data Analysis

In interpretive research there is a thin line separating the data collection and the data analysis. This is because the two belong to an iterative process and the results of one can help guide the other. The data collected was analysed using hermeneutics. Hermeneutics is primarily concerned with making meaning of textual data by providing a set of concepts to help a researcher interpret and understand the meaning of text or multiple texts. Hermeneutics is of the view that the understanding of a research phenomenon is derived through an iterative process between understanding of the interdependent meaning of the parts and the whole (Myers, 2013). Hermeneutics was found appropriate because hermeneutics is consistent with the interpretive qualitative study and the type of data that was collected collected-that is data from interviews and documents.

The process of data analysis involved a number of stages of familiarisation, identification of a thematic framework, indexing and interpretation (Ritchie, Lewis, Nicholls, & Ormston, 2013; Spencer, Ritchie, & O'Connor, 2003).

The activity system in Figure 1 was used as a heuristic model (Mwanza, 2001) to represent the key concepts from AT which are relevant to the analysis of lecturer evaluation. The diagram offered a useful starting point for interpreting and applying the theory in the analysis of lecturer evaluation. The diagram also placed the lecturer evaluation it its proper social and cultural context whilst paying attention to the mediating aspects of that activity through the tools, rules and division of labour components. The theory was applied by modelling the paper-based and online lecturer evaluation activity systems and the virtualisation activity systems

To model the three separate activity systems, various components of the activity systems were interpreted by identifying the following and asking the accompanying questions:

    a.   Activity of interest - What sort of activity is of interest in the study?

b. Object or Objective of activity- Why is this activity taking place?
c. Subjects in this activity- Who is involved in carrying out this activity?
d. Tools mediating the activity- By what means are the subjects carrying out this activity?
e. Rules and regulations mediating the activity - Are there any cultural norms, rules or regulations governing the performance of this activity?
f. Division of labour mediating the activity - Who is responsible for what, when carrying out this activity and how are the roles organised?
g. Community in which activity is conducted - What is the environment in which this activity is carried out?
h. What is the desired Outcome from carrying out this activity?

This was followed by producing the activity system which helped to identify areas to be focused on during the analysis of the study. After this the activity system was decomposed through an activity notation as seen in table 1.

Actors	Mediator	Objective (Purpose)
Subjects	Tools	Object
Subjects	Rules	Object
Subjects	Division of Labour	Object
Community	Tools	Object
Community	Rules	Object
Community	Division of Labour	Object

Table 1: Activity Notation

This supported the process of breaking down the activity system into sub-activity triangles. Each combination in the activity notation consist of an 'actor' who is represented by the subject or community, a 'mediator' represented by the tools, rules or division of labour and the 'object' on which activity is focused. This means that each combination within the activity notation denotes a unique sub-activity triangle from the main activity system as shown in table 2. After this, questions that are specific to a particular combination within the activity notation and also representing a sub-activity triangle are then generated. Examples of the questions that were generated are:

a. What tools does the subjects use to achieve their objective and how?
b. What rules affect the way the subjects achieve the objective and how?
c. How does the division of labour influence the way the subjects satisfy their objective?
d. How do the tools in use affect the way the community achieves the objective?
e. What rules affect the way the community satisfies their objective and how?
f. How does the division of labour affect the way the community achieves the objective?

Going through the above steps enabled a detailed investigation of the lecturer evaluation phenomenon using the generated questions. To make sense of what is happening within the lecturer evaluation activity systems the data gathered was analysed by drawing on the concept of contradictions and using the questions generated to support in identifying areas of contradictions.

5.0   Description of the Case Study

This section presents the case descriptions of the case organisation, the paper-based evaluation and the online evaluation.

5.1.   The University of Ghana

The University of Ghana was established in 1948 with a current population of about 45,000 students and about 600 lecturers. All the lecturers are required to be evaluated by students at the end of every semester. In the past, lecturers were evaluated through a paper-based form. However, this was changed to an online evaluation in 2014. The University takes the evaluation of lecturers seriously and uses the evaluation report to improve the learning experience of students. It is also used in making tenure decision such as the renewal of lecturer's appointment and promotion.

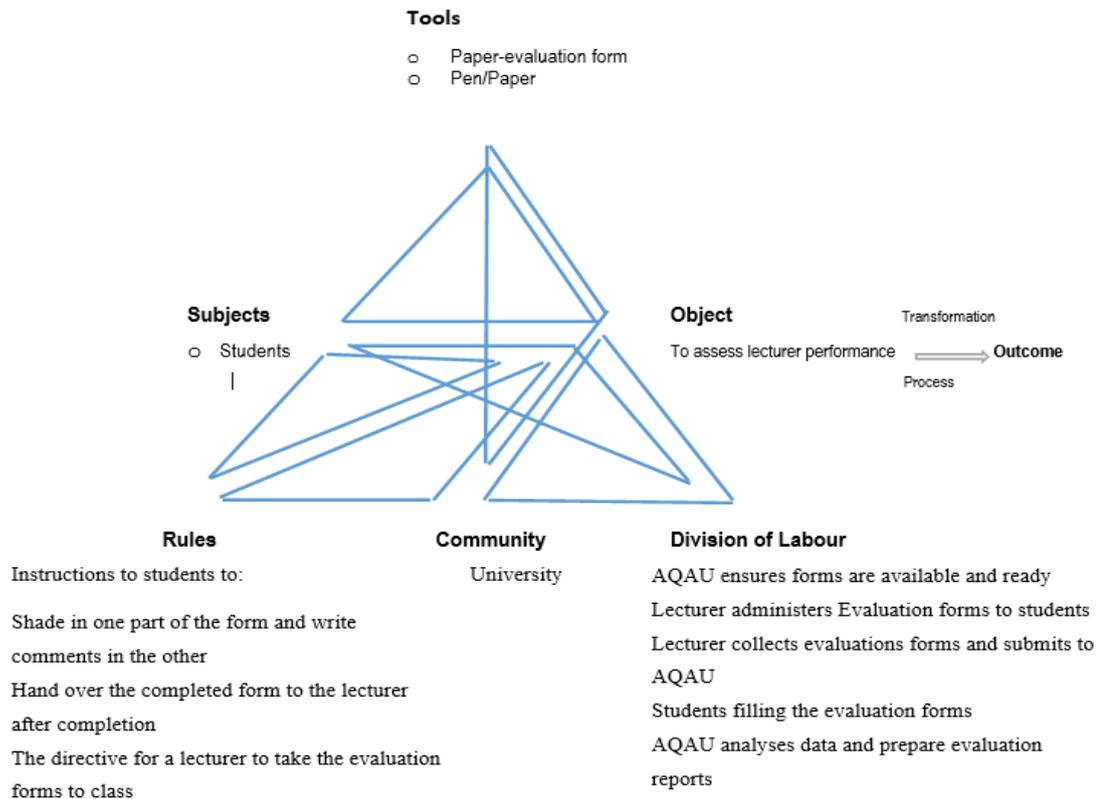### 5.2.   Description of Paper-Based Evaluation of Lecturers

The University conducted paper-based evaluation of courses and lecturers for a long time until 2014 when it was stopped. During this time the University ensured that all departments had a procedure in place for dealing with student evaluation of courses, and that this was clearly communicated to students. All students taking a course completed a questionnaire that was prepared by the AQAU and administered by the department through the lecturer. The questionnaire had two main sections; an objective portion where students selected the most suitable option and a subjective/written portion for comments from the students. Students were required to complete both sections of the evaluation form.

The AQAU ensured that the evaluation questionnaires were printed in scannable format. The forms were made available to the lecturer through his/her department. The lecturer then took the questionnaires to his/her last lecture for it to be administered. Before, the questionnaire was completed, the lecturer would give brief instructions of how the student should fill out the questionnaire whilst emphasising that the questionnaire will be collected at the end of the lecture. Upon collecting the questionnaires, these were submitted to the AQAU through the lecturer's department. It usually took about a week or two for the completed questionnaires to be collated at the AQAU for analysis. The research unit of the AQAU will then start the laborious process of scanning all the forms individually before analysis could commence. The AQAU spent so much time during this stage of processing the data from the questionnaires. The analysis then continued with the data. However, there was difficulty in processing the second section of the questionnaire which had subjective responses in the student's handwriting because the scanning machine could not capture this aspect. The process of analysing this section was cumbersome and tedious because of ineligible handwritings and the long process of transcription. The cost of the processing was huge.

The feedback from the students is intended to enhance the current as well as future student experience of their courses, therefore the opportunity to provide feedback should be well-timed. However, the evaluations were always conducted at the end of the semester. After analysis, the results are sent back to the department.

From the data gathered, the following elements were identified in respect of the paper-based lecturer evaluation. In the paper-based lecturer evaluation activity system, the activity of interest was identified as evaluation a lecturer and course. The object of this activity was to achieve the desired outcomes of informing curricular change and assessing lecturer's performance the subjects involved in this activity

were identified as students or a group of students who assesses their lecturers and the courses they teach. To support the activity of evaluation the mediators included the use of a paper evaluation form and a pen/pencil (Tool) used by the students to conduct the evaluation. The responsibilities were spelt out such that the AQAU brings the forms to the Head of Department, who then passes it to the lecturer for the lecturer to take it to class for students to fill out (Division of Labour). The subjects were students; the rules consisted of the instructions to students to shade in one part of the form and write comments in the other, hand over the completed form to the lecturer, the directive for a lecturer to take the evaluation forms to class; the community consisted of students, lecturers and AQAU staff.

Tools
- Paper-evaluation form
- Pen/Paper

Subjects
- Students

Object
To assess lecturer performance

Transformation → **Outcome**

Process

Rules

Instructions to students to:

Shade in one part of the form and write comments in the other

Hand over the completed form to the lecturer after completion

The directive for a lecturer to take the evaluation forms to class

Community

University

Division of Labour

AQAU ensures forms are available and ready

Lecturer administers Evaluation forms to students

Lecturer collects evaluations forms and submits to AQAU

Students filling the evaluation forms

AQAU analyses data and prepare evaluation reports

Figure 2: Paper-based Lecturer Evaluation Activity System
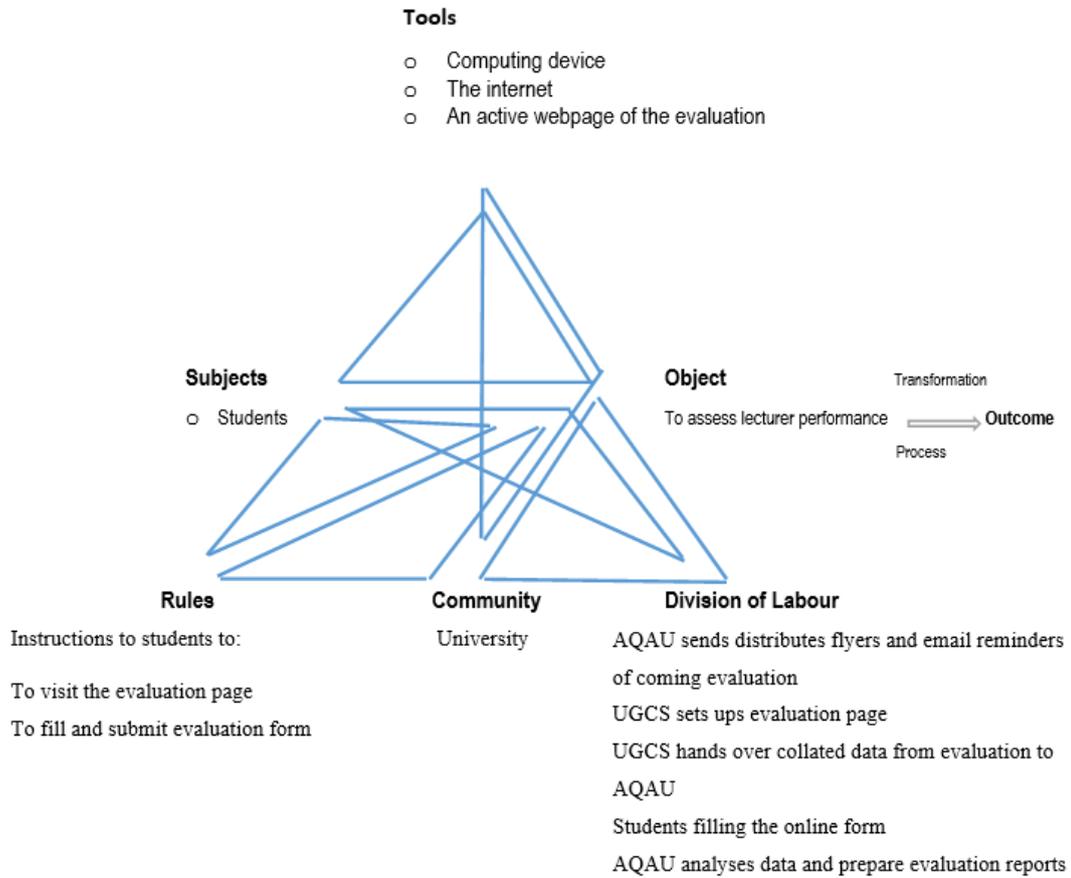
5.3. The Online Evaluation of Lecturers

The online evaluation was developed by the AQAU in conjunction with the University of Ghana Computing Services (UGCS). Whilst AQAU handled the administrative aspect of determining the content of the evaluation form and how the data will be analysed, UGCS was involved in the technical aspect of developing the webpage and making sure that this was up and running during the period of the evaluation. When evaluations are completed, UGCS extracts the data and hands it over to AQAU for analysis. However, any feedback received by AQAU from the use of the system is communicated to UGCS for improvement in subsequent evaluations.

The online evaluation of lecturers was provided through the University's website. An active link is provided about three weeks to the end of semester at the homepage of the University website. A click on the link directs students to a log in page where a student number and pin is required. After logging in the student is presented with options to choose his/her college first and then department. After this, the courses the student has registered for the semester, the name of the lecturer, the academic year

and the semester are populated in a drop down list. After choosing these, the student then proceeded to start the evaluation which were in three main parts; course evaluation, lecturer evaluation and comments and suggestions for improvement.

The systems have evolved from the previously scannable forms. When the online system was first implemented the students were granted access to log into the systems using a security token in order to enable them conduct the evaluation. When this was implemented, the response rate was quite high but in the subsequent evaluation it dropped drastically. When the AQAU interacted with some students it was realised that students were sceptical about conducting the evaluation because of fear of getting their identification (IDs) tied to the evaluation.

In the following semester, the feedback of the students was taken into consideration and the token and log in approach was abandoned. An open link was then provided at the homepage of the University website where the students could just visit and start filling out the form without having to log in with the IDs. However, this approach was saddled with issues such as multiple evaluations by students without being noticed. Even a lecturer who feared that he may be evaluated negatively could visit the page and evaluate himself multiple times in order to raise his/her score. To ensure that students did not feel that their identification is tied to the evaluation, AQAU and UGCS organised a demonstration session with a cross section of students who were very conversant in the way this type of technology works. This was to allay the fears of the students. Other problems were student complaints that they could not find their courses in the online system. Some students complained of missing course codes, course names and lecturer names. Also it was reported that the system did not provide avenues for lecturers who had co-taught a course to be evaluated individually.

From the data gathered of the online evaluation, it can be seen that as an activity system, the students are the subjects and they interact with the object of evaluating lecturers online in order to achieve the desired outcomes of informing curricular change and assessing lecturer's performance. The tools are a computing device, the internet connection and an active webpage of the evaluation. The rules are the guidelines that direct students as to how to conduct the evaluation, the community are the students, lecturers and some staff whilst the division of labour is seen in the AQAU sending emails to lecturers to remind students to conduct the evaluation, lecturers reminding students to conduct the evaluation and students conducting the evaluation. Here the supervision of the evaluation is minimised because students do it at their convenient time.
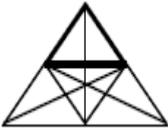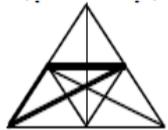
Tools

- o Computing device
- o The internet
- o An active webpage of the evaluation

Subjects

- o Students

Object

To assess lecturer performance

Transformation

⟹ Outcome

Process

Rules

Instructions to students to:

To visit the evaluation page

To fill and submit evaluation form

Community

University

Division of Labour

AQAU sends distributes flyers and email reminders of coming evaluation

UGCS sets ups evaluation page

UGCS hands over collated data from evaluation to AQAU

Students filling the online form

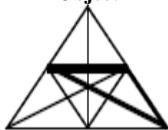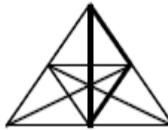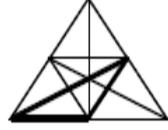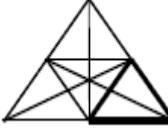AQAU analyses data and prepare evaluation reports

Figure 3: Online Lecturer Evaluation Activity System

After modelling the two activity systems as shown above in figure 2 and figure 3, questions that are specific to paper based and online evaluations were generated. The questions enabled the researchers to obtain meaningful data. The questions generated concerning the two evaluation systems are presented in the analysis in Table 2.

6.0   Analysis and Discussion of Findings

The specific questions generated were used to conduct a detailed investigation of the evaluation process during observations and in interviews. The qualitative data gathered was analysed using the concept of contradictions. Two key relationships were identified as crucial for understanding the evaluation process. The relationship between students (Subjects) and the objective (Object) of assessing lecturer's performance. The other was the relationship between the University (Community) and the objective (Object) of assessing lecturer performance. These two relationships were then analysed with the tools, rules and division of labour as the mediators. The analysis considered how the mediators enhanced or hindered the process. The questions in table 2 were also used to help identify areas of contradiction within the lecturer evaluation activity system.

Sub activity triangle based on either paper-based or online evaluation	Questions generated from the paper-based and online evaluation	Identified areas of contradictions
Subject-Tool-Object	**Paper-based Evaluation:** How do the paper-based evaluation form help students to evaluate lecturers? **Online Evaluation:** How the online evaluation system helps students to evaluate lecturers?	**Paper-based Evaluation:** No Contradiction identified **Online Evaluation:** The online evaluation system
Subject-Rules-Object	**Paper-based Evaluation:** How do the rules of completing the paper-based evaluation form affect the way the students evaluate lecturers? **Online Evaluation:** How do the rules of completing the online evaluation affect the way the students complete the evaluation?	**Paper-based Evaluation:** The instruction that student response will be anonymous whilst collecting the forms directly from the students **Online Evaluation:** Students are instructed to complete online evaluation and their courses are missing from the system Students are instructed to completed an evaluation anonymously but are asked to log in with their ID and personal pin
Subject-Division of Labour-Object	**Paper-based Evaluation:** How does the distribution of roles/responsibilities affect the way the paper-based evaluation is conducted? **Online Evaluation:** How does the distribution of roles/responsibilities affect the way the online evaluation is conducted?	Paper-based Evaluation None Online Evaluation: None
Community-Tool-Object	**Paper-based Evaluation:** How does the use of paper evaluation form help the students, lecturers and administrators in the evaluation process? **Online Evaluation:** How does the use of the online evaluation process help the students, lecturers and administrators in the evaluation process?	Paper-based Evaluation None Online Evaluation: None
Community-Rules-Object	**Paper-based Evaluation:** Does the university's use of the paper-based evaluation affect the way students, lecturers and administrators are involved in the evaluation process? **Online Evaluation:** Does the university's use of the online evaluation affect the way students, lecturers and administrators are involved in the evaluation process?	Paper-based Evaluation None Online Evaluation: None
Community-Division of Labour-Object	**Paper-based Evaluation:** How does the distribution of roles among students, lecturers and AQAU administrators affect how the paper-based evaluation is conducted? **Online Evaluation:** How does the distribution of roles among students, lecturers and UGCS technical team, AQAU administrators affect how the online evaluation is conducted?	Paper-based Evaluation None Online Evaluation: None

Table 2: Mapping Questions onto Activity System

From the analysis of these elements in both the paper-based and envisioned activity systems, it was found that whilst the subjects have been the same in both systems. However, the subjects changed in the virtualisation activity system to involve the AQAU and UGCS. The rules, the tools and the division of labour which are the mediators has also changed from when the system was paper-based. Also whilst the object has remained the same in both the paper based and online activity system, it differed in the virtualisation activity system. These changes and the interaction within and between the elements of each activity system are discussed in the next sections bringing out the contradictions and how the contradictions shaped the migration to the

online evaluation system. The next sections present the discussion of the findings in relation to three key issues: contradiction within elements, between elements and between an existing activity and a more advanced form of that activity.

Different types of contradictions were identified in the online lecture evaluation activity system. They represent three different types of contradictions in AT (Engeström, 1987). There was a primary contradiction in the university's rules that guide the evaluation. Some of the rules/guidelines were inconsistent with the objective of the evaluation and also there was some inconsistency with some standards the university had set to guide the evaluation which were no longer followed. The first is, in the same academic year the university had allowed open access to the evaluation link and students did not have to log in with their student numbers. Whilst this allayed the fears of students that their identities were tied to an evaluation and promoted easy access, the log in feature was reintroduced in the same year. Students are required to log in with their University ID and pin to conduct the evaluation, these same details are required to log into a system to allow students register for a course or access any other details such as transcripts. Students are not convinced that an evaluation is not tied to their IDs. Students are therefore struggling to understand why their IDs are not required in one semester but is required in the next and as one student puts it;

"I'm not going to conduct the evaluation this semester. I did it last semester but when I tried to do it this time, the system required my ID and pin. This has got me thinking about why you need my ID"

When the evaluation was open access, the university provided a disclaimer in indicating that the evaluation will not be tied to any student's ID but in the subsequent semester when an ID and pin was required for log in, the disclaimer was not provided. This led some students to believe that their IDs were actually tied to their evaluations. The contradiction is clear in the University's insistence of not tying IDs to an evaluation and the lack of a disclaimer to assure students that this is the case. Second, there was a secondary level of contradictions. These contradictions are seen between the constituent elements of the central activity system. For instance, some students who were willing to conduct the evaluation went online and realise that their courses were either not there or their lecturer's was not there. This was a contradiction between the subjects and the tools. Another contradiction was between the object of getting high student response for the evaluation and the institution of guideline and rules that are clearly hindering responses. The requirements to log in with one's IDs negatively impacts on the objective since many students do not show interest in participating. Contradictions emerged between the elements of online lecturer evaluation as an AS, between students (subjects) and the guidelines for online evaluation (the rules) or response rates of the evaluation (the object). Through these underlying contradictions some major interests are identified. These are the interest of the University to benefit from the evaluation through improved responses to lead to the sort of feedback that can be used to ensure better delivery by lecturers, the interest of the students to get their money's worth by telling the University how they think delivery can be improved and the interest of lecturers to use the valuation score to develop better delivery approaches for students and for the lecturers own personal development. When any of these interests is endangered a contradiction emerges.

7.0   Conclusions

The study investigated the migration of a paper-based lecturer evaluations in a HEI to a virtual one. The implementation of the online lecturer evaluation though complete to some extent is an evolving process and this is supported by activity theory and the principle of contradictions. The contradictions emanating from within elements and through interaction between elements of the online lecturer evaluation activity system and whiles the elements and its interactions shapes the evaluation process the elements are also shaped in the process of interactions. The fact that the implementation of the online lecturer evaluation does not have a timeframe for the completion of implementations, the tensions and contradictions are a source of development that can drive the online evaluation to perfection. For instance, whilst students were stuck during the online evaluation process if their lecturers name was missing (a contradiction between subject and tool), addressing this contradiction as a source of development led to an additional feature in the system in the subsequent semester where student had the option to add the lecturer's naming by typing it in.

The study contributes to the study of process change by providing an understanding and an analysis of the migration from paper-based evaluation to an online one and ensures a better understanding of the element of the activities in the change process. The understanding of this process can be extended to shape the migration of other processes in the University of Ghana and beyond.

Since the data collection was limited to the University, the transferability of the results should consider the possible difference in the context described in this study. Another limitation is the small number of participants in the study. However, the sample represented the whole University participants in the lecturer evaluation process and this provided very rich data for the study.

8.0   References

Anderson, H. M., Cain, J., & Bird, E. (2005). Online student course evaluations: Review of literature and a pilot study. *American Journal of Pharmaceutical Education, 69*(1), 34-43.

Baker, S. E., Edwards, R., & Doidge, M. (2012). How many qualitative interviews is enough?: Expert voices and early career reflections on sampling and cases in qualitative research.

Barrett, M., & Walsham, G. (2004). Making contributions from interpretive case studies: Examining processes of construction and use *Information systems research* (pp. 293-312): Springer.

Bennett, T., & De Bellis, D. (2010). The move to a system of flexible delivery mode (online v. paper) unit of study student evaluations at Flinders University. *Management issues and the study of initial changes in survey, volume, response rate and response level. Journal of Institutional Research, 15*(1), 41-53.

Capa-Aydin, Y. (2014). Student evaluation of instruction: comparison between in-class and online methods. *Assessment & Evaluation in Higher Education*(ahead-of-print), 1-15.

Crews, T. B., & Curtis, D. F. (2011). Online course evaluations: Faculty perspective and strategies for improved response rates. *Assessment & Evaluation in Higher Education, 36*(7), 865-878.

Davison, E., & Price, J. (2009). How do we rate? An evaluation of online student evaluations. *Assessment & Evaluation in Higher Education, 34*(1), 51-65.

Denson, N., Loveday, T., & Dalton, H. (2010). Student evaluation of courses: what predicts satisfaction? *Higher Education Research & Development, 29*(4), 339-356.

Ditsa, G. (2003). Activity theory as a theoretical foundation for information systems research. *Information management: support systems & multimedia technology*, 192-231.

Dommeyer, C. J., Baum, P., Hanna, R. W., & Chapman, K. S. (2004). Gathering faculty teaching evaluations by in-class and online surveys: their effects on response rates and evaluations. *Assessment & Evaluation in Higher Education, 29*(5), 611-623. doi:10.1080/02602930410001689171

Engestrom, Y. (1987). Learning by expanding. *Helsinki: Orienta-Konsultit Oy*.

Engeström, Y. (1987). Learning by expanding: An activity-theoretical approach to developmental research.

Falchikov, N. (2013). *Improving assessment through student involvement: Practical solutions for aiding learning in higher and further education*: Routledge.

Fike, D. S., Doyle, D. J., & Connelly, R. J. (2010). Online vs. paper evaluations of faculty: when less is just as good. *The Journal of Effective Teaching, 10*(2), 42-54.

Gaillard, F. D., Mitchell, S. P., & Kavota, V. (2011). Students, faculty, and administrators' perception of students' evaluations of faculty in higher education business schools. *Journal of College Teaching & Learning (TLC), 3*(8).

Gravestock, P., & Gregor-Greenleaf, E. (2008). *Student course evaluations: Research, models and trends*: Higher Education Quality Council of Ontario Toronto.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field methods, 18*(1), 59-82.

Hatfield, C. L., & Coyle, E. A. (2013). Factors that influence student completion of course and faculty evaluations. *American Journal of Pharmaceutical Education, 77*(2).

Hobson, S. M., & Talbot, D. M. (2001). Understanding student evaluations: What all faculty should know. *College teaching, 49*(1), 26-31.

Isssroff, K., & Scanlon, E. (2002). Using technology in higher education: An activity theory perspective. *Journal of Computer assisted learning, 18*(1), 77-83.

Kember, D., & Ginns, P. (2012). *Evaluating teaching and learning: A practical handbook for colleges, universities and the scholarship of teaching*: Routledge.

Korpela, M., Mursu, A., Soriyan, A., Eerola, A., Häkkinen, H., & Toivanen, M. (2004). Information systems research and development by activity analysis and development: dead horse or the next wave? *Information systems research* (pp. 453-471): Springer.

Kuutti, K. (1991). Activity theory and its applications to information systems research and development. *Information systems research: Contemporary approaches and emergent traditions*, 529-549.

Kuutti, K. (1996). Activity theory as a potential framework for human-computer interaction research. *Context and consciousness: Activity theory and human-computer interaction*, 17-44.

Laubsch, P. (2006). Online and in-person evaluations: A literature review and exploratory comparison. *Journal of Online Learning and Teaching, 2*(2), 62-73.

Layne, B. H., DeCristoforo, J. R., & McGinty, D. (1999). Electronic versus traditional student ratings of instruction. *Research in Higher Education, 40*(2), 221-232.

Leont'ev, A. N. (1978). Activity, consciousness, and personality. *Moscow: Progress*.

Mason, M. (2010). *Sample size and saturation in PhD studies using qualitative interviews.* Paper presented at the Forum Qualitative Sozialforschung/Forum: Qualitative Social Research.

Morrison, K. (2013). Online and paper evaluations of courses: a literature review and case study. *Educational Research and Evaluation, 19*(7), 585-604.

Mursu, A. S., Luukkonen, I., Toivanen, M., & Korpela, M. J. (2006). Activity theory in information systems research and practice: theoretical underpinnings for an information systems development model. *Information Research, 12*(3), 3.

Mwanza, D. (2001). *Where theory meets practice: A case for an activity theory based methodology to guide computer system design.* Paper presented at the Proceedings of INTERACT.

Mwanza, D., & Engeström, Y. (2005). Managing content in E-learning environments. *British Journal of Educational Technology, 36*(3), 453-463.

Myers, M. D. (1997). Qualitative research in information systems. *Management Information Systems Quarterly, 21*, 241-242.

Myers, M. D. (2013). *Qualitative research in business and management*: Sage.

Nulty, D. D. (2008). The adequacy of response rates to online and paper surveys: what can be done? *Assessment & Evaluation in Higher Education, 33*(3), 301-314.

Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organizations: Research approaches and assumptions. *Information systems research, 2*(1), 1-28.

Patton, M. Q. (2005). *Qualitative research*: Wiley Online Library.

Rienties, B. (2014). Understanding academics' resistance towards (online) student evaluation. *Assessment & Evaluation in Higher Education, 39*(8), 987-1001. doi:10.1080/02602938.2014.880777

Risquez, A., Vaughan, E., & Murphy, M. (2015). Online student evaluations of teaching: what are we sacrificing for the affordances of technology? *Assessment & Evaluation in Higher Education, 40*(1), 120-134.

Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative research practice: A guide for social science students and researchers*: Sage.

Scanlon, E., & Issroff, K. (2005). Activity theory and higher education: Evaluating learning technologies. *Journal of Computer assisted learning, 21*(6), 430-439.

Shenton, A. K., & Hayter, S. (2004). Strategies for gaining access to organisations and informants in qualitative studies. *Education for Information, 22*(3), 223-231.

Spencer, L., Ritchie, J., & O'Connor, W. (2003). Carrying out qualitative analysis. *Qualitative research practice: A guide for social science students and researchers*, 219-262.

Spooren, P., Brockx, B., & Mortelmans, D. (2013). On the Validity of Student Evaluation of Teaching The State of the Art. *Review of Educational Research, 83*(4), 598-642.

Stowell, J. R., Addison, W. E., & Smith, J. L. (2012). Comparison of online and classroom-based student evaluations of instruction. *Assessment & Evaluation in Higher Education, 37*(4), 465-473.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*: Harvard university press.

Walsham, G. (2006). Doing interpretive research. *European Journal of information systems, 15*(3), 320-330.

Wright, R. E. (2006). Student evaluations of faculty: Concerns raised in the literature, and possible solutions. *College Student Journal, 40*(2), 417.