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The influence of online resources on student–lecturer relationship in higher education: a comparison study

Saeed Alshahrani¹ · Ejaz Ahmed¹ · Rupert Ward¹

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Abstract The internet has become a key resource for students' higher education studies due to both its availability and currency. Previously within higher education, lectures, books and course materials were the only sources of information. This change, to more open access to information and more online materials being accessed outside of those provided by lecturers, and indeed institutions, is likely to accelerate and change the way students are learning. This study aims to help institutions understand better the impact of these changes on the student–lecturer relationship by exploring students' perceptions of their studies in terms of power and students' academic engagement in the classroom. The importance of the internet (online learning resources) to students' achievements, the importance of lecturers and the student–lecturer relationship have all been widely investigated. However, limited research has been undertaken examining the impact of students' use of the internet on the student–lecturer relationship, or comparing this across different countries and cultures. To address this, data were collected via semi-structured questionnaires distributed to undergraduate students from three countries: United Kingdom, Saudi Arabia and Kenya. Quantitative data were analysed using a simple statistical analysis approach and qualitative data were analysed using a thematic analysis approach. The results showed that students' use of the internet has improved students' academic self-confidence, academic self-reliance and student–lecturer connectedness, but students' use of the internet has increased the gap in the student–lecturer expert relationship and referent relationship. The impact and reasons for this differed between the countries involved in this study.

Keywords Academic self-confidence · Academic self-reliance · Expert relationship · Referent relationship · Connectedness

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Introduction

One of the most important parts of classroom management is the relationship between students and their lecturer. Improving this relationship can have positive and long-lasting implications on students' academic and social development and can support students in attaining higher levels of achievement (Adeyale and Yusuff 2012; Lasky and Estes 2009; Lessard et al. 2010). As a result, students show more engagement with their learning and perform better academically. During the last few years, classroom management and teaching and learning methods have been influenced by educational technology developments, such as virtual learning environments (VLE) like Blackboard (Bayne 2008), video-based self-directed learning like the Khan Academy (Thompson 2011), extra-curricular achievement recognition systems such as Mozilla OpenBadges (Goligoski 2012) and Massive Open Online Courses (MOOCs) (Conole 2013).

Existing research on the use of online learning resources reveals that it improves students' achievements and faculty performance (Jones et al. 2011). For example, they can transform the lecturer's role from information provider to facilitator and make students more independent learners (Moore et al. 2011). Most existing research on the impact of online learning resources in higher education settings is either too broad or multi-purpose (Simsim 2011) and does not reflect students' views. Some researchers have examined the impact of accessing online information on both lecturers and students but none have investigated its impact on the student–lecturer relationship. This research therefore explores the personal and emotional aspects of the student–lecturer relationship from the student's perspective and investigates the influence of online learning resources on students' perceptions.

Research framework

This research focuses on the influence of online learning resources on the personal and emotional aspects of the student–lecturer relationship. The student–lecturer relationship can be viewed in terms of expert power and referent power which a lecturer possesses (French and Raven 1959; Mehra 2004; Spencer 2013). The word “power” in this context represents the influence of a lecturer on students in a classroom. Expert power is “based on subordinates' belief that a superior has job experience and special knowledge or expertise in a given area” (Yahaya et al. 2011). Referent power, on the other hand, is how a lecturer is liked, appreciated, respected and taken as a role model (Bayrak et al. 2014). Both of these power relationships are considered social communicative behaviours, associated with closer relationships and personal communication (O'Malley et al. 2012).

The student–lecturer relationship can also be viewed in terms of the three dimensions of academic engagement, which are academic self-confidence, academic self-reliance and connectedness (Coates 2006). Academic self-confidence is related to academic self-efficacy and measures the degree to which a student believes he/she can perform well (Caldwell and Komarraju 2014). Self-reliance is the condition of relying on our resources in order to accomplish any number of

specific tasks and responsibilities that contribute to our independence (Johnson 1969). Finally, connectedness has been used to investigate how students use internet technologies to communicate with their lecturers (Bond et al. 2007). It shows students’ relationship to their institution based on their understanding that lecturers care for their learning and them as individuals.

The research framework is shown in Fig. 1, which focuses on both, personal and emotional, aspects of the power relationship and academic engagement in classroom. Expert power and referent power are prosocial communicative behaviour and are referred to as a personal power source as they come from the personal feelings of an individual and are non-tangible (Schermerhorn 2011). On the other hand, academic self-confidence, academic self-reliance and connectedness are personal communicative behaviour and are associated with emotional engagement.

Literature review

The relationship between students and lecturers is essential to learning (Davis 2003). This relationship is rapidly and radically transforming with the popularity and easy access to online learning resources (Freeman et al. 2013; Martin 2012). The new relationship is more interactive and collaborative, instead of lecturer-dominant. Students can acquire knowledge form massively available online learning resources, such as MOOCs, open education resources (OERs) and commercial e-learning products, opening up a gateway of lifelong learning opportunities (Kerrison et al. 2016). All these developments are influencing student–lecturer power relationship.

The student–lecturer power relationship has been studied since 1980s, when a well-known series of studies about “power in the classroom” were conducted (Kearney et al. 1985; McCroskey and Richmond 1983; McCroskey et al. 1985; Plax et al. 1986; Richmond and McCroskey 1984; Richmond et al. 1987). Expert power and referent power were two important factors investigated in these series. Expert power is the ability to provide another with the required information, knowledge or

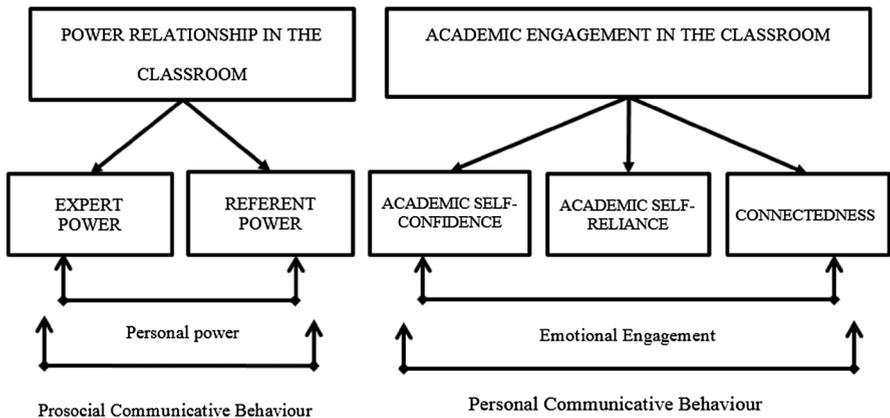


Fig. 1 Research framework

expert advice that comes from experience or education (Coon and Mitterer 2008; Nazarko 2004; Phillips and Gully 2011). It is synonymous with the well-known educational concept of “content knowledge”, which is the knowledge that expert teachers call upon (Pourshafie and Murray-Harvey 2013). Whilst lecturers have expert power because of the knowledge that they have, students gain expert knowledge through both their teachers and the online learning resources they access outside of the classroom. Use of online resources for learning helps students expand their knowledge and achieve better outputs (Asdaque et al. 2010; Grace-Martin and Gay 2001). Students’ knowledge, gained from accessing online resources, may be comparable to the information provided by their lecturers including information from well-known scholars, specialists or experts. It is important therefore to assess whether this change in information sources indicates that the cognitive gap between students and lecturers is changing. From the review of literature on the expert power relationship, the following hypothesis (H1) and research question (R1) will be used:

H1 The lecturer has enough knowledge and experience (expert power) in a particular area that qualifies him/her to be a lecturer. Therefore, students follow his/her instructions and regard them as an expert and knowledgeable person.

R1 What is the impact of students’ access to online learning resources on their expert relationship with their lecturers?

Referent power is based on an individual’s personal charisma. “People hold someone with referent power in very high regard and will do what they say based on their regard for that person” (Schwalbe 2010, p. 349). It is the influence that people exercise because they believe in them (Walker 2011). Referent power is also known as attractive power where the lecturer tries to influence students’ behaviours (Felix and com 2011). Students could follow their lecturer’s instructions when they admire him or her, irrespective of the knowledge that he or she has. Several studies have proven that this type of relationship is potentially affected by factors such as cultural differences (Merriweather and Morgan 2013) and lecturer’s personal charisma (Schwalbe 2010), and is likely to be highly linked to the lecturer’s content knowledge (Chinomona and Ming-Sung Cheng 2013). The gender and age of the lecturer also play a role in the student–lecturer relationship (Tauber 2007). The role of online learning resources as an external factor that could impact on this relationship has not yet been explored. From the referent power relationship, the following hypothesis and research question were therefore developed.

H2 Students normally follow the lecturer’s instructions because they admire him/her. They identify with the lecturer and have a positive regard for him/her; they willingly do as the lecturer says.

R2 What is the impact of students’ access to online *learning resources on their referent relationship with their lecturers?*

Academic engagement in the classroom is an important part of learning and classroom management. It is defined as students’ active involvement in learning (Singh et al. 2002). Academic self-confidence, reliance and connectedness are

important dimensions of academic engagement in the classroom (Coates 2006). Self-confidence is the sense of personal strength and a belief that you are worthy and talented (Masters and Wallace 2010). Academic self-confidence refers to self-confidence in a specific academic subject such as mathematical ability or problem-solving skills (Nelson Laird 2005). According to Alodiedat and Eyadat (2008), online learning resources can have a positive impact on students' academic self-confidence. Studies show that using technology boosts students' academic self-confidence in the classroom (Chachra et al. 2009; Nelson Laird 2005; Park et al. 2012). Students' self-reliance encourages them to find alternative ways to solve problems in the classroom. In other words, it is a state of trusting ourselves to complete a task which can elevate our freedom and independence (Johnson 1969, p. 45). Students' academic reliance does not necessarily link to the self-confidence that students have. Students may have enough confidence in their knowledge, but they also rely on and follow the lecturer's instructions as they believe that he or she has the leadership in the classroom and is the person who has the final judgment in the class. Lastly, connectedness considers the backbone of the student–lecturer relationship as an important element of student academic engagement in the classroom (Giles 2008). The term connectedness has become well known when using technology to interact with other people (Robertson 1996). The word “connect” could include many forms of communications: face-to-face, notice board or any other method of communication. Within this research, connectedness is considered as effective use of online web technology for the purpose of communication between the lecturer and the student.

The following hypothesis and research questions were developed from a review of literature on academic self-confidence and academic reliance:

H3 Online learning resources have a positive impact on students' academic self-confidence because they provide them with extra information that is required.

R3A How does the use of online learning resources influence students' self-confidence?

R3B Does students' self-confidence impact on their reliance on lecturers?

The nature of the relationship between the student and lecturer differs from one culture to another, which could influence the results (Alexander et al. 2007), as could teaching strategy. The availability of lecturer support and the amount of referring of students to online learning resources may also vary between institutions, and students are unlikely to take these issues into account when they evaluate their relationship with their lecturers.

Methodology

Subjects

The aim of this study was to examine the impact of students' use of online resources for study purposes and to examine their relationship with their lecturers in higher

education. Subjects for this study were higher education students from three countries: United Kingdom, Saudi Arabia and Kenya. Data were collected from a total of 1942 students (294 from the United Kingdom, 346 from Kenya and 948 from Saudi Arabia). As it was not possible to access all members of the target population groups because of limited time and resources, a non-probability sampling (convenience sampling) approach was used. In this approach, participants do not have an equal chance to participate, because not all subjects of the target population are selected (Pathak 2008). However, this approach represents a valuable group of sampling techniques for a mixed methods approach and is well suited for collecting medium sample sizes.

Measures

The study examined and compared the influence of online learning resources in relation to five factors: students' academic self-confidence, academic self-reliance, student-lecturer expert relationship, student-lecturer referent relationship and student-lecturer connectedness. A semi-structured questionnaire was developed using three well-known existing instruments, adopted version of Academic Engagement Form (AEF) (Price et al. 2007) originally constructed by Foster et al. (1999), Teacher Power Use Scale (TPUS) (Fassett and Warren 2010) and Student Instructor Relationship Scale (SIRS) (Creasey et al. 2009). AEF elements directly assess the impact of online learning resources on students' academic engagement. TPUS and SIRS assess student-lecturer associations by comparing the students' opinions about online learning resources with their opinion about their lecturer. Adopting existing measures is a common practice among researchers, and these measures have been tested, demonstrating high levels of both validity and reliability (Mji and Kalashe 1998; Williams 1992). Furthermore, two pilot studies were completed to test the instrument after making minor changes.

The minor changes were made to ensure that the survey items were suitable for this research. For example, the words "teacher" in TPUS instrument, "tutor" in AEF instrument and "instructor" in SIRS instrument were changed to "lecturer" as they may not refer to higher education. Similarly, the word "this" changed to "my" as it refers to a specific person in the original instrument, while "my lecturer" does not specify a lecturer. As the native language of students from Saudi Arabia was Arabic, the questionnaire was translated into Arabic language to ensure that all questions were fully understood. Adaption of the questionnaire into Arabic was done in two stages: first, the English version of the instrument was translated into Arabic by a professional translation company; second, the Arabic version of the instrument was reviewed by an Arabic linguistic expert. This step was taken to ensure that the translated version was accurate and had the same meaning as the original. Furthermore, two pilot tests were completed before conducting the final study. The first pilot test was completed before translating the questionnaire and the second pilot test was completed after translating the instrument into Arabic language. Only minor typographical errors were identified and corrected. Before the data analysis of the main study, reliability of the instrument was also assessed using Cronbach's Alpha, which is the most popular method to conduct an internal

Table 1 Reliability test

| Categories | Reliability statistics | |
|-----------------|------------------------|------------------|
| | N of items | Cronbach's Alpha |
| Expert power | 7 | 0.767 |
| Referent power | 6 | 0.835 |
| Self-confidence | 6 | 0.866 |
| Reliance | 1 | N/A |
| Connectedness | 11 | 0.898 |

consistency reliability test (Sekaran 2003). As shown in Table 1, the Cronbach's Alpha reliability statistics were greater than 0.70. A reliability score closer to 1.0 shows higher internal consistency reliability (Pallant 2011) and considered good if it is above 0.70 (Hair et al. 2007).

The questionnaire was divided into six sections with brief information provided to respondents at the start of each section. The first section was to collect demographic information and the remaining five sections were to collect data for each factor. Each variable was tested by a list of items preceded by a statement (question) to guide the participant. Close-Ended Items (CEIs) were recorded using 7-point Likert scale ratings from 'strongly disagree' SD = 1 to 'strongly agree' SA = 7. At the end of each section, an open-ended question was added to collect further information related to the same section.

Data collection

Both online and paper-based methods were used to administer the questionnaires. A link to the questionnaire was sent to a list of participating educational institutions using a professional version of Smart-Survey Online Software. A paper form of the questionnaire was also distributed to students at the end of their timetabled sessions. Lecturers asked students to complete the questionnaire if they wished to participate in the study. This approach helped in collecting more data than the online approach. The online approach yielded a 37% response rate, whilst the paper-based approach yielded a 63% response rate.

Participants in the survey were students from various academic disciplines. The discipline factor was not taken into account to avoid divergence.

Data analysis

The data were entered into a data file for the purpose of statistical analysis and the results were compared between the three countries. Two different approaches were used to analyse the data: a quantitative approach to analyse the quantitative data and a qualitative approach to analyse the qualitative data. Data analysis was completed through three stages as shown in Fig. 2.

Results from the quantitative analysis are presented using the terms level of impact (LOI) and percentage of impact (POI). Level of impact (LOI) indicates the

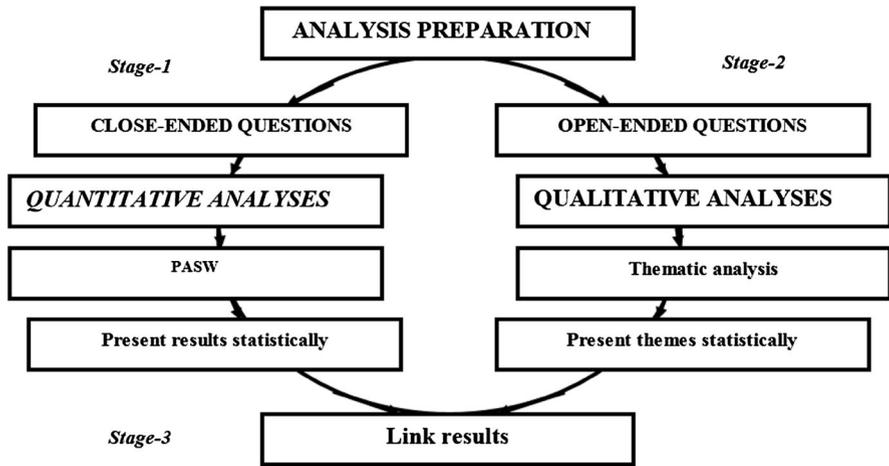


Fig. 2 Analysis plan

strength of the perceived impact of online learning resources' usage on the factor being considered, with a rating from 1 (maximum negative impact) to 7 (maximum positive impact), and where 3.5 and under equates to a negative impact, i.e. on average was the impact positive, neutral or negative. POI indicates the amount of students experiencing this perceived impact, i.e. the percentage of students with negative, neutral and positive impacts. Results from the qualitative analyses were analysed using thematic analysis. The themes extracted from open-ended questions represented the reasons behind the impact (of online learning resources' usage on the investigated factors).

Quantitative data analysis

Demographics

Table 2 shows the number of male and female participants from each country. Overall 70% of participants were male and 30% female. The distribution of male and female participants from each country was different as shown in Table 2. There were more male participants from the UK and Saudi Arabia, and more female participants from Kenya.

A large number of the participants across the sample were in the age group of 20–29, 80%. There were 13% participants in the age group of 19 or under and 6% in the age group of 30–39. None of the participants from the UK and Kenya were over 39 years old and only 1% of the participants from Saudi Arabia were in that age range. The percentage of respondents in each age group from each country is shown in Table 3.

Table 2 Participant statistics

| | Saudi Arabia | Kenya | United Kingdom | Total |
|--------|--------------|-----------|----------------|------------|
| Male | 948 (73%) | 162 (47%) | 245 (83%) | 1355 (70%) |
| Female | 354 (27%) | 184 (53%) | 49 (17%) | 587 (30%) |
| Total | 1302 | 346 | 294 | 1942 |

Table 3 Participants' age group

| | Saudi Arabia (%) | Kenya (%) | United Kingdom (%) | Total (%) |
|-------------|------------------|-----------|--------------------|-----------|
| 19 or under | 10 | 14 | 26 | 13 |
| 20–29 | 82 | 79 | 71 | 80 |
| 30–39 | 7 | 6 | 2 | 6 |
| 40–49 | 1 | | | 1 |

Internet uses for study purposes

It can be seen from Table 4 that the use of the internet for study purposes is different from one country to another. There is a higher percentage of students in Kenya and the United Kingdom using the internet for more than 15 h a month compared to Saudi Arabia where the majority of students use the internet for study purposes for 5 h a month or less. There is no significant difference in the rate of online learning resources' usage between male and female students in the three countries.

Expert power relationship

The results indicate that using online learning resources is perceived to have a positive impact on the student–lecturer expert relationship. Results shown in Table 5 indicate that the LOI is positive in the three countries. The UK has a higher level of impact compared to Saudi Arabia and Kenya. Similarly, the UK has 90% positive percentage of impact compared to 67% in Saudi Arabia and 69% in Kenya. There is not much difference in LOI between gender and different age groups. The time spent online for study purpose positively influences LOI, with LOI increasing with time (Table 6).

Referent power relationship

Using the online learning resources has increased the referent relationship between the students and lecturers in the three countries. As shown in Table 7, the LOI

Table 4 Online number of hours

| Number of hours | Less than 1 (%) | 1–5 (%) | 5–10 (%) | 10–15 (%) | 15–20 (%) | More than 20 (%) |
|-----------------|-----------------|---------|----------|-----------|-----------|------------------|
| Saudi Arabia | 27.8 | 34.5 | 13.5 | 8.4 | 6.2 | 9.6 |
| Kenya | 2.3 | 20.6 | 15.1 | 16.9 | 15.4 | 29.7 |
| United Kingdom | 2.4 | 4.8 | 23.8 | 14.3 | 26.2 | 28.6 |

Table 5 Expert power relationship and level of impact

| | Saudi Arabia | | Kenya | | United Kingdom | |
|-------------|--------------|------|-------|------|----------------|------|
| | Mean | SD | Mean | SD | Mean | SD |
| Gender | | | | | | |
| Male | 4.69 | 1.1 | 5.09 | 1.08 | 5.46 | 0.76 |
| Female | 4.98 | 0.87 | 4.85 | 1.34 | 5.33 | 0.41 |
| Age | | | | | | |
| 19 or under | 4.62 | 1.16 | 5.43 | 0.86 | 5.42 | 0.67 |
| 20–29 | 4.78 | 1.04 | 4.97 | 1.22 | 5.44 | 0.75 |
| 30–39 | 4.89 | 1.03 | 3.8 | 1.25 | 5.43 | 0 |
| Time | | | | | | |
| Under 1 h | 4.58 | 1.11 | 5.55 | 0.79 | 3.86 | 0 |
| 1–5 h | 4.75 | 1.06 | 4.96 | 1.16 | 5.29 | 0.44 |
| 5–10 h | 4.9 | 0.97 | 4.91 | 1.53 | 5.47 | 0.36 |
| 10–15 h | 4.95 | 0.98 | 4.87 | 1.3 | 5.24 | 0.61 |
| 15–20 h | 4.8 | 1.08 | 5.13 | 1.11 | 5.52 | 0.73 |
| Over 20 h | 5.08 | 0.87 | 4.94 | 1.14 | 5.58 | 0.86 |
| Total | 4.77 | 1.05 | 4.96 | 1.23 | 5.44 | 0.72 |

Table 6 Expert power relationship and percentage of impact

| | Saudi Arabia (%) | Kenya (%) | United Kingdom (%) |
|----------|------------------|-----------|--------------------|
| Negative | 10 | 15 | 2 |
| Neutral | 22 | 16 | 7 |
| Positive | 67 | 69 | 90 |
| | 100 | 100 | 100 |

among students in the three countries ranged between 4.5 and 5.2 out of 7. The LOI was highest amongst the UK students. In terms of POI, shown in Table 8, 86% of the students in the UK feel that their referent relationship with their lecturers had been impacted positively due to their use of the internet as a source of information compared to 62% students from Kenya and 57% students from Saudi Arabia. The LOI is almost the same for different gender and age groups.

Academic self-confidence

As shown in Table 9, the LOI on student academic self-confidence is high in general and quite similar across the three countries, scoring approximately 5.5 out of 7. POI is also high in all three countries but slightly less amongst Saudi students in comparison to Kenyan and the UK students (Saudi Arabia is 83% positive, Kenya 86% positive and United Kingdom 90% positive). LOI for this factor is higher for Saudi females than males, lower for Kenyan females than males and almost the same for the UK females and males (Table 10).

Table 7 Referent power relationship and level of impact

| | Saudi Arabia | | Kenya | | United Kingdom | |
|-------------|--------------|------|-------|------|----------------|------|
| | Mean | SD | Mean | SD | Mean | SD |
| Gender | | | | | | |
| Male | 4.49 | 1.29 | 4.89 | 1.31 | 5.19 | 0.9 |
| Female | 4.56 | 1.16 | 4.44 | 1.67 | 5.29 | 0.86 |
| Age | | | | | | |
| 19 or under | 4.49 | 1.37 | 4.84 | 1.38 | 5.32 | 0.72 |
| 20–29 | 4.5 | 1.25 | 4.68 | 1.55 | 5.2 | 0.94 |
| 30–39 | 4.65 | 1.05 | 3.94 | 1.41 | 4.17 | 0 |
| Time | | | | | | |
| Under 1 h | 4.49 | 1.32 | 4.73 | 1.46 | 4 | 0 |
| 1–5 h | 4.56 | 1.24 | 4.74 | 1.39 | 4.42 | 0.95 |
| 5–10 h | 4.48 | 1.29 | 4.9 | 1.67 | 5 | 0.95 |
| 10–15 h | 4.5 | 1.26 | 4.67 | 1.49 | 5.19 | 0.75 |
| 15–20 h | 4.55 | 1.13 | 4.91 | 1.23 | 5.44 | 0.75 |
| Over 20 h | 4.48 | 1.17 | 4.33 | 1.69 | 5.4 | 0.88 |
| Total | 4.51 | 1.25 | 4.65 | 1.53 | 5.21 | 0.89 |

Table 8 Referent power relationship and percentage of impact

| | Saudi Arabia (%) | Kenya (%) | United Kingdom (%) |
|----------|------------------|-----------|--------------------|
| Negative | 21 | 26 | 7 |
| Neutral | 22 | 12 | 7 |
| Positive | 57 | 62 | 86 |
| | 100 | 100 | 100 |

Academic self-reliance

Similar to the previous factor, LOI is overall higher and positive, as shown in Table 11. However, it is lower than academic self-confidence. Average LOI among the UK students is higher (5.24), compared to Kenyan students (4.91) and Saudi students (4.74). Similarly, positive POI is also higher among the UK students, at 79%, with positive POI for Saudi and Kenyan students at 66 and 67%, respectively. LOI for this factor is higher for Saudi females than males, lower for Kenyan females than males and almost the same for the UK females and males (Table 12).

Connectedness

The results in Tables 13 and 14 show that the average LOI was positive and high amongst the UK students, at 5.11. Average LOI amongst Kenyan students was 4.64 and positive, and amongst Saudi students it was 4.10 and neutral. Similarly, the

Table 9 Academic self-confidence and level of impact

| | Saudi Arabia | | Kenya | | United Kingdom | |
|-------------|--------------|------|-------|------|----------------|------|
| | Mean | SD | Mean | SD | Mean | SD |
| Gender | | | | | | |
| Male | 5.26 | 1.23 | 5.87 | 1 | 5.61 | 0.91 |
| Female | 5.8 | 0.9 | 5.47 | 1.37 | 5.64 | 0.3 |
| Age | | | | | | |
| 19 or under | 5.24 | 1.37 | 5.93 | 0.81 | 5.42 | 0.75 |
| 20–29 | 5.41 | 1.15 | 5.73 | 1.17 | 5.73 | 0.84 |
| 30–39 | 5.65 | 1.05 | 4.14 | 1.59 | 4.33 | 0 |
| Time | | | | | | |
| Under 1 h | 5.19 | 1.26 | 6.01 | 0.8 | 3.33 | 0 |
| 1–5 h | 5.37 | 1.13 | 5.82 | 0.86 | 5.67 | 0 |
| 5–10 h | 5.59 | 1.15 | 5.32 | 1.58 | 5.65 | 0.47 |
| 10–15 h | 5.65 | 1.07 | 5.69 | 1.32 | 5.42 | 0.69 |
| 15–20 h | 5.62 | 1.01 | 5.56 | 1.18 | 5.8 | 0.85 |
| Over 20 h | 5.62 | 1.05 | 5.75 | 1.2 | 5.71 | 0.95 |
| Total | 5.41 | 1.17 | 5.66 | 1.23 | 5.62 | 0.84 |

Table 10 Academic self-confidence and percentage of impact

| | Saudi Arabia (%) | Kenya (%) | United Kingdom (%) |
|----------|------------------|-----------|--------------------|
| Negative | 8 | 11 | 5 |
| Neutral | 9 | 3 | 5 |
| Positive | 83 | 86 | 90 |
| | 100 | 100 | 100 |

results in Table 14 show that positive POI amongst the UK students was very high (71% positive and 24% neutral) compared to Kenyan students (57% positive and 17% neutral) and Saudi students (38% positive and 33% neutral).

Qualitative data analysis

In addition to responding to the Likert scale questions, the respondents were given the opportunity to provide further explanation to support the values they assigned to specific questions. A thematic analysis was used for such responses to identified themes within the qualitative data. For this, each response was read, appropriate codes were assigned and, based on the meaning of codes, initial themes were generated. A counter was set to count how many times each theme was repeated from different responses. The first open-ended question asked respondents to provide as much detail as possible to explain their scoring for the Likert scale question regarding “information from the internet being more appropriate than lecturer information”.

Table 11 Academic self-reliance and level of impact

| | Saudi Arabia | | Kenya | | United Kingdom | |
|-------------|--------------|------|-------|------|----------------|------|
| | Mean | SD | Mean | SD | Mean | SD |
| Gender | | | | | | |
| Male | 4.54 | 2.02 | 5.08 | 1.76 | 5.09 | 1.38 |
| Female | 5.27 | 1.80 | 4.75 | 1.88 | 6.00 | 0.76 |
| Age | | | | | | |
| 19 or under | 4.22 | 2.24 | 4.88 | 1.83 | 5.27 | 0.97 |
| 20–29 | 4.78 | 1.96 | 5.03 | 1.80 | 5.17 | 1.44 |
| 30–39 | 5.08 | 1.82 | 3.45 | 1.53 | 7.00 | 0.00 |
| Time | | | | | | |
| Under 1 h | 4.02 | 2.07 | 3.63 | 2.26 | 4.00 | 0.00 |
| 1–5 h | 4.64 | 2.03 | 4.83 | 1.69 | 5.00 | 0.00 |
| 5–10 h | 5.21 | 1.70 | 4.37 | 1.96 | 4.60 | 1.51 |
| 10–15 h | 5.56 | 1.59 | 4.77 | 1.76 | 5.17 | 1.08 |
| 15–20 h | 5.37 | 1.51 | 5.13 | 1.93 | 5.27 | 1.55 |
| Over 20 h | 5.46 | 1.71 | 5.32 | 1.71 | 5.92 | 0.87 |
| Total | 4.74 | 1.98 | 4.91 | 1.83 | 5.24 | 1.34 |

Table 12 Academic self-reliance and percentage of impact

| | Saudi Arabia (%) | Kenya (%) | United Kingdom (%) |
|----------|------------------|-----------|--------------------|
| Negative | 28 | 25 | 10 |
| Neutral | 6 | 8 | 12 |
| Positive | 66 | 67 | 79 |
| | 100 | 100 | 100 |

The reasons for the impact of students’ access to the internet for study purpose on the student–lecturer expert relationship are shown in Table 15 with the reasons being categorised into three groups: R1, R2 and R3, based on themes concluded from analysing the open-ended responses from the students.

In general, R1 responses in Table 15 showed that a substantial percentage of students felt that the internet was richer in information compared to the information provided by lecturers. This percentage was similar for Saudi and Kenyan students, and higher for the UK students (KSA 33%, Kenya 28% and the UK 45%). For R2 responses, similar percentages of students (KSA 27.23%, Kenya 27.07% and the UK 27.27%) believed that internet information was more organised, accurate and current compared to lecturer information. For R3 responses, the time that the lecturer gives to the students is a factor which students highlighted in different ways. Without apportioning blame, students understood that they had access to the internet “24/7”, whereas lecturers were usually available to provide support within a limited timeframe. Given this, some students felt that seeking information from the internet saved them time (KSA 5.35%, Kenya 2.26% and the UK 9.09%). The UK students’ response for R3.2 was 0.00%, which suggests more technology

Table 13 Connectedness and level of impact

| | Saudi Arabia | | Kenya | | United Kingdom | |
|-------------|--------------|------|-------|------|----------------|------|
| | Mean | SD | Mean | SD | Mean | SD |
| Gender | | | | | | |
| Male | 4.12 | 1.27 | 4.83 | 1.30 | 5.14 | 0.95 |
| Female | 4.05 | 1.19 | 4.47 | 1.44 | 4.96 | 0.81 |
| Age | | | | | | |
| 19 or under | 3.96 | 1.26 | 4.75 | 1.33 | 5.12 | 0.86 |
| 20–29 | 4.10 | 1.26 | 4.69 | 1.38 | 5.12 | 0.96 |
| 30–39 | 4.25 | 1.18 | 3.83 | 1.40 | 4.55 | 0.00 |
| Time | | | | | | |
| Under 1 h | 4.04 | 1.30 | 4.86 | 1.35 | 4.00 | 0.00 |
| 1–5 h | 4.12 | 1.22 | 4.79 | 1.23 | 4.50 | 0.80 |
| 5–10 h | 4.15 | 1.28 | 4.79 | 1.53 | 4.64 | 0.90 |
| 10–15 h | 4.10 | 1.27 | 4.42 | 1.35 | 4.67 | 0.77 |
| 15–20 h | 4.18 | 1.10 | 4.61 | 1.37 | 5.68 | 0.88 |
| Over 20 h | 4.03 | 1.28 | 4.60 | 1.46 | 5.39 | 0.64 |
| Total | 4.10 | 1.25 | 4.64 | 1.39 | 5.11 | 0.92 |

Table 14 Connectedness and percentage of impact

| | Saudi Arabia (%) | Kenya (%) | United Kingdom (%) |
|----------|------------------|-----------|--------------------|
| Negative | 29 | 26 | 5 |
| Neutral | 33 | 17 | 24 |
| Positive | 38 | 57 | 71 |
| | 100 | 100 | 100 |

maturity in terms of valuing their lecturer's instructions more than relying on online learning resources. This could also suggest that compared to other two countries there is a stronger emphasis on the reliability of sources from lecturers within the UK and students' associate reliability with their lecturers rather than online learning resources as a result of this.

Similarly, reasons for the impact of students' access to the internet on the student–lecturer referent relationships are shown in Table 16 and are based on further explanation from respondents regarding “I feel that my lecturer and I share a common perspective”. These reasons can be categorised into two groups, R1 that shows the legitimate power of the lecturer and R2 that represents lecturers' expert power. 38.00% of Saudi students and 34.78% of Kenyan students feel that using the internet is a good alternative to avoiding lecturer contact. They claim that lecturers are very formal and that the lecturers want to maintain this distance. Only 9.80% of the UK students highlighted this factor. There was also a variation in the percentage of students who linked referent relationships to the knowledge the lecturer has (Saudi 43.00%, Kenya 56.52% and the UK 67.40%).

Table 15 Main reasons of internet impact on students–lecturer expert relationship

| Code | Reason | KSA (%) | Kenya (%) | UK (%) |
|------|--|---------|-----------|--------|
| R1.1 | Information is available in the internet | 2.05 | 3.01 | 4.55 |
| R1.2 | The internet contains more resources or variety of information | 5.49 | 6.02 | 18.18 |
| R1.3 | The lecturer's knowledge is limited or his/her information delivery is not comprehensive | 7.10 | 0.00 | 0.00 |
| R1.4 | The lecturer is restricted to specific information (course material) | 0.58 | 3.76 | 0.00 |
| R1.5 | The internet has more detailed information | 17.75 | 15.04 | 22.73 |
| | | 33 | 28 | 45 |
| R2.1 | The internet information is more organised and easily delivered | 17.42 | 17.29 | 22.73 |
| R2.2 | The internet information is more accurate, updated and important | 6.39 | 6.77 | 4.55 |
| R2.3 | The internet has more evidence and is more trustworthy | 3.42 | 3.01 | 0.00 |
| | | 27.23 | 27.07 | 27.27 |
| R3.1 | The lecturer is not available or does not have time | 3.77 | 0.00 | 9.09 |
| R3.2 | The internet is always available and information can be reviewed (quicker) | 1.58 | 2.26 | 0.00 |
| | | 5.35 | 2.26 | 9.09 |

Table 16 Main reasons of internet impacts on students–lecturer referent relationship

| Code | Reason | KSA (%) | Kenya (%) | UK (%) |
|------|--|---------|-----------|--------|
| R1.1 | Because of some lecturers' excessive use of authority because of his/her position | 38.00 | 34.78 | 9.80 |
| R2.1 | Because lecturers' knowledge is limited or his/her information delivery is not comprehensive | 23.00 | 0.00 | 3.00 |
| R2.2 | Because student and lecturer have the same amount of information | 7.00 | 8.70 | 32.00 |
| R2.3 | Because the student has sufficient information from the internet | 10.00 | 4.35 | 30.00 |
| R2.4 | Because students and lecturers have the same source of data | 3.00 | 43.48 | 2.40 |
| | | 43.00 | 56.52 | 67.40 |

Using one-to-one methods of communication such as e-mails, students have increasingly been able to communicate with lecturers outside of the class, but they claim that the response from the lecturers is slow. Lecturers' delayed response has been mentioned from students in all three countries.

Students provided many reasons justifying why the internet has increased their academic self-confidence and self-reliance. For example, students from the three countries believe that the internet gives them the chance to prepare for new subjects before class and it confirms that they require less clarification of the information provided by the lecturer. Reasons are categorised under groups and illustrated in Table 17, as explanations to the questions "Using the internet has an impact on my self-confidence in class" and "When I do not understand something on the course, I

Table 17 Main reasons of internet impact on students' self-confidence and self-reliance

| Code | Reason | KSA (%) | Kenya (%) | UK (%) |
|------|---|---------|-----------|--------|
| R1.1 | Because the internet gives more information that helps in the class | 76.12 | 60.22 | 66.67 |
| R1.2 | Because the student finds studies and examples on the internet | 3.73 | 7.53 | n/a |
| R1.3 | Because the internet is good preparation for lectures | 10.45 | 24.73 | 33.33 |
| R2.1 | Because the internet gives students more self-reliance | 1.49 | 7.53 | 0.00 |
| R3.1 | Because the lecturer urges students to search on the internet | 0.80 | 7.09 | 10.23 |
| R3.2 | Students considered their lecturers as role models regardless of her/his provided information | 2.16 | 7.09 | 69.23 |
| R4.1 | Because the lecturer is not available or does not have time | 12.74 | 6.30 | 61.54 |

search the web rather than asking the tutor". R1 shows the impact related to the power of the internet as an information provider and the benefits of it outside of the classroom. This factor is high in all the three countries compared to the other stated factors. R2 reflects students' feeling about their ability to be independent while using the internet for information and R3 reflects lecturers' influence on students' use of internet-based information. Finally, R4 represents how lecturers' availability may impact on students' reliance on online learning resources. The words "scared" and "afraid of lecturers" were frequently mentioned by Kenyan students when they talked about their contact with lecturers. 13% of Saudi students and 61% of the UK students have highlighted difficulties in reaching lecturers out of class time when further support was needed.

Discussion and conclusion

Results from the data provided from the three countries show that the internet as an information provider has improved students' academic self-confidence (LOI 5.41–5.66 and POI 83–90%) and academic self-reliance (LOI 4.74–5.24 and POI 66–79%). Students have become more self-reliant when searching for information online. The World Wide Web (WWW) as a method of communication has also improved student–lecturer connectedness. It enables students to communicate more easily with lecturers without face-to-face contact.

Students' use of online learning resources has created a gap in the student–lecturer expert relationship and referent relationship in all three countries. The impact varies from one country to another and is not directly related to the amount of internet use, though it is strongly related to the nature of the relationship between the students and lecturers and what students expect the lecturer to provide. The student–lecturer referent relationship is not always linked to lecturers' knowledge. In the UK, the students' use of the internet for seeking information is higher compared to Saudi Arabia; however, the results of this study showed that the harmful impact of the internet on the student–lecturer referent relationship is less in

the UK compared to Saudi Arabia and Kenya. This could be because of cultural differences such as power distance and individualism, a view which is supported by Hofstede's work on cultural dimensions across different countries (Hofstede and Hofstede 2001; Hofstede et al. 2010). Power distance represents inequality in the society and individualism represents the degree of interdependences maintained in a society. The UK society seeks to minimise inequalities, whereas the societies in Kenya and KSA reflect more hierarchical structures. KSA and Kenya societies are also more collectivist when compared to the UK where individualism and personal fulfilment are encouraged more. Looking at the results of this study, it can be argued therefore that the differences in positive impact in expert and referent power, between the UK on the one hand, and Kenya and KSA on the other, could be down to the UK's less hierarchical culture, where questioning of authority figures such as lecturers is more common. By having access to online learning resources, which for the most part support the information provided by lecturers, the credibility of lecturers in the UK may improve when compared to more referential cultures such as Kenya and KSA. Similarly, the UK's more individualistic culture suggests that collective support will be lower compared to Kenya and KSA and hence online learning resources may be seen as additional support which helps students feel more self-reliant and connected in the UK.

As with any study, this study has some limitations. One possible weakness is that the study focused on students' perspective only. The lecturers' opinions and contributions are also important and necessary in order to elucidate the ways in which online learning resources impact the student–lecturer relationship. Furthermore, details about the type of technology, websites and online resources were not collected and analysed, which can be valuable in the future research. Finally, this study used convenience sampling approach. Even though the sample size was large (1942 students), the study is limited by its participants, as students from specific universities were chosen. The research findings should therefore be generalised with caution.

This research provides a starting point for longer-term and larger-scale studies of the impact of access to knowledge online on the higher education sector. By studying the student–lecturer relationship, through the instruments and approaches discussed in this paper, it is possible both to assess the changing perspectives of students regarding higher education delivery and to provide guidance to lecturers on the changing needs and experiences of their students. Beyond this immediate benefit, there is a more fundamental issue also being considered through these measures, namely the viability and continued relevance of a lecturer-based educational delivery model for higher education. As more high-quality online provision is available to students outside of their studies, or for example through Massive Open Online Courses (MOOCs) or other similar initiatives, and as other educational sectors provide more material online, higher education institutions will need to review and respond to students' study needs if they are to continue to remain relevant and valued by students. By monitoring and understanding student perspectives through the measures outlined above, institutions are therefore better placed to understand and adapt to this changing learning landscape.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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