

Impact of Culture on Construction Education in South Africa

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Abstract

The purpose of this study is to assess the impact of culture on construction education in South Africa with a view to determining how cultural backgrounds influence students' behavior. The data used in this paper were derived from both primary and secondary sources. The secondary data were collected through a detailed assessment of related literature. The primary data were likewise collected via a structured questionnaire aimed at 130 respondents who were students registered for Construction Management (CM), Quantity Surveying (QS), Civil Engineering and Building Science at a South African higher education institution. Out of the collected 130 questionnaires, only 101 were usable, representing a response rate of 78 per cent that was deemed viable for statistical analysis for this study. Data received from the questionnaires were analyzed using descriptive statistics procedures. The higher education institution used for the study has a variety of students and lecturers: through this study it is evident that the cultural background of the students shapes their attitudes and values, knowledge base as well as the skill set and these, in turn, influencing classroom behaviors, their study habits, their writing styles and faculty student interactions. The study concluded that culture is an important concept when it comes to education, especially construction education, which needs to be managed appropriately. The study, therefore, recommended that in order to manage cultural differences, students need to be aware of the cultural backgrounds of those with whom they work and interact since failure to manage cultural differences in a collaborative learning environment could possibly lead to student failure.

Keywords

Culture, Construction education, Higher education institutions, South Africa.

1. Introduction

The Republic of South Africa (RSA) is a multicultural democratic country in Africa which is bordered by countries such as Mozambique, Namibia, Botswana, Lesotho, Swaziland and Zimbabwe. The country is divided into nine provinces and has a total population of about 54 million people (2014 mid-year estimate) Statistics South Africa (Stats SA) (2014). In 2013, there was a total of 136 public and private higher education institutions (HEIs), where 23 of them were public HEIs and the remaining 113 private. From these higher education institutions, 85 per cent of the students were enrolled in the public HEIs and this large percentage saw the Department of Higher Education and Training (DHET) establish two new public HEIs in the same year. The two new public HEIs are the Sol Plaatje University and the University of Mpumalanga which both started operating in 2014. Higher education institutions (HEIs) have become essential for employment, for social mobility, economic development and growth and to this day, the significance of a vibrant higher education sector is even internationally recognized (Pouris & Inglesi-Lotz, 2014). The role of education in improving work-skills, learning and in developing personal preferences is unquestionably important and it continues to be one of the pointers of human development and wellbeing (Timæus et al., 2011).

The construction industry is one of the biggest industries in the world and contributes greatly to the economy of any country. Construction is quite different from other industries as it has several unique characteristics which include the construction process, management practice, organization structure, working environment and the characteristics of workers' behavior. In any building project for example, regardless of the type or size, different people are required to provide different services through the process of designing, construction and/or maintenance, all from the point of inception until completion. The construction industry employs a variety of people who come from different environments and backgrounds: this would mean that people are used to different ways of doing things. It must also be acknowledged that in order to work effectively and efficiently, the needs of these different individuals must be addressed and met. As such, education is connected to culture and the methodology of education is very much connected to the culture of the country at hand (Wursten & Jacobs, 2014).

Culture is an important subject when it comes to the ever-growing, ever-changing construction industry, particularly considering the concept of education. Scholars such as Spencer-Oatey (2008, 2012) define culture as a vague set of basic assumptions and values, orientations to life, beliefs, policies, procedures and behavioral conventions that are shared by a group of people, and that influence but do not determine each member's behavior and his/her interpretations of the meaning of other people's behavior. Hofstede (1984) and Hall and Jaggard (1998) express the view that culture is the collective programming of the mind that distinguishes the members of one human group from another. In this sense, it includes systems of values and values are among the building blocks of culture. Furthermore, Kagerer and Gandarilla (2011) maintain that even though culture commonly refers to societies, it can also be applied to any human collectivity or category which can be an ethnicity, an organization, a family or a gender. Hofstede (1984) has studied the concept of culture and according to his study in Kagerer and Gandarilla (2011), there are ways in which cultures differ from one another and this can be seen through different dimensions.

Currently, the South African education sector faces many challenges. However, even though the sector faces the challenges, the issue of cultural differences remains a factor that should be looked into as opposed to being totally ignored. The country's education sector comprises various individuals, all with different backgrounds and this sometimes creates challenges when it comes to the teaching and learning processes. Culture and education are inseparable, as they are simply two sides of the same coin (Obanya, 2005), hence the need to find ways to embrace culture in education and not ignore it. The problem assessed in this research project is the impact of culture on the teaching and learning processes of construction education in South Africa, a case of a South African higher education institution.

2. Literature Review

2.1 The Concept of Culture

Traditionally the term 'culture' has always been defined in terms of people's origins, covering the aspect of where people come from, their up-bringing as well as how they interact with each other. It is evident from the various definitions that the term 'culture' is a difficult term to fully define as it has many aspects to it. However, studies on the concept of culture define it as the collective programming of the mind which distinguishes the members of one group from another, and as such, it is passed on from one generation to the other. The change occurs due to each generation adding value of its own before passing it on to another generation (Hofstede, 1980). According to Khoza (2006), "Culture is to people as water is to fish, we all live in it". Additionally, culture again refers to aspects of 'the way of life' that people learn in a society, with the addition of language, customs, values and norms, beliefs, dress code, roles, knowledge and skills. It is passed on from one generation to the next through the process of socialization. Allison and Kamisky (2015) stated that culture can be defined in a variety of ways: this includes it being defined as a verb ('culture' as in micro-bial cells), as a noun ('culture' as a group of beliefs or ideas) or even as an adjective ('cultural' as in cultural tradition).

Additionally, there are various ways of categorizing culture mentioned by Allison and Kamisky (2015) which include it being topical, historical, behavioral, normative, functional, mental, structural and symbolic. When we say culture is topical, this means that culture consists of everything on a list of topics, or categories, such as social organization, religion, or economy, whereas historical culture is passed on from one generation to the next, and means tradition or social heritage (Allison & Kamisky, 2015). Behavioral culture refers to the way people live life, which is shared and learned behavior of humans. Functional culture, on the other hand, focuses on the ability of

humans to adapt to different environments and people, to solve different problems and so forth. Mental culture is how the mind works with regard to ideas and habits that make humans different from other species. Finally, symbolic culture refers to symbols that have meaning and are shared by the society (Allison & Kaminsky, 2015). Rathje (2009) state that the most common understanding of culture is one that imagines a high level of internal uniformity within a social system. They further explain that the concept of culture was previously limited to contexts of ethnicity or nationality. According to Tso (1999), culture describes the social system created by a group of people: it starts from the moment that a few people get together regularly and begin to establish norms and rules through which they will interact and communicate with each other and maintain order. It is about patterns of meaning; it is about shared beliefs, values, perspectives, and worldviews; it is about shared behavior, practices, rules, and rituals (Allison & Kaminsky, 2015; Chan & Tse, 2003).

In the work of Khoza (2006) culture was used in two ways and these include the word being used in both the wide and the narrow sense. In a wide sense this means that culture underlies our social identity; it is the bond that forms clusters of ethnic identities in multicultural societies when we speak of many cultures in one society. However, when we speak of the narrower sense of culture, this refers to the culture that pervades business and business organizations and this grows inside the business itself (Khoza, 2006). Sillars and Kangari (2004) state that culture can also be defined as the business traditions, processes and attitudes that an organization uses in pursuit and performance of its work (Allison & Kaminsky, 2015). Culture represents different ways of relating to other people, and interpreting the world and all environments (Jandt, 2004). Khoza (2006) states that the word 'culture' is layered with meanings and can be confusing. Belshek (2006) also highlights that culture is not a simple concept to define. It has no single definition that has achieved consensus in literature. Therefore, out of the numerous definitions examined, Hofstede's definition of culture guides this study: Culture distinguishes members of one group from another; it is passed on from one generation to another and it always changes owing to additional values inputted by the newer generation (Hofstede, 1980; Belshek, 2006).

2.2. Culture and Construction Education

The construction industry is known for its diversity as it employs people from different backgrounds, perspectives and systems. This would also mean that diversity also exists in the education sector. In considering construction education, there has to be a mention of the construction industry as a whole since the industry determines what the providers of construction education should be teaching students in order to prepare them for the actual industry. According to Wit et. al. (2010), within a contemporary knowledge economy students need new skills for college and careers, and failure to foster these skills and a culture of learning leaves them vulnerable. The Smith Institute (2014) indicates that it has become evident that the construction sector faces a challenge when it comes to recruitment as youngest people are unaware of the range of the available employment opportunities and most recruits happen through referrals.

The Smith Institute (2014) further adds that the industry must use modern ways of attracting recruits and using modern adverts. Furthermore, a culture change is essential in a way that it would be more welcoming to women. The choice to study construction-related courses can be based on or determined by, amongst others, interests, passion, curiosity and the availability of funds. However, according to the ECTE (2005), academic options and choices in some countries are determined by examination scores, sometimes as early as at the age of 13. In terms of colleges and majors to study, parents in some countries give the students no choice when deciding on those choices (ECTE, 2005).

2.2.1 Students' culture in construction education

We are shaped by our view of those outside our defined culture based on the differences in religion, language, ethnicity, values and norms (Baier, 2005). The cultural background of the students shapes their attitudes and values, knowledge base as well as the skill set and these, in turn, influence classroom behaviors, their study habits, their writing styles and faculty student interactions (ECTE, 2005). Also, our identity with regard to where we were born and raised influences our behavior and the ability to adapt to changes (Kagerer & Gandarilla, 2011). In the university environment, students are exposed to different factors that influence their behavior, attitudes, views and perspectives on their studies and these factors may include issues around financing their university fees, their transition from high school to university, the classroom culture in the new institution, the difference in the scope of work, having to work in teams/ groups, and obtaining experiential learning.

2.2.2 Classroom culture in construction education

The (ECTE) (2005) explains that in some cultures, students are expected to remain silent in class, whereas in others, there is a deeper formality where-by students display respect by rising when the professors enter the class-room and they address the professors by titles, hence conforming to a more formal standard of behavior. In construction education the classes are de-signed in a way that the faculty expects to have a level of respect between the university staff (lecturers, tutors) and the students. Sometimes the tu-tors who are selected to offer tutorials to the students are often found to be peers of the students and therefore the level of respect becomes questionable by the students.

2.2.3 Students' culture in collaborative learning

Collaborative learning is a social interaction that involves learners and teachers in a community whereby those members acquire and share knowledge and experience (Zhu, 2012). Collaborative learning involves students working together to complete tasks where the instructor or lecturers hands out a task that should be carried out and completed by a group of students working together to reach a common goal. In some cultures, group dynamics are developed in a more systematic and sustained manner, with greater value placed on interdependence and collaboration than on individual performance (ECTE, 2005). Project success can be observed when the goals of an individual or organization have been met and accomplished. As Kivrak et al. (2009) stated, a successful management of cultural differences is seen as one of the key elements in project success; moreover, it can also enhance organizational effectiveness and give an organization or a group a strong competitive advantage. Additionally, the same can apply in collaborative groups, whether in an educational institution or an actual construction project and it is also worth noting that the opposite can be expected when cultural differences are not managed. The failure to manage cultural differences can possibly lead to delays in project deliveries, de-crease in productivity and a bad image for the organization (Kivrak et al., 2009).

3. Methodology

The study made use of a survey research design. Data for the study were collected from students who registered for Construction related programmes like Construction Management (CM), Quantity Surveying (QS), Civil Engineering and Building Science at a South African higher education institution. Structured questionnaire was used to collect the data. The first section was based on the demographic data of the respondents, Section two relates to the impact of culture on construction education and the questions in this section were based on a Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was examined and criticized by experts to ensure its adequacy and effectiveness in achieving the intended results. The reliability analysis was also carried out on the research instrument as well. One hundred and thirty (130) copies of questionnaire were administered to respondents purposively selected among the students who were registered for Construction related programmes as mentioned above. Out of 130 copies of questionnaire administered, 102 were returned, but one of them was discarded due to incomplete information. Therefore, only 101 were usable, representing a response rate of 78 per cent that was deemed viable for statistical analysis for this study. Data were analyzed using percentage and the mean item score (MIS) to derive straight-forward totals and rank the variables. MIS was computed using the following formula:

$$\text{MIS} = \frac{1n_1 + 2n_2 + 3n_3 + 4n_4 + 5n_5}{\Sigma N}$$

where;

n1 = the number of respondents for 'strongly disagree';

n2 = the number of respondents for 'disagree';

n3 = the number of respondents for 'neutral';

n4 = the number of respondents for 'agree';

n5 = the number of respondents for 'strongly disagree';

N = the total number of respondents

4. Results and Discussion of Findings

4.1. Background Information of the Respondents

This section gives insights about the background information of the respondents. The results from the questionnaire survey indicate that, in terms of the ethnicity of the respondents, majority of the respondents were African with a percentage of 90 per cent, followed by whites at 6 per cent, Indian or Asian at 3 per cent and 1 per cent were colored. Also, 84 percent of the respondents are single, 12 per cent are married, 4 per cent are co-habiting and none of the respondents were divorced or widowed. Further, the result showed that 90 per cent of the respondents were South African, while the remaining 10 per cent non-South African.

Additionally, the result indicated that of the total students participated in the study, 82 per cent are currently registered for a B. Tech. degree while 18 per cent of them are registered for third year in Building science. The respondents currently registered for the B.Tech. degree are registered for various courses: 46 per cent of them are registered for Quantity Surveying, 28 per cent for Construction Management and 10 per cent for Civil Engineering and the 17 per cent represents those registered for third-year Building Science. Also, when asked who is funding their university fees, the result revealed that 34 per cent of the respondents said that they are responsible for their own fees, 30 per cent of the respondents are studying through a bursary, 23 per cent of the respondents' fees are paid by their parents, 5 per cent of the respondents are studying through NSFAS, another 5 per cent are studying through scholarships and 3 per cent are making use of study loans.

4.2. Findings

As part of the influence of culture on education of students, the students were asked about the way in which they address their lecturers. The results revealed that 69 per cent of the respondents address their lecturers by title and surname, 19 per cent use 'Sir/Madam' and 12 per cent said that they refer to their lecturers by name as shown in Figure 1.

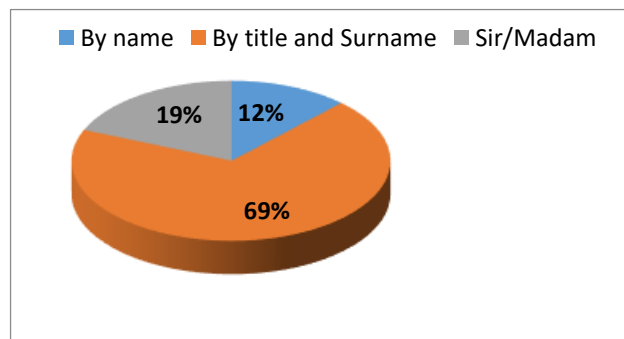


Figure 1. Ways students address lecturers

The findings, as shown in Figure 2, further revealed that a failure to manage cultural differences in collaborative learning could lead to a decrease in productivity and 31 per cent of the respondents agreed with this factor, 21 per cent indicated that it may cause delays in project deliveries, 17 per cent of the respondents said that it may create a bad image for the group, 16 per cent said it leads to project failure and 15 per cent of the respondents said that it gives the group a weak competitive edge.

Furthermore, the study sought to understand the extent to which the cultural backgrounds affects the students' behaviour. The findings indicated that the cultural background influences the students' values more than the other factors and the respondents ranked this factor first with an MIS score of 4.09. Attitude was ranked second with an MIS score of 4.08; ranked third was the student interactions with an MIS score of 4.03; ranked fourth was the study habits with an MIS score of 3.81; ranked fifth was the classroom behaviour with an MIS score of 3.78; and ranked sixth was the writing styles with an MIS score of 3.65.

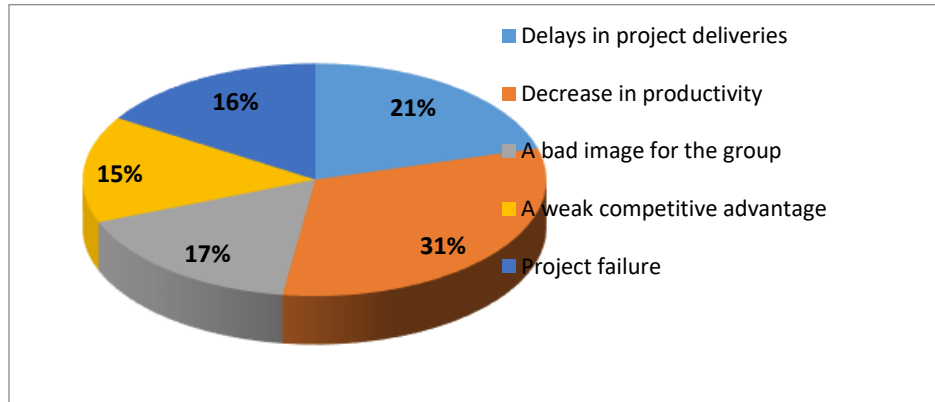


Figure 2. Effects of the failure to manage cultural differences

In addition, ranked seventh was the ability to change with an MIS score of 3.60; ranked eighth was the knowledge base with an MIS score of 3.60; ranked ninth was the influence on the skill set with an MIS score of 3.50 followed by an MIS score of 3.50 for the abilities to learn which was ranked tenth and last.

Table 1. Influence of cultural backgrounds on students' behaviour

Cultural backgrounds influence the students	MIS	RANK
Values	4.09	1
Attitudes	4.08	2
Student interactions	4.03	3
Study habits	3.81	4
Classroom behaviour	3.78	5
Writing styles	3.65	6
Ability to change	3.60	7
Knowledge base	3.60	8
Skill set	3.50	9
Abilities to learn	3.50	10

4.3. Discussion of Findings

The ECTE (2005) explains that in some cultures, students are expected to remain silent in class, whereas in others, there is a stricter formality whereby students display respect by rising when the professors enter the classroom and they address the professors by titles, hence following a more rigid standard of behaviour. The survey study showed that within construction education, 69 per cent of the respondents reported that they refer to their lecturers by title and surname, 19 per cent reported that they use "Sir/Madam" and 12 per cent said they refer to their lecturers by name. This clearly shows that in some cultures there is a stricter level of formality whereby students address their professors and lecturers by titles, hence conforming to a more rigid standard of behaviour and confirming the results of the ECTE (2005) study.

Also, Kivrak *et al.* (2009) outlined that successful management of cultural differences is seen as one of the key elements in project success; that it can also enhance organisational effectiveness and give an organisation or a group a strong competitive advantage: a failure to manage cultural differences can possibly lead to delays in project deliveries, decrease in productivity and a bad image for the organisation. The study findings of impact of culture on construction education revealed that a failure to manage cultural differences in collaborative learning could lead to a decrease in productivity: it may cause delays in project deliveries, it may create a bad image for the group, it leads to project failure and it gives the group a weak competitive edge. These findings support the views of Kivak *et al.* (2009) about the failure to manage cultural differences.

Further, the research findings revealed that the cultural background influences the students' values, attitudes, student interactions, the study habits, the classroom behaviour, the writing styles, the ability to change, the knowledge base, the skill set and the abilities to learn of construction students. The findings were in agreement with the study by ECTE (2005) which highlighted that the cultural background of the students shapes their attitudes and values, knowledge base as well as the skill set and these, in turn, influence classroom behaviours, their study habits, their writing styles and faculty student interactions. The findings are also in agreement with the study by Baier (2005) that indicates that we are shaped by our view of those outside our defined culture based on the differences in religion, language, ethnicity, values and norms. Also, our identity with regard to where we were born and raised influences our behaviour and the ability to adapt to changes (Kagerer & Gandarilla, 2011).

5. Conclusions and Implications of Research Findings

The findings indicated that cultural background influences the construction students' values more than the other factors such as attitude, student interactions, the study habits, classroom behaviour, the writing styles, the ability to change, the knowledge base, the influence on the skill set, and the abilities to learn. Furthermore, most of the respondents reported that they refer to their lecturers by their titles and surnames and only a few of the respondents said that they use either 'Sir/Madam' or they just refer to their lecturers by name.

A failure to manage cultural differences in collaborative learning could lead to a decrease in productivity; it may cause delays in project deliveries; it may create a bad image for the group; it leads to project failure, and it gives the group a weak competitive edge.

From the above findings, it is evident that the cultural background of the students influences their attitudes and values, the knowledge base and the skill set. These in turn influence the classroom behaviours, study habits, the writing styles and their student interactions. Additionally, people's identity regarding where they were born and raised influences their behaviour and ability to adapt to changes.

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