

# CASE STUDIES AS A LEARNING METHOD: THE EXAMPLE OF SUSTAINABILITY AT THE HERIT HERITAGE SITE OF UM QAIS/JORDAN

**Mairna Hussein Mustafa**<sup>1</sup>

*Department of Sustainable Tourism-Hashemite University, Queen Rania Faculty of  
Tourism and Heritage, Jordan*

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## ABSTRACT

*This paper aims at testing the influence of using case studies as a teaching method for the topic of heritage sites' sustainability. The heritage site of Um Qais was selected for this purpose. A sample of 70 students (control and experience groups, 33 and 26 responded, respectively out of 35 for each) in a Tourism Management BA Program filled a questionnaire that focused on measuring agreement and satisfaction of students on variables related to pro-environmental behavior (awareness of consequences and value orientations), and the performance of stakeholders in developing and managing heritage sites. It was noticed that students who were introduced to the case study of Um Qais had higher means for variables related to awareness of consequences and value orientations, and lower levels of satisfaction for performance of public sector, significant differences were also recorded for some variables in these indices.*

**Keywords:** Case Studies, Teaching Methods, Awareness of Consequences, Value Orientations, Satisfaction about Performance, Sustainability of Heritage Sites, Um Qais/Jordan.

## INTRODUCTION

Making students involved in the learning process ensures its effectiveness (Sivan et al., 2001); a method to achieve this goal is the use of case studies, which according to Grant (1997), derive their significance from being interactive in nature, thus shifting learning process from being teacher-centered to become more student-centered. A case study was defined as a "story with a hidden message or a narrative that describes an actual or realistic situation in which an individual or a group has to make a decision or solve a problem" (Killen, 2006). It is also an example that gives insight into problems with illustrating main ideas (Fry et al., 1999).

The benefits of using case studies are clearly seen in increasing students' motivation and their interest in subjects (Mustoe & Croft, 1999), stimulating dialogue (Badger, 2010), linking between theory and practice (Olkum et al., 2009), encouraging deep learning, promoting interaction between teachers and students,

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<sup>1</sup> Correspondence to: Mairna Hussein Mustafa, Department of Sustainable Tourism-Hashemite University, Queen Rania Faculty of Tourism and Heritage, P.O. Box 330127 Postal Code 13115 Zarqa, Jordan, Tel: 00962-5-3903333-5103; E-mail: mairna@hu.edu.jo

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making learning more enjoyable (Ngcobo, 2008) and promoting the development of analytical skills by students (Herreid et al., 2011). As cited by Anderson & Krathwohl (2000), case studies facilitate development of the higher levels of Bloom's taxonomy of cognitive learning; moving from remembering of knowledge to analysis, evaluation and creation.

Case studies take many forms; these can be: formal written cases, newspaper articles, movie clips, media news story, pictures, mathematical word problems, pieces of art or any other (Golich, 2000). According to McGuire & Whaley (2017), there are different types of case studies, these include: critical incidents that are short and compact cases that focus on one event or issue with little contexts; descriptive illustrations that describe actions taken by an organization; problem-identification cases that help students to prioritize information and identify, define or re-define a problem; decision-focused cases that ask the reader to make a decision or give advice on decisions to be made; application cases where students apply a concept, theory, typology, calculation or model to test fitness of theory to data; contextual issue cases used to explore the context around an ethical and/or legal issue; live cases where information is provided orally in a field visit or a classroom; and multimedia cases that engage students at different cognitive levels.

In order to develop a teaching case study, objectives of teaching should be developed and sufficient information should be gathered on the issue tackled, the case study is then to be written and structured as following: an interesting reflective title, an introduction that sheds the light on the problem and parties involved, the main body that includes the story and exhibits as the case require to make reader know extra information. Not less important is setting teaching notes, which give insights on how to use and prepare for the case study, additional information sources and issues to be brought by teacher during discussion, and criteria used to evaluate students (Balakrishnan, 2010). When being presented in class; case study's key concepts should be identified and clarified to students, who are then asked to work in groups; then participate in a discussion where they are inquired to give their suggested solution to the case. The teacher in this case is a facilitator of the discussion by asking questions to make the reasoning behind the suggested solutions and ask other students to evaluate them (Giacalone, 2016). Assessment of case studies as a final step is usually offered at the end of the class discussion for formative and summative purposes (Biggs & Tang, 2011). Evaluating the effectiveness of case studies in teaching can be done in several ways, these include: surveys given to students where levels of understanding and agreements are measured on quantified scales (e.g. Iahad et al., 2013; Bonney, 2015), by measuring attitudes of students toward an issue (Akengin & Aydemir, 2012) or by comparing results gained by students in evaluation of courses they take (e.g. Pilato & Ulrich, 2014). Experiment vs. control groups or pre vs. post using case study approaches are also used in making comparisons among different groups involved for this purpose.

Some literature works investigated significance of manipulating case studies in teaching within different disciplines, these were for example: chemistry (Bennett & Cornely, 2001; Cheng, 1995); biology (Camill, 2000); physiology (Cliff, 2006); biochemistry (Cornely, 1998); medicine (Dayal et al., 2008; Sandstorm, 2006); engineering (Woods, 1996; Yadav et al., 2010); environment (Biegel et al., 1998), economics (Carlson & Schodt, 1995), accounting (Knechel, 1992); and psychology (Mayo, 2004).

Sustainability as a topic was also discussed in literature; some examples are: using case studies as an interdisciplinary approach to connect the theory and practice of environmental law courses with other disciplines (Hammer, 1999); implementing multidisciplinary case studies to help engineering students in understanding the concepts of sustainability (Perdan, 2000); using case studies to promote the benefits of sustainable development to business in MBA university programs (Willard, 2004); applying trans-disciplinary case study approach to assist students in experiencing sustainable development, and in exploring how regions can achieve ecologically, economically and socially sustainable development in the future (Steiner & Posch, 2006); and presenting the trans-disciplinary case study as a learning framework to learn competencies needed for research on sustainable development (Stauffacher et al., 2006). The general outcome of these research works is that case studies have proved to be a very effective learning method to understand different theoretical concepts and develop critical and reflective thinking skills by students. Though, one of the sustainability areas that was not sufficiently discussed in literature is the one concerning heritage sites; therefore, the heritage site of Um Qais was selected to test the influence of using case studies as a teaching method in making students recognize the value of heritage sites, and the possible impacts of tourism development on them, also to help students evaluate different policies taken to achieve their sustainability.

### **SUSTAINABILITY OF HERITAGE SITES**

The World Commission on Environment and Development (1987) defined sustainable development as ‘a process to meet the needs of the present without compromising the ability of future generations to meet their own needs.’ Such definition embeds the use of different resources in order to meet the needs of societies; which is formed by three dimensions: the economic sustainability which aims at achieving prosperity for society and effectiveness of economic activities on the long term; the social sustainability which stresses the respect of human rights, equality in gaining benefits, tolerating cultural differences and avoiding exploitation; and environmental sustainability based on conserving and managing resources, most particularly the non-renewable or precious ones in terms of life support (World Tourism Organization (UNWTO) & United Nations Environmental Program (UNEP), 2005). Heritage sites form a significant part of non-renewable cultural resources and tourism attractions (Richards, 1996); beside their interpretive and educational value (Henry, 1993), they create the personal and collective identity of the society; they form a vital source of economy for enterprises and communities through the expenditures of visitors (Timothy & Boyd, 2003). Tourism on the other hand is a helping factor to conserve the cultural heritage by providing a source of fund for the minimum level of maintenance and conservation (Yunis, 2000). Though, tourism development in some cases can cause an actual problem, which is basically the physical damage and destruction of monuments by negative tourists’ activities and random navigation within heritage sites, also by inappropriate forms and actions of tourism development (Herrmann, 1989). Such matters should be the focus of educational programs concerned with cultural resources development and management; consequently, two critical sustainability issues should be addressed: pro-environmental behavior, and the performance of stakeholders in developing and managing these sites.

As stated by Hines et al. (1986 & 1987), pro-environmental behavior is influenced by different variables: cognitive variables, psycho-social variables, class room’s strategies, demographic variables, experimental studies and situational

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factors. As for cognitive variables, these are the factors pertaining to the knowledge of environmental issues, such as awareness of environmental problems and their consequences, also ways of solving them. Individuals who have such knowledge are more willing to engage in responsible environmental behaviors. Psycho-social variables include (value/attitude/norm-behavior relationships); individuals who hold more positive values and attitudes are more likely to have reported engaging in environmental behaviors than those without it. These two types of variables were conceptualized in this context to test the significance of case studies in teaching sustainability of heritage sites. The following is an explanation of selected theoretical concepts.

### **Awareness of Consequences**

Awareness of consequences is a disposition of awareness about the potential consequences of one's acts for the welfare of others during the decision-making process (Schwartz, 1968). The behavior of an individual might be influenced by what that individual knows about the consequences following his actions (Gross & Niman, 1975). In this study, the concept was measured through evaluating the awareness of respondents about impacts caused by different behaviors and forms of development taking place at heritage sites.

### **Value Orientations**

Values are modes of conduct or desirable end states of existence (Rokeach, 1973). They do not explain much of the variability among the specific behaviors of individuals (Fulton et al., 1996), basic beliefs (value orientations) then contribute to the understanding of general values on the more specific behaviors (Vaske & Donnelly, 1999), these differ in their patterns of direction and intensity (Fulton et al., 1996). Different patterns of value orientations according to the environmental concern were suggested in literature, Stern et al. (1993) for example grouped orientations as social-altruistic, biospheric and egoism. Vaske & Donnelly (1999) proposed two directions of value orientations for a continuum; these were: the anthropocentric approach, which allocates the natural resources to serve human needs and benefits and the biocentric orientation, which elevates nature and species to the center stage. A continuum of value orientations (derived from Mustafa, 2005) was used in this study, where different kinds of basic beliefs reflected how individuals would value heritage sites; one end of the continuum represents their economic value, while the other end considers the right of existence and protection of these sites.

### **Satisfaction about Performance**

Many definitions were given to satisfaction; it is a feeling generated from an evaluation of the use experience (Cadotte et al., 1987); Oliver (1997) defined it as the judgment that a provided product is of a pleasurable level of consumption. Satisfaction represents the response of the end user (Giese & Cote, 2002). It is an evaluation process, regardless of the context or targeted group. Since attitude is "tendency expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993), then satisfaction can be considered as a form of attitude, reflecting then a psycho-social variable influencing pro-environmental

behavior. In this study, satisfaction was measured for items about performance of public sector in managing the heritage site under discussion and solving its development problems.

### **The Selected Case of Um Qais**

The Site of Um Qais (the Greco-Roman Decapolis town of Gadara) is 120 km north of Amman (Jordan). It is overlooking both Lake Tiberias and the Golan Heights (Teller, 2006). In 1806, the German traveler Ulrich Seetzen identified the ancient ruins of the city; Romans frequently visited the city as a resort since they were enjoying the nearby al-Hemma hot springs (Weber & Khouri, 1989). In present, domestic and international tourists come to enjoy its scenic and heritage features.

In the 1890's, there was an occupation that took the form of a small Ottoman village, of which many cottages and small houses can be witnessed today among the Roman remains. A modern village then appeared and continued till 1986, when 1500 inhabitants changed their settlements after accepting payments from the Ministry of Tourism and Antiquities, so that archaeological work can be continued in the city. During the 1990's, the ministry renovated a number of these Ottoman houses to include a rest house and a museum (Teller, 2006). Since the time of developing the site of Um Qais for tourism, some impacts took place and affected both the remains and the local community, the Government sold villagers new housing units, after which herding animals, farming and cultivating olive trees all declined as a source of income. Most locals were forced to look for other jobs in nearby urban centers as Irbid (Traditional Mediterranean Architecture (TMA), 2001). After a long period of marginalization and displacement, the role of locals has been improving after developing plans for tourism and visitors' management, also, therapeutic tourism sites of Himmeh and Mukhaibat witnessed a recent expansion of local rest-houses along the spring water sources, also a small hotel, guided tours and few handicrafts projects started to flourish and produce job opportunities to locals. Some negative impacts are threatening natural and cultural environments at the site; the excessive excavations with limited restoration and the reconstruction of some features that does not fit proper principles of conservation are accelerating the deterioration of architectural remains (el-Khalili, 2012). Another threat is the growing plants and weeds between structures; beside their destructive effect, using herbicides to kill these weeds by the Antiquities Directorate is causing air pollution; ground ozone was found to exceed limits set by World Health Organization, thus being harmful to humans and other living creatures, it also expedites erosion and deterioration rates of rocks at Umm Qais (Abu al-Labban & el-Khalili, 2012). The littering, graffiti and random movement of tourists is another threat to the site, the excessive visitation makes stepping on neglected mosaic floors and stone tiles inside ancient buildings a serious problem. School trips frequently cause impacts of littering, noise and random climbing. Moreover, the illicit excavations by locals are witnessed in different spots of the site.

### **DEVELOPING THE CASE STUDY**

The case study of Um Qais was developed as one of the teaching methods for a course entitled (Tourism Destinations Management), which is a compulsory requirement in a BA Tourism Management Program. The aim of this course is to

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make students familiar with roles of different stakeholders and visitor management tools as relate to different kinds of tourism destinations.

The case study was written and composed of the following parts: an introduction on the archaeological and historical significance of the site of Um Qais, the story of tourism at the site and how it influenced the environment and local community, then different actions taken by stakeholders were presented to students. Illustrative materials of captured photos and videos about different impacts, and locals expressing their opinions on tourism development were also used.

## **METHODOLOGY AND INSTRUMENT**

A random sample of 70 students (most of them had previous visits to the site) were targeted to fill the questionnaire of this study (by calculating the sample size needed with a confidence level of 90% and a margin of error of 10%, it should be at least 68). This sample was divided into two subgroups: 35 students in (Tourism Destinations Management) course were introduced comprehensively to the significance, history and impacts of tourism development at the site of Um Qais (33 students responded) (see the previous section), then they were asked to fill a questionnaire with being guided by the instructor. The other 35 students (not from the same course) were given a very brief explanation about tourism development and its impacts and then they were also asked to fill the same questionnaire (only 26 responded). Such method was used to test statistical differences for the influence of case study as a teaching method.

The questionnaire included the following sections: the first section was for information about students as gender (35 were females and 24 were males) and study level (first year: 16, second year 18, third year: 14, and fourth year: 11). The second section was composed of 3 indices measured on five-point scales; this was as follows: the index of awareness of consequences was measured on the scale (1: Not harmful at all, 2: Not really harmful, 3: Moderately harmful, 4: Harmful, 5: Very harmful); the index of value orientation was measured on the scale (1: Strongly disagree, 2: Disagree, 3: Neutral, 4: Agree; 5: Strongly Agree); and the index of evaluating the performance of public sector in managing and solving different issues related to the tourism development at the site, this one was measured on the scale (1: Very unsatisfied, 2: Unsatisfied, 3: Neutral, 4: Satisfied, 5: Very Satisfied), see Table 1 for items and descriptive statistics.

## **ANALYSIS AND RESULTS**

The results show that most of the mean scores for the index of awareness of consequences were generally between 3 to 5 (Moderately harmful to Very harmful), this indicates a high level of awareness on the influence of negative actions of visitors, environmental problems and marginalizing of locals in tourism development. The variables of highest mean scores were those for the impacts of: illicit excavations (M=4.6724, SD=0.63212), graffiti (M=4.1897, SD=0.84722) and limiting the conservations to few features of the site (M=4.2241, SD=1.22894) (Table 1).

**Table 1. Descriptive statistics of observed variables for the concept of awareness of consequences.**

Questions	N	M	SD
How much harmful to the site is having animals for tourists to ride?	59	2.8475	1.32370
How much harmful to the site is having grazing cattle within?	59	3.6271	1.40072
How much harmful to the site is conserving only few heritage features?	58	4.2241	1.22894
How much harmful to the site is having littering in some areas?	59	4.1695	0.98528
How much harmful to the site is leaving mosaic floors uncovered?	59	4.1356	1.10575
How much harmful to the site is the random movement of tourists?	59	3.1864	1.19589
How much harmful to the site is the negative behavior of school students?	59	4.0678	0.73963
How much harmful to the site is the air pollution?	59	4.0508	0.93631
How much harmful to the site is having illicit excavations taking place?	58	4.6724	0.63212
How much harmful to the site is graffiti on heritage features?	58	4.1897	0.84722
How much harmful to the site is the lack of interpretation for some sites features?	58	3.4483	0.86191
How much harmful to the site is marginalizing locals in tourism development?	56	3.6250	1.07132
How much harmful to the site is having limited tourist facilities?	57	3.4561	0.98326

*\* These variables were measured on the scale (1: Not harmful at all, 2: Not harmful, 3: Moderately harmful, 4: Harmful, 5: Very harmful)*

For the concept of value orientations, there was a general high level of agreement among the respondents where it ranged from 3 to 5 (Neutral to Strongly agree), the variables with highest mean scores were for the protection of heritage sites for future generations (M=4.7458, SD=0.65898) and spending money for protecting these sites (M=4.5593, SD=1.00466) (Table 2).

**Table 2. Descriptive statistics of observed variables for the concept of value orientations.**

Questions	N	M	SD
Heritage sites are considered important since they form a source of income to local communities	59	4.3559	0.86628
Heritage sites are places of educational and scientific significances	59	4.4576	0.77286
Heritage sites should be protected for future generations	59	4.7458	0.65898
Money should be spent to protect heritage sites	59	4.5593	1.00466
Tourists should be restricted from reaching sensitive areas in heritage sites if their movements cause their destruction	59	4.2712	1.28426
The satisfaction of tourists should be given the priority in developing tourist sites	59	3.5763	0.87501
The satisfaction of locals should be given the priority in developing tourist sites	59	3.8814	1.11548

*\* These were measured on the scale (1: Strongly disagree, 2: Disagree, 3: Neutral, 4: Agree; 5: Strongly Agree)*

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It was noticed that low levels of satisfaction were recorded for the performance of public sector, most of the results were between 2 and 3 (Unsatisfied to Neutral), the variable with the lowest mean was for the provision of facilities at the site ( $M=2.7797$ ,  $SD=1.45113$ ), while the variable for providing interpretational methods at the site ( $M=3.0678$ ,  $SD=1.44871$ ) (Table 3).

**Table 3. Descriptive statistics of observed variables for the concept of satisfaction about performance of public sector.**

Questions	N	M	SD
How do you evaluate the performance of tourism public sector regarding the conservation works at the site?	59	2.9831	1.86151
How do you evaluate the performance of tourism public sector regarding locals' involvement in tourism development?	59	2.8475	1.07981
How do you evaluate the performance of tourism public sector regarding interpretational methods provided to tourists at the site?	59	3.0678	1.44871
How do you evaluate the performance of tourism public sector regarding negative behaviors of tourists at the site?	59	2.9831	1.13702
How do you evaluate the performance of tourism public sector regarding tourists' facilities provided at the site?	59	2.7797	1.45113

*\*These variables were measured on the scale (1: Very unsatisfied, 2: Unsatisfied, 3: Neutral, 4: Satisfied, 5: Very Satisfied)*

By looking at the descriptive statistics for the two groups investigated, it was noticed that students who were introduced to the case study of Um Qais had higher means for variables related to awareness of consequences and value orientations, and lower levels of satisfaction for performance of public sector (Table 4).

**Table 4. Descriptive statistics of the two groups in the sample for indices of observed variables.**

Questions	Was the student introduced to the story of the site?	N	M	SD
<b>Awareness of Consequences</b>				
<b>These were measured on the scale (1: Not harmful at all, 2: Not really harmful, 3: Moderately harmful, 4: Harmful, 5: Very harmful)</b>				
How much harmful to the site is having animals for tourists to ride?	Yes	33	3.2121	1.19262
	No	26	2.3846	1.35873
How much harmful to the site is having grazing cattle within?	Yes	33	4.1212	0.85723
	No	26	3.0000	1.69706
How much harmful to the site is conserving only few heritage features?	Yes	33	4.4545	1.09233
	No	25	3.9200	1.35154



How much harmful to the site is having littering in some areas?	Yes	33	4.1515	0.90558
	No	26	4.1923	1.09615
How much harmful to the site is leaving mosaic floors uncovered?	Yes	33	4.3636	0.78335
	No	26	3.8462	1.37673
How much harmful to the site is the random movement of tourists?	Yes	33	3.5455	1.06334
	No	26	2.7308	1.21845
How much harmful to the site is the negative behavior of school students?	Yes	33	4.1818	0.68258
	No	26	3.9231	0.79614
How much harmful to the site is the air pollution?	Yes	33	4.2424	0.70844
	No	26	3.8077	1.13205
How much harmful to the site is having illicit excavations taking place?	Yes	32	4.7500	0.56796
	No	26	4.5769	0.70274
How much harmful to the site is graffiti on heritage features?	Yes	32	4.1875	0.82060
	No	26	4.1923	0.89529
How much harmful to the site is the lack of interpretation for some sites features?	Yes	32	3.5313	0.80259
	No	26	3.3462	0.93562
How much harmful to the site is marginalizing locals in development?	Yes	31	4.0323	0.79515
	No	25	3.1200	1.16619
How much harmful to the site is having limited tourist facilities?	Yes	32	3.6563	0.82733
	No	25	3.2000	1.11803
<b>Value Orientations</b>				
<b>These were measured on the scale (1: Strongly disagree, 2: Disagree, 3: Neutral, 4: Agree; 5: Strongly Agree)</b>				
Heritage sites are considered important since they form a source of income to local communities	Yes	33	4.6061	0.60927
	No	26	4.0385	1.03849
Heritage sites are places of educational and scientific significances	Yes	33	4.5758	0.66287
	No	26	4.3077	0.88405
Heritage sites should be protected for future generations	Yes	33	4.9091	0.29194
	No	26	4.5385	0.90469
Money should be spent to protect heritage sites	Yes	33	4.6970	0.58549
	No	26	4.3846	1.35873
Tourists should be restricted from reaching sensitive areas in heritage sites if their movement cause their destruction	Yes	33	4.4848	1.06423
	No	26	4.0000	1.49666
The satisfaction of tourists should be given the priority in developing tourist sites	Yes	33	3.4242	0.86712
	No	26	3.7692	0.86291
The satisfaction of locals should be given the priority in developing tourist sites	Yes	33	4.0606	1.24848
	No	26	3.6538	0.89184
<b>Evaluation of Performance</b>				
<b>These were measured on the (1: Very unsatisfied, 2: Unsatisfied, 3: Neutral, 4: Satisfied, 5: Very Satisfied)</b>				

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How do you evaluate the performance of tourism public sector regarding the conservation works at the site?	Yes	33	2.2424	1.06155
	No	26	3.9231	2.22572
How do you evaluate the performance of tourism public sector regarding locals' involvement in tourism development?	Yes	33	2.5758	1.03169
	No	26	3.1923	1.05903
How do you evaluate the performance of tourism public sector regarding interpretational methods provided to tourists at the site?	Yes	33	2.3939	1.32144
	No	26	3.9231	1.12865
How do you evaluate the performance of tourism public sector regarding negative behaviors of tourists at the site?	Yes	33	2.8182	1.10268
	No	26	3.1923	1.16685
How do you evaluate the performance of tourism public sector regarding tourists' facilities provided at the site?	Yes	33	2.5758	1.58174
	No	26	3.0385	1.24838

A T-test was conducted to examine the differences between the group of the students who were involved in presenting and discussing the selected case study and those who were briefly informed about the impacts of tourism development at the site of Um Qais. The results show that significant differences were variably found in the 3 indices of this study. For the concept of awareness of consequences, the variables with p-values < 0.05 were those concerning riding animals ( $t=2.488$ ,  $p=0.016$ ), having grazing cattle within the site ( $t=3.303$ ,  $p=0.002$ ), random movement of tourists ( $t=2.740$ ,  $p=0.008$ ) and marginalizing locals from tourism development ( $t=3.471$ ,  $p=0.001$ ). There were only two variables of significant differences in the value orientation index, these were for the importance of heritage sites as sources of income ( $t=2.622$ ,  $p=0.011$ ) and the need to protect heritage sites for future generations ( $t=2.216$ ,  $p=0.031$ ). For the index of satisfaction about public sector performance, the following variables had significant differences: conservation works that took place at the site ( $t=-3.826$ ,  $p=0.001$ ), locals' involvement in tourism development ( $t=-2.253$ ,  $p=0.028$ ) and the provision of interpretational methods at the site ( $t=-4.700$ ,  $p=0.001$ ) (Table 5).

**Table 5. T-test comparisons between the two groups in the sample for indices of observed variables.**

Questions	t	p
How much harmful to the site is having animals for tourists to ride?	2.488	0.016
How much harmful to the site is having grazing cattle within?	3.303	0.002
How much harmful to the site is conserving only few heritage features?	1.666	0.101
How much harmful to the site is having littering in some areas?	-0.157	0.876
How much harmful to the site is leaving mosaic floors uncovered?	1.820	0.074
How much harmful to the site is the random movement of tourists?	2.740	0.008
How much harmful to the site is the negative behavior of school students?	1.343	0.185
How much harmful to the site is the air pollution?	1.805	0.076
How much harmful to the site is having illicit excavations taking place?	1.038	0.304
How much harmful to the site is graffiti on heritage features?	-0.021	0.983
How much harmful to the site is the lack of interpretation for some sites features?	0.811	0.421

How much harmful to the site is marginalizing locals in development?	3.471	0.001
How much harmful to the site is having limited tourist facilities?	1.771	0.082
Heritage sites are considered important since they form a source of income to local communities	2.622	0.011
Heritage sites are places of educational and scientific significances	1.331	0.188
Heritage sites should be protected for future generations	2.216	0.031
Money should be spent to protect heritage sites	1.190	0.239
Tourists should be restricted from reaching sensitive areas in heritage sites if their movements cause their destruction	1.453	0.152
The satisfaction of tourists should be given the priority in developing tourist sites	-1.520	0.134
The satisfaction of locals should be given the priority in developing tourist sites	1.402	0.166
How do you evaluate the performance of tourism public sector regarding the conservation works at the site?	-3.826	0.000
How do you evaluate the performance of tourism public sector regarding local's involvement in tourism development?	-2.253	0.028
How do you evaluate the performance of tourism public sector regarding interpretational methods provided to tourists at the site?	-4.700	0.000
How do you evaluate the performance of tourism public sector regarding negative behaviors of tourists at the site?	-1.261	0.212
How do you evaluate the performance of tourism public sector regarding tourists' facilities provided at the site?	-1.221	0.227

### CONCLUSION

Overall, the descriptive statistics have shown that case study approach helped in making students more aware of the value of heritage sites, also the consequences of inappropriate behaviors or forms of development, moreover, to better see the weaknesses by public sector in solving developmental issues related to local involvement, conservation and provision of a better experience at the site.

For the significant statistical differences between the two groups, it is noticed that introducing the detailed case study of Um Qais had its influence in creating such differences. In the index of awareness of consequences, the variables that had significant differences were for riding animals within the site, grazing cattle, leaving mosaics uncovered, random movement of tourists and marginalizing local community from tourism development. Such problems are not of an immediate and visible effect, they usually take a long period of time to show an accumulative effect, which makes them not recognized among many people. For the index of value orientations, besides having high means for its variables by the two groups of students, the only two variables of significant differences were for the value of heritage site as a source of income, and for the need to protect the site for future generations. This can be simply justified by the fact that presenting the case study, and explaining how many locals were displaced and forced to find new sources of income other than agriculture, all made respondents recognize the importance of involving this local community in tourism development, whether in the present or for the long term future.

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Using videos and illustrative material helped the experience group in recognizing the shortages in actions taken by the Public sector (presented in the Ministry of Tourism and Antiquities), this could be seen in the significant differences for the variables related to conservation works done, involving locals in tourism development and provision of interpretational methods at the site. Such results (even with the limitation of small sample size) confirms the importance of using case studies in teaching sustainability, and in creating well qualified human resources needed in managing and developing heritage sites. According to Hedden et al. (2017), such method ensures that students are fully immersed in the learning process through problem solving and critical thinking beyond classroom position, this will help students to become future decision makers, problem solvers and agents of change, this will translate into solving real-world sustainability problems, and thinking critically about sustainability-matters.

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