



# RESEARCH PAPER

## Can education reduce Middle Eastern fatalistic attitude regarding earthquake disasters?

Fatalistic attitude  
regarding  
earthquake  
disasters

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### Abstract

**Purpose** – The purpose of this paper is to discuss the unique and necessary role that Middle Eastern educational institutions must play to reduce the negative influence of fatalism regarding risk perception and disasters.

**Design/methodology/approach** – This paper is based on conceptual analysis and real situational cases to confirm the existing fatalistic attitudes in the Middle Eastern communities and shows how education can be used to reduce and limit the negative effects of such fatalism on earthquake risk mitigation.

**Findings** – The paper calls for the integration of critical thinking along with disaster risk education throughout the schools' system to reduce the dominating culture of fatalism and to facilitate the implementation of disaster risk reduction strategies in the Middle Eastern communities. In addition, the assistance of the religion instructors and clergy, in reducing fatalistic attitudes has positive implications.

**Originality/value** – The paper represents an effort to accelerate the implementation of earthquake disaster risk reduction strategies in the Middle Eastern vulnerable communities. It uncovers the mask on one of the most critical social issues that has for long time hindered social progress in the Middle East region.

**Keywords** Middle East, Disasters, Educational institutions, Fatalism

**Paper type** Viewpoint

### 1. Introduction

Disaster risk reduction in the Middle Eastern countries cannot be implemented solely on the basis of these nations' vulnerability in isolation from the current social, religious and political contexts. In that region of the world, religion has a profound influence on almost all aspects of individuals' lives and on all facets of the community. Religion contributes heavily to the formation of people's political views and social attitudes. The power of both education and the scientific discoveries that have transformed nations and advanced communities around the world during the last few centuries have fallen short with regard to transforming the Middle Eastern countries and transforming them into economically more nations. The existing educational institutions have implemented programmes that have failed to induce the progressive and critical thinking that is necessary for creating intellectual citizens with logical and positive attitudes towards the well-being and safety of their communities. As critical thinking has proven to improve the way people utilise, evaluate, judge and interpret information, academic programmes tend to engage their students in this process and help them build upon their prior knowledge and experience to recognise, and critique assumptions (Bailin *et al.*, 1999; Facione *et al.*, 1995; Rapps *et al.*, 2001).



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Education can be referred to as a process that brings about changes in societal behaviour. It is a process of enlightenment that enables individuals to effectively contribute to the progress of their societies (Brown, 1932). Today, the role of education as an instrument of social change is widely recognised. Education has brought about phenomenal changes in people's attitudes towards every aspect of life. In most Middle Eastern countries, private schools are confessional in nature and many offer religious education only according to the confessional identity of the school (Leirvik, 2004; Rugh, 2002). In such an environment, education becomes a tool to promote certain ideological, religious or nationalist views (Adwan, 1998), where programmes and teachers continue to reinforce traditional views and attitudes. Thus, educational systems have remained as a means of social control rather than an instrument of social evolution. Although in the western countries religious education can still exist, critical thinking is taught and emphasised.

Education in the majority of Middle Eastern communities excludes the possibility of subjecting religious and cultural beliefs to rational and critical investigation, lest it might erode their certainty and shake their faith. It rejects the subjection of existing knowledge and beliefs to revision when new evidence threatens and challenges its reliability. Thus, a strong existing state of denial to questioning, verifying, criticising, evaluating and making judgments in favour of the uncritical acceptance of authority (Halstead, 2004). In this context, instead of enlightening the minds of people, education in those communities has reinforced the existing religious and cultural beliefs and has taken the form of indoctrination as a means of control over people's lives.

Educational curricula in most Middle Eastern schools and universities are typically based more on rote teaching and learning style rather than on critical thinking, problem-solving skills, analysis and synthesis of information (Neill, 2006; Rugh, 2002). In most Arab states, educational system of the public schools, which the majority of students attend, has a considerable amount of Islamic religious education. Generally speaking, Islam is a required subject from elementary to high school. Although the amount of time given to religious instruction varies, it remains considerable when compared with the rest of subjects taught. For instance, in Bahrain, Egypt, Jordan and Kuwait, an average of about 10 per cent of total class hours are devoted to religious studies each year. In Saudi Arabia it consumes 32 per cent of class time for grades 1-3, 30 per cent in grades 4-6, 24 per cent in grades 7-9, and then 15 per cent or more for grades 10-12. The figures for Qatar are 17-20 per cent in grades 1-6, 14 per cent in grades 7-10, then 8-11 per cent in grades 11-12. These statistics do not give the whole picture because subjects, such as history, social studies, and Arabic, are covered and taught from Islamic point of view. In Lebanon, however, more than half of all Lebanese students are in private religious schools, most of which are supported by religious institutions, including Christians and Muslims, each of which teaches its own religion ideology to its students (Rugh, 2002).

Education is the driving force behind human progress and cultural evolution. Through the family, schools and higher education institutions, education can be relied upon to convey a culture of safety in society. This culture of safety refers to a set of learned beliefs, skills, activities and philosophies that enhance precautionary behaviour and protective measures taken by individuals to reduce potential risk and vulnerability. Education remains one of the most effective methods of conveying disaster risk awareness in any vulnerable community and is the fastest way to yield satisfactory results in regard to disaster risk mitigation (Coburn and Spence, 2006). However, based on its current content and style, the existing traditional education

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offered by Middle Eastern schools does not provide a suitable environment that supports progressive critical thinking among children and youth because religious views have strong influence and control on the vision of the entire educational curricula (Roald, 1994; Rugh, 2002). Additionally, within such an educational system, facts and logical views are reluctantly supported when they contradict the existing social norms and religious beliefs.

During the last few decades, Middle Eastern educational programmes have successfully improved quality of life within communities by producing qualified trained professionals; however, they have failed to induce any noticeable social and attitudinal changes towards critical issues or to advance the spirit of community engagement even on limited basis. In fact, through the years, the fatalistic attitudes promoted by religious misinterpretation have been reinforced through the content of ill-structured educational programmes and the incorporation of religious teachings into curricula that are usually taught by unqualified teachers with poor educational backgrounds. For example, In Lebanon, religious education has been mandatory since 1968. In contrast with other Arab countries, Lebanon has had no fixed curriculum for religious education in public schools and the religion classes have been provided by Muslim and Christian clergy (LebanonNews, 1997). The most courageous attempt was made in Lebanon when in 1998, the government proposed to make confessional religious education optional and replace it with a new and compulsory subject of civic education. The proposal provoked a heated debate in the media and was opposed by the religious leaders who strongly defended the confessional model (Dagher, 2000). With regard to models for religious education in the Muslim world, the confessional model still prevails (Leirvik, 2004).

Due to the poor educational processes involved in addressing disaster misconceptions triggered by wrong interpretations, ignorance and fatalistic attitudes, Middle Eastern communities have repeatedly suffered from catastrophic earthquake disasters (Ghafory-Ashtiany, 2009). Evidence has demonstrated that cultural misconceptions and incorrect beliefs and attitudes may lead to inadequate behaviour in preparing and responding to sudden disasters (Alexander, 2007).

Researchers have rarely given consideration to the ambiguity surrounding the earthquake risk perceptions of Middle Eastern societies or how cultural misconceptions and the false interpretation of religious notions have passively contributed to risk perception in these communities. It has become obvious that understanding individual and community perceptions of seismic hazards and risks is critical to reducing the fatalities and injuries caused by potentially destructive earthquakes. As Middle Eastern communities in seismically active regions are vulnerable to earthquakes due to governments' negligence, building inadequate design and the dominant fatalistic attitudes, the role of educational institutions in promoting earthquake disaster mitigation and the well-being of future generations becomes an absolute necessity.

This paper urges educational programmes in the Middle East to be rejuvenated through the integration of critical thinking approach and to adjust their curricula to incorporate the necessary disaster risk mitigation that could transform helpless and reactive communities into more responsive proactive ones by reducing and limiting the influence of destructive fatalistic attitudes.

## **2. The impact of fatalistic attitudes on disaster risk and mitigation**

Historical and recent earthquake events have revealed that the majority of Middle Eastern countries – Morocco, Algeria, Egypt, Jordan, Israel, the West Bank,

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Lebanon, Syria and Iran – are vulnerable to earthquakes. Although the magnitude of such earthquakes cannot be predicted, their destructive power should not be underestimated. In fact, the Middle Eastern region has one of the best records of historical seismicity in the world, dating back more than 2,000 years for some areas (Degg and Homan, 2005). Catastrophic historic earthquakes that led to massive destruction and heavy casualties have been well documented, particularly along the Eastern Mediterranean (Sbeinati *et al.*, 2005). In his writings, ancient Jewish historian Flavius Josephus recounted a massive earthquake in 33 BC that killed 50,000 people. Three additional large earthquakes devastated the region in 363, 749 and 1,033 AD (Peim, 2011).

Seismic activity in Iran is more pronounced than in other Middle Eastern countries and has been devastating due to the lack of seismic design in constructions and to the high-population density in high-seismic risk region which have recently led to a massive number of casualties (Ambraseys and Melville, 2005). Algeria has also suffered from devastating earthquakes; the events of 1716, 1825, 1954, 1980 and 2003 are considered the most catastrophic in terms of fatalities and destructions. The well-documented moderate 5.7 Agadir earthquake in Morocco in 1960, which killed approximately 15,000, injured as many and destroyed most of the city, is an example of the seismic hazard exposure and vulnerability of that region. The Agadir vulnerable buildings have led to that tragedy. In fact, high-structural vulnerability of buildings and lifeline facilities which is a common feature in many Middle Eastern countries is a critical issue that should be addressed by government authorities.

Therefore, based on historical earthquake documentation, recent catastrophic events and published scientific evidence regarding seismicity in the Middle Eastern region (Ambraseys, 2009), it has been proven beyond any doubt that the probability of earthquakes affecting the seismically active Middle Eastern regions is very high and must be mitigated at all levels.

The lack of public awareness of the seismic risk may appear to be the contributing factor to the current state of indifference and neglect. However, the high rate of satellite dish adoption and penetration in most of Middle Eastern countries (Jamal and Melkote, 2008), the high number of TV owners and viewers (over 90 per cent in all Arab states (Abdulla, 2007)) and the internet's high-penetration rate in the Middle East (40.2 per cent) compared with the rate worldwide (34.3 per cent) (Internet\_World\_Statistics, 2012) should rule out this lack of awareness. The recent images of the massive casualties and heavy destruction of the 2010 Haiti earthquake were displayed on TV channels all over the world and explicitly posted on internet pages for weeks, and the misery of the 2011 Japan earthquake, aftershocks and tsunami, as well as the environmental concerns associated with the meltdown of the Fukushima nuclear reactor, shook the whole world for months. In addition, the media coverage of earthquake events that occur worldwide has been extraordinary. All of these sources of instruction should have enhanced public awareness of earthquake hazards to eliminate the assumed lack of knowledge. Let us, therefore, admit that the root of the issue goes beyond poor awareness; it actually lies deep within the existing socio-religious fatalistic attitudes that dominate the views and behaviour of individuals and control the progress of Middle Eastern communities.

The situation in the Middle East is similar to that in many economically less countries, where exhaustive wars, sectarian conflicts, political neglect, poor educational opportunities, unstable economies and low quality of life drive people to take risks without taking precautionary measures. These conditions encourage the

spread of fatalistic beliefs among individuals, especially after tragedies and crises. Such views can provide relief to victims since they conveniently refer to the will of God as an escape from blaming themselves and the authorities for the neglect and unpreparedness that led to their hardship and tragedy (Gaillard and Texier, 2010). Fatalistic attitudes traditionally dominated pre-industrial societies in Middle-Age Europe, as well as contemporary economically less countries (Akasoy, 2007), and it is still found, to a lesser extent, in some communities in modern civilisations (Hewstone, 1993; Hewstone, 1994; Morris and Peng, 1994).

It is well understood that fatalism regarding earthquake risks and hazards varies according to an individual's set of beliefs, educational level, social values, culture, ethnicity and gender (Flynn *et al.*, 1994). Studies in the USA, for example, have shown that African Americans are more fatalistic than Caucasians regarding earthquakes and floods and are less likely to protect themselves because these phenomena are viewed as uncontrollable natural events (Gregory, 1995). Additionally, a study was conducted in Indonesia to identify community attitudes with regard to how Islamic teaching influences disasters. When asked about the cause of tsunamis, the majority of the students believed that tsunamis were caused by God's will, which is intended to test the patience of humankind, and they stressed the view that tsunamis are God's signs warning that people should change their behaviour to avoid the next tsunami (Adiyoso and Kanegae, 2013). In the flood that affected communities in Bangladesh, Haque (1987) found that 97 per cent of a sample of displaced people felt that their future depended on God, and 95 per cent of the respondents prayed to God and accepted the consequences of the disaster as simply as a reflection of the omnipotence of God. The occurrence of destructive earthquakes, such as those in the USA, Japan and Europe, usually results in a change of regulations, policies and engineering design standards (Armigliato and Tinti, 2003); however, in most Middle Eastern communities, where God is believed to control future events, including earthquakes, people tend to believe that there is little chance of preventing or avoiding the eternal and unchangeable will of God. A similar case was observed in the Turkey earthquake of 2000, where, amidst extensive rubble, a major mosque was left undamaged. The appearance of the relatively unaffected mosque against the backdrop of devastation in the affected region supported the belief that the site was indeed sacred and that the earthquake was a divine act to injure or kill the unfaithful. After the earthquake in Agadir, Morocco, the residents who survived were surveyed with a view to understanding their perception of seismic risk. The findings revealed that poorly educated respondents tended to attribute earthquakes to divine action and retribution, and were more likely to believe that God protected the believers who followed his orders (Paradise, 2005). A recent study examining public perception of the risk of disasters in Saudi Arabia showed that the majority of respondents (97 per cent) tended to agree that God is in control of all events that occur in the world. Although approximately 93 per cent believed that earthquakes, floods and other natural hazards were signs from God, 70 per cent believed that God sometimes punishes nations for the sins of its citizens (Alshehri *et al.*, 2013). A questionnaire-based study carried out in the United Arab Emirates to determine public response to a range of disasters revealed that the respondents viewed such events as Acts of God, the aim of which was to punish the sinful, and the preferred solution was "to pray to *God* for help" (Dhanhani, 2010). Chester (2005) notes that in Islam disaster-related suffering is viewed as a means whereby Allah uses pain to discipline human beings and bring them back to His Prophets' teachings. For instance, one of the sixteenth century leading scholars

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Jalaluddin Al-Suyuti believed that many catastrophes in the Middle East were divine judgments for sins which included adultery and drinking alcohol (Chester *et al.*, 2013).

Therefore, the consistent findings of the existing religious fatalistic attitudes towards disasters in Middle Eastern countries deserves serious attention as it represents a challenge to the future implementation of disaster risk reduction strategies, and consequently to development sustainability.

Embarking on the implementation of disaster risk reduction strategies in vulnerable communities dominated by fatalistic attitudes without taking socio-religious influences into consideration is a waste of resources and may hinder the process of achieving the desired outcomes. Therefore, reducing the influence of the existing fatalistic attitudes in Middle Eastern communities regarding earthquake disaster mitigation should be considered as prerequisite for implementing disaster risk reduction that improves the safety of people and protects buildings in the event of an earthquake. When Middle Eastern communities perceive earthquakes as purely natural phenomena and disasters as preventable and controllable events, then the implementation of disaster risk reduction can be easily accomplished. Although Islamic teachings do not inhibit the application of preventive safety measures to reduce losses from disasters (Chester *et al.*, 2013; Ghafory-Ashtiany, 2009), the misunderstanding and misinterpretation of Islamic notions have traditionally led to the existing fatalistic views observed in Muslim communities.

In order to effectively accelerate the implementation of disaster risk reduction across these communities, a reform of both curriculum contents and teaching strategies is necessary. Such suggestion is crucially needed to reduce the existing fatalistic views regarding disasters. Moreover, schools should exercise their authorities and must monitor how specific subjects are introduced and taught by recruiting qualified educators. Moreover, the collaboration of educational institutions and religion teachers is highly essential for effective and successful outcomes. The educational authorities and international agencies officials must realise that integrating critical thinking approach in the educational curricula in vulnerable communities is the key to any future endeavour that intends to influence public views, reduce seismic risk and enhance earthquake risk preparedness, mitigation and response strategies. Due to the current traditional memorisation style of instruction that fosters passivity in students and making them susceptible to religious indoctrination (Kadi, 2006), and to the lack of emphasis on critical thinking, the mentality of young students tend to be blindly receptive to accept the views of teachers. Most of the educational institutions in the region are inadvertently supporting fatalistic views through the appointment of teachers who generally incorporate their own religious beliefs in their teaching philosophy and practices. The majority of schools in the Muslim countries have to deal with the fact that there are abusive teachers who use schools as recruitment centres and sites for their beliefs (Brown, 2011), and their teaching career as a platform to preach their own views, advocate for specific ideologies and damage the students' ability to critical thinking.

If supported, educational institutions could play a promising role in reducing the spread of such self-destructive attitudes and behaviours in communities in which earthquake vulnerability is high and community resilience is low. The integration of disaster risk mitigation into educational curricula should work in conjunction with a well-designed instructional strategy that aims to replace dogmatic fatalism with free critical-thinking processes at all educational levels starting with elementary schools and ending with universities. The objective of such a strategy is to promote the transformation of awareness into behaviour and preparedness among children and youngsters.

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### 3. The role of Middle Eastern educational institutions in earthquake risk mitigation

#### 3.1 Reforming fatalistic attitudes

There are important reasons to consider critical thinking as fundamental aims of education to reduce fatalism, since the acquirement of such character is vital to create mature citizens who possess independent judgment (Siegel, 1988). Such individuals are empowered to resist indoctrination (Chomsky, 1975). Thus, incorporating critical thinking in the educational programme in Middle Eastern schools can create an ambiance of questioning that limits the adoption of the fatalistic attitude. Because critical thinking has not been integrated in formal education, the teacher's own particular opinions become critical in framing the minds of students who will not be capable to critically scrutinise other views.

While Islamic fatalism has been the focus of many scholarly works, some claim that fatalism remains a largely misunderstood phenomenon (Acevedo, 2008). Fatalism in Middle Eastern communities must be understood in light of more complex influences, including the political, cultural, economic and historical context. Local researchers and educators have paid limited attention to influence the dominant religious fatalistic attitudes on disaster risk perception and mitigation in Middle Eastern communities. Culture and religion have contributed significantly to the formation of such beliefs among individuals and communities through the beliefs that earthquakes occur by divine decree and have predestined locations selected by Allah (Acevedo, 2008). Fatalism is a self-defeating attitude that can lead to the depreciation of individuals' intellectual capability and to the transformation of self-reliant communities into helpless, passive ones. Fatalists become blindly confident in illusive protection – such as prayer, protective medals, sacrifices and supernatural powers – which usually leads them to take risks and neglect safety procedures (Kouabenan, 1998). Gaining deep insight into fatalistic beliefs and taking them into consideration prior to the implementation of a disaster risk mitigation plan will facilitate its success and ensure its effectiveness in terms of the rate of community participation in the mitigation activities. A research examined the effectiveness of safety training on changing employees' fatalism with attention to the mediating role of attitude towards safety issues showed that safety training only with promoting workers' safety attitudes can change the fatalistic beliefs among employees (Kiani *et al.*, 2014).

Thus, the responsibility of educators is crucial in regard to infusing and supporting social attitudes that can contribute to societal advancement. Their instructions should not focus solely on conveying information but also on opening the way to ideas and discussions, shaping and reforming views and inspiring values that impact the intellectual capacity of individuals and the well-being of the community. The process of education in shaping and reforming values and attitudes begins early, at the elementary school level, where children are exposed to basic expectations, and it extends through the high school and university level where students are challenged to build intellectual and reasoning capabilities, undertake more in-depth explorations of ideas, search for knowledge and truth, gain vision and skills, assess ideas, distinguish truth from superstition, screen fallacies and make the right choices. Students should be taught that education is of little value if it is not used to improve our personal lives, our community and our world.

Thus, education aims to shape new attitudes and reshape existing ones that our children have wrongly developed as a result of the influence of cultural and religious settings. Due to differences in backgrounds, children may be raised with a variety of

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negative attitudes, beliefs, prejudices, hatred, etc., these need to be reformed. The educational process is relied upon as a complex operation that begins with the strategic and careful removal of unfounded beliefs, illogical prejudices and existing hatred from children's minds. Although schools have limited resources in this regard, they are expected to lay the foundation for this process of reform and to continue working with students towards the well-being of the community. By designing various specific activities, schools can influence children's beliefs regarding disasters and assist in the formation of scientific-based attitudes towards the causes of natural phenomena.

Traditionally, the majority of Middle Eastern schools and their educational curricula focus on textbooks that emphasise religious ideology and social identity (Leirvik, 2004; Rugh, 2002). In Lebanon, for example, authorities have not been able to agree upon an official national history textbook due to their conflict regarding religious identity (Hajjar, 2002). In Saudi Arabia, religious identity has been emphasised through school curricula and textbooks that teach religious supremacy and exhibit explicit intolerant views towards different religious ideologies (Doumato, 2003; Stalinsky, 2002). As a result of the wide spread cultural beliefs in religious supremacy that has been conveyed by religious leaders and taught and nurtured informally and formally through school programmes and textbooks, teachers express their religious views both directly and indirectly through the teaching process; students are taught to celebrate the great Muslim civilisation, heroes and the major historic battles and holy wars; to believe that God protects from disasters whoever is righteous and obedient to His laws; to believe that victims of disasters are martyrs; and other similar views that do not contribute to the progress and well-being of such vulnerable communities. It would be more beneficial and rewarding to adopt a constructive educational approach that exposes students to a history that reflects a critical view of modernity, the movements that shaped civilisations and human rights and the free people who contributed to the betterment of humanity.

The content of educational programmes lies at the core of reducing fatalistic attitudes. The goal is to break the cycle of fatalism by reforming the current generation; once this is accomplished, future generations will follow. If educational institutions in fatalistic communities focused their efforts on creating individuals who value life and who are capable of thinking critically, evaluating objectively, analysing properly, deciding rationally and choosing freely, then education would have successfully laid the fundamental blocks for the reform process to begin. To reduce fatalistic attitudes, students must be given the tools to free their minds and choose their own behaviour based on their knowledge, confidence and judgment, and they must be able to express their opinions freely, to be courageous and to tolerate and accept differences.

Middle Eastern communities must realise that fatalistic beliefs and inherited superstitions cannot prevent disasters, save lives or protect property; it is only through rational reasoning and well-structured school educational programmes that enhance seismic risk mitigation people may survive the ferocity of sudden earthquakes. The absence of educational initiatives, the deficiency of the curricula and the lack of collaboration with religious teachers in addressing the prevailing fatalistic attitudes regarding natural hazards and earthquake risks will definitely decelerate the progress of disaster risk reduction in these vulnerable communities.

### *3.2 Integrating earthquake disaster risk mitigation into the curriculum*

Education is a critical aspect to effectively reduce the impacts of disasters (Alexander, 2000). The role of education should not be limited to shaping and reshaping attitudes

but also to reducing disaster risks. It must provide information, procedures and activities regarding disaster mitigation and preparedness strategies through well-structured instructional curricula. Drawing on the conclusions of the review of the Yokohama Strategy, the World Conference on Disaster Reduction deliberated five priorities for action under the Hyogo Framework 2005-2015 (Framework, 2005); the third priority was to “use knowledge, innovation and education to build a culture of safety and resilience at all levels”. Introducing disaster risk reduction through schools can reduce loss of life and minimise injuries. Recent earthquake devastation has shown that loss of life can only be effectively reduced through public education, awareness, preparedness and planned response action programmes (Spence, 2007). School systems can play a substantial role in raising children with the knowledge and skills for mitigating risks and responding to earthquake hazards. However, education will not yield the desirable outcomes of attitudinal changes towards disaster perception unless it is revolutionised in its contents. Paradise (2005) showed that although Agadir residents’ beliefs about earthquakes were affected by their educational level, well-educated proportion with a baccalaureate or higher said they believed that God determined who lived and who died in the Agadir earthquake.

A recent study of school children from different parts of Japan suggested that it is not earthquake experience but community and family education that are more effective in motivating a person to take risk-reducing actions (Shaw and Goda, 2004; Shaw *et al.*, 2004). Therefore, educating children and young adults about the facts of disaster prevention should not be postponed or ignored. An educational strategy should be developed and implemented in Middle Eastern schools to avoid future tragedies induced by prospective earthquakes. Schools can have a direct impact on raising community awareness and preparedness regarding earthquake hazards and threats (Izadkhah and Hosseini, 2005).

Schools and universities have an important role to play in promoting educational safety against natural hazards and are the only places where children and youth can be easily reached. It is a natural setting for learning about earthquake risks, causes and safety procedures. The knowledge and skills acquired by students regarding earthquake preparedness activities can be transmitted to outside communities; therefore, the activities related to earthquake disaster risk education that are initiated and implemented by the school may reduce the impacts of earthquake disasters on the surrounding community.

Previous research has confirmed that formal education is one of the best mediums for improving knowledge of earthquake hazards, disaster awareness and the preparedness of a community, especially when disaster education programmes are integrated into the school curriculum at all levels (Izadkhah and Hosseini, 2005). However, schools in most Middle Eastern countries do not emphasise earthquake hazard education, and no commitment to seismic risk reduction has been seen in recent decades. Although the curriculum is diverse and comprehensive, it has poorly addressed issues concerning climate change and natural and environmental hazards. There is also an obvious lack of collaboration between schools and communities. School children at all levels have been traditionally ill-informed and unaware of the potential risks of existing seismic hazards. The long-term goal of integrating hazard and risk education is to produce a risk-literate community that demonstrates responsibility for effective response action when faced with natural and environmental hazards (Richard and McGarrity, 1994). The current situation in which earthquake risk education is ignored by school programmes and administrators is unacceptable and can have catastrophic consequences.

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Collaboration between educational institutions and religious teachers on issues related to disaster education and prevention is suggested to be a key component to reduce and mitigate risks in Middle Eastern communities, especially when such issues do not contradict religious doctrines or cause conflicts of interest. Religious teachers can act as an important source of information about the religion – natural hazards relationship (Adiyoso and Kanegae, 2013). According to Islamic teachings, doing good deeds and protecting or saving the lives of others are noble acts that will be rewarded by the Almighty God (Ghafory-Ashtiany, 2009). Teachers of theology at schools must be persuaded to engage in such a reforming attitude mission, especially since it is aligned with their spiritual goals. They should understand the value of their collaboration in enlightening the community regarding the protection and safety of human lives and alleviating the suffering and tragedies induced by earthquakes. Therefore, to effectively implement earthquake disaster risk reduction strategies, Middle Eastern educational programmes at all levels must first promote rational attitudes and reduce fatalistic views through their instructional styles and contents, and then integrate earthquake disaster risk education into their curriculum.

#### **4. Conclusion and recommendations**

Throughout the years, Islamic teachings have shaped people's beliefs and influenced the cultural views of Middle Eastern communities. The misinterpretations of some of those beliefs have negatively impacted the well-being of such communities and hindered their progress. Although religious fatalistic attitudes in the Middle East region regarding earthquakes and other disasters is commonly observed and popular among individuals, more future research is required to empirically and quantitatively examine the implication of such phenomenon on the lives and behaviours of Middle Eastern people. Without clear understanding of how such fatalism propagates in communities and throughout generations and why people adhere strongly to it, Middle Eastern societies will remain passive towards risk reduction and vulnerable to existing hazards.

In an effort to help communities develop a new paradigm shift regarding their attitudes and behaviour towards earthquakes, this paper called for the urgent need to reduce such fatalistic attitude in earthquake vulnerable Middle Eastern communities and to facilitate the implementation of disaster risk reduction strategies through the following recommended actions:

- the incorporation of new teaching approach that rejects indoctrination through the implementation of critical thinking techniques in teaching all fields of study and at all levels of education;
- the integration of disaster risk education formally and informally in schools' programmes at all levels; and
- the collaboration of educational institutions with religion teachers to ensure that religious teachings are constructively taught to children by qualified, trained, open-minded teachers.

If Middle Eastern students are taught properly to think critically, then they would be able to use such approach as a guide to evaluate and judge information delivered through cultural and religious contexts and to reject false beliefs and misconceptions. Such new thinking environment would help reduce fatalistic attitude regarding earthquakes and other natural hazards. Thus, to implement disaster risk reduction strategies, Middle Eastern educational authorities are urged to take the initiative for

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the necessary educational reform that utilises critical thinking approach in the teaching style and to prioritise educational opportunities in the disadvantaged communities.

Although safety cannot be guaranteed during an earthquake, attitudes about risks, education about hazards and preparatory activities can surely save lives while drastically reducing injuries and protecting property.

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