

Religion, politics and science education in Pakistan: Analysis of Islamisation of science textbooks in tribal districts

**Authors:**

Qasim Jan¹ 
 Shakir Ullah² 
 Baha Ul Haq³ 
 Yi Xie¹ 

Affiliations:

¹School of Education,
Guangzhou University,
Guangzhou, China

²Center for Social Sciences,
Southern University of
Science and Technology,
Shenzhen, China

³Department of
Anthropology, Quaid-e-Azam
University, Islamabad,
Pakistan

Corresponding author:

Shakir Ullah,
ulla.shaker888@gmail.com

Dates:

Received: 23 Sept. 2022

Accepted: 29 Oct. 2022

Published: 20 Jan. 2023

How to cite this article:

Jan, Q., Ullah, S., Haq, B.U. & Xie, Y., 2023, 'Religion, politics and science education in Pakistan: Analysis of Islamisation of science textbooks in tribal districts', *HTS Teologiese Studies/Theological Studies* 79(1), a8151. <https://doi.org/10.4102/hts.v79i1.8151>

Copyright:

© 2023. The Authors.
Licensee: AOSIS. This work
is licensed under the
Creative Commons
Attribution License.

Read online:

Scan this QR
code with your
smart phone or
mobile device
to read online.

Historically, education has largely been used for political gains and to strengthen positions of power. Similarly, ruling elites in Pakistan achieve their political interests by using education as a tool. This study problematised the religious content in the secondary school science textbooks of the national curriculum. This was illustrated in the context of the post-conflict scenario of 11 September 2001 (9/11) in the newly merged tribal districts of Khyber Pakhtunkhwa, Pakistan. A thematic analysis of the content of the science textbooks (physics and biology) was used to develop the findings of this study. This was supported by field data gathered from students' experiences and interactions with the sample textbooks. By incorporating Foucault's concept of the 'regime of truth' and Talbani's conceptualisation of Islamisation, the study found the use of the Qur'anic verses in the sampled textbooks to be influential 'technologies of power and self' to Islamise science and scientify Islam to prove it as a scientific religion. In addition, it makes education increasingly irrelevant to changing socio-economic realities and aspirations among students.

Contribution: The study can contribute both to theory and practice. By Islamising science education and instilling obscurantism in textbooks for schools, there is a substantial sociopolitical impact, as well as a negative impact on students' critical thinking skills. The policymakers and actors in the Pakistani education system should therefore pay close attention to this issue. Unless the current educational system is changed, a number of generations will experience stunted growth that will be nearly impossible to reverse in the future.

Keywords: Science textbooks; politics; religion; Pakistan; 9/11.

Introduction

Historically, research on various education systems reveals the control of the modern state over education since its inception. The control is sustained through the knowledge and content in the national curriculum textbooks of a country's state-provided education, which plays a pivotal role in transforming a society into what and how it should be (Apple 2019). The analysis of the national curriculum textbooks requires situating them in the social, historical, political and economic realities of the students in which they find themselves (Aoki 2004). The national curriculum textbooks display the intentions and aims that serve as the key bearers of formal knowledge production in the society (F. Pinar 2012). Situated in this context, Pakistan's national curriculum textbooks play an important role across all school levels. The school system in Pakistan is classified by a range of different school systems with greatly varying quality. However, all schools must follow the national curriculum under the Federal Ministry of Education (Shahid 2016). The Pakistani school system comprises 6 years of primary education; the middle level of education consists of 3 years, followed by 2 years of secondary school and 2 years of higher secondary school. Given that, the textbooks must strictly meet the official guidelines. The contents are based on nation-building and conformity to state ideology and core Islamic values for students who specify to spend their lives in the Islamic values (Government of Pakistan 2006). Located in this context and utilising Foucault's concepts of 'regime of truth' and 'technologies of power and self', and Talbani's concept of Islamisation, this study aims to analyse the impact of religious content in Pakistan's national curriculum textbooks of science on changing socio-economic realities and aspirations of students' lives.

In this study, the authors have thoroughly read all textbooks for Grades 9 and 10, that is, mathematics, physics, chemistry, Urdu, English, Islamiyat (Islamic studies) and Pakistan studies. However, for this study, the authors selected and focused on only those national curriculum textbooks of science which begin with religious text directly quoted from the holy

book of Muslims, that is, the Qur'an. Therefore, the sampled textbooks comprised physics and biology taught to secondary school students (Grades 9 and 10) in the newly merged tribal districts of the province Khyber Pakhtunkhwa, Pakistan. This study analyses the interplay between religion and science by situating the students' experience and interaction with religious content in the sampled textbooks and its implications for the development of their critical thinking and skills.

Power, education and state control

To problematise the notion of education and how the state utilises it to legitimise its power to exercise control over society, this study takes insights from Foucault's concepts of the 'regime of truth', 'technologies of power' and 'technologies of the self' to analyse the sampled textbooks of physics and biology. As influential technologies of power, the state uses national curriculum textbooks to disciplinise individual conduct and orient them to certain ends or control, yielding an objectivising of the subject (Foucault 1980). According to Foucault, 'technologies of the self' allow individuals to change themselves, either by their own means or by enlisting the help of others. This will enable them to change their conduct, thoughts, bodies and way of being as subjects (Foucault 1980). Foucault's subject is not universal or timeless, but it is determined by and within the context of historical and social conditions (Foucault 1982). As Foucault points out, each society has its own regime of truth and its own political system for dealing with the truth. Those under a regime are controlled and dominated by its political, economic and social apparatuses (Foucault 1980). This notion of the 'regime of truth' is built through institutionalised procedures or processes within certain social and political conditions. This implies that the foundation of educational and social institutions has been linked with a power struggle, which means developing, sustaining and expanding certain notions of truth by controlling the power of legitimacy (Talbani 1996). Foucault considers the educational system as a means to sustain and modify the appropriateness of discourses of knowledge and power (Foucault 1980).

Therefore, the selection, distribution and evaluation of educational knowledge represent power distribution and the principle of social control by the society (Bernstein 2018). In the case of Pakistan, the regime of truth uses religion, namely Islam, as a political means of social control (Talbani 1996; Ullah et al. 2020). However, this study focuses on the 'Islamisation' of the national curriculum textbooks of science as influential 'technologies of power and self' and how it is utilised by the regime of truth. The regime of truth portrays Islam as a complete universal code of life (derived from the Arabic concept of *Din*) that encompasses both the physical and intellectual spheres (Talbani 1996). Similarly, Geertz (1971) views it as:

[A]n effort to universalize Islam theoretically, is a process of standardization/homogenization of Islam, and to make it

unchangeable/static body and a well-integrated system of beliefs and rituals, not only as a religion but complete and comprehensive code of life. (pp. 81–95)

Talbani, meanwhile, sees it as an Islamisation of the society (Talbani 1996).

Religion, power and science education in Pakistan

Since the division of the subcontinent into Pakistan and India in 1947, Islam has become a binding force and the ideology of the state to sustain its power and control the society (Zaman 2018). A preview of Islamisation was first adopted in the 1949 'Objective Resolution' to base the future legal and constitutional development of the newborn state and socialisation of society on the universal principles of Islam (Zaman 2018). It resulted in making Islam the official religion in the first Constitution of Pakistan in 1956. As part of its first 'All Pakistan Education Conference', the government announced in 1947 that the education system in Pakistan would be based on Islamic principles and ideology (Qazi 2021). In the early years, the struggle was fought at the state constitution level when Islam became the state's official religion and sovereignty was entrusted to Allah, the Muslim God (Zaman 2018).

In Pakistan, the process of Islamisation intensified after the secession of Bangladesh in 1971 (Lall & Saeed 2020). It resulted in the Islamisation of social life under Zulfikar Ali Bhutto. He centralised the role of Islam by introducing Pakistan studies as a compulsory subject (Saigol 2007). However, his reforms included the right to education in the 1973 Constitution of Pakistan under Chapter 2, Article 37/2 a,b (Shahid 2016). In the subsequent years, after dismissing the civilian government, the dictator General Zia established the national education policy of 1979 to Islamise the society through national education and its curriculum (Lall 2010). It also resulted in developing its own vocabulary and terms such as Islamic education, Islamic science and so on (Yates & Grumet 2011). The Islamisation of education continued and even intensified after 11 September 2001 (9/11), which is the focus of this study. Post-9/11 witnessed a regime change in Pakistan and resulted in the direct rule of the military dictator General Musharraf, who took over the government. The six-religious party conglomerate (Muttahida Majlis-e-Amal [MMA]) was an ally of the military regime of General Musharraf (Khan 2014). The military dictator General Musharraf sided with the United States of America (US) to topple the Taliban's regime in Afghanistan and offered unconditional support for the so-called 'war on terror' to the US (Akhtar 2020). The political conflict after 9/11 was re-signified as originating from religious beliefs. Every country made provisions to its curricula to promote patriotism and its ideology through school textbooks and curricula in schools (Kamat & Mathew 2010). Similarly, the curriculum wing of Pakistan's Federal Ministry of Education introduced new content and changes, specifically religious content in the national curriculum. Therefore, this study focuses on the religious content in

Pakistan's national curriculum textbooks of science in the post-9/11 situation and explores its impact on the socio-economic realities of students' lives and its implications for critical skills development in students.

Special focus: The newly tribal districts of Khyber Pakhtunkhwa, Pakistan

The newly merged districts (then known as Federally Administered Tribal Areas [FATA]) of Khyber Pakhtunkhwa are located on the western border of Pakistan with Afghanistan. The total population of all these districts is 5 million, according to the 2017 population census of Pakistan (Wazir & Goujon 2019). Almost 73% of the population lives in poverty, and the literacy rate is 28.4% as compared to the rest of the country, which is 57%, and most of the students come from poor socio-economic background (G. Ali & Hussain 2020). For 100 years, this region served as a buffer zone between the colonial British Indian empire and Russia before making it a strategic launching ground during the Cold War in the Eighties Afghan jihad (Hayat 2009). From 1901 to 1947, the British colonial administration used the region for strategic purposes by administering it under the *Frontier Crimes Regulation Act*, that is, the FCR-1901 (Hayat 2009). It is pertinent to note that the Pakistani state kept the FCR-1901 in place after the subcontinent was partitioned in 1947 and gave special constitutional protections to the area under Articles 246 and 247 of the 1973 Constitution (Taj 2011). Because of its special constitutional status, the people and their elected representatives had no voice or say in policy and law-making process and development regarding the area, including its curricula and textbooks (Shah 2012). As a result of the 25th constitutional amendment in 2018, the area became part of the province of Khyber Pakhtunkhwa (Akhtar 2020). Before the merger of the tribal area in Khyber Pakhtunkhwa, the area was under the jurisdiction of the federal government, including educational policies and curricula. But after the merger, the area came under the jurisdiction of the provincial government. Therefore, the merged districts are obliged to follow the educational policies and curricula designed by the provincial government of Khyber Pakhtunkhwa after 2018.

This section of the study attempts to contextualise the students' interaction with the selected textbooks in the post-9/11 war on terror situation of the tribal areas. The rationale behind the selection of tribal areas is the role of religion, which is instrumentalised in the normalisation of the war on terror by religious militants and proxies (Lall & Saeed 2020). However, in this context, the Islamisation of education by the state plays a significant role in reproducing the religious extremist narrative after 9/11 in the tribal areas (see sections 'Religion, power and science education in Pakistan' and 'Study findings' for further details). Tribal areas have attracted worldwide attention as an epicentre of the war against terrorism since 9/11. The Taliban and al-Qaeda found safe havens throughout the tribal areas of Pakistan when the USA invaded Afghanistan, giving them a secure base for their operations against the USA and its Western allies (Taj 2011).

TABLE 1: Names of schools, their locations and number of students who participated in the study.

| Number | Name of school | Number of students interviewed | Location of school |
|--------|---------------------------------------|--------------------------------|--------------------|
| 1 | Musa Nika Public High School | 12 | South Waziristan |
| 2 | Government High School Ladha | 9 | South Waziristan |
| 3 | Government Boys High School Miranshah | 8 | North Waziristan |
| 4 | Cadet College Razmak | 11 | North Waziristan |

Pakistan became a recipient of the US alliance's aid and launched several paid military operations under the guise of US allies in combating and eliminating religious extremism and militancy in the region (Akhtar 2020). The military operations were funded by the US military assistance fund given to the state of Pakistan as an ally in the so-called 'war on terror'. In the partnership with the USA in the campaign of the war on terror, Pakistan saw two opportunities: the economic opportunity and the strategic one. The economic opportunity was linked with a partnership with USA, and the strategy was linked with the Taliban and their covert operations in the strategic interests of Pakistan in Afghanistan and the adjacent border tribal areas. Pakistan's role oscillated between these two opportunities. As an ally of the USA, Pakistan received the leverage of economic opportunities. Strategically, Pakistan clandestinely provided safe havens to the Taliban to gain leverage for targeting Indian interests in Afghanistan and beyond (Taj 2011). The Taliban-Pakistan alliance was based on Islamisation and the religious ideology of Islam. These two compulsions can be ascertained by Pakistan's negotiations with the Taliban and implicitly categorising the Taliban into bad and good (Zaman 2018). The good Taliban were those who pursued Pakistan's interest in Afghanistan and beyond, and the bad Taliban were those who carried out armed attacks within the national boundaries of Pakistan (Taj 2011). To pursue their ideology and struggle, the Taliban were given space to visit educational institutions to interact with students. During their rule over the tribal region, the leadership of the Taliban were seen visiting different local schools and colleges and glorifying jihad in their speeches and emphasising sacrifices for the sake of God. It is important to note that both the Pakistani state and the Taliban derive their legitimacy from religion (Zaman 2018). With that backdrop, the religious content in the sampled textbooks is vulnerable to manipulation by the religious extremist narrative of the Taliban.

Similarly, there were frequent attacks on educational institutions, specifically targeting girls and their schools, by religious militants (N. Ali 2019). In compliance as a USA ally in the war on terror, the major security operations conducted by Pakistan's army against religious militants in tribal areas since 2001 were 'Zarb-e-Azab' (sharp and cutting swift), 'Rah-e-Nijat' (pathway to salvation) and 'Radd-ul-Fasaad' (elimination of discord), and each lasted for more than 2 years (Akhtar 2020). The military operations displaced millions of people, putting Pakistan on the top of the list of internally displaced people (Akhtar 2020). The displaced population, especially women and

children, were subject to massive adversities such as separation from their families, mental problems, violence and abuse (Taj 2011). Situated in the given context, the study analyses the pedagogical and social experience and interaction of secondary school students with the science textbooks of biology and physics containing Qur'anic verses at the onset of every textbook in the tribal areas of Pakistan after 9/11.

Methodology

The current study was conducted in the tribal areas of South and North Waziristan in Pakistan over the course of more than a year. The fieldwork was conducted in 2021–2022. The first author, as a fieldworker, stayed in the community for 8 months to collect the data. The data were analysed through ATLAS.ti version 9, following a thematic analysis of the content of the national curriculum textbooks of science (physics and biology) for secondary school students and field data collected from students in the tribal districts of Khyber Pakhtunkhwa, Pakistan after 9/11.

As mentioned earlier, the sample textbooks were developed and published by the Khyber Pakhtunkhwa (then North West Frontier Province [NWFP]) Textbook Board Peshawar according to the curriculum guidelines and policy of the Federal Ministry of Education's Federal Curriculum Wing (Government of Pakistan 2006). The subjects taught to secondary school students included Urdu, Islamiyat (Islamic studies), English, Pakistan studies, mathematics, chemistry, physics and biology. This study selected and focused only on physics and biology textbooks because they contain direct religious content from the holy book of Muslims, that is, the Qur'an. After a thorough reading and analysis of all the science textbooks (physics, mathematics, chemistry and biology) for secondary schools, the study found direct religious content from the holy Qur'an in the national curriculum textbooks of physics and biology. This thematic analysis was based on textual data from sampled textbooks of Grades 9 and 10 students. Our primary research question is; how the religious content in the sampled textbooks impacts the social, historical, political and economic realities of students' lives in the tribal districts after 9/11 and its implication for students' critical skills development.

In addition, this study was also substantiated by data collected during fieldwork for this study to understand students' interaction and social and pedagogical experiences with sampled textbooks taught to them in their secondary schools. The field data were collected by incorporating and utilising field data tools, that is, interview guides for students, participant observations, focus group discussions, informal discussions and personal experience with students at secondary schools who had studied the sampled textbooks.

The selection criteria for student participants considered their experience as students in the tribal areas and the location of their school when the tribal areas became the epicentre of religious extremism and militancy after 9/11. These students

were residents of the tribal areas with poor socio-economic conditions, as discussed earlier, and were enrolled in those schools during the teaching of the sampled national curriculum textbooks. The data represent the participants' views about the impact of the religious content in the sampled textbooks for Grades 9 and 10 on the social, historical, political and economic realities of students' lives and its implications for the development of their critical skills. The collection of data was guided by the study's central research questions. The questions included the following, among others: how do students see the importance of religious text in the textbooks of science, and how do they see the relationship between science and religion (Islam)? How does the religious content in the sampled textbooks influence students' understanding of science in the tribal districts after 9/11 and its implication for students' critical skills development?

The federally administered region of Pakistan has been affected by the war on terror for the last few decades. Thus, it is politically a very sensitive area for fieldworkers. However, the first author, as a native local person, did not face any problems and smoothly completed the fieldwork.

Data and analytical framework

Data for this study were divided into two sets: thematic analysis of the contents of physics and biology textbooks and field data. The sampled national curriculum textbooks are taught throughout the province of Khyber Pakhtunkhwa and its newly merged tribal districts of Pakistan.

The content of the sampled textbooks was thoroughly analysed and the thematic patterns observed in the content were grouped accordingly to make their categories (Given 2008). Based on Given's categorisation approach, the data patterns observed in the study were grouped into meaningful categories (Given 2008). All the emerging themes were extracted from the data of those sections in the sampled textbooks where direct extracts from the Qur'an are quoted.

Field data collection tools, that is, the interview guide, consisted of open-ended and tailored questions, participant observations and experiences guided by the textbook discourse and content. The interview guide was developed in English and later translated into the mother language (Pashto) for the convenience of participants. The tailored questions were posed to students who recollected their experiences and memories at the time of being students and recipients of the sampled textbooks in their secondary schools. Data based on the interview guide were collected by conducting in-depth interviews and focus group discussions with students in fieldwork. Students of the particular time were approached by the snowball sampling method when we first met a student of the same period. He led the researchers to connect with the rest of the students in the area during the special social context after 9/11. Some students who had travelled out of their hometown for higher education were accessed through online apps like Zoom and WhatsApp. Their contacts and e-mail addresses were obtained from the

schoolteachers and their class fellows who remained in contact with them. The audio and video interviews' anecdotes were put into a catalogue for sequence and numbering, and later, all the data were translated into English and regrouped according to the interview guide to extract meaningful verbatim and themes from the data. After introducing the study to the participants, their consent was sought to induct them into the study. All participants agreed and their consent for audio and video recording was also sought. To keep the research ethics, the respondents' names were anonymised with 'M', and the number quoted with them shows the number of respondents interviewed for the research purposes. Whenever the 'M' in italics appears in this study, it is the actual words of the respondent quoted in the text. A total of 40 students from 4 secondary schools participated, including focus groups and in-depth interviews.

A total of 20 students participated in in-depth interviews in Pashto because they preferred Pashto, given that it was their mother language at home and outside. On average, each interview lasted roughly 40–60 min. Every interview was first transcribed in Pashto and later translated into English. Apart from in-depth interviews, 8 focus group discussions were conducted, and each focus group discussion lasted from 60 to 80 min. A total of eight focus group discussions (FGDs) were conducted, including three FGDs online because the distance of participants prevented the researchers from conducting them in person, and five FGDs were conducted face to face. Every focus group consisted of 4–6 participants, and the majority of them had been interviewed before as well. Data collected through FGDs and participant observation were also dealt with as interviews for analysis.

Study findings

This part of the study analyses the national curriculum textbooks taught in secondary schools in the newly merged tribal districts of the province of Khyber Pakhtunkhwa, Pakistan, after 9/11. Further, it is substantiated by primary data collected during the fieldwork of this study.

Thematic content analysis of the national curriculum textbooks

This section of the study analyses the contents of textbooks of physics and biology through thematic content analysis. The first chapter of both the sampled textbooks contained direct religious content from the Qur'an, and how these Qur'anic texts relate the scientific knowledge in the sampled textbooks with the contents of Qur'anic verses and texts are analysed as follows.

National curriculum textbooks of science subjects

Science, in the modern sense, believes in scientific inquiry based on observations and experiments. At the same time, religion mainly emphasises the divine revelations about the

natural world and the relationship between the physical world and the social world. The conflict emerges when scientific inquiry and findings contradict the theological explanation of the physical world (Legare & Visala 2011). Many scholars and theologians have strived to reconcile the frank disagreement between science and religion, and they emphasise that science is an evolving subject, and it changes frequently when new evidence emerges from scientific inquiry, but the theological explanations remain unchanged because of its divinity traits (Evans 2011). The two opposites (science and religion) are always in disagreement; a good number of people among the masses consider religion to be against scientific inquiry and explanation. It has been noted that some individuals disagree with both sides in the context of Islam (Evans 2011). They believe that the early Islamic scholars' inquiry and advancement in scientific inquiry were the results of Qur'anic impetus-based intellectual forces that invite and encourage humans to explore nature and find the signs of the presence of God in nature (Hoodbhoy 1991). Such arguments and assumptions aim to establish the nexus between the physical cosmos and the metaphysical realm, which is mainly the focus of scientific investigation (Evans 2011). Following the traditions that early Islamic-era achievements and advancements found their origin in the Qur'anic or Islamic framework and quest to reach the horizons for scientific inquiry, the national curriculum textbooks of physics for Grades 9 and 10 in Pakistan start with Qur'anic verses and encourage students to embark on scientific inquiry, and it is represented in a curious way to learn science that leads confirmation and reaffirmation of belief of students in the Muslim God (Jan et al. 2022). This conception of the idea gives a verdict in favour of Islam that it is compatible with the science (Buhari 2019).

Keeping the justification of Islamic claims about the physical world and also about life and its evolution, and the Qur'anic verses at the first chapter of both biology and physics textbooks for Grades 9 and 10 emphasise to Islamise science or scientific Islam. Page 8, a lesson with the title 'Holy Quran and Biological Science' quotes verse 7 from Surah Al-Sajda of the Qur'an, stating, 'Who made all things which he created, and He began the creation of man from clay'. Qur'anic verse 12 from Surah Al-Mominoon on the same page affirms the same claim further by stating, 'Verily We created man from a product of wet earth'. Similarly, verse 14 from Surah Al-Rahman of the Qur'an on the same page of the biology textbook for Grade 9 quotes, 'He created man of clay like the potter's'. Also, verse 62 of Surah Al-Zumar of the Qur'an on the same page says, 'Allah is Creator of all things, and He is Guardian over all things'. All the verses quoted in the biology textbook for Grade 9 show close resemblance to the biological science and phenomenon, and give an emphasis to look them in the religious/Islamic framework such as page 9 of the biology textbook for Grade 9 Surah-Al Ana'm verse 101 says, 'The Originator of the heavens and earth'. Similarly, on page 10 of the same biology textbook for Grade 9, verse 53 of Surah Taaha states:

Who hath appointed the earth as a bed and hath threaded roads for you therein and hath send down water from sky and thereby We have brought forth diverse kinds of vegetation. (p. 81–95)

On page 11 of the biology textbook for Grade 9, verse 95 of Surah Al-Ana'm attempts to portray the evolution of life in a religious or Islamic framework: 'And Lo! Allah (it is) who Split the grain of corn and the date-stone (from sprouting). He bringeth forth the living from the dead and is the bringer-forth of the dead from the living. Such is Allah. How then are ye perverted?'

The sampled textbooks quote Qur'anic verses having concepts related to the physical world, such as orbits, the floating of the Sun and Moon in their orbits and asking Muslims to contemplate nature and its organisation. These Qur'anic verses resemble questions of physical science, and they embed curiosity in students' minds about the physical world. In the physics textbook for Grade 9, on page 4, Surah Al-Yaseen verse 40 says, 'The sun is not to overtake the moon, nor is the night to out space the day. Each floats in orbit'. It serves to inculcate and socialise students to have firm belief in God and Islam rather than to interpret the physical world in scientific framework and inquiry. Another Qur'anic verse in the same physics textbook, on page 4, quotes verse 3 of Surah Al-Mulk: 'He who created seven heavens in layers. You see no discrepancy in the creation of the Compassionate. Look again; can you see any fault?' The purpose of these Qur'anic verses is to portray Islam as a scientific religion that gave scientific knowledge to Muslims 1400 years ago which science has just discovered recently. The Qur'anic text at the beginning of both the sampled textbooks of physics and biology makes the minds of young students to follow and think in the religious or Islamic framework rather than the scientific way.

The textbook of physics for Grade 9 strives to tame and limit the development of the critical skills by portraying the Qur'an as the source of truth and knowledge; on page 4, verse 33 of Surah Al-Rehman quotes that: 'O company of Jinn and men, if you can [*want to*] cross the limits sky and earth, then cross, you will not cross except by the authority [*from Allah*].'

The inclusion of Qur'anic verses in the sampled textbooks of science for secondary school students serves as an ideological base that Islam is a scientific religion, and it encourages scientific inquiry. This religious content in the science textbooks links and encompasses the physical world and social experience of the students in the Islamic framework. The emphasis in the science textbooks to link and encompass the physical and social world of the students within the Islamic framework cannot be disassociated from the ideological foundations of the state, which is based on the religion of Islam. Further, the sampled textbooks of science portray and present Islam as more scientific as compared to other religions of the world.

Students' reflections and experiences

This section of the study is based on field data about the pedagogical and social experience and interaction of secondary

school students with the sampled textbooks of science within the given context of the border tribal areas of Pakistan after 9/11. An ice-breaking question was posed to students about the language of instruction and mediation: 'What was the medium of instruction and mediation in your classrooms?' Some of the students responded as follows:

M2, M4, M5: 'It was in Urdu and English.' (15 years, 16 years and 15 years old male students)

M12: 'Teachers often used to teach and explain in Pashto, because Urdu and English were difficult for us.' (16-year-old male student)

M14, M16: 'The medium teachers used to deliver and explain content most of the time in Pashto and Urdu. They rarely explain in English.' (14 years and 15 years old male students)

The students at secondary schools study general science, consisting of physics, chemistry, biology and mathematics, which are mandatory for them to pass the secondary school board examination. The students responded as follows: 'we studied Physics, Chemistry, Biology and Mathematics' (13 and 15 years old male students). They were all from the same grades and studied all the mentioned textbooks.

The national curriculum textbooks of science hardly link and portray their content with the natural and socio-economic world of the students in which they find themselves. Students' responses to the question of how the textbooks were relevant to their lives. More than 80% said they could not find anything related to themselves and their natural world and spoke clearly about the relevance of their textbooks and curriculum to their natural and socio-economic surroundings, such as:

M15: 'No, there isn't any such content ... these curriculum and textbooks make us to think or relate everything to Islam or Muslim identity. You will not find anything or discussion about our local geography, climate, mountains etc. [...] [I]f you closely read the textbooks, both the science and social science textbooks have the same approach [...] to look at everything within the Islamic approach. Science textbooks did not have content about regional science, scientists, their achievements and their history, and scientists are presented as Muslims in our science textbooks. Even social science textbooks do not contain content about our regional and local histories etc.' (15 years old male student)

Students did not find themselves and their inspirations in the national curriculum textbooks for secondary schools. Some students responded, such as *M19*:

'It [*science textbooks*] associated us with the larger Muslim community and disassociated us with our ethnicity, identity and rest of the world.' (15 years old male student)

Generally, all the textbooks and specifically the science textbooks have presented the only authentic source of knowledge for students in schools. The following statements were received in response to the question, 'How do you react to the knowledge presented to you in your curriculum and textbooks?':

M9, M15 and M16: We had no idea at that time because critical thinking or our training to look it critically was not there. The

only source of knowledge for us was textbooks and we thought it was the only source that was provided to us. (15 years old male student, 15 years old male student and 16 years old male student)

M12: These [*textbooks*] were presented as authentic sources. Almost all of them said the same. (16 years old male student)

The Islamisation of science textbooks also impacts the development of students' critical thinking and skills. The same findings were revealed in a study by Saada and Magadlah (2021). It resulted in making the young minds of secondary school students look and think within the Islamic framework. Most of the students considered the scientific explanation and knowledge of the physical world less authentic as compared to the Islamic one. The majority of the students had the same opinion, such as *M20*'s response:

'Science is based on observation and experiments, which can be proved wrong anytime ... Its knowledge is uncertain ... Every time it changes while Islamic or Quranic knowledge is certain and did not change from 1400 years ago till now.' (15 years old male student)

During focus group discussions, they (students) did not find science in accord with religion or Islam. They led the debate and discussion on the early Islamic history of the Prophet Muhammad (PBUH). *M4, M5, M6, M7, M12, M14* and *M18* tried to defend his argument, such as:

'Come on, you people forgot Ghazwa Badr [The Day of Criterion in Quran] ... Only 313 Muslims defeated more than thousands of Non-Muslims despite the Non-Muslims being equipped with more arms than Muslims but Muslims defeated them with a strong belief in Allah [*Muslim God*].' (16, 15, 16, 15, 16, 14, 15 years old male students)

Most students consider science Western knowledge or even call it evil knowledge. *M13* maintained:

'Science is western knowledge ... it is not less than evil knowledge ... Look at the US drones!' (16-year-old male student)

The field data with students unravelled the role played by the Islamic or Qur'anic content of science textbooks in the Islamisation of science education. These 'technologies of power and self' of the 'regime of truth' influenced students' minds to think and look at science within the Islamic framework. In addition, it resulted in making the national curriculum textbooks increasingly irrelevant to the socio-economic realities and in fulfilling students' inspiration in which they find themselves.

Discussion and conclusion

This study problematises the religious content in the national curriculum textbooks of science, particularly physics and biology, for secondary school students in tribal districts of the province of Khyber Pakhtunkhwa that are newly merged into this province after 9/11. Based on extensive fieldwork data and insights from Foucault's concepts of the 'regime of truth' and Talbani's conceptualisation of Islamisation, his study found that the sampled textbooks of science are used by the state as influential 'technologies of power and self' to

portray science within a religious or Islamic framework and Islam as a scientific religion for students. Taking insights from Foucault's concepts of the 'regime of truth' and Talbani's conceptualisation of Islamisation, this study found that the sampled textbooks of science are used by the state as influential 'technologies of power and self' to portray science within a religious or Islamic framework and Islam as a scientific religion for students. The study suggests that most students conform to this portrayal of Islam and science in the sampled textbooks. In addition, these findings suggest that it curtails the students' critical thinking and the outcomes of scientific knowledge. The phenomenon makes education increasingly irrelevant to changing socio-economic realities and aspirations among students. Scientific inquiry or knowledge is always considered independent of social and political forces (Evans 2011). It has its own methodology to explain nature and life. Scientific methodology and pedagogy are based on human observations and experimentation. Scientific knowledge and inquiry do not conform to, nor are they influenced by, the political and social values and forces of society (Marcotte 2006). With that backdrop, science education in Pakistan is shaped under the influence of the state-backed policy of Islamisation (Lall & Saeed 2020).

The universalisation of education and improvements in curriculum based on the principle of the inclusion of pluralistic ideas and scientific knowledge that meets the needs of the day have largely increased and improved worldwide (Durrani & Dunne 2010). Pakistan is still lagging in improving its overall education system and, more importantly, its curriculum (Noreen & Tahir 2020). The education system in Pakistan, especially in the tribal regions that have had a history of conflict and religious militancy, is fraught with problems such as low literacy rate, bad teaching quality and, most importantly, outdated curriculum and textbooks. The issue of quality of education remains prominent in the context of Pakistan (Nayyar 2013). Keeping in view the education crisis in Pakistan, the debate on improving the curriculum to improve the critical thinking skills of the students is not even part of the national discourse (Nayyar & Salim 2005).

However, the case of Pakistan's science textbooks not only limits and imprisons the scientific inquiry to the Islamic framework but also uses science as an explanatory tool to identify Islam. In addition, the incorporation of Qur'anic verses (religious text) in the science textbooks of physics and biology emphasises Islam not only as a complete code of life but also as a scientific religion that explains the natural forces of nature and life. The Islamisation of science education seems to be part of the larger ideological project based on Islam to sustain the power and control of the ruling elites of the state on society. The study suggests that the government of Pakistan and education policymakers can use other means to promote patriotism based on religion rather than doing so at the huge cost of depriving students of their basic right to get a quality education. This kind of socialisation is dangerous

for local and regional security because it glorifies jihad and violence in the mind of students and makes them more prone to join militant networks.

Acknowledgements

We are thankful to all the participants of this study and our key informants who did not allow us to mention their names in the acknowledgment; however, we still wish to acknowledge them, because without them we would not have been able to complete this paper.

Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

Q.J. and S.U. were responsible for conceptualisation, methodology, formal analysis, investigation and writing of the original draft. B.U.H. contributed to the investigation and writing of the original draft; Y.X. contributed to the conceptualisation, writing of the original draft and supervision. All authors have read and agreed to the submitted version of the manuscript.

Ethical considerations

For the fieldwork in the study area, the study proposal was approved by the Home Department Academic Committee (ref. no. F-1-Q1-2022). The formal field visit approval was obtained from the host university and PhD Supervisor. Furthermore, for data collection and participant observation, the researcher has strictly followed all the field ethics directed by the ethics committee of the host department. Fully informed verbal consent was obtained from all research participants before proceeding for collecting data from them.

Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Data availability

This is a qualitative study based on participant observation, fieldwork and interviews. The transcript of the interview is available from the corresponding author on request.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

References

Akhtar, A.S., 2020, 'The War of Terror in Praetorian Pakistan: The emergence and struggle of the Pashtun Tahaffuz Movement', *Journal of Contemporary Asia* 51(3), 1–14. <https://doi.org/10.1080/00472336.2020.1809008>

- Ali, G. & Hussain, E., 2020, *Perspectives on contemporary Pakistan: Governance, development and environment*, vol. 37, Routledge, London & New York.
- Ali, N., 2019, *Delusional states feeling rule and development in Pakistan's Northern Frontier*, Cambridge University Press, London.
- Aoki, T.T., 2004, 'Curriculum in a new key the collected works of Ted T. Aoki', in R.L. Pinar & W.F. Irwin (ed.), *Curriculum in a new key*, pp. 1–224, Lawrence Erlbaum Associates, New Jersey, NJ.
- Apple, M., 2019, *Curriculum and ideology*, 4th edn., Routledge, London & New York.
- Bernstein, B., 2018, 'On the classification and framing of educational knowledge', in R. Brown (ed.), *Knowledge, education, and cultural change*, pp. 363–392, Routledge, London.
- Buhari, O.K., 2019, 'Scientific anti-Islamism: The exploitation of science and cognates in anti-Islamic narratives', *Islamophobia Studies Journal* 5(1), 45–60. <https://doi.org/10.13169/islstudj.5.1.0045>
- Durrani, N. & Dunne, M., 2010, 'Curriculum and national identity: Exploring the links between religion and nation in Pakistan', *Journal of Curriculum Studies* 42(2), 215–240. <https://doi.org/10.1080/00220270903312208>
- Evans, J.H., 2011, 'Epistemological and moral conflict between religion and science', *Journal for the Scientific Study of Religion* 50(4), 707–727. <https://doi.org/10.1111/j.1468-5906.2011.01603.x>
- Foucault, M., 1980, *Power/knowledge: Selected interviews and other writings, 1972–1977*, Vintage Books, New York.
- Foucault, M., 1982, 'The subject and power', *Critical Inquiry* 8(4), 777–795. <https://doi.org/10.1086/448181>
- Geertz, C., 1971, *Islam observed: Religious development in Morocco and Indonesia*, vol. 37, University of Chicago press, Chicago.
- Given, L.M., 2008, *The sage encyclopedia of qualitative research methods*, vol. 1 & 2, Sage, London.
- Government of Pakistan, 2006, *National curriculum for Islamic studies from grade 3 to 10th*, pp. 5–12, Ministry of Education: Department of Curriculum Islamabad, Islamabad.
- Hayat, M., 2009, 'Still "Taming the turbulent frontier"? The state in The Federally Administered Tribal Areas of Pakistan', *JASO-Online* 1(2), 179–206.
- Hoodbhoy, P., 1991, *Islam and science: Religious orthodoxy and the battle for rationality*, Zed Books, London.
- Jan, Q., Xie, Y., Qazi, M.H., Choudhary, Z.J. & Ul Haq, B., 2022, 'Examining the role of Pakistan's national curriculum textbook discourses on normalising the Taliban's violence in the USA's post 9/11 war on terror in South Waziristan, Pakistan', *British Journal of Religious Education* 44(2), 1–10. <https://doi.org/10.1080/01416200.2022.2036102>
- Kamat, S. & Mathew, B., 2010, 'Religion, education and the politics of recognition: A critique and a counter-proposal', *Comparative Education* 46(3, special issue 40), 359–376. <https://doi.org/10.1080/03050068.2010.503746>
- Khan, J., 2014, 'The rise of political Islam in Khyber Pakhtunkhwa: The case of Muttahida Majlis-e-Amal (MMA)', *The Dialogue* 19(3), 300–312.
- Lall, M., 2010, 'What role for Islam today? The political Islamisation of Pakistani society', in S. Lyon & I.R. Edgar (eds.), *Shaping a Nation: An examination of education in Pakistan*, pp. 96–113, Oxford University Press.
- Lall, M. & Saeed, T., 2020, *Youth and the National narrative education, terrorism and the security state in Pakistan*, 1st edn., Bloomsbury Publishing Plc, London.
- Legare, C.H. & Visala, A., 2011, 'Between religion and science: Integrating psychological and philosophical accounts of explanatory coexistence', *Human Development* 54(3), 169–184. <https://doi.org/10.1159/000329135>
- Marcotte, R.D., 2006, 'Islam and science', *Ars Disputandi* 6(1), 140–145. <https://doi.org/10.1080/15665399.2006.10819915>
- Nayyar, A.H., 2013, *A missed opportunity: Continuing flaws in the new curriculum and textbooks after reforms*, Draft Report Prepared for Jinnah Institute Islamabad, Jinnah Institute Islamabad.
- Nayyar, A.H. & Salim, A., 2005, *The subtle subversion: The state of curricula and textbooks in Pakistan Urdu, English, Social Studies and Civics*, Islamabad: Sustainable Development Policy Institute, Islamabad, Pakistan.
- Noreen, S. & Tahir, A., 2020, 'Textbooks & nationhood: A content analysis of Punjab secondary curriculum English textbooks during early Ayub Khan era in Pakistan', *Journal of Arts and Social Sciences* 7(2), 269–178. [https://doi.org/10.46662/jass-vol7-iss2-2020\(269-278\)](https://doi.org/10.46662/jass-vol7-iss2-2020(269-278))
- Pinar, F.W., 2012, *What is curriculum theory?*, 2nd edn., Routledge, London.
- Qazi, M.H., 2021, 'Construction of students' religious national identities in Pakistani state schools and its implications for minorities', *Compare: A Journal of Comparative and International Education*, 1–18. <https://doi.org/10.1080/03057925.2021.1886053>
- Saada, N. & Magadlah, H., 2021, 'The meanings and possible implications of critical Islamic religious education', *British Journal of Religious Education* 43(2), 206–217. <https://doi.org/10.1080/01416200.2020.1785844>
- Saigol, R., 2007, 'A tale of two communities Pakistani textbook representations of 1857', *Pakistan Perspective* 12(2), 61–95.
- Shah, S.W.A., 2012, *Political Reforms in the Federally Administered Tribal Areas of Pakistan (FATA): Will it End the Current Militancy?* Heidelberg Papers in South Asian and Comparative Politics, working paper No.64. <https://doi.org/10.11588/hpsap.2012.64.2232>
- Shahid, S., 2016, *Education policies in Pakistan: Politics, projections, and practices*, Oxford University Press, Oxford.

Taj, F., 2011, *Taliban and anti-Taliban*, 1st edn., Cambridge Scholars Publishing, Newcastle upon Tyne.

Talbani, A., 1996, 'Pedagogy, power, and discourse: Transformation of Islamic education', *Comparative Education Review* 40(1), 66–82. <https://doi.org/10.1086/447356>

Ullah, S., Guoqiang, H., Khan, U. & Niazi, K., 2020, 'State, religion and the marginalisation of traditional healing in Gwadar, Pakistan', *Medical Humanities* 46(4), 444–453. <https://doi.org/10.1136/medhum-2019-011747>

Wazir, M.A. & Goujon, A., 2019, *Assessing the 2017 Census of Pakistan Using Demographic Analysis: A Sub-National Perspective*, Vienna Institute of Demography Working Papers, No. 06/2019, Austrian Academy of Sciences (ÖAW), Vienna Institute of Demography (VID), Vienna.

Yates, L. & Grumet, M., 2011, *World yearbook of education 2011: Curriculum in today's world: Configuring knowledge, identities, work and politics*, Routledge, New York, NY.

Zaman, M.Q., 2018, *Islam in Pakistan: A History*, Princeton University Press, Princeton, NJ.