education sciences

MDPI

Article

Conversations on Critical Thinking: Can Critical Thinking Find Its Way Forward as the Skill Set and Mindset of the Century?

Maura Sellars [1,*], Razia Fakirmohammad [2], Linh Bui [1], John Fishetti [1], Sarfaroz Niyozov [3], Ruth Reynolds [1], Nisha Thapliyal [1], Yu-Ling Liu-Smith [2] and Nosheen Ali [2]

1 School of Education, University of Newcastle, Callaghan 2308, Australia; ThiNgocLinh.Bui@uon.edu.au (L.B.); John.Fischetti@newcastle.edu.au (J.F.); Ruth.Reynolds@newcastle.edu.au (R.R.); Nisha.Thapliyal@newcastle.edu.au (N.T.)
2 Institute for Educational Development, Aga Khan University, Karachi 74800, Pakistan; razia.fakirmohammad@aku.edu (R.F.); yuling.liusmith@aku.edu (Y.-L.L.-S.); Nosheen.Ali@aku.edu (N.A.)
3 Department of Curriculum, Teaching, and Learning, University of Toronto, Toronto, ON M5S 3H7, Canada; sarfaroz.niyozov@utoronto.ca
* Correspondence: Maura.Sellars@newcastle.edu.au

Received: 22 August 2018; Accepted: 12 November 2018; Published: 19 November 2018

Abstract: The capacity to successfully, positively engage with the cognitive capacities of critical thinking has become the benchmark of employability for many diverse industries across the globe and is considered critical for the development of informed, decisive global citizenship. Despite this, education systems in several countries have developed policies and practices that limit the opportunities for students to authentically participate in the discussions, debates, and evaluative thinking that serve to develop the skill set and mindset of critical thinkers. This writing examines the status of critical thinking in four different contexts across the globe as reflected in educational policies and academic experiences as a preface to investigating actual classroom practices and possible impacts the support of critical thinking skills may have on the potential development of the global citizens of the future. Each vignette reflects the contextualized difficulties that are presented by social and cultural concerns and traditions of making meaning. These stories of education also illustrate the various ways in which the skills and capacities of critical thinking are interpreted in different contexts and address the negative nuances with which thinking critically has become associated. Finally, a pedagogical model of teaching, which may support student development of the skill set of critical thinking within the boundaries of social and cultural mindsets, has been developed.

Keywords: critical thinking; making meaning; global education; 21st century

1. Introduction

Critical thinking has emerged as one of the most highly coveted skills to enable education, life and work success in the innovation age [1]. While there are many definitions of critical thinking, the following is proposed [2]:

> Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness.

> It entails the examination of those structures or elements of thought implicit in all reasoning: purpose, problem, or question-at-issue; assumptions; concepts; empirical grounding; reasoning leading to conclusions; implications and consequences; objections from alternative viewpoints; and frame of reference ... the development of critical thinking skills and dispositions is a life-long endeavor. The development of critical thinking is included in most conversations related to the development of so-called "21st century skills". This manuscript is the initial investigation of the discourses around the notion of critical thinking as reflected in four diverse global contexts. It seeks to investigate the current perceptions of critical thinking in the relevant education policies of these different cultural environments if they exist, and, if possible the degree to which critical thinking is articulated. Further study intends to research how, if at all, the rhetoric of critical thinking is actually realized in educational practices and to what degree the development of critical thinking skills can contribute to informed global citizenship. This writing presents the initial investigation of the policyscape in each of the four contexts included in the study. These are captured in the vignettes developed by the participants with academic educational experiences in dissimilar backgrounds. The vignettes are followed by a discussion of the major theories defined and developed by scholars of critical thinking in western tradition and a suggested framework for the possible identification of, and the potential success of teaching and learning around the cognitive capacities of critical thinking in the formal, educational contexts of the countries of those represented by the collaborative team associated with this research project.

2. Research Context

Across the globe, alternative versions of critical thinking are evolving simultaneously, reflecting the changing purposes of education in response to the evolving nature of work [3,4] and to the economic foundations of global free trade [5,6]. As the economic foundations of neoliberalism continue to impact substantially on educational policy and practice, stressing the importance of human capital and productivity, educational perspectives have shifted from simply teaching students to know and use information to a commitment to developing students' capacities related to the complexity of the interpolated cognitive skills of critical and creative thinking. Technological advancement and the rate and quantity of information that is currently available across the globe to be analyzed, evaluated and enhanced has created a need for students to be able to engage with increasingly complex cognitive skills from a very young age [6].

The current economic marketplace, which is dominated by international conglomerates, principally led by individuals from 'developed' or 'first world' countries (see [3]), may easily take advantage of the human capital and productivity of populations in less developed countries should the educational policies not suitably prepare students to participate effectively in this market place. Despite the difficulties of neoliberalism and the resultant world economic crisis, it appears that the free trade principle of this neo economic rationalism will remain to dominate world trade [6]. While employment is no longer determined by geographical location [3,6], and individuals may have opportunities to become sufficiently mobile to escape exploitation by the capitalist dominated market agenda [7], this is not always possible for entire populations.

3. Purpose of the Research

Global citizenship, a term which is used frequently and inclusively, is often conceived and discussed in terms of the views and aspirations of those whose cultural, social, and personal beliefs are those of the 'developed' countries [8–11]. It is proposed in this research that the key to global citizenship is the capacity to think deeply and reason fairly in order to make decisions, be creative and participate democratically in the global arena. Whilst there are many traditions of philosophical, analytical, and logical thought in various cultural contexts across the globe, this writing explores the role of the cognitive capacities, dispositions and attitudes that generally identified as critical thinking

in the education systems of four diverse environments with the intent to identify the challenges and possibilities that eventually face teachers in their roles as the educators of global citizens. The significance of this research lies in the importance of developing global citizens who have the capacities to identify policies and practices which privilege the few and disempower the many in terms of access to the world's resources. The exploitation of much of the world's capital, both natural and human, is historically well documented [12–14]. The development of critical global citizens lies in the capacities of education systems to employ pedagogies which empower [15,16]. In these educational contexts, the potential for critical thinking is enhanced and nurtured. This, however, may mean doing things differently in classrooms as the world becomes increasingly complex [17–19], and mass education becomes progressively more multifaceted.

Mass education, which prepares students for society, irrespective of cultural context [20–22] has been given the responsibility of preparing students to develop and expand their thinking skills in preparation for a lifetime of engaging with critical and postformal thinking [21], despite the characteristics of many educational systems and their professionals. These characteristics, in many contexts, include adherence to hegemonic boundaries of what constitutes knowledge, implementation of cognitive stage theory without significant attention to sociocultural considerations and the intellectual investigation which focusses on problem solving, not problem finding as an endpoint. This mismatch of educational actuality and the growing need for teachers and students to learn to think differently elicits several concerns. While economic enterprise in a global free market may be a compelling motivation for school reform, more urgent, social and environmental purposes confront educationalists. These pertain to meaning—making from multiple perspectives as global multiculturalism becomes the rule, not the exception and to the ways in which the criminal mismanagement of the earth, its flora and fauna can be mitigated and repaired.

Without the interactive, educational environments of schools and their socializing function in societies, the challenges to think differently and engage with cognitive skills of critical, and postformal thought, would have limited opportunities to be developed for entire populations. Although it may be argued that conventional pedagogical practices do not currently provide fertile environments for the successful development of these cognitive competencies, in some contexts, this may be changing, if only in rhetoric. To investigate the status of critical and postformal thinking in educational documentation across four diverse contexts, vignettes were developed by authors working in tertiary education in each of the settings. The study will then analyse the evolution of critical thinking skills in the schooling sector across Pakistan, India, Vietnam and Australia. India and Pakistan have huge populations of untapped human potential, many of whom are undereducated. Vietnam is currently reforming its educational priorities and curricula to better compete in the global marketplace and Australia is currently entrenched in its own style of neoliberalism. Starting with working definitions in each context, a discussion of the evolution of critical thinking and the current and future trends in historical, political, and cultural terms is presented.

4. Historical Perspectives of Critical Thinking

A review of the historical literature suggests that the notion of critical thinking could be linked to the teaching philosophy of Greek scholar Socrates [23], who demonstrated these skills through a series of probing questions. As a result, people at the time learnt through self-exploration and inquiry. This necessitated rationalizing and justifying existing knowledge and claims. This teaching practice denies the authority of singular perspectives, knowledge and power. The positive outcome of this approach to learning was seen in terms of raising an individual's confidence and in the ownership of living a self-examined life; a life of quality. This perspective of teaching and learning was adapted to empower individuals so they could reflectively question and critically evaluate the merits and demerits of existing social and cultural norms and values, so they could offer rationalized judgments and through this positively transform their society. Socrates' philosophy of teaching reflected his philosophy of human nature. He theorized that thinking was built in human nature but that if much

of the thinking was left to itself, it would remain uninformed and subjective. Socrates believed that how humans live and act depended on the quality of thinking. With this philosophy, he began to teach for fostering thinking through probing questions.

Socrates' foundation for this critical thinking paradigm invited significant debate on reform in education many centuries later. In fact, since his time, or even before, there have been two thinking and education traditions competing for space and influence over centuries right to present: (i) the tradition of transmission and indoctrination, which has promoted recall, regurgitation, absolute truth, fixed knowledge, conformation, obedience, following and submission; and (ii) the tradition of questioning, challenge, criticality and transformation. It is also safe to say that the second tradition (transformational-critical) would often metamorphose into first (transmission) once it gained power. In Islamic tradition this existence and metamorphosis is well traced by the emergence of Islam as a transformational force and its own mutation into an absolutist framework, as well by the existence of various competing discourses such as Asharites and Mu'taziltes, Karramis and Ismailis, Usulis and Akhbaris, Hanbalis and Sufis [24,25], and of the Salafi and rationalist pluralist Muslim thoughts at present [24]. An example of critical thinking tradition in Muslim history is Abu Bakr Muhammad al-Razi [26], who dared to question the established religious dogmas in the 9th century of Islam, shedding doubts about authority, hierarchy, and authoritative knowledge and promoting the role of intellect, learning, efforts and support in every human's success. Notably, such occasions were rare and had limited growth opportunity in the Muslim history.

In most recent time, the use of critical thinking in teaching practice was evidenced in the seminal works of Freire [27]; Skemp [28]; Ernest [29] and Von Glasersfeld [30] when they each questioned the outcomes of traditional models of learning which emphasized externally imposed performance rather than active engagement in logical reasoning and co-construction of knowledge. Von Glasersfeld [30] writes:

> Reinforcement fosters the repetition of what gets reinforced, regardless of the acting subject's understanding of the problem that was posed, and of the inherent logic that distinguishes solutions from inadequate responses (p. 17).

Freire [27] agreed, adding that in the traditional transmission view of teaching, children are conceived as empty vessels for a teacher to fill up with knowledge, leaving no opportunity for the transactional dialogue, which prompts critical thinking. Skemp [28] confirmed that a traditional view of teaching promotes a practice of rote learning in which learning is built up into a habit of repetition, which can be followed without thinking. Skemp observed:

> . . . certain actions are reinforced as a result of their outcomes, so learning follows action. And what is learnt is action: the cognitive element is small [28].

Educational practices which foster individuals' own ideas, expertise and knowledge through inquiry as well as enhance their independent decision making and active interaction with the outside world, are crucial for effective and meaningful education. Therefore curriculum, pedagogy and assessment, from primary to higher education, are required to engage with pedagogies that foster students' habits of inquiry and the cognitive capacities that facilitate critical thinking.

5. Current Perspectives of Critical Thinking

Additionally, the more recent works of theorists such as Ennis [31], Lipman [32], Paul [33], Scriven and Paul [34] and Facione [35] have not only made a substantial contribution to educational policy and practice, but have also provided a common language around which to discuss the characteristics of the purposeful, disciplined, judicial use of the processes of reflective skepticism that is known as critical thinking. The multiplicity of definitions and interpretations that are currently found in educational, vocational and professional literature are further complicated by the contemporary understanding that critical thinking skills are not, in themselves, a discrete set of skills or activities. Presently, critical

thinking skills are recognized as cognitive capacities which need to be developed in the context of general or specific problem solving in a particular area of knowledge or expertise [36]. Some have also raised questions about whether there is a universally- unified understanding of the concept and procedures of critical thinking. In some cases, questions have even been raised as to whether critical thinking is another western global practice that undermines local values, traditions, and approaches to knowledge, problem solving and decision making. As part of this challenge, Muslim scholars have, for example suggested Islamic versions of critical thinking, problem solving such as jadal, munaqasha, munazara, ijtihad, and shura.

The major work of critical thinking skills is currently understood to be in solving problems that arise in the context of discovery or inquiry. Consequently, the development of these critical capacities is not limited to one discipline area or a range of particular experiences. Due to the nature of the competencies required for critical thinking, the global interconnectedness and rate of knowledge creation, the development of critical thinking skills is a lifelong commitment. The development and practice of critical thinking skills in formal schooling is merely the beginning of this disciplinary process [37]. Nevertheless, school based opportunities to investigate and engage with the logic, hypotheses and decision making skills embedded in the development of critical thinking skills are critical foundations for capacity growth and, importantly, the development of the disposition to engage with critical thinking as a habit of mind [37]. In fact, it has been suggested that the greatest challenge facing schooling in the 21st century is to build students' critical dispositions, confirm understanding and construct personal meaning within the context of diverse discipline specific critical thinking skills [38].

This challenge is a direct reflection of the changing nature of work, especially in Western countries, and the resultant need for students to develop cognitive skills that are characterized by criticality, creativity, flexibility, and currency. However, it is a considerable challenge for public education systems in many countries. Whilst there are many purposes of education, one of the most prominent of these at present is the responsibility to prepare young people for the workforce, for citizenship and to sustain cultural mores and characteristics. In countries where the model of economic rationalism [39] is expressed as a dominant neoliberal paradigm, educational reform is driven by the demands of the economy [40,41] and by the associated market and industry features of competition, benchmarking, quality control and standardization, much of which may not provide authentic opportunities for all students to develop critical thinking skills, as systems such as these are overtly dominated by those seeking to promote hegemony [40].

Despite this apparent paradox in educational goals and practices, the rapidly changing workforce and global economy demand new knowledge, skills and disposition such as those developed in the intellectual activities that support critical thinking. Meltzer [42], for example, clearly indicates that in addition to sound content knowledge, students need to have the skills to live and work in increasingly complex, changeable and challenging contexts. One of the key innovations and problem-solving skills is identified as the capacity for critical thinking. The Foundation for Young Australians [43] has actually quantified the need for critical thinking, indicating that the jobs in the future, which are least likely to be automated, will demand that prospective employees to have critical thinking skills 70% more frequently than in the past and that between 2012–2105 an analysis of 4.2 million job advertisements showed an increase of 158% in the need for applicants to have demonstrable critical thinking skills (1). The Foundation for Young Australians team also notes the impact of global mobility, indicating that, with geographical position no longer being considered an obstacle, the determining factor in employability will be the capacity for improved thinking and cognitive capacities. This is an important concern for educators, considering that critical thinking is recognized as the cornerstone of the much-desired student aptitude for entrepreneurship and enterprise.

The world is changing and the employment prospects around the globe are changing for populations of all countries as traditional occupations are renewed, automated, digitalized or simply made extinct. The human brain has considerable cognitive capability to think critically and to develop

the cognitive capacities of executive function [42–44] that support this type of thinking. The role of education in the development of critical thinking is vital. Schooling can provide multiple occasions for students to practice the skills of critical thinking and change the connectivity the brain [45] to more readily facilitate the growth of these cognitive skills in supportive learning environments and in the company of peers who are encountering the same challenges, inquiries and discoveries. The question is, what policies and practices are education systems in various parts of the world developing so students from their earliest years of schooling have the opportunities and contexts in which to develop authentic critical thinking skills? This question leads to an examination of the various understanding and practices in four diverse contexts.

6. Methodology

This initial section of the research project sought to establish the any writing in the researchers' educational contexts that suggested policies, ministerial statements or other official documents related to education contained references to critical thinking and to the status of such commentary. The researchers comprised a convenience sample of academics with specific interest in critical thinking. These researchers represented three universities and had experience in the academic sector of country of their vignette, allowing them to access and interpret the appropriate documents. This facilitated an accurate, systematic analysis of the documents which could be utilized to inform later stages of the project, as is customary research practice [46]. The raw data provided by educational policies was interrogated for suggestions of innovative practice to support student thinking in the cognitive capacities of critical thinking. The major sources of information were policies, ministerial statements, curriculum and syllabi. Where no evidence of critical thinking in education contexts and materials was found, this was reported, alongside the contextual considerations that may have impacted upon this or resulted in the reluctance to adopt critical thinking as important pedagogical practices in these contexts. This document analysis was undertaken to inform the next stage of the research, which would relate to classroom practices intended to support the development of the capacities of critical thinking. One group of academics, upon finding no evidence of any educational endeavors relating to the cognitive capacities of critical thinking, convened a 'round table' of interested colleagues with international experiences and sound understandings of the concept of critical thinking. Their discussion, whilst not part of a document analysis, was included in this writing, as it provides a snapshot of the cultural and religious context, barriers and benefits with which any critical thinking may be extrapolated to provide an insight into educational contexts which are dominated by prominent cultural and religious ways of making meaning and working with knowledge. Their perceptions are recorded to inform the overall research project.

This writing discusses the answers to the first two research questions:

1. What contextual influences may impact on educational policy statements related to developing students' critical thinking skills?
2. What, if any, do the statements in educational policy, ministerial declarations, curriculum and syllabi indicate about perceptions of the nature and importance of students in schools developing the cognitive capacities of critical thinking?

7. Critical Thinking in the Pakistani Educational Context

This Pakistan vignette on critical thinking begins with illustrating possibilities and challenges for critical thinking in the local history and tradition, followed by contemporary realities of critical thinking in Pakistan, as expressed by 16 participants of Round Table at the Institute for Educational Development and discussed in national educational and curriculum documents. The participants, representing private and public education systems, spoke about their experiences, challenges, possibilities and ways forward for critical thinking in Pakistan education. Several of the participants have contributed to this summary (Razia Fakirmohammad, Sarfaroz Niyozov, Yuling Smith, and Nosheen Ali.

7.1. History and Tradition Contexts

South Asian societies, including Muslim ones, have had long-standing thought traditions that offer new ways for us to think about the contemporary fascination with critical thinking. Notably, both those who promoted thinking, questioning and disagreement, and who rejected these processes have used the Qur'an, hadith and other sources for support. In the Sufi philosophical thought, use of intellect has always been heart-centered, and knowledge without attention to heart and soul has been discounted as bookish. The emphasis on courage, generosity, and the spirit of love has been considered more important than mind-based reasoning, as evidenced by poet-intellectuals like the 13th century Rumi and the 18th century Bulleh Shah [47]. This perspective rejects both rigid ritualistic and mind-centred interpretations of Islam.

Magnus Marsden [48] found that critical discussion, debate and intellectual curiosity are central to Muslim personhood and are actively sought after through local practices of inter-generational pedagogy. Living a "life of the mind" in this region of Pakistan is deeply valued, but focus on intellectual activity is accompanied with a simultaneous valorization of emotional sensitivity and balance. Hence, critical thinking as discernment and intellectual reflection is not a new concept in Pakistan.

However, the emphasis on the "rational" and the "objective" in the definitions of critical thinking today can indeed be traced to Western rationalist tendencies. These approaches, however, often subdue heart and emotions, historically significant *means* and *ideals* in the pursuit of knowledge in Muslim societies, to 'pure' reason. Antidogmatic South Asian Muslim traditions offered a view of living in which faith, reasons and emotions were existing in balance enabling the follower to not fall to all forms of excess and keep them on the straight path. Imagining reasoning outside religious framework was unacceptable in the past, as it is predominantly today. Often those who have asked critical questions and disagreed with those in power and authority, suffered dearly. One might say that critical analytical pedagogies such as questions, disputes, debates and so on were by themselves analyzed as whether they are based on good intentions (*niyat*), aimed a deeper understanding of the reasons for religious and secular acts, whether they proposed improvement of the status quo and harmony, and promoted societal good (*maslahah*), and whether these questions and disagreements were accompanied with humility, good faith and loyalty to the key values, pillars and principles of Islam. To that end, the cases of aforementioned Abu Bakr Razi, have remained very rare historical accidents. Critical thinking, if one might call it so, existed only though emergence of non-orthodox interpretations of the existing beliefs and practices.

Given these historical nuances, the question for global educationists and scholars promoting critical thinking approaches is: How can we ensure that the knowledge in schools does not dismiss locally- grounded, and ethical visions of pedagogy that have historically favored notions of emotional refinement, love, oneness, self-understanding, and service in our part of the world? Our region's history offers us a way to embrace a different notion of critical, creative and heart-centered thinking. It also enables us to address two key problems that hamper meaningful education across Pakistan: one, an overemphasis on rote learning, and two, an overemphasis on a dogmatic and non-pluralist understanding of Islam as well as of Pakistan's "exclusivist" and "theocratic" vision of citizenship education curriculum [49,50] Such an approach connects well with other South Asian traditions of thought that have long emphasized intellectual search, questioned the orthodoxy of the time, and troubled the hierarchies of caste, class and gender.

7.2. Perceptions and Importance of Developing Critical Thinking Skills

For the round table participants, critical thinking was one of the most important skills necessary for students to succeed in education and life. It is an advanced/intelligent thinking skill and disposition, different from ordinary thinking skills in depth, form and purpose. The outcomes of critical thinking are intellectual growth, self-development, improvement, continuous seeking of knowledge, and examination of subjective perspectives. Critical thinking was seen as developing

a habit of self-disciplined learning and may challenge the authority of a teacher and knowledge holder. The participants viewed critical thinking positively. Drawing from the participants' exposures and engagements in professional development activities, critical thinking was viewed as teacher's pedagogical competence and a learning tool to promote student self-directed learning behavior. As some suggested, critical thinking did not emerge in a vacuum, so teachers must provide various perspectives and situations to help students begin with the process. Others indicated that critical thinking entails the elements of systematic inquiry and helps the learner achieve a rational perspective; it is a mode to establish reasoned judgments and rationalized arguments based on evidence and skilful evaluation approaches. From the participants' perspective, critical thinkers address the issues of human irrationality, biases, uncritically-accepted rules, and generalizations.

Giving an example of self-directed learning, (as an outcome of critical thinking), the participants suggested that critical thinking involves learners in evaluating assumptions, facts, and concepts provided by individuals or groups, and making decisions about acceptance, rejections and/or co-construction of the knowledge. They all discussed critical thinking as a good thinking, leading to refining learning, human habits, and betterment of society. Practices, norms, and values could be challenged but within political and national regulations. For example, a participant of British origin, currently teaching in Pakistan, agreed that sternly approach to challenge the removal of monarchy in Britain may not be acceptable, yet one needs to adapt effective communication skills to share their disagreement with the system in constructive manners. From the participants' perspectives, critical thinking does not simply challenge and question everything; it is for the betterment of individuals, organization, and societies. In other words, critical thinking seems to appear as a capability that combines, what Freire coined, both critique and possibility.

Formal schooling appears to be detrimental to critical thinking. The participants indicated that every child is born with the mindset of critical thinking and this can be seen as every child asking questions all the time and disagreeing. However, once the child goes to school, the education/school system discourages such questioning habits and forces the child to conform to the existing learning ethos, follow the rules, become submissive, silent and obedient. Teachers' capacity, skills and work environment have adopted more traditional ways of teaching (e.g., dictation mostly), where in the classroom students are the receivers and they have to remain silent during the lessons. Moreover, it is also possible that due to weak content knowledge or information, teachers are not able to answer students' questions. They feel threatened and would be reluctant to encourage students' questions. Teachers assume that they are obliged to provide all answers. This could be due their experiences of previous learning or professional developments where their own teachers or teacher educators may have been viewed as experts and final authorities. Not inviting questions in a classroom context is a common behavior, which minimizes habits of discussion, questioning and debating among children in Pakistan.

Overloaded, heavy content-based curriculum and existing assessment methods were other challenges. The amount of syllabus that the teachers need to teach and the students need to learn has become an overwhelming burden for both teachers and students. The examinations assess low order thinking and most of the teaching focuses on teaching for examination patterns and tests. The outdated assessment and examination systems require students to remember answers, facts and routines and there is no alignment between classroom activities and assessments. Here are some quotes from the participants:

> There are some cultural barriers, mentioned by the participants, which discourage critical thinking, especially for women. The common social norm expects females to be quiet and this silent trait makes them more appealing to the proposition of marriage. In addition, people feel unease when questions about religion are being asked, not only for Islamiat, but also for Christianity, as this challenges their beliefs.

Similar senses of fear and insecurity also arise with regards to inviting questions on the topics, which promote nationalism and patriotism. It was discussed that powerful people, who believe in and

maintain authority of status quo social values, and norms, resist against nurturing critical thinking. This kind of situation does not only happen in Pakistan, but also in all other societies around the world, such as in US and in UK, mentioned the participants. The education system, teachers' own beliefs/knowledge, and curriculum/syllabus, and lack of resources all play a role in hindering critical thinking. The cultural barriers, such as patriarchy, gender stereotypes, class, ethnic, and religious prejudices give little room for critical thinking to flourish.

Despite all challenges mentioned above, there was a general consensus that Pakistan's historical and present realities present opportunities for critical thinking. A number of the participants suggested that asking questions of all sorts, at times curiosity-oriented or even mysterious wonderings, as well as offering different interpretations on a topic could be considered as examples of critical thinking. When high school students, excited by the stories about medieval Muslim scientists, ask their current teachers whether they can turn a metal or another matter to gold, this creates an opportunity to engage in critical thinking in a subject such as chemistry. Here, the teacher could not simply correct some of the students' misconceptions, but also tell the students about how paradigm shifts have happened in the history of science. Another participant pointed out that students, especially at the younger ages, ask all sorts of questions and these questions can be very critical at times.

The other possibility was embedded in the nature of teaching and beliefs and values of a teacher. A participant acknowledged his instructor, who had encouraged him a number of years ago, to always ask questions and do not give up on questions, for giving up on questioning would betray one's own skills for learning. Giving up on questions will make one obedient and lose independence of thought, said the professor at that time. Since then, the student (Round Table participant) has been asking questions and, most recently, read two books on critical thinking. Critical thinking is fostered when a teacher consistently makes attempts to engage students in thinking rationally, empirically, reasonably and empathically, using intellectual and interactive tools such as holding discussions, asking questions, and clarifying concepts and principles. These enable students to analyze, assess, and improve thinking.

A range of national documents were referred to where the skills for living in the 21st century were emphasized. National Education Policy [51] suggests that students be provided with 'room for developing the capacity for self-directed learning, the spirit of inquiry, critical thinking, problem-solving and team-work' (p. 45). Critical thinking is also regarded as one of the core standards of national curriculum:

> Promote higher order thinking skills that develop the capacity for self-directed learning, a spirit of inquiry, critical thinking, reasoning and teamwork [51] (p. 31).

Following on the curriculum standards, provincial governments have begun to take reform initiatives in revising textbooks.

Development projects and interventions from outside have also created opportunities for critical thinking. Strengthening Teacher Education in Programme (STEP), supported by Global Affairs Canada (2009–2016), promoted higher order thinking and creativity in the teachers and students in rural Sindh and Balochistan. The new B Ed. Honors, introduced in 2010, as well as the current Master's degrees at the Institute for Educational Development (IED), have specific courses on critical thinking, reflective practice, and propose interactive strategies to promote critical thinking. There are institutes such as Lahore University of Management Science (LUMS), Habib University, and Aga Khan University's IED that are promoting analytical and critical skills through academic programmes and courses.

Media and global technology have been broadening people perspectives and values. For example, there are many TV channels and newspapers such as *The Dawn* and *the Express* that are pushing the boundaries. A participant suggested that youth and their parents are becoming critical thinkers by default so as to ensure that they do not become victims of parochial and extremist agendas and groups promoted by social media. This fear and survival-based drives for critical thinking are something that is learnt informally, but it suggests a great need for such thinking at present. Never has critical thinking been so important than now to ensure that one is making the right choices, especially in religion and

politics. As a result, critical thinking in Pakistan, while is not dead, is also yet not alive in practice. It has existed historically in the culture and tradition, albeit not as dominant thought process. Critical thinking exists in multiple forms and manifestations and in different contexts. However, practices at school level are very weak and limited, though there is willingness to nurture and recognize the educational worth of critical thinking. Perhaps more research needs to be done in exploring perceptions and practices about critical thinking in the context of formal and informal educations in Pakistan.

The articulation of critical thinking needs to change so that it is not seen always as a threat to those in power and society. If critical thinking is promoted as an improvement and constructive tool, as one grounded in the tradition and culture, as a win-win tool, and as one vital for the country's survival in the 21st century (as opposed to a deposing and alien item, and as a partisan agenda), it has more opportunity for flourishing. Critical thinking also cannot happen overnight: There has to be a well thought, long term strategy for developing critical thinking as grounded, sustainable skills and dispositions. Critical thinking opportunities should be explored in proposing alternative views, creating spaces for open and honest discussions, solving problems, and discussions and debates. Good pedagogy of encouraging healthy questioning attitude, creating a room for discussion and debating should be exercised as a normal practice in the classroom. At the system level, the outdated assessment and examination system in Pakistan should be revamped to a system which is nourishing the 21st century skills and does not emphasise rote learning and cramming of countless accumulation of arbitrary facts and rules, so that critical thinking can be promoted.

Finally, we also need to ponder the question of critical thinking, *for what?* In an age of widespread cultural misunderstandings, unending violence at every level of human life, and climate catastrophes, should a 21st century education espouse other ideals? Ideals of ecological stewardship, gender equality and cultural bridging as necessary elements of what the sources of global problems are and how the purpose of critical thinking may be redefined beyond the immediate goal of educational attainment. This emphasis means that we recognize what mainstream education models embodying the dualities of mind and heart have done to damage social relations as well as the physical condition of the planet, and develop a more holistic approach of critical thinking to address pressing social problems.

8. Critical Thinking in the Educational Context of Australia

In the context of the Australian curriculum the idea that a series of overall capabilities, including critical thinking, must be promulgated, at the same time as curriculum content and associated values and skills are taught, has been clearly accepted and is evident in the continually evolving Australian Curriculum (Australian Curriculum Assessment and Reporting Authority (ACARA)), Version 8.3, 2016. The Australian Curriculum (It should be pointed out that Australia has a federal system of government, and the primary responsibility for schooling, including curriculum, rests with the six states and two territories—not the national government—this is not currently the case as there is now in place a national Australian curriculum which, of necessity, overarches the educational curricula of the states and territories. There are also other national educational initiatives in place that cannot be ignored) has evolved from the Melbourne Declaration statement of 2008, endorsed by all the state Ministers of Education and published by the Ministerial Council on Education, Employment, Training and Youth Affairs [52]. It established two key goals for Australian schooling: (i) that Australian schooling promotes equity and excellence; and (ii) that all young Australians become successful learners, confident and creative individuals and active and informed citizens (p. 7). The 2013 ACARA statement, *General Capabilities in the Australian Curriculum*, argued that the capabilities required of all Australian school children are to be individuals who can manage their own wellbeing, relate well to others, make informed decisions about their lives, become citizens who behave with ethical integrity, relate to and communicate across cultures, work for the common good and act with responsibility at local, regional and global levels' [51]. These general capabilities comprise an 'integrated and interconnected set of knowledge, skills, behaviors and dispositions that students develop and use in their learning across the curriculum, in co-curricular programs and in their lives outside school' [52].

The fact that the learning area curriculum documents do not explicitly address behaviors and dispositions ensures that these cross-curriculum capabilities are essential for a futures-focused Australian Curriculum. Thus the Australian curriculum has a list of content and skills in specific disciplines and teachers are expected to adapt and apply generic capabilities within these areas.

Dr Richard Paul, from the Center for Critical Thinking in California, argued that critical thinking is underpinned by critical questioning. He indicated that there are essentially three types of questions we can ask about problems—those where there is only one answer, those that call for a subjective preference, and those that require evidence and reasoning within conflicting systems [53]. The latter types of questions are the ones that we refer to as critical questions to enable critical thinking. Elder and Paul argued that the questions you formulate should address various sectors of the thinking process, and so, if we were considering an idea or a proposal that we would like to implement, then we would critically address the:

1. goals and purpose;
2. questions that lead to the proposition or proposal;
3. information, data and experience gleaned;
4. inferences and conclusions made;
5. concepts and ideas evoked;
6. assumptions;
7. implications and consequences;
8. viewpoints and perspectives.

When we assess the answers to these questions we would employ standards of thinking, thus querying:

- clarity;
- accuracy;
- precision;
- relevance;
- depth;
- breadth;
- logic;
- fairness.

It is thus a two-part process of carefully examining all aspects of the decision-making process and then checking on the quality of your evaluation.

The Australian Curriculum, in an unusual manner, links critical and creative thinking in one capability along with other capabilities such as *Ethical Understanding*, *Personal and Social* capability and *Intercultural Understanding*. *Critical and Creative Thinking* focuses on developing the skills associated with ascertaining the quality of material presented and the use of new ideas in meaningful ways. There has been an increase of interest in teaching critical and creative thinking skills, as the skills needed are seen to be transferable, contributing to lifelong learning across the curriculum. Baumfield [54] argued that teachers who implement a thinking skills approach often create a more positive learning environment in their classrooms and so the capability of *Critical and Creative Thinking* links with *Personal and Social Capability* and dispositions, borne out in research literature from studies such as Harvey et al. [55]. Thinking skills are core intellectual activities that include solving problems, making decisions, developing an argument and using evidence in support of that argument, and applying that argument to new situations. Creative thinking is a particular form of thinking, relevant to the latter theme of application of thinking, strongly linked to thinking skills acquisition and manipulation. The curriculum sees them as mutually intertwined with the emphasis on communication, sharing thinking and giving and receiving effective feedback. The *General Capabilities in the Australian Curriculum*

document [52] stresses the dispositions of *Critical and Creative Thinking* and specifically mentions inquisitiveness, reasonableness, intellectual flexibility, open and fair-mindedness, a readiness to try new ways of doing things and considering alternatives, and persistence. The skills of productive, purposeful and intentional thinking can only be achieved by focusing on these dispositions to develop more confident and autonomous problem solvers and thinkers. This capability also focuses on the need for reflective thinking to assist students to learn about their own thinking and manage it successfully.

The *Critical and Creative Thinking* capability is addressed at six developmental levels [1–6] from beginning school age (five to six years old) to the end of compulsory schooling at about age 16 to 17 years. Within these levels, four groups of thinking are focused upon: inquiring—identifying, exploring and organising information and ideas; generating ideas, possibilities and actions; reflecting on thinking and processes; and analysing, synthesising and evaluating reasoning and procedures. These are the skills associated with ascertaining the quality of material presented and the use of the new ideas in meaningful ways, the latter being seen as creative thinking although strongly linked to critical thinking skills of acquisition and manipulation.

Critical thinking is at the core of most intellectual activity that involves students in learning to recognise or develop an argument, use evidence in support of that argument, draw reasoned conclusions, and use information to solve problems [56].

There are four organising elements of the critical and creative thinking capability with a series of skills under each element as below:

- *Inquiring, identifying, exploring and organising information and ideas*: pose questions; identify and clarify information and ideas; organise and process information;
- *Generating ideas, possibilities and actions:* imagine possibilities and connect ideas; consider alternatives; seek solutions and put ideas into action;
- *Reflecting on thinking and processes:* think about thinking (metacognition); reflect on processes; transfer knowledge into new contexts;
- *Analysing, synthesising and evaluating reasoning and procedures*: apply logic and reasoning; draw conclusions and design a course of action; evaluate procedures and outcomes.

Just one example can be used to exemplify the guidance a teacher can get from this capability area of the curriculum, focusing on global education and global ramifications of the curriculum material. Within the *Generating ideas, possibilities and actions* element students are asked to 'identify situations where current approaches do not work, challenge existing ideas and generate alternatives' (Year 6) with the specific example being 'examining the environmental impact of transporting goods'. All the curriculum outcomes are coded and so in this instance the critical thinking strategies can fit in an integrated unit of work which links with English ACELT1800; Science ACSIS104; History ACHHS123; and Geography ACHGK035.

9. Critical Thinking in the Educational Context of Vietnam

Developing a Western thinking like critical thinking in a Confucian culture in Vietnam is not simple. It requires curriculum designers to consider the congruence between sociocultural characteristics and the nature of critical thinking. Based on the status of its implementation in current education, a conception of critical thinking needs to consider three issues: (1) seeking harmony culture versus the essence of advocacy expressed in critical thinking; (2) political operation versus western thinking; and (3) a compatible framework for general education. The first issue can be solved with the inclusion of fair-mindedness of critical thinking. It can also be sorted out by another translation of critical thinking that reduces the confrontation of arguing. Importantly, this translation has to be congruent with the political operation in Vietnam.

Critical thinking is perceived as an important ingredient for both individual and national competitiveness in the global arena [36,57], So, this higher order thinking has been adopted and adapted through the West to the East. However, critical thinking is not context-free. It has to

be congruent with social, cultural context in which it roots and functions [57–59]. It means that Vietnamese context should be addressed to see how critical thinking is perceived and used. Vietnam is an East-Asian country and has its own unique cultural characteristics. Like other Confucian heritage cultures, Vietnamese culture has been heavily influenced by Chinese ideologies, such as Confucianism, Taoism, and Buddhism [60]. The adoption of these doctrines resulted in the power distance between superordinates and subordinates, the overemphasis on collectivism over individualism, masculine over feminine, and the inclination of uncertainty avoidance [61]. These cultural characteristics potentially challenge the development of debate-pattern thought like critical thinking in the Vietnamese context. Specifically, the rigidly hierarchical society does not encourage social debate, but seek to maintain harmony among members in community [62]. Thus, Vietnamese people tend to avoid confronting others to protect their relationships.

However, Vietnamese culture is the hybrid of Eastern and Western cultures rather than the homogeneous one in terms of cultural characteristics. The Western influences associated with the invasions of French colonialism and U.S. imperialism from the last half of the twentieth century changed various facets of Vietnamese society. They resulted in new form of writing (shift from characters into Latin alphabet), innovative educational ideologies (under Saigon regime), changes in architecture, cuisine, etc. [63,64]. Associated with these changes, the influences of Confucian culture have been gradually less dominant [65]. More recently, the adoption of Marxist-Leninist philosophy from Russia for political purposes has taken Vietnam closer to Western ideologies. This western doctrine has driven the way that Vietnamese people think and act with the orientation of dialectical materialism [66]. This fact partially supports Vietnamese people in learning and developing a set of mind that empowers their advanced thinking like critical thinking. It also reflects that Vietnamese people are inclined to be open to change and flexible to adopt new things that benefit themselves. Critical thinking now has become a crucial demand for Vietnamese students in the context of global integration and market economy [57,66]. Changes in work places have changed the nature of problems that workers encountered [67]. To be efficient in their work, people have to be able to think critically [36]. Moreover, maintaining traditional cultural values contributes to the increasing demand of critical thinking in Vietnamese society. Le [68], when analysing the influences of foreign, especially western cultures to contemporary Vietnam, alleged that apart from the advantages of enriching Vietnamese culture, external cultural factors are blindly adopted by young generations, which can damage traditional values. This practice heightens the significance and imperativeness to develop critical thinking among Vietnamese students.

Educational Documentation

While critical thinking gradually receives burgeoning attention from Vietnamese academia, the fertilized soil for this western thinking to flourish is tertiary education. This educational level seems to have a strong move to develop t critical thinking among their students. Ten years ago, critical thinking skills were mostly taught to preservice English teachers, and those in some big universities as formal and informal logics. However, the demand for critical and creative thinkers from the labour market has impacted the visions of universities [64]. Today, many of them treat developing critical thinking as a crucial learning outcome in their training programs (see EIU [69], TDTU [70], To [71]); Despite its adoption in university education, there is no consistent definition devoted for critical thinking [72]. Normally, the term critical thinking means criticising (phê phán) when it is translated into Vietnamese [73]. The translated version implies a negative meaning that criticising other arguments or rejecting beliefs, knowledge, which are different from the major, official or unacceptable ones [74]. This meaning appears to prevent critical thinking from being accepted in a harmony seeking culture like Vietnam.

Recently, Vietnamese scholars have used dialogic thinking (understood as phản biện) as an alternative to express the more precise meaning of critical thinking [57,72,74–77]. Accordingly, critical thinking is interpreted as a set of cognitive processes, which allow thinkers to examine different

arguments and to keep a sense of fair-mindedness [57,72]. Critical thinkers are expected to make decisions based on the grounds of sound evidences and principles of logics. During this process, individuals have to employ four higher order thinking skills: analysis, synthesis, evaluation, and creation [78]. The contents of these cognitive skills are less detailed, however, they are similar to those in Bloom's Taxonomy. The case of creation, Bui [79] articulated that students' creativity was not limited in their thinking but transformed into their actions, or manifested in the cooperation of varying mental skills. She argued that because of these higher order thinking, students could recognise that there were different ways to deal with an issue. Thus, they became tolerant of other ideas, which could differ from theirs. Generally, this perspective of critical thinking seems to adopt Ennis' and Paul's notions, which treat critical thinking as a cognitive process to improve their thinking via examining arguments and keeping fair-minded [75–78].

Adopting Paul's substantive trans-disciplinary conception of critical thinking, Phung [80] developed a comprehensive framework to prepare pre-service teachers for critical users of English in her institute. Critical thinking is defined as a process aiming to develop intellectual traits via intellectual standards (denotes the quality of thinking) and social values. In the global context, these values were identified as equity and powerfulness for community, which enable people to live together in peace [81]. Whereas, in the context of TESOL (Teaching English to Speakers of Other Language), social values are collaboration and sustainable development. Phung also noticed that intellectual standards, traits, and values should be redefined to be congruent with the context in which critical thinking was employed. Standing with these ideas, her framework of critical thinking consisted of six dimensions:

- Logical dimension: thinking is an inference process;
- Psychological dimension: thinking is a psychological process;
- Semiotic dimension: thinking is a process of expressing stored thoughts via language;
- Sociopolitical dimension: thinking is under the influences of the contextual factors;
- Methodological dimension: thinking process employs different strategies and principles to be operated;
- Educational dimension: thinking is a process to develop universal intellectual traits (intellectual humility, intellectual autonomy, intellectual integrity, intellectual courage, intellectual perseverance, confidence in reason, intellectual empathy, and fair-mindedness).

These two perspectives of critical thinking are being pursued to develop a relevant concept for the Vietnamese context. At the first glance, they bridge the gap between critical thinking and Vietnamese sociocultural characteristics. They both place an emphasis on the nature of critical thinking as an evaluative process in a fair-minded manner. This aspect not only reveals the strong meaning of critical thinking [79], but also mitigate the confrontation of advocacy. Nonetheless, these conceptions have their own problems to be implemented widely in Vietnamese education. According to the definition of critical thinking as a dialogical thinking in Vietnamese Communist party's guideline, this term is defined as judgements, evaluations, and decisions towards scientific works in different areas [82]. It means that the using of dialogic thinking is limited within academia but not for education area. Furthermore, although Phung [80] considered the congruence between adopted conception of critical thinking and Vietnamese context, her framework was developed for tertiary education, perhaps it cannot be applied to general education without some alteration or consideration of the structure for younger students. It is not to say that Paul's substantive transdisciplinary conception of critical thinking was constructed for higher education, it seems to be different to cognitive skills and well as quantities of these skills that Bui [79] addressed or others that also be used for general education [36,67,77].

In general education, critical thinking is still an alien term for both teachers and students. There are less materials mentioning this thinking, including students and teachers' books and guidelines. However, critical thinking can be traced, using its characteristics via different cognitive skills or

competencies. For examples, problem solving class in Niemierko's taxonomy [83] that contemporary secondary education uses for assessment purposes [84]. Analysis, synthesis, and evaluation skills are combined and involved under the term of applying knowledge (consists of applying knowledge in typical situation and applying knowledge in problem situation). In July 2017, the latest blueprint for the curriculum and textbooks innovation after 2018 was issued. In this vision, although critical thinking was not addressed as a competency, its characteristics can be seen from three related competencies: learner autonomy, problem solving, and creative thinking [85]. Learner autonomy is emphasized so that students are capable to govern themselves in affective, intellectual, and prospective career. They are expected to understand their rights as citizens and then make right decisions or take actions suitable to their rights. They should distinguish right actions from the wrong ones; evaluate the strength and weakness of their feelings and control them and become independent individuals. As students, it is hoped that they take control over their learning and to evaluate their own thinking in order to adjust it as well as their learning methods. These characteristics are akin to intellectual autonomy, which is related to critical thinking [86].

Critical thinking is also manifested in the skills of problem solving. According the curriculum and textbooks innovation initiative [85], when solving learning problems, students are encouraged to not blindly conform to ready-made truths. Instead, they are expected to be critical to analyse and evaluate these arguments or opinions; assess the probabilities of potential risks of each decision or solution. Concurrently, they must eliminate their bias and make decisions based on sound evidence. Effective problem solvers are also willing to reevaluate their decisions and reflect on their thinking process. With the emphasis on evaluative and decision-making processes of thinking, problem solving encompasses the component of critical thinking, or it becomes an arena for critical thinking to take place [87]. Being open to original ideas and evaluating issues from different angles are the representatives of creative thinking that the blueprint supported to develop in general education. These characteristics are identical to the creative component and fair-mindedness of critical thinking. Critical thinking is argued to include two parts: evaluative and non-evaluative. The latter component refers to skills, such as formulating questions, hypothesis, conceiving alternatives, and devising plans for experiments as creative aspects of critical thinking [76,77,87]. To elucidate the close relationship between critical thinking and creative thinking, Paul and Elder [53]) stated that these thinking skills look like two sides of a coin and therefore critical thinking without creativity reduces to mere scepticism and negativity, and creativity without critical thought reduces to mere novelty (p. 35).

In summary, critical thinking in general education can be sought in different competencies or cognitive skills that the contemporary education aims to develop or intends to launch. It becomes apparent that critical thinking is incorporated into other constructs that have a mutual relationship with it. When students become autonomous learners, effective problems solvers, and creative thinkers, they have the skills to become critical thinkers. However, sometimes this reciprocal relation may not work if critical thinking is not developed along with its counterparts. For example, solving problems does not necessary lead to critical thinking. Therefore, to generate critical workers and citizens, critical thinking needs to be determined as a substantive thinking competency. Associated with this determination, sub-skills should be involved to facilitate students to think in a critical manner.

10. Critical Thinking in the Educational Context of India

> We need critical thinkers—Times of India, 13 June 2011;
>
> Can India have a future without critical thinkers—Hindustan Times, 26 June 2016;
>
> The elephant in the room—Indian Express, 28 July 2017;
>
> Critical thinking a post-truth remedy—The Hindu, 30 Jan 2017.

These four recent headlines in leading English-language dailies highlight a resurgence of interest in teaching critical thinking in popular and policy discourse on education in India. This vignette

provides an overview of current learning and teaching conditions in Indian schools and attempts a preliminary mapping of critical thinking discourses within this sociohistorical context.

While there appears to be consensus in English-language news media discourses about the need for teaching critical thinking, there is less agreement about what critical thinking is and why we should teach it. The existence of discourses of critical thinking in India can be traced back to precolonial educational traditions rooted in Hinduism and Islam. Education scholarship in this area is still in its nascent stages but is a growing area of interest. For instance, Hirst [88] and Vaidya [89] discuss contributions to logic and critical thinking derived from classical Hindu, Buddhist, and Jain philosophies (2nd CE). Contemporary proponents of critical thinking can be found in diverse educational settings from primary schools to universities. Within these settings, practitioners differ between those primarily oriented towards producing globally competitive workers as well as those primarily oriented towards learner-centred and inclusive pedagogies and education for democratic citizenship. Similarly, reference points or inspiration for contemporary critical thinking discourse tend to be diverse, if primarily Western, and include educational thinkers as philosophically diverse as Jean Piaget, Lev Vygotsky, John Dewey and Gestalt psychologists [89]. This review suggests that proponents appear to share conceptions of the outcomes of critical thinking (e.g., students should be able to analyse information, solve problems, communicate, and collaborate and so forth, but not necessarily how to teach it and where to place it in the school curriculum.

Underlying this divergence is a centuries-old debate about the purpose of mass public education that is for human capital and economic development versus education for a just and democratic society. A human capital rationale manifests where advocates argue that critical thinking is essential for preparing current students for a future in which few people will have a single career or field of work for their entire lives. This individualized and privatized conception of critical thinking tends to dominate the Indian corporate sector and relatedly, the recently commercialized and privatized regions of the schooling sector. Indian education has now become an important hunting ground for school choice advocates (see e.g., Center for Civil Society), corporate philanthropists (e.g., Gates Foundation), and global venture capitalists. This has given rise to highly lucrative business opportunities in the areas of curriculum development, standardized testing, teacher professional development and educational leadership (see e.g., Adhyayan, Teach for India). In addition, advertising the teaching of critical thinking is becoming an integral component of branding strategy for exclusive, high fee private schools. In brief, critical thinking has become central to private school branding and the different ways in which commercial operators strive to set themselves and their students apart from one another.

A broader and more social and relational conception of critical thinking can be found in contemporary education legislation and some spaces within teacher- and social science education. The major point of divergence in theory as well as practice appears to centre on the following question: In addition to conventional conceptions of critical thinking, should critical thinking teach a critical and contextualized understanding of the cultural diversity that constitutes Indian society? [90,91].

Educational Policy and Documentation

Recent national education policies such as the 2005 National Curriculum Framework, the 2009 Right to Education Act, and the 2009 National Curriculum Framework of Teacher Education, has affirmed the importance of critical thinking [91]. This section briefly identifies language and understandings of critical thinking in current national policy. In the 2005 National Curriculum Framework the concept of critical thinking is mentioned five times in the sections on Forms of Understanding (p. 47), Some Developmental Considerations (p. 53), Learning to Read and Write (p. 59) and the concluding Epilogue [92]

Instead of a structure built to promote success for a select few, we must adopt a structure that engages participation in learning by all. The base should be so sturdy it lasts a whole life. The pillars should be broadened and redefined. New pillars like personality, character, physical fitness, creative and critical thinking should be laid alongside the old academic pillars of math, science, history etc.

In the 2009, the Right to Free and Compulsory Education Act [93], the language of critical thinking is not included, but the following excerpt is provided to indicate the potential overlap between a child rights-based and critical thinking- approach to pedagogy and curriculum. Article 29, Curriculum and Evaluation Procedure (2). The academic authority, while laying down the curriculum and the evaluation procedure under subsection [49], shall take into consideration the following, namely:

(a) conformity with the values enshrined in the Constitution;
(b) all round development of the child;
(c) building up child's knowledge, potentiality and talent;
(d) development of physical and mental abilities to the fullest extent;
(e) learning through activities, discovery and exploration in a child friendly and child-centered manner;
(f) medium of instructions shall, as far as practicable, be in child's mother tongue;
(g) making the child free of fear, trauma and anxiety and helping the child to express views freely;
(h) comprehensive and continuous evaluation of child's understanding of knowledge and his or her ability to apply the same.

The 2009 National Curriculum Framework for Teacher Education is a process-based approach to teacher education, based on a curriculum, which would allow student teachers to develop an understanding of self and others, including: "content enrichment to generate understanding and knowledge, examine disciplinary knowledge and social realities, relate subject matter with the social milieu and develop critical thinking" [92], "to generate knowledge and critical thinking and professional skills in pedagogical observation, drama, craft, storytelling and reflective enquiry." [92]. Progressive shifts in education legislation notwithstanding, the challenge of implementation remains a formidable one, given a historical legacy of colonial and postcolonial schooling, which has legitimized and reproduced educational as well as social inequality [93–95].

While there are divergent conceptions of critical thinking, there is general agreement that Indian school teachers are not equipped to teach these cognitive skills. Not in the least because critical thinking has been absent from teacher education policy and practice in colonial and postcolonial Indian education [94,96,97]. Teacher educator Poonam Batra [98] phrases the challenge confronting Indian teacher education in terms of individual as well as structural transformations. She argues for the need to cultivate a critical social consciousness in teachers as well as to amplify teacher agency and support pedagogical empowerment: "The central question the NCF evades is: How do you enable critical thinking and meaning making among children (the aim of the NCF) with a teacher who has not been through such a process herself?" [98].

In concluding this vignette, the terrain of critical thinking discourse in India is in urgent need of systematic exploration and mapping. This brief exploration identifies two distinct and even contradictory forces that have invigorated this terrain in recent times. A third and related imperative for teaching critical thinking has grown with the rise of right-wing, Hindu fundamentalism over the last three decades. In 2015, India witnessed the election of the political party that represents this social movement—the Bharatiya Janata Party (BJP)—and the subsequent mainstreaming of discourses of patriarchy, Islamophobia and casteism. Similar to the last time that the party won national elections in 2002, the BJP has resumed its systematic project of removing all secular influences and perspectives from the mass education system—through curricular/textbook as well as governance reforms for basic and higher education. The explosion in religious intolerance, discrimination, and violence across all sectors of Indian society have raised fresh questions about the purpose of mass education in a democratic, diverse and secular nation such as India.

11. Results

An analysis of these snapshots of how critical thinking is understood in the different contexts illustrated, provides a notion of the complexity of critical thinking, its interpretations, and the ways in

which it may be represented in diverse cultural education systems. Four significant trends emerged as essential issues to be discussed in any attempt to incorporate critical thinking skills into education systems. These were identified as (i) cultural, social, religious and political sensitivities, (ii) the purposes for which critical thinking may be incorporated into classroom discourse, [99] the uncertain nature of what is meant by critical thinking, and [34] the need for clarity around the pedagogical perspectives, strategies and interactions, which have the potential to engage students in the cognitive capacities of critical thinking.

11.1. Cultural, Social, Religious and Political Sensitivities Which Impact on Purposes for Teaching Critical Thinking

It is obvious from the various vignettes that writers are aware of and wary of cultural, social, religious and political sensitivities aroused by the idea of being 'critical'. In Pakistan for example it is obvious that being intellectually analytical is not acceptable without also being emotionally linked—considering oneness and service to the wider world. In Australia critical thinking is increasingly being linked to creativity—to build new ideas and new solutions. It appears to be increasingly linked to being useful and adaptive rather than being an intellectual exercise—which may signal that controversial critical thinking may not be welcome. This seems to be suggestive in the analysis of Indian educational endeavours. Advocating skills to enable students to express opinions may be safer than trying to change entrenched divisions and diversity.

It is also clear that what is critical in one context is not necessarily critical in another. The idea of building a national workforce with a politically compliant and often uniform constituency seems at odds with the idea of having a critical workforce and a diverse range of viewpoints and opinions of what the national should look like. In Vietnam the diversity of influences on its traditional cultures, and its peoples' and institutions' ability to adapt to change has depended, not on dialogic critical thinking skills but on collective thinking and an inclination towards avoidance of uncertainty—pursuing social harmony. However, the influences of western cultures on contemporary Vietnamese work practices and values cannot be blindly accepted without weighing up various points of view and so critical thinking in order to preserve national cultural and social focus is becoming more important. Critical thinking can be a force for tradition. The notion of critical thinking seems to set up false dichotomies of emotion versus rationality; traditional versus modern, Western versus Eastern; ethical versus dishonourable; significant versus insignificant; historical versus futuristic; and judgemental versus accepting. If only the world was so simple—the true value of critical thinking is that it enables us to face the real everyday issues of our cultural, social, religious and political sensitivities and provides a way forward.

The analysis of findings indicates that across the curriculum, in four contexts, teaching students to think critically has become very important as well as popular. However, the level of its implementation varies from context to context. For example, Australia has taken various initiatives to design curriculum, from primary to high education to encourage educators to teach critical thinking. Various deliberations put forward students' active engagement in learning processes with the distinct purpose in some curriculum areas identified as contributions to social justice. Scholars in Vietnam redefine critical thinking—as processes of thinking intertwined with social and collaborative value to narrow the gap between critical thinking and Vietnamese sociocultural characteristics as part of their determination to develop Vietnam's potential to be positively active in the global free trade market. In the context of India and Pakistan high fee private schools, do provide space for students' active participation in the learning processes; however, no such research has been done as to whether they are teaching critical thinking, and for what purpose. In the context of Pakistan, the situation to promote critical thinking is not hopeless but possibilities and difficulties of teaching students to think critically have not been unpacked as yet. In both these countries, it is becoming a necessity in the face of parochial and exclusive national and religious discourses and ideologies because of these countries' untapped human

potential. The purposes for which critical thinking skills may be incorporated in mass education in these countries are undetermined.

11.2. The Nature of Critical Thinking

The essential nature of critical thinking is developed around the understanding of deliberate, complex cognitive activity at a level that includes *Higher Order Thinking Skills* [100] being operationalized in specific ways and for specific purposes. Initially defined by the members of the Delphi Project,

> We understand critical thinking to be purposeful, self-regulatory judgment that results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. [101]

This understanding of critical thinking describes not only the cognitive capacities of critical thinking, but also articulates the need educators to support the development of student attitudes, dispositions and metacognitive capacities to facilitate effective critical thinking skills. The consensus developed by this project group included consideration of the everyday, the novel and the innovative events that need to be evaluated productively using the skills and dispositions of critical thinking, which are considered to be essential at all levels of education, citizenship and purposeful employment. An important aspect of this work on critical thinking is the degree to which the inquisitiveness, persistence and trust of reasoning are compatible with the cultural in which learners are situated, and the degree to which bias and prejudice can be identified, confronted and minimized. This aspect of the capacities of critical thinking may be accommodated by the inclusion of the contextual dimension of the thinking in the definition of critical thinking. However, it could be argued that the contexts of some of vignettes presented here may prove to be culturally intolerant of both the dispositions and cognitive capacities of critical thinking as a western way of thinking and decision making.

Given the cultural, social, religious and political sensitivities discussed in previous sections, it may be most productive to put semantics to one side and to simply interrogate the skills with which students must engage to become successful, productive, and constructive members of the society in their own contexts. Discussing these cognitive capacities under terms or attempting to bring these intellectual pursuits together under a universally acceptable term may also be counterproductive, especially when the terms used do not represent synonymous intellectual activity and interaction to those required for critical thinking. An example of an attempt to bring about a universally comprehensible and acceptable 'label' for these intellectual activities can be found in the Program for International Student Assessment (PISA) literature, which attempts, perhaps unsuccessfully, to bring these cognitive competencies together as 'problem solving'. The Organization for Education and Cooperative Development (OECD) determined 'problem-solving' to be one of the key international benchmarks for PISA examinations. PISA (2015, p. 3) states:

> Collaborative problem solving (CPS) is a critical and necessary skill used in education and in the workforce. While problem solving, as defined in PISA 2012 (OECD, 2010), relates to individuals working alone on resolving problems where a method of solution is not immediately obvious, in CPS, individuals pool their understanding and effort and work together to solve these problems. Collaboration has distinct advantages over individual problem solving because it allows for: (i) an effective division of labour (ii) the incorporation of information from multiple perspectives, experiences and sources of knowledge [99] enhanced creativity and quality of solutions stimulated by the ideas of other group members.

This definition of collaborative problem solving is now a measured component of PISA, with Minsters of Education around the world making key decisions on the state of schools in their regions based on definitions that may or may not be culturally contextualized or proper for their context. What

may prove to be a more inclusive, rigorous, and productive approach to developing these critical thinking attributes in diverse contexts is to examine the steps and processes that are embedded in this construct and to develop these authentically in educational spaces in ways which are appropriate, socially and culturally acceptable and which do not compromise the religious or political beliefs and values held by the schools, students, and teachers and which promote problem finding.

11.3. Pedagogies of Critical Thinking

Critical thinking can be viewed as both a pedagogical process [44] and as the development of skills which facilitate more complex cognitive capacities [101]. It cannot be realistically assessed as a learning outcome without some content and context in which it operates to improve the thinking and problem solving by which it is categorized [102]. Students need to be presented with tasks that are rich in complexity, challenging and in which they have the interest and intellectual capacities to engage [37]. In this way, teaching for critical thinking has both long-term and short-term goals. As teachers develop different pedagogical strategies to ensure safe, nonjudgemental, inclusive interaction in classrooms in diverse cultural contexts, they develop communities of respectful learners who can both voice their distinct opinions and hear the opinions of others [103]. This requires teachers themselves to think and act as facilitators of learning, not transmitters of knowledge [104], and, as the role of the teacher changes, then so must the role of the students, who become partners in the process of change in the teaching and learning context [104]. Whilst there are no authentic attempts to assess critical thinking in the standardized, widespread tests that are readily available at present, there are a number of interesting frameworks available [105]. Figure 1 illustrates the complexity and the components of pedagogical strategies which can facilitate deeper, more reflective investigation of the subject matter under investigation in a wide variety of contexts and support the development of the attitudes and dispositions of critical thinkers.

The eight elements of thought (see Figure 1 below), provide a guide to ways in which the complex thinking around the issue, topic or situation can be organized. The systematic interrogation of the issue, topic or situation lies in firstly determining the purpose for which the thinking is being purposefully and intellectually engaged. This supports the development of appropriate and precise question, from which to identify any assumptions that are embedded. This can be then followed by establishing various perspectives on the matter, determining how well informed these points of view may be and researching or recognising the underpinning conceptual understandings and what each of these may infer, but not actually state. The final process involves thoroughly investigating the implications of all the information, concepts and inferences that have been ascertained as relevant. At each step of this process, there are precise ways in which the constructs are examined. These are nominated as the nine intellectual standards that must be considered as the evaluative process to which each of the eight elements are subjected in order to be recognized as authentic considerations in the pursuit of this intellectual activity [2,33,35,106–108]. This inclusive framework, therefore, provides a basis from which these habits of thinking can become part of student learning, irrespective of the diversity and differences that are found in every classroom in every educational context. The framework also has the potential to prompt and promote the very best of higher order thinking in the teaching and learning partnership. This framework can be utilized to guide student thinking and the development of critical thinking skills in a linear manner theoretically. In practice however, the students may need to return to earlier stages prior to finding effective solutions to the issues or problems under scrutiny, despite their attempts to analyse and examine the constructs as thoroughly as they are able in the initial stages. Learning to work with the intellectual standards and elements of the framework is itself the process of developing the cognitive capacities, attitudes and dispositions of critical thinkers.

Figure 1. Model of the Eight Elements of Thought and the Nine Intellectual Standards of Critical Thinking. (Developed from [2,33]).

11.4. Pedagogies to Support the Development of Critical Thinking

To engage with the framework detailed in Figure 1, teachers and students need to engage in significant opportunities for dialogue. This alone may substantially challenge the traditional ways in which many students and their teachers work together in the learning process. The dialogical processes that are characteristic of transactional pedagogical strategies change the roles of both the teachers and the students [109,110]. Students will be required to engage with higher order thinking skills, to value and respect the views of others and to work collaboratively as a community of learners [104,111,112]. As many countries, including those featured in the vignettes presented here, include various taxonomies of cognitive skills in the curriculum documents and as such are familiar to teachers, a widely available taxonomy was incorporated into the elements of thought and intellectual standards identifies in Figure 1.

The detail provided in Figure 2 indicates one way in which these skills and cognitive capacities can be developed within a commonly implemented taxonomy [100]. In this table, the higher order thinking skills of analysing, evaluating and then creating have been used to provide opportunities for introducing and promoting the elements of thought and intellectual standards indicated in Figure 1. Additionally, as the indicating verbs [100] are scrutinized in each of these levels of cognition, activities can be designed to include these processes. For example, in the level of analysing, the cognitive capacity of differentiating can be supported by discriminating between perspectives represented, selecting purposeful questions, focussing on assumptions and points of view and distinguishing between the concepts that can be identified in the information that is under consideration. All this thinking can then be evaluated in terms of detecting errors or fallacies or critiquing using the nine intellectual standards found in Figure 1. This integration of the higher order thinking skills, the intellectual standards and the elements of thought can support the lifelong task of thinking in ways that promote the best possible decisions, attitudes and skills for effective citizenship. It also presents a basic framework from which students can take opportunities to investigate culturally appropriate notions of fairness and a paradigm from which to work with others to solve problems and create powerful, inventive solutions to questions which are important to the students, developmentally and academically appropriate and culturally acceptable.

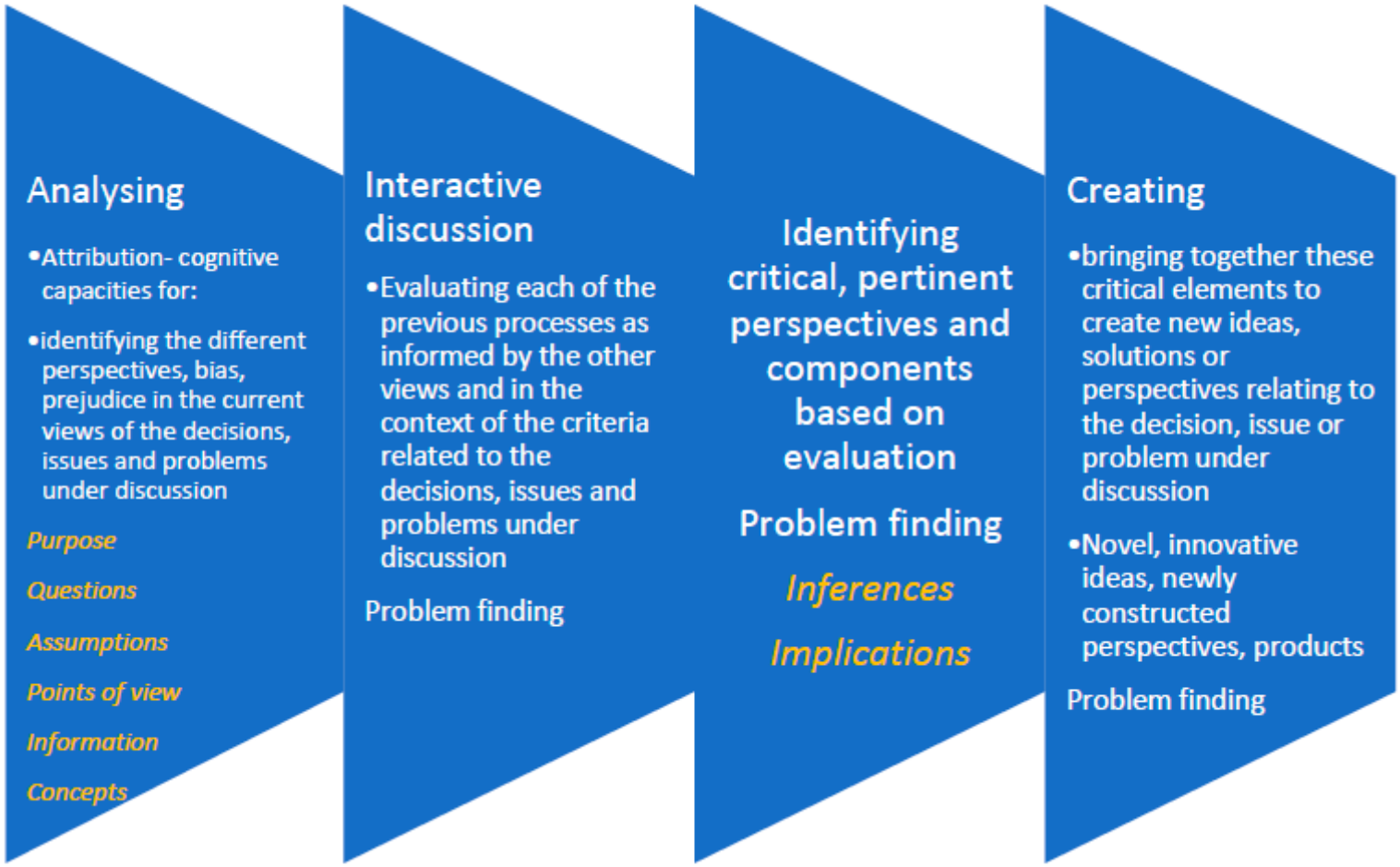

Figure 2. Pedagogical Model for Teaching Critical Thinking: Clarity Accuracy Precision Relevance Breadth Depth Logicalness Significance Fairness. Developed from [2,33,100].

12. Conclusions and Implications

The above cases and following discussion suggests a number of interesting issues for further exploration. Firstly, across Pakistan, India, Vietnam and Australia, there is a recognition that critical thinking is a very significant capacity, quality and skill for the 21st century, at the level of individual, community and nations and globe. It enables the students, communities and nations to be successful, independent, creative, tolerant, and constructive. It allows individuals and communities to identify what is good for them and resist what might harm them. It opens the space for sharing, transacting and transforming. Critical thinking not only serves different purposes, but also takes various forms and shapes, in different contexts. Critical thinking, as skill or capacity is also contested in the sense that different people, cultural traditions, ideological and economic discourses, including religious ones, who all claim to be promoting it, give it different meanings and use it for their various purposes. It is neither a neutral and nor objective, solid and immutable construct.

Secondly, formal schooling, including its pedagogical approaches, however, appear to be non-conducive to promoting critical thinking. There is a need to build on the existing possibilities and potentials such as non-formal thinking, non-orthodox streams (e.g., Sufi tradition in Pakistan), oppositional and hybrid positions such as dialectical and dialogical methodologies in Vietnam. There is also a need to build inclusive frameworks and pedagogies, highlighted in Figures 1 and 2 of the paper. The inclusive critical thinking framework above comprises of 8 elements that are presented as basic competencies and as scaffolding to building the attitudes and dispositions of critical thinkers. Its pedagogies suggest that critical thinking needs to be understood, not only as an outcome to be achieved, a concept to be attained and learnt and applied only when passing high stake exams, but also as a process and pedagogy. Teaching for critical thinking should be facilitated and supported developmentally through critical thinking skills and procedures which are embedded in the content, resources, pedagogies, relations and classroom and school culture. While there exists no single understanding and unified enactment of critical thinking in the education systems, not just across the four countries discussed, but within a single country's education system and even within each teacher's practice, the modes of thinking, standards of intellectual quality and pedagogical frameworks can be readily aligned to the commonly implemented cognitive taxonomy developed by Anderson and Krathwohl [100]. This may provide a common understanding of critical thinking across diverse contexts and limits the possibilities that uncritical thinking, rote, passive and indoctrinatory teaching and learnings may be implemented under the terms and rhetoric of critical thinking

Thirdly, the situation with the critical thinking in these vignettes and the broader literature presents a scenario that is similar to many so called global best practices. There are polices which support the implementation of strategies to develop critical thinking at a theoretical level. There exists curriculum documents which attempt to address these conceptual requirements practically into discipline content, knowledge and skills. However, the human interaction, power relationships and pedagogical perspectives that comprise teaching and learning may not be conducive to the development of critical thinking skills [61]. It is important to be conscious of the possible 'distance' between the policymakers' conceptual approach and the realities of the limitations and constraints that may be present in the diverse teaching and learning contexts. With the exception of the Australian perspective, critical thinking is seen as a western practice, because of an emphasis on it in the development and education projects and institutions in other countries which are funded by the west. The word critical appears negative, let alone the possibility of admitting that students are required to question and debate what which comprised formerly - accepted truths and dogmas for face value. Given these concerns, several questions arise. What opportunities will critical thinking skills, attitudes and dispositions have to grow in non-western contexts beyond particular projects and the western funding attached to them? Is the theory of presenting critical thinking as an indigenously existing and constructive force that aims and improvement and development and not as deconstruction an acceptable proposition given the negativity inherent the naming of the construct? May acceptance be perceived to be a diversion from the fact that the crux of critical thinking, even as constructive

force, lies in challenging and deconstructing the existing scientific, political, cultural, and religious propositions, ideas, and perspectives, presented in much of the school curricula, societal media and ideological (including religious) dogmas? What would an indigenous model of critical thinking look like? Could it be understood to be the gradual development of the modes of thinking, intellectual standards and cognitive process organized and dependent on respectful dialogue as elaborated in this chapter, which also incorporates an acknowledgement and sensitivity towards the local cultural, societal, religious, and political variables that comprise context? The next stage of the research project may provide some degree of response to these questions and may be informative in answering the remaining research questions:

- Q3. Where critical thinking and its authentic culturally based counterparts appear in educational documents, is there any evidence of classroom-based practices that articulate the policies?
- Q4. If critical thinking pedagogies in any form are evidenced in school- based practices, what implications may these have for culturally authentic, global citizenship?

It is acknowledged that much of the success of the contextually appropriate implementation of modes of thinking, qualities of thought and pedagogical implementation that is presented in this work depends on the gradual transition from exclusively transmission pedagogies to that that incorporate increasing degrees of transactional strategies which further support the development of transformative educational interactions [110–112]. A shift from rote, passive learning to a more interactive classroom culture may be problematic for teachers who are trained to engage with their professional work in traditional classrooms [107,108]. Changes of pedagogy require the acknowledgement of changes of roles for both teachers and students, with accompanying changes to the balances of power. Despite challenging traditional ways of teaching and learning, the rate of technological change mandates an increase in students' capacities for problem solving, decision making, creativity and innovation. Critical thinking requires consistent participation in the process of intellectual, emotional, and affective engagement with the self, others, texts. and contexts. Critical thinking is an important part of managing change whilst safeguarding against the rhetoric of education influences such as the political-economic principles of neoliberal and conservative ideologies that promote competition, standardization, ranking in education, erosion of indigenous cultures and languages, and economic devastations at the larger societal levels. This paper offers an invitation to students, parents, leaders, be it in the realms of the social, religious, academic and political, to discuss underpinning assumptions of critical thinking and their relevance for betterment of individuals and society in the global context. It also challenges the authors to find a way forward to undertake the next stage of the proposed research project and to gather the information needed to answer the remaining two research questions, the responses to which may prove critical to current understandings of what it means to be an active, informed, decisive global citizen.

Author Contributions: Conceptualization, M.S., R.F., L.B., J.F., S.N., Y.-L.L.-S. and N.A.; Formal analysis, M.S.; Methodology, M.S. Project administration, M.S. and R.F.; Writing—original draft, M.S., R.F., L.B., J.F., S.N., R.R. and N.T.; Writing—review & editing, M.S.

Funding: This research received no external funding

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Foundation for Young Australians. The New Work Minset. Available online: https://www.fya.org.au/wp-content/uploads/2016/11/The-New-Work-Mindset.pdf (accessed on 16 November 2018).
2. Paul, R.; Elder, L. Defining Critical Thinking. Available online: http://www.criticalthinking.org/pages/defining-critical-thinking/766 (accessed on 16 November 2018).
3. Connell, R. The neoliberal cascade and education: An essay on the market agenda and its consequences. *Crit. Stud. Educ.* **2013**, *54*, 99–112. [CrossRef]

4. Gary, K. Neoliberal education for work versus liberal education for leisure. *Stud. Philos. Educ.* **2017**, *36*, 83–94. [CrossRef]
5. Robinson, K. *Out of Our Minds*; Capstone Publishing Co.: West Sussex, UK, 2011.
6. Zhao, Y. *World Class Learners*; Coewin: Thousand Oaks Calif, CA, USA, 2012.
7. Steger, M.; Roy, R. *Neoliberalism: A Very Short Introduction*; Oxford University Press: New York, NY, USA, 2010.
8. One World Nations. First, Second and Third Worlds. Available online: http://www.nationsonline.org/oneworld/third_world_countries.htm (accessed on 16 November 2018).
9. Boli, J.; Ramirez, F.O.; Meyer, J.W. Explaining the origins and expansion of mass education. *Comp. Educ. Rev.* **1985**, *29*, 145–170. [CrossRef]
10. DeMarrais, K.; LeCompte, M. *The Way Schools Work: A Sociological Analysis of Education*, 2nd ed.; White Longman: Plains, NY, USA, 1995.
11. Tait, G. *Making Sense of Mass Education*; Cambridge University Press: Melbourne, Australia, 2013.
12. Kincheloe, J.; Steinberg, S. A tentative description of post-formal thinking: The critical confrontation with cognitive theory. *Harv. Educ. Rev.* **1993**, *63*, 296–320. [CrossRef]
13. Brown, P.; Lauder, H. Education, globalization and economic development. *J. Educ. Policy* **1996**, *11*, 1–25. [CrossRef]
14. Singh, P. Globalization and education. *Educ. Theory* **2004**, *54*, 103–115. [CrossRef]
15. Dale, R. Globalization and education: Demonstrating a "common world educational culture" or locating a "globally structured educational agenda"? *Educ. Theory* **2000**, *50*, 427–448. [CrossRef]
16. Rizvi, F. Postcolonialism and Globalization in Education. *Cult. Stud. Crit. Method* **2007**, *7*, 256–263. [CrossRef]
17. Gidley, J. Prospective youth visions through imaginative education. *Futures* **1998**, *30*, 395–408. [CrossRef]
18. Akbari, R. Reflections on reflection: A critical appraisal of reflective practices in L2 teacher education. *System* **2007**, *35*, 192–207. [CrossRef]
19. Levitt, R. Freedom and empowerment: A transformative pedagogy of educational reform. *Educ. Stud.* **2008**, *44*, 47–61. [CrossRef]
20. Schmoker, M. What money can't buy: Powerful, overlooked opportunities for learning. *Phi Delta Kappan* **2009**, *90*, 524–527. [CrossRef]
21. Gidley, J. Beyond homogenisation of global education: Do alternative pedagogies such as Steiner education have anything to offer an emergent globalising world? In *Alternative Educational Futures: Pedagogies for an Emergent World*; Inayatullah, S., Bussey, M., Milojevicm, I., Eds.; Sense Publications: Rotterdam, The Netherlands, 2008; pp. 253–268.
22. Gidley, J. *Postformal Education: A Philosophy for Complex Futures*; Sternberg, S., Ed.; Springer: Cham, Switzerland, 2016.
23. Gagren, M. (Ed.) *The Oxford Encyclopedia of Ancient Greece and Rome*; Oxford University Press: Oxford, UK, 2010.
24. Marmura, M. Ghazali and ash'arism revisited. *Arab. Sci. Philos.* **2002**, *12*, 91–110. [CrossRef]
25. Wiktorowicz, Q. Anatomy of the Salafi Movement. *Stud. Confl. Terror.* **2006**, *29*, 207–239. [CrossRef]
26. Amr, S.; Tbakhi, A. Abu Bakr Muhammad Ibn Zakariya Al Razi (Rhazes): Philosopher, physician and alchemist. *Ann. Saudi Med.* **2007**, *27*, 305–307. [CrossRef] [PubMed]
27. Freire, P. *Pedagogy of the Oppressed*; Continuum: New York, NY, USA, 1970.
28. Skemp, R. *Intelligence, Learning and Action*; Wiley: New York, NY, USA, 1979.
29. Ernest, P. *Constructig Mathematical Knowledge: Epistimology and Mathematics Education*; Falmer Press: London, UK, 1994.
30. Von Glasersfeld, E. *Radical Constructivism: A Way of Knowing and Learning*; Falmer Press: London, UK, 1995.
31. Ennis, R. A concept of critical thinking. *Harv. Educ. Rev.* **1962**, *32*, 81–111.
32. Lipman, M. Critical Thinking: What can it be? *Anal. Teach.* **1998**, *8*, 1–12.
33. Paul, R. The state of critical thinking today. *New Dir. Community Coll.* **2005**, *130*, 27–38. [CrossRef]
34. Scriven, M.; Paul, R. Defining Critical Thinking. Available online: http://www.criticalthinking.org/aboutCT/define_critical_thinking.cfm (accessed on 7 November 2018).
35. Facione, P. *Critical Thinking: What It Is and Why It Counts*; Pearson: Upper Saddle River, NJ, USA, 2011.
36. Mc Peck, J. *Critical Thinking and Education*; Routledge: Oxford, UK, 2016.
37. Pithers, R.; Soden, R. Critical thinking in education: A review. *Educ. Res.* **2000**, *42*, 237–249. [CrossRef]

38. Garrison, D.R. *E-Learning in the 21st Century: A Framework for Theory and Practice*; Routledge: Oxford, UK, 2011.
39. Pusey, M. *Economic Rationalism in Canberra*; Cambridge University Press: Melboune, Australia, 1991.
40. Melbourne Declaration on Educational Goals for Young Australians. Available online: http://www.curriculum.edu.au/verve/_resources/National_Declaration_on_the_Educational_Goals_for_Young_Australians.pdf (accessed on 7 November 2018).
41. Connell, R. Why do market 'reforms' persistently increase inequality? *Discourse Stud. Cult. Polit. Educ.* **2013**, *34*, 279–285. [CrossRef]
42. Meltzer, L. *Understanding Executive Function*; Meltzer, L., Ed.; Guildford: New York, NY, USA, 2007.
43. McPherson, S. The 'New' Basics and How People are Learning Them. Available online: http://www.fya.org.au/2017/06/29/new-basics-young-people-learning/ (accessed on 7 November 2018).
44. Sellars, M. Intrapersonal Intelligence, Executive Function and Stage Three Students. Available online: https://researchbank.acu.edu.au/theses/320/ (accessed on 7 November 2018).
45. Baars, B.; Gage, N. *Cognition, Brain and Consciousness: An Introduction to Cognitive Neurocience*; Elsevier: Laguna Hills, CA, USA, 2010.
46. Bowen, G. Document analysis as a qualitative research method. *Qual. Res. J.* **2009**, *9*, 27–40. [CrossRef]
47. Ali, N. From Hallaj to Heer: Poetic knowledge and the Muslim tradition. *J. Narrat. Polit.* **2016**, *3*, 2–26.
48. Marsden, M. Living Islam: Muslim Religious Experience in Pakistan's North-West Frontier. Available online: https://journals.openedition.org/samaj/215 (accessed on 7 November 2017).
49. DFID in 2009–2010 Response to the International Development (Reporting and Transparency) Act 2006. Available online: https://reliefweb.int/report/world/dfid-2009-10-response-international-development-reporting-and-transparency-act-2006 (accessed on 16 November 2018).
50. Ahmad, I. Islam, Democracy and Citizenship Education: An Examination of the Social Studies Curriculum in Pakistan. *Curr. Issue Comp. Educ.* **2004**, *7*, 39–49.
51. A National Framework for Professional Standards for Teaching. Available online: http://www.curriculum.edu.au/verve/_resources/national_framework_file.pdf (accessed on 7 November 2018).
52. Australian Curriculum and Reporting Authority. *General Capabilities in the Australian Curriculum*; ACARA: Sydney, Australia, 2013.
53. Paul, R.; Elder, L. Critical thinking: Teaching students how to study and learn (part I). *J. Dev. Educ.* **2002**, *26*, 36.
54. Baumfield, V.; Hall, E.; Wall, K. *Action Research in Education: Learning Through Practitioner Enquiry*; Sage: London, UK, 2017.
55. Harvey, L.; Moon, S.; Geall, V.; Bower, R. *Graduates' Work: Organisational Change and Students' Attributes*; Centre for Research into Quality, University of Central England: Birmingham, UK, 1997.
56. Australian Curriculum and Reporting Authority. *The Australian Curriculum: History (Version 5.2)*; ACARA: Sydney, Australisa, 2013.
57. Bui, L.T. Nang cao suc canh tranh cho sinh vien vietnam tren thu truong lao dong trong nuoc va quoc te (Improving vietnamese students' competitiveness in the domestic and international labour force). *Tap Chi Phat Trien va Hoi Nhap* **2013**, *6*, 55–60.
58. Atkinson, D. A critical approach to critical thinking in TESOL. *TESOL Q.* **1997**, *31*, 71–94. [CrossRef]
59. Fox, H. Listening to the World: Cultural Issues in Academic Writing. Available online: https://eric.ed.gov/?id=ED373331 (accessed on 7 November 2018).
60. Bureau of Naval Personel UN. Confucianism in Vietnam. Available online: http://www.sacred-texts.com/asia/rsv/rsv06.htm (accessed on 7 November 2018).
61. Hofstede, G. Cultural differences in teaching and learning. *Int. J. Intercult. Relat.* **1986**, *10*, 301–320. [CrossRef]
62. Nisbett, R.E. *The Geography of Thought: How Asians and Westerners Think Differently—and Why*; Free Press: New York, NY, USA, 2003.
63. Nguyen, K.K. *Introduction to Vietnamese Culture (National Report)*; United Nations Educational, Scientific and Cultural Organisation (UNESCO): Paris, France, 1960.
64. Nguyen, Q.K.; Nguyen, Q.C. Education in Vietnam: Development History, Challenges, and Solutions. Available online: https://openknowledge.worldbank.org/handle/10986/6424 (accessed on 16 November 2018).

65. Huynh, N.T. Tiep xuc van hoa phuong tay va su hoi nhap van hoa cua thanh pho ho chi minh trong qua trinh phat trien (Ho Chi Minh City in the Process of Western Interaction and Cultural Integration). Available online: http://www.tapchicongsan.org.vn/Home/Thong-tin-ly-luan/2013/24828/Anh-huong-cua-van-hoa-nuoc-ngoai-den-van-hoa-Viet-Nam.aspx (accessed on 16 November 2018).
66. Bodewig, C.; Badiani-Magnusson, R. Skilling up Vietnam: Preparing the Workforce for a Modern Market Economy (Annual Report). Available online: https://openknowledge.worldbank.org/handle/10986/18778 (accessed on 16 November 2018).
67. Halpern, D.F. *Thought and Knowledge: An Introduction to Critical Thinking*, 5th ed.; Psychology Press: East Sussex, UK, 2014.
68. Le, T.A. Anh huong cua van hoa nuoc ngoai den van hoa Viet Nam hien nay (Influences of Foreign Cultures to Contemporary Vietnam). Available online: http://www.tapchicongsan.org.vn/Home/Thong-tin-ly-luan/2013/24828/Anh-huong-cua-van-hoa-nuoc-ngoai-den-van-hoa-Viet-Nam.aspx (accessed on 7 November 2018).
69. EIU. *Educational Outcomes for College Students in Business Administration Department*; Eastern International University: Thủ Dầu Một, Vietnam, 2012.
70. TDTU. *Educational Outcomes for Master Degree in Business Administration*; Ton Duc Thang University: Ho Chi Minh City, Vietnam, 2015.
71. To, H.P. *Educational Outcomes for Students in Business Administration Department*; Hoa Sen University: Ho Chi Minh City, Vietnam, 2009.
72. Do, T.K. Nhung giai phap nham dinh hinh mot phong cach tu duy phan bien (Solutions for Developing Students' Critical Thinking). *Tap chi Phat trien va Hoi nhap* **2013**, *4*, 65–67.
73. Duong, T.H.H. Ban chat cua hoat dong doc van va viec day doc van ban van hoc trong nha truong (The Essence of Literature Reading Activity and Reading-Comprehension Teaching in Secondary Schools). *Tap Chi Khoa Hoc* **2014**, *56*, 48.
74. Le THCG. Understanding about Critical Thinking: Institute of Educational Research. Available online: http://www.criticalthinking.org/pages/center-for-critical-thinking/401 (accessed on 7 November 2018).
75. Ennis, R. The logical basis for measuring CT skills. *Educ. Leadersh.* **1985**, *43*, 44–48.
76. Ennis, R. Critical thinking assessment. *Theory Pract.* **1993**, *2*, 179–186. [CrossRef]
77. Paul, R.; Elder, L. Critical thinking: The nature of critical and creative thought. *J. Dev. Educ.* **2006**, *30*, 34–35.
78. Paul, R. *Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World*; Willson, J., Binker, A.J.A., Eds.; Foundation for Critical Thinking: Tomales, CA, USA, 2012.
79. Bui, L.T. Day va ren luyen ky nang tu duy phan bien cho sinh vien (Teaching Critical Thinking for University Students). *Tap Chi Phat Trien va Hoi Nhap* **2013**, *7*, 76–81.
80. Phung, T.H. A Pilot Comprehensive Critical Thinking Education Framework in TESOL. In *Frontiers of Language and Teaching: Proceedings of the 2010 International Online Language Conference (IOLC 2010)*; Shafaei, A., Ed.; Universal Publishers: Boca Raton, FL, USA, 2010; pp. 124–134.
81. Barber, M.; Whelan, F.; Clark, M. McKinsey & Company: Our Insights. Available online: http://mckinseyonsociety.com/capturing-the-leadership-premium/ (accessed on 7 November 2018).
82. Nguyen, V.T. *Tim hieu mot so thuat ngu trong van kien dai hoc XI cua Dang (Terms using in documents of the 10th national congress of the Communist Party of Vietnam)*; Chinh tri quoc gia Press: Haboi, Vietnam, 2011.
83. Niemierko, B. Taxonomies of educational goals as a lead into creative teacher training. *Pol. J. Soc. Sci.* **2009**, *4*, 93–106.
84. MOET. *Huong dan bien soan de kiem tra (Guidelines for Designing Tests for General Education)*; Ministry of Education and Training: Hanoi, Vietnam, 2010.
85. Government of Vietnam. *Project on Curriculum and Textbook Renovation for General Education*; Government of Vietnam: Hanoi, Vietnam, 2017.
86. Kamii, C. Toward autonomy: The importance of critical thinking and choice making. *Sch. Psychol. Rev.* **1991**, *20*, 382–388.
87. Bailin, S.; Case, R.; Coombs, J.R.; Daniels, L.B. Common misconceptions of critical thinking. *J. Curric. Stud.* **1999**, *31*, 269–283. [CrossRef]
88. Hirst, J.C. A questioning approach: Learning from Shankara's pedagogic techniques. *Contemp. Educ. Dialogue* **2005**, *2*, 137–169. [CrossRef]

89. Vaidya, A. Does critical thinking and logic education have a Western bias? The case of the Nyāya School of Classical Indian Philosophy. *J. Philos. Educ.* **2017**, *51*, 132–160. [CrossRef]
90. Nambissan, G.B.; Ball, S.J. Advocacy networks, choice and private schooling of the poor in India. *Glob. Netw.* **2010**, *10*, 324–343. [CrossRef]
91. Kumar, K. *What is Worth Teaching*, 3rd ed.; Orient Longman: Hyderabad, India, 2004.
92. Venkatesh, K. Negotiating the 'Social' in Elementary School Social Science. *Econ. Polit. Wkly.* **2017**, *52*, 169–172.
93. National Council of Educational Research and Training. *National Curriculum Framework 2005*; NCERT: New Delhi, India, 2005.
94. Government of India. *The Right of Children to Free and Compulsory Education Act*; Ministry of Law and Justice, Ed.; Government of India: New Delhi, India, 2009.
95. Kumar, K. *Political Agenda of Education: A Study of Colonialist and Nationalist Ideas*, 2nd ed.; Sage Publications: New Delhi, India, 2005.
96. Chopra, R.; Jeffrey, P. *Educational Regimes in Contemporary India*; Sage Publications: New Delhi, India, 2005.
97. Sarangapani, P.M. *Constructing School Knowledge: An Ethnography of Learning in an Indian Village*; Sage Publications: New Delhi, India, 2003.
98. Sriprakash, A. *Pedagogies for Development: The Politics and Practice of Child Centered Education in India*; Springer: Dordrecht, The Netherlands, 2012.
99. Ennis, R. A taxonomy of critical thinking dispositions and abilities. In *Teaching Thinking Skills: Theory and Practice*; Baron, J., Sternberg, R., Eds.; W.H. Freeman: New York, NY, USA, 1987; pp. 9–26.
100. Anderson, L.; Krathwohl, D. *Taxonomy of Teaching and Learning: A Revision of Bloom's Taxonomy of Educational Objectives*; Longman: New York, NY, USA, 2000.
101. Facione, P. The Ideal Critical Thinker. Available online: https://www.insightassessment.com/Resources/Importance-of-Critical-Thinking/Expert-Consensus-on-Critical-Thinking/Delphi-Expert-Consensus-Table-1-The-Ideal-Critical-Thinker (accessed on 9 November 2018).
102. Cummins, J. Transformative multiliteracies pedagogy: School-based strategies for closing the achievement gap. *Mult. Voice Ethn. Divers. Except. Learn.* **2009**, *11*, 38–56.
103. Burgh, G.; Field, T.; Freakley, M. *Ethics and the Community of Enquiry: An Approach to Ethics Education*; Thomson Social Science Press: Melbourne, Australia, 2005.
104. Zhao, Y. Students as change partners: A proposal for educational change in the age of globalization. *J. Educ. Chang.* **2011**, *12*, 267–279. [CrossRef]
105. Zhao, Y. (Ed.) *Counting What Counts: Reframing Educational Outcomes*; Hawker Brownlow: Victoria, Australia, 2017.
106. Paul, R.; Elder, L. The Miniature Guide to Critical Thinking. Available online: https://www.criticalthinking.org/files/Concepts_Tools.pdf (accessed on 9 November 2018).
107. McGregor, S. Transformative education grief and growth. In *Narrating Transformative Learning in Education*; Gardner, M., Kelly, U., Eds.; Palgrave Macmillan: New York, NY, USA, 2008.
108. Lave, J.; Wenger, E. *Situated Learning: Legitimate Periferal Participation*; Cambridge University Press: Cambridge, UK, 1991.
109. Smith, M. Communities of Practice, the Encyclopedia of Informal Education. Available online: www.infed.org/biblio/communities_of_practice.htm (accessed on 9 November 2018).
110. Silova, I.; Steiner-Khamsi, G. *How NGOs React: Globalization and Education Reform in the Caucasus, Central Asia and Mongolia*; Kumarian Press: Bloomfield, CT, USA, 2008.
111. Miller, J. *The Holistic Curriculum*; University of Toronto Press: Toronto, ON, Canada, 2007.
112. Haberman, M. 11 consequences of failing to address the 'Pedagogy of Poverty'. *Phi Delta Kappan* **2010**, *92*, 45. [CrossRef]