Digital Dementia and Predisposing Cultural Factors: Emerging Evidence from Thailand

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Introduction: When the Mental Base Disintegrates

Several authors have warned in recent publications of the devastating effects that the overuse of digital technology can exercise on the mental development of children and adolescents. Effects encompass the impairment of memory functions, brain lateralization (the lopsided development of the brain) (West et al., 2015), deficits in the ability to concentrate, executing higher order thinking, suffering from short attention span, memory- and language impairment, underdevelopment of social cognition and behavior as well as emotional disturbances, such as depression (Badke, 2010; Bittman et al., 2011; Carr, 2008; Corredor et al., 2011; Dossey, 2014; Kühn et al, 2011; Spitzer, 2012).

In the following I present preliminary findings from academic practice among typical college students in Thailand. It is suggested that the original framework proposed by Prof. Dr. Spitzer (Spitzer, 2012) can be extended. Not only does the overuse of technology lead to cognitive impairment, but cultural factors in interaction with digital technology can form a crippling alliance to mental development in the form of predisposing factors. Besides neurological evidence, which focuses on physical brain functionality, submitted academic papers allow for additional empirical evidence since written assignments provide direct insight into students’ thinking- and knowledge-acquisition patterns.

In pre-internet and pre-smartphone times, the grading of academic papers was predominantly concerned with the correction of spelling- and grammatical errors, careless formatting, lack of references, clarity of explanations, social biases or weak conclusions. In recent years, the underlying base of cognition itself appears to erode. Recent academic papers lack conceptual scaffolding and logical thought all together. Much presented thinking appears superficial and shallow, lacking concise argument and detail. The question arises how papers can be graded when ‘all’ is wrong, when the entire epistemological base deteriorates. Students from cultures that are still based in traditional literacy and reflective practice continue to do well, whereby students from low-literacy cultures that have been exposed to rote learning do significantly worse. Digital media seem to amplify and bifurcate predisposing factors of culturally imposed limitations.
The Local Environment: Heavy Media Use and the Lack of Traditional Literacy

Thailand’s total population is 64.5 million. The marketing agency We Are Social (2015), who compiles global statistics on new media use, found that of the 23.9 million active Internet users in Thailand, each user spends on average almost 5 and half hours per day using the internet from a PC or tablet and just over 4 hours per day from a mobile phone. Psychologically, any media use in excess of 5 hours per day qualifies as problematic use. DJS Research Ltd (ThaiPBS, 2014) derives at similar numbers. Mobile phones in Thailand are frequently used throughout the day by many: in bed when they wake up (17%); early morning (37%); during lunch (20%); late afternoon (47%); during dinner (17%) and in bed before they sleep (33%). Collectively, Thai Internet users spend 3.1 hours a day on their mobile phones, compared to 2.6 hours spent watching television, 1.5 hours dedicated to PC/laptop time and 0.7 hours used on tablets.

Thailand tops the world in social network access, with Facebook being the most commonly used social application. Most information processing is facilitated for the purpose of instant messaging or chatting, playing games via a mobile phone or tablet, reading news, sports or weather, watching recorded or on-demand videos online, researching products before purchasing and streaming music or radio stations. All of the described media formats have certain properties in common: they are brief, heavily based on subconscious visual communication, formulated for the moment, serving short-term entertainment and they are not embedded in larger cognitive narratives. Opposite examples would be professional podcasts, Blogs, online journals, news-websites and e-learning platforms that demand participatory behavior and reflected pro-active mental construction.

There is little to counterbalance heavy media use. Thailand’s deteriorating education system is largely based on rote learning, while the country has no strong literary or philosophical traditions that would motivate students to permanently engage in book culture. In fact, even native language skills at Thai high schools are vastly deteriorating with Thai students scoring barely above 50 out of a 100 in national O-NET university admission tests (The Nation, 2014). Regarding bi-linguality, Thailand ranked 42nd out of 44 countries surveyed for adult English proficiency, below Vietnam (39), and Indonesia (34), with Malaysia ranking as the top ASEAN country at No. 9 (Bangkok Post, 2012).

The very recent data provides a good picture of context: while modern pedagogy in schools and a strong literacy tradition have never been firmly established on national level, digital media have quickly filled the void. Information processing is facilitated predominantly for personal and entertainment purposes. Students lack opportunity to develop higher order thinking skills since intellectual development is neither scaffold by schools, families, institutions of the private sector, nor by local mass-media. The socio-cultural environment is entirely constructed around the intrinsic needs of personal- and ingroup identities.
Three Examples to Illustrate Aspects of Cognitive Underdevelopment

The following are examples of assignments that have been written on undergraduate Bachelor-level by local students. Foreign students of the same cohort who have grown up in literacy tradition and have been exposed to critical thinking, did not show the same symptomatic effects of cognitive limitation. A detailed text analyses (excerpts below) led to the presented preliminary conclusions.

Example 1 (Student text/excerpt)

Thai Buddhist temple is the most well known spot to surrender stray dogs, since they have a ton of remains. If the temple dogs get along, then stray dog and stray. Other normal spots incorporate disconnected streets or even outside somebody's fence.

This is the reason people can see stray dogs at most sanctuaries around Thailand. Since nobody really cares for these animals, some of them have skin infections that make them lose their skin and they frequently notice awful. Sometimes Buddhist cloisters effectively debilitate individuals from dumping their unwanted pets at temples, since it’s a weight to the resident monk.

Most stray dogs are afraid of people their saw, not just in the temple but stray dogs around Bangkok except the ones who feed them and make them truth that nobody going to hurt them. Some can be regional however, particularly after dark. Along these lines, in case if people not comfortable to walk past them, carry an umbrella or a stick, to be safe.
Comment: Obviously, the student cannot communicate in English language and has most likely used an online translation program. For ‘digital natives’ technology provides the illusive belief of universal validity and reliability. The student doesn’t notice that entire sentences are incomplete and make no sense whatsoever (‘Some can be regional however, particularly after dark’), demonstrating the lack of metacognitive strategies for self-evaluation: if I know that my command of the English language is flawed, I may still find reliable methods to check for mistakes.

The visual metaphor of defending oneself with a stick against stray dogs reveals a very rudimentary picture of reality. Higher-order concepts such as animal rights, social- and health-problems arising from a large population of stray dogs are not elaborated upon, as would be expected for a Bachelor thesis, while no in-text citations back up and justify the writing.

Example 2 (Student text/excerpt)

Another subculture is called hippies it originally started in the mid-1960s in America (San Francisco) by Herb Caen started to spread through other countries around the world. Hippies came from the word hipster literary people who move out of the house away from their family, go into the city for example New York City. Hippies mostly do drugs and move towards violence which forms groups and their own community. For Kenneth Rexroth proposes the terms hipster and hippies to refer to young people participating in black American or Beatnik nightlife. According to what Wikipedia states in sociology and cultural studies, a subculture is a group of people within a culture that differentiates itself from the parent culture to which it belongs, often maintaining some of its founding principles. There are many type of subcultures relating to what has been said like traditions family subcultures that are very close to their kids and teens.

Comment: The quoted Wikipedia source on Hippie subculture is mixed up to the point of being unintelligible, demonstrating that the student does neither understand content nor context of the Wikipedia entry. For example, Herb Caen certainly did not start Hippie subculture and the mention that hippies ‘mostly do drugs’ stands as an undifferentiated over-generalization. The Wikipedia-entry is subsequently managed like a set of Lego-stones where any recombination and randomization of content seems legitimate. Moreover, Wikipedia is treated mentally as an author, an active cognitive agent (‘According to what Wikipedia states...’). The student’s example contradicts theories such as formulated by Ludwig (2015) who claims, based on David Chalmers concept of mental externalization, that Google and Wikipedia represent extended cognitive processes. The counter-argument is that external, pre-structured information is only as valid as it is reconstructed intelligibly in a reader’s competent subjective consciousness. If the reader has little or no prior knowledge, in particular conceptual knowledge that extends beyond the media formats of Google and Wikipedia, the illusive belief in presented online prima facie does not lead to greater insight, but in fact to greater confusion. This is because the reader has simply no mental tools, no internalized frames of reference or strategies at her disposal to critically assess online sources. The last sentence of the text sample is dislocated from the preceding paragraph and its proposition remains unclear, displaying a rather sporadic approach to verbalization.
Example 3 (Student text/excerpt)

Some subcultures are united by shared experiences or activities. For example, surf community which is a lifestyle that associated with those who surf. Some subcultures are united by members who prefer to be differences in the majority of a society’s population. Vampire culture, Those who embraces alternative lifestyle based on vampire and define themselves as human living vampires. They have their own hierarchy system and they are also differentiated from the rest of the society by their cultural patterns. But even they are members of a subculture, they still identify and participate in the larger society. Subcultural studies is all about participant-observation, and emphasize sociological, anthropological, or semiotic analysis in order to address the organization and production of relational, material, and symbolic structures and systems.

Comment: The student attempts to give a definition and example of subcultures, however without references. ‘Vampire culture’ is labeled as an ‘alternative lifestyle’ – terms are used without knowledge of their common use, history and context. The validity of establishing a ‘vampire culture’ is not further elaborated upon, justified or questioned. The opening ‘Vampire culture’ in the third line of the paragraph remains unfinished. The last sentence is copied and pasted from the Internet; the student assumes blindly that the online content ‘magically’ fits to what has been previously stated.

Conclusion: A Typology of Cognitive Underdevelopment

From these examples, six key-properties have surfaced that constitute different aspects of cognitive degradation. The list of properties, which is not exhaustive, includes the following:

(a) LACK OF CONCEPTUAL FRAMEWORK: A conceptual, referential framework for accommodating and assessing external information is absent or only rudimentary present,
(b) LACK OF PRIOR KNOWLEDGE: Information cannot be adequately decoded to be mapped within pre-existing logical, hierarchical categories, mostly due to the lack of prior knowledge such as historical and cultural contexts. Note that frameworks are formulated conceptually (formal) while prior knowledge is based on empirical information and experience (see also Hergenhahn & Olson, 1993)
(c) LACK OF A LOGICAL TRAIN OF THOUGHT: Conditional, causal and hypothetical relationships between propositions cannot be adequately formulated into conclusive arguments, subsequently the line of reasoning remains ambiguous.
(d) LACK OF JUSTIFICATION: Propositions are not justified by reasons and the validity of reasons is not questioned based on their underlying assumptions, coherence, inductive and deductive logic (Kuhn, 1991). Since reasoning begs explanation this entails the metacognitive ability to critical thinking (Kuhn, 1999; Magno, 2010).
(e) LACK OF DEPTH: Information is used on surface level, often in arbitrary and randomized manner, resulting in superficial, over-generalized and simplified thought. Such coarse-grained cognition also leads to factually wrong conclusions.
(f) THE INABILITY TO DISTANCE ONESELF FROM PERSONAL MOTIFS AND SPONTANEOUS INTUITIONS: Cognition in such case is primarily driven by personal emotion, motivations, intuition and notions of familiarity in noetic consciousness. It is not reflected upon or driven consciously by arguments in autonoetic consciousness (Kuhn, 1991; Rosenbaum et al., 2005).

Thorough studies are needed to confirm on a statistical basis the correlations between predisposing cultural- and technological risk-factors of heavy media use. The erosion of cognitive and metacognitive skills is of great concern, not only because it impedes academic success, but also as it affects rational, goal-directed behavior in adult life, the socio-political responsibility young people take on as future citizens and the huge issue of dignified ageing, this is the increased likelihood of early onset of dementia given that no highly integrated mental structure has been fostered in younger years.

The suggested correlational model, based on emerging evidence, is summarized below.
References


