Techno-solutionism and Neocolonial Narratives in ICT (and other engineering) Curriculum: Extended Abstract

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1. Abstract

While decolonisation is discussed and debated in various disciplines within and outside the university [1], engineers are notably absent from this introspection. Far from a neutral apolitical collection of artefacts, engineering has historically been instrumental in building and perpetuating colonial orders. All engineering disciplines, including ICT, are heavily influenced by Eurocentric knowledge and its supposed excellence [2], [3]. A reflection on the colonial history and its underpinning values that brought about development in applied sciences is rarely part of the engineering curricula [4]. On the contrary, young engineers training is dominated by concepts such as techno-optimism and techno-solutionism that uncritically frame technology as value-free, always good and the solution to any problem humanity can face [5] At the same time, this narrow view hides to the students that most of "technological progress" is highly dependent on colonial-era exploitation of the Global South [6]. Contrary to other engineering disciplines, the ICT/electronics sector had an unprecedented growth in recent years and also has a disproportionately large influence in the modern world that dictates our everyday lives in innumerable ways [7], [8]. But this success has been also partially possible thanks to extraction of a variety of raw materials, exploitation of cheap labour and illegal dumping of e-waste in the global south [9]. This colonial legacy of the discipline has a long history, starting from some of the earliest ICT innovations e.g., long-distance telegraphic cables (that was primarily developed to establish military domination of the empire [10]) or quick adoption of photography by Western 'explorers' (that reaffirmed the 'colonial gaze'[11]) that instituted the power dynamic of the Global North. Among other important technologies, next came the wireless radio that was used to 'educate/civilise' colonial subjects and entertain the anxious settlers far from their homeland [12]. The rise of the modern mass-produced electronics industry (on which most ICT is based), itself depended on the cheap labour in colonised Hong Kong and then even cheaper resources in war-torn South Asian states (including Taiwan) [13]. That dependence is still strong as the extraction (and pollution) from Global South keep the industry running [14]. Engineering students and practicing engineers are rarely aware of the colonial legacies of their domain and how a techno-solutionist narrative helps to maintain and reproduce the colonial order. Moreover, sustainability and ideas of planetary boundaries, global/environmental justice are considered exotic topics rarely debated or even mentioned in the engineering classroom [15]. Furthermore, even when sustainability is evoked in debates about ICT, it is generally not seen with a decolonial / environmental justice lens.

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We propose to use Information Communication and Electronic Technology (ICET) as the appropriate term that justifies this all-encompassing tech infrastructure of today. We argue that a substantial shift in the way ICET (and most other engineering subjects) is taught is needed. Although universities are primarily non-profit and exist for the public good, the teaching and research conducted by engineering educators, particularly in ICET, are conspicuously devoid of sociotechnical and political thoughts [16]. The curriculum is mostly influenced by the requirements of profit-driven industries rather than societal needs. Most of the wealthiest companies on earth (Google, Apple, Microsoft, Amazon, Facebook, Tesla etc.) are ICET-based, and most people running them are ICET engineers by training. The R&D capabilities of these top tech companies are now way past the largest government funding budgets (e.g., over $100b recently spent by Meta alone [17] compared to EUR80b total budget of EU-H2020 over 7 years). Hence, it is not surprising that the narrative of engineering education/research is driven by these and other similar industrial players. As technology companies become increasingly powerful, surpassing even governments, it is essential to question the core of the educational system that eventually supports this industry (with trained workforce and research outcomes). The need to introspect these aspects is becoming more important in EE/CS disciplines, primarily due to the omnipresence of ICET as backbone technology in almost all industries. Yet, the negative impact of this sector (even within the so-called green-tech [18]), is rarely taught and is not easily visible to the technology researchers themselves.

2. Acknowledgements

3. References

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