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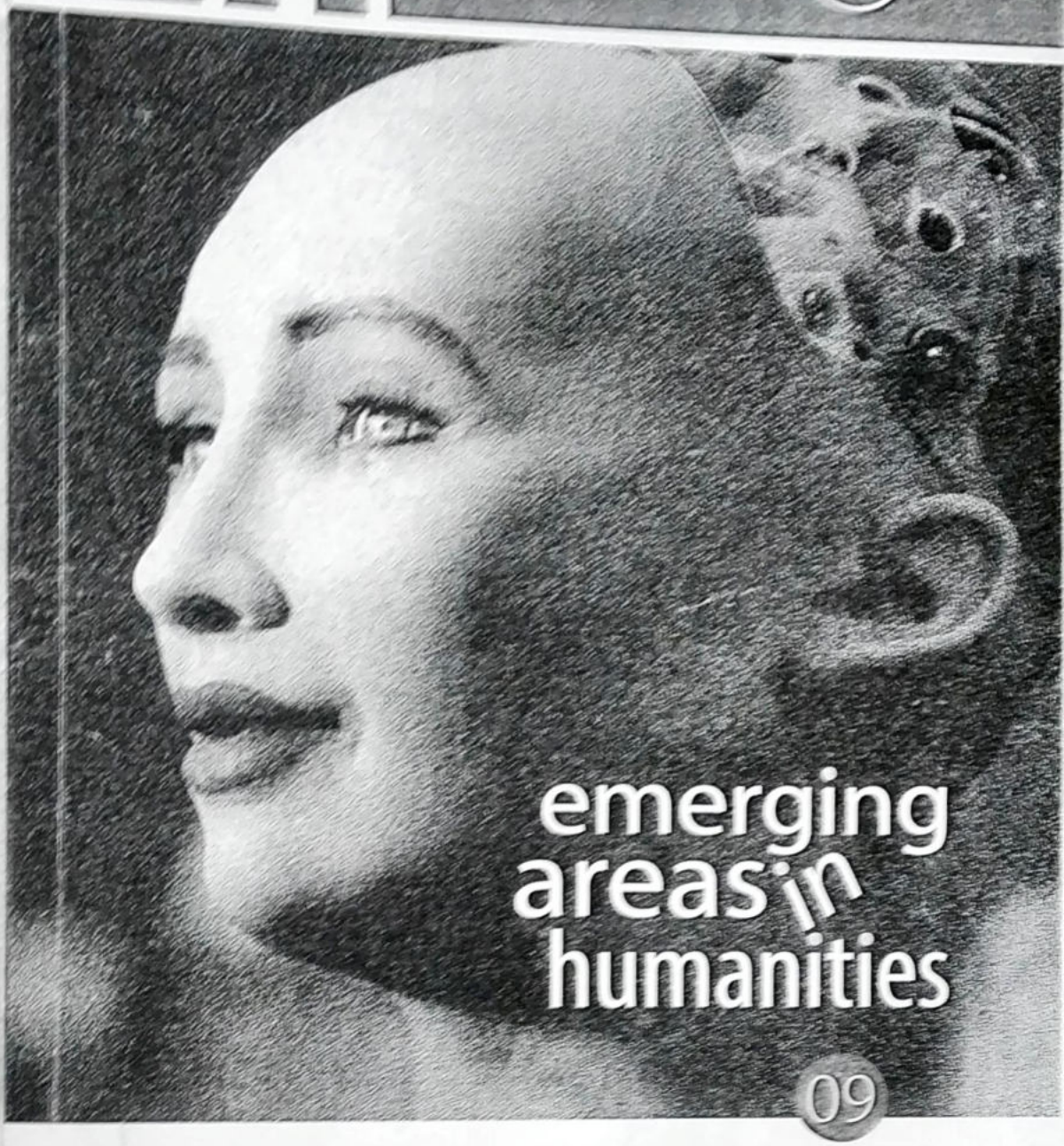

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Neutrality of Technology and Centrality of Pedagogy: the Tool context trade off

We are living in a world of answers! While we have a glut of answers, on the other side of the coin, we face dearth of questions. Zero tolerance for questions and infinite entertainment for answers! This is particular to a society which is characterized by the percolation of ICT into almost every aspects of human life. Medical practitioners say ICT revolutionized medical treatment. Scientist believe that without ICT they would not have gained this much advancement. Recently a scientist told me 'I can adjust a month without electricity, but I cannot live a day without internet'. Researchers in teacher education started treating ICT in education as the most relevant and important research area of the time. Time and again, teachers try to convince themselves and, also, parents that ICT is the key factor in modern schooling.

Researchers like Prensky (2006) proposed the notion of 'digital natives' while addressing young generation. A wide range of literature projects ICT skills as a basic necessity for entering into higher education (Stoner, 1999; McCourt Larres, Ballentine and Whittington, 2003) and as an important contributor to employability (SHEFC, 2005; Critical Thinking, policy works, Scottish Council Foundation, 2003). The infatuation for ICT in education doesn't need much justification in modern day. Researchers like Jonassen,

Peck & Wilson (1999) argue that, in modern day, technology in education is used not only to learn *from* but also to learn *with* and to construct knowledge. In addition to the capacity to catch up interest and engagement and enthusiasm of modern 'i Generation' (students) in class rooms, ICT is attributed with several spillover effects like its effects to go well beyond classroom (Casey, 2000, 2001; Shields & Behrman, 2000). The U.S. Department of Education (1996) found that when students have home computers, they get themselves connected to school networks for longer periods.

Needless to say ICT is a citadel in the modern schooling. In contrast to the i Generation, the elders (and of course teachers too) can remain illiterate of ICT skills, but they can never neglect its role in the life of their wards. The acceptance for ICT in education all over the world has a psychological impact. While teachers, teacher educators, researchers and stake holders of education are flooded with glory of ICT in education, it has become an unchallengeable phenomenon in our modern educational practices. Or otherwise, the aura of ICT stops us from asking more serious questions about *how* ICT influences learning. Even if such questions are asked from some corners they will meet with "the seemingly obvious fact that it will make learning relevant and will engage and motivate youth" (Philip and Gracia, 2013). Widely accepted answers like relevance, engagement and motivation eclipse the critical questions of researchers about ICT in education. In this paper my attempt is to promote educational researchers to go well beyond these questions based on contemporary realities. For the purpose, I will be problematizing some issues related to ICT in education for which answers are already available, but unfortunately questions are never!

In this paper I contest a popular view about ICT in education: ICT individualizes learning! This is a long standing belief among the educational researchers and educationalists often eluded from serious discourses about it. Such evasion could be the effect of technology manifested in the society and the reputation that it has gained in easing the human labour and thereby making life more technologically dependent.

Technology helps students to learn at one's own pace (Skinner, 1958; Akram, 2011) and to take charge of their own learning (Clarke, 2003; Hargreaves, 2005; Keefe & Jenkins, 2008). These are the most powerful arguments that bolstered proliferation of technology in education. Since classrooms are widely heterogeneous, every attempt to individualize learning will certainly reduce the time and energy of the teacher. Skinner (1953) argued that technology is "capital

equipment to be used by teachers to save time and labor". In doing so, the teacher can assign certain mechanisable functions to machines and thereby humanize himself (Skinner, 1953). Skinner envisioned a student absolutely individualized in the process of learning with the support of a learning machine. The modern ICT and its varied tools provide a sophisticated picture of Skinnerian dream by equipping our students with tablets and mobile phones supported with android platform.

Fascinated by the power of technology in creating miracles in student's progress, several nations provide public funding for availing technologies to teachers and students. Manmohan Singh government in India 'offered' low cost tablets for all the students in India. States like Tamilnadu provided free laptops to students. Odisha provided free laptops to meritorious students under Biju Yuva Sashaktikaran Yojana. A CBSE school in Pattambi, Kerala received special attention from public, through media, as the school pioneered in empowering every student with a tablet distributed from the school (Mathrubhumi daily, 30/5/2015). Central universities and other prestigious institutes provided free laptops to its teaching faculties. Central government started a scheme for lending its employees to procure latest electronic gadgets.

In fact extending support to students through technological gadgets is a model followed from advanced nations. For example, a US government-sponsored program, called LifeLine Assistance, offered cell phones to the financially disadvantaged. University of California offered free smart phones to their students to support their learning. Canadian Academy reports that its students from grades 3 to 12 use personal laptops while at school (http://www.canacad.ac.jp/page.cfm?p=1774). Georgia Tech requires all undergraduate students to own a laptop computer for which they give financial assistance.

The above examples shows that technology's ability to individualise learning opportunity has got extensive public support across the world. Thus students are individualized in classrooms, in doing home work, assignments and projects. The process of individualization spill over to life! New generation appeared themselves insulated from social interactions! They appeared connected to earphones when they are in buses and trains while travelling, while doing their daily jogging and gymnastics and in many other activities. Often they pair their routine activities with their favourite 'tool' in activation. Yes, our young generation is really fit for grouping them as iGeneration who had individualized themselves.

Thus first part of the research question, that tools have individualized, is well supported! But had it really resulted in learning? My answer would be no. The ICT devices individualise students, but not necessarily for learning. ICT has larger potential to entertain younger generation through its users 'age-friendly' and 'taste-friendly' proffers. Students are often fascinated to technology because of its tremendous entertainment potential for them. All the latest ICT devices are incorporated with music, video, games, texting and messages, whatsapp, facebook, youtube and so many age friendly and taste-friendly options. These options can engage them for hours together without boring. In my own example, my daughter used my mobile phone for accessing information from websites and videos from youtube. She remains energetic and enthusiastic to learn with mobile technology. In an examination about her progress, it was realized that her learning with the support of smart phone is at periphery level. She could remember facts and details; but has not made an attempt to question the source and authenticity of information and reflect on its cultural relevance. Often she finishes the assignments as fast as she can and then she switche over to her favourite Barbie make up games installed in the same smart phone. When asked, she said, learning with a smart phone with a lot of attractive and interesting options to engage gives her a feeling like asking a starved individual to pray for an hour while keeping the delicious food covered just in front of her.

Learning that happens through ICT may be an active and meaningful construction. But it cannot be generalized. Considering examples as norms will be a dangerous threat! Learning with ICT in an individualized context remains to be a passive acceptance of learning, where the learner is in expectation of breeze off learning task to switch off to his favourite activities in the ICT. Here learners rarely engage in construction (Bruner, Piaget,) and interpret experience and go on to elaborate and test interpretations (Perkins, 1992). Active learning involves questioning, interpreting, hypothesizing, debating and critically engaging with the information in order to construct meaning. In this process ICT is a supporter to just present information to make students engage individually and in group to go ahead with the 'learning task'. Unfortunately, our modern discourses assign too much credit for ICT as a learning supporter!

This observation is well supported by the study conducted by Philip and Gracia (2013). According to Philip and Gracia (2013p 301)

> kids think that the (technological) devices are cool. However, transferring the capabilities and coolness of youth-endorsed

devices were classroom learning is not as simple as throwing them out and running them on. In fact, what we see is quite the contrary. In one particularly striking pattern from our current study, many kids racked their school-issued phones away in lockers and turned out as they became frustrated with the limitations of the devices, such as restrictions on texting, calling, and Web access, and their perceived liability if the phones were lost or stolen. Most students showed little to no interest in completing their homework, even though it was assigned on their shiny new devices. They explained that it was a hassle to carry around their phone and the other phone. Students also conjectured that they might be more inclined to use the school phone if it had more privileges.

Thus it is very evident that the ability of technology to promote individualized learning opportunity is naive and nimble. The individualizing capacity of the technology is an offshoot of its proffers that generate interest among the young. Often, the technology is unable to integrate the interest generation potential to learning of the student. Technology as an easy solution for individualizing instruction and thereby improving the achievement of the students is built around premature understanding about technology and its implications on the one side and understanding about the interest of the students on the other side. This move is wary and emanate from systematically organized manner in India. The first step in such action is raising qualms among the public about the potential of publically funded schools. For dealing with problems of public-funded education technology is presented as a panacea. Augmenting the role of technology in improving achievement in educational institutions has been counterproductive for teachers and students. Such attempts have made teaching more (technological) 'tool dependent' and to be more 'accountable' to the system.

In a world of accountability often technology is being treated as a tool that ensures that the teachers teach students the right way (Philip and Gracia, 2013). Accountability in teaching is built up on an assumption that there is always a right way, and aberration from that should be harmful to the system. Such concept of right way of teachings is based on the assumption that teaching is a set of skills and possession of stock of knowledge which can be better propped up through technology. After all, reducing effective teaching to the use of technology in classroom is to gloss over teaching and learning as a social process mediated by pedagogy.

As Hall (1996) reminds us, tool gains its meaning in connection with multiple images, concepts, and ideas. The very neutral tools and technologies, even if they appear to be neutral, will have a tacit story of 'intentions' by those who designed and devised it. Such intentions would be ostensibly related to either establishment or reproduction of power relations between the producer and users. In such contexts, the tools used in the classrooms can have an ideological purpose to serve. It is most unfortunate that the faith of teachers and researchers about the capacity of the tools to individualize learning has glossed over serious discourses about the way technology mediates learning.

A naïve assumption persistent among the educational researchers and teachers is that tools and technology could produce interest, relevance and engagement among the students as they are most popular among the students. But such assumptions are seriously questioned by Selwyn (2006). Homogenous interest among students in using technology and attempts to use it in the educational contexts is counterproductive as "young people resent having their cultural forms (mis)appropriated into schools" (Selwyn, 2006). How interest is generated and how it progress into other levels is another important question that needs to be addressed in the context of education. It is often true that students show a genuine interest in learning when they are exposed to such tools and technologies. But once the interest is developed then what is next? What is the role of technology in the progressive phases of interest? Tools and technology develop interest among students, when they are exposed to, and left stagnated at the initial interest as the further phases of interest is beyond the capacity of tools and technologies.

Generating indepth interest, relevance for the content and engagement with content are not something which can be done with tools and techniques in single classrooms. It needs time and continuous engagement with the context in which the process of learning happens. As Giroux (2011) reminds us "Pedagogy is related to the specificity of particular contexts, students, communities, and available resources". Providing a tool to the teacher with a conviction that it will enhance teaching effectiveness will not bring in interest, relevance and engagement about the content to be learned. The role of pedagogy is crucial here. An effective teacher consistently evokes situational interest, with or without technology (Wade, 2001). Situational interests to a great extent depend on the contexts and the way teacher could utilize the contextual realities with the content to be transferred. Connecting the contexts to the content through pedagogy is the only means to develop interest, relevance

and engagement. In such attempts technology can or cannot be used! Reducing the individualized learning to usage of tools and technology often undermines the importance between the context and pedagogy and its interactions. When teachers use technology in classrooms they must be extra careful they are not in the whirlpool of assumption that individualizing learning is not an inherent capacity of tools, instead it needs serous attention from the teachers to connect the context with content through pedagogy. •

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