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IN AND AGAINST RADICAL MONOPOLY: CRITICAL EDUCATION AND INFORMATION AND COMMUNICATION TECHNOLOGIES

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Abstract

In the recent study "Ivan Illich Gone Digital: Convivial Information and Communication Technologies for Critical e-Learning" Jandric and Boras (2011) conducted counterfoil research of e-learning technologies. Results of this study strongly indicate that information and communication technologies might possess potentials to develop various radical monopolies, while education might be one of the main vehicles for such developments. Using the aforementioned study as the point of departure, this study confirms that information and communication technologies have the potentials to develop Illich's radical monopolies and asserts that critical educators have a moral duty to act against such developments. Based on similarity between the position in and against radical monopoly of information and communication technologies and the position in and against the state, it adapts the conclusions developed in 1979 by the London Edinburgh Weekend Return Group to the context of contemporary information and communication technologies. Finally, it identifies oppositional possibilities for critical action against radical monopoly of information and communication technologies in the context of educational praxis. .
Key words: *critical education, information and communication technologies, Ivan Illich, radical monopoly.*

Introduction

Radical monopoly is the monopoly of a certain kind of products, which happens "when one industrial production process exercises an exclusive control over the satisfaction of a pressing need, and excludes nonindustrial activities from competition"(Illich, 1973). The dominance of radical monopolies reaches far beyond dominance of a product or a brand: it is a wholesome concept that encompasses all aspects of the society. For instance, at this historic moment there is no viable substitute for electricity: it powers homes, factories, streets, communication devices and computers. Therefore, a sudden global disruption of power supply would cause thorough changes in lifestyles of almost anyone on our planet.

People have always tried to understand their relationships with their tools. Frankfurt School, however, represents the first massive movement in studies of the relationships between technologies and human beings in wide social contexts (Encyclopædia Britannica, 2011). This group of fairly unsystematic attempts by thousands of researchers during time span of more than half a century provides a rich theoretical background for contemporary critical studies of information and communication technologies. However, three generations of Frankfurt School theories from Horkheimer's and Adorno's *Dialectic of Enlightenment* (first published in 1947) through Marcuse's *One-Dimensional Man* (1964) until famous Heidegger's *Only a God can*

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save us (1981), suffer from a very important problem. Deeply rooted in technological dystopia, they radiate pessimism and helplessness.

During the peak period of Frankfurt School, scientific theories have mirrored the spirit that could be found in their contemporaries' artwork such as Huxley's *Brave New World* (1932) and Orwell's *1984* (1949). In other words, science and arts equally reflected the sentiment of the age of rapid industrialization (Feenberg, 1996). Drawing from different technological and social contexts, however, later critical educators such as Illich (1971, 1973) and Freire (1972) have asserted that things are not as dark as they seemed to the original Frankfurt School theorists. Technology is not destiny, and anything that was made by humans can be destroyed and rebuilt according to people's wishes and abilities (Feenberg 1996, 2002).

Authors such as Feenberg (2002), Kahn and Kellner (2007) etc. have extensively written about theoretical issues associated with Frankfurt School theories of technologies. In the context of this research, however, it is enough to notice that most early Frankfurt analyses, such as Marcuse's one-dimensionality, represent primers of problems brought by the perceived, although often too far-stretched radical monopolies (Feenberg, 2002). Despite exaggerations, therefore, Frankfurt School theories provide excellent starting points for our discussion.

What is Wrong with Radical Monopolies?

Let us take a look at few different examples of radical monopolies. Marcuse's one-dimensional man lives in a pre-fabricated, highly technological environment. He is unable to change this environment not only because he lacks tools or power, but more importantly because he does not understand their ways of functioning. This leads to a zombie-like state of despair, where one-dimensional people commute from work places to homes through busy streets and large shopping malls without any substantial interaction with their environment. In this way, people become biological parts of a mechanical system called the modern society (Marcuse, 1964).

In this particular example Marcuse's man is unable to reach his ontological vocation of active creator of his environment because of radical monopoly of construction technology. Marcuse's world, however, consists of many radical monopolies, and his citizens suffer consequences of one-dimensionality in many important aspects of their lives. Marcuse's case against modern construction technology, therefore, represents a simplified example adequate for the purpose of this research rather than full interpretation of his work.

Horkheimer and Adorno applied similar methodology to their analyses of the modern marketplace. They assert that modern citizens, although presented with an alleged wide variety of products that differ in colours, shapes and design, are actually presented with a false choice. This choice hides the fact that "the mechanically differentiated products are ultimately all the same", while "the advantages and disadvantages debated by enthusiasts serve only to perpetuate the appearance of competition and choice" (Horkheimer & Adorno 2002: 97).

Let us illustrate their assertions using the example of cars. Some cars use gasoline, others use diesel; some are faster, other are slower; some are more comfortable, others are fairly Spartan… In general, car buyers can choose amongst numerous colours, shapes and styles. However, most cars available at the contemporary market are powered by one or another derivative of oil. For this reason, most cars suffer from essentially the same problems: they are sensitive to movements in oil markets, pollute the environment, and contribute to climate change. According to Horkheimer's and Adorno's theory the choice between makes, colours and design is ultimately false, because the basic principles always remain the same.

Illich and Robert assert that, despite all problems associated with cars, one cannot simply wake up one morning and decide to quit driving. Car usage is determined by various social conditions such as work organisation and urbanism: the majority of people do not drive because

they particularly enjoy driving but because they are (at least seemingly) left with no other choice. By losing the choice whether to drive, car users lose their ontological vocations of active creators of their environments. In this way, cars radically monopolize traffic (Illich & Robert, 1992).

Finally, let us take a look at an example of radical monopoly from an artistic side of the spectrum. In the well-known appendix to *1984*, Orwell develops an artificial language called *newspeak* which ideologically aligns with certain political principles and makes "all other modes of thought impossible" (Orwell, 1949). In the best Wittgensteinian tradition, *newspeak* brings radical monopoly to the absurd levels where language wipes out the very idea of anything different from the mainstream.

The first example represents radical monopoly of construction technology, the second example represents radical monopoly of cars, and the last example represents radical monopoly of political principles and ideas. In all examples, radical monopolies "upset the relationship between what people need to do by themselves and what they need to obtain ready-made" (Illich, 1973). People have natural abilities to build own settlements, choose means of transport and develop own language. Radical monopolies, however, sedate these abilities into comfortable consumerism, which provokes individual frustration and leads to imbalance of the whole ecosystem. Therefore, radical monopolies are equally adverse for the individual as well as for the whole society, and critical educators have a moral duty to act against their development.

Research Methodology

This research of the relationships between critical education and information and communication technologies uses counterfoil research methodology developed by Ivan Illich and used by several studies in diverse fields from mass communication (Pauly, 1983) and information systems theory (Beeson, 2002) to education at a distance (Jandric & Boras, 2011). According to Illich,

> present research is overwhelmingly concentrated in two directions: research and development for breakthroughs to the better production of better wares and general systems analysis concerned with protecting man for further consumption. Future research ought to lead in the opposite direction; let us call it counterfoil research. Counterfoil research also has two major tasks: to provide guidelines for detecting the incipient stages of murderous logic in a tool; and to devise tools and tool systems that optimize the balance of life, thereby maximizing liberty for all (1973).

Counterfoil research is not a new methodology. Instead, "it is the dimensional analysis of the relationship of man to his tools"(Illich, 1973).

Let us briefly illustrate counterfoil research methodology using an everyday example. Students simultaneously act in different, interconnected and concentric social environments or dimensions: they are class-mates, school-mates, university students, members of international student association etc. At the same time they are family members (sons, daughters, husbands, wives, mothers, fathers), members of individual social networks (friends, acquaintances, sailing club members) and members of the society (voters, citizens). Upon completion of their studies, graduates become employees (for instance, carpenters). Consequently, they are interconnected to individuals and organisations throughout the globe (wood producers from Canada, glue producers from China and furniture buyers from Germany).

Interests arising from various dimensions often collide. For instance, the interest for spending more time with children arising from family dimension is directly confronted to the interest for spending long hours at work arising from business dimension. Influenced by the family dimension, our carpenter might decide to work shorter hours. However, if business

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productivity fails beyond certain levels, he or she will be fired and thus unable to feed the family. Under such circumstances a qualified carpenter might be forced to accept a less paid job at the saw mill. In order to maintain the level of family income, he or she might have to work longer hours and thus spend even less time with the family. In this example, the decision to work shorter hours in order to spend more time with family is obviously counterproductive. In order to avoid such mistakes, counterfoil research looks for compromise between common human interests arising from all dimensions (Illich, 1973).

Are Information and Communication Technologies Able to Create Radical Monopoly?

Radical monopolies can emerge only when new practices, powered by new tools, create new ways of doing the existing tasks, or create a need for doing new, previously un-needed tasks, or both (Illich, 1973). For instance, electricity introduced new ways of communication and created the need to convert voltage which did not exist prior to its introduction. Therefore, in order to explore whether information and communication technologies are able to create radical monopoly, we must first decide whether they bring significant changes to human activities. First we shall explore arguments in support of the idea that information and communication technologies do not bring significant changes to human activities, then we shall explore arguments in support of the idea that information and communication technologies bring significant changes to human activities, and finally we shall reconcile the presented arguments into a single conclusion.

Let us explore arguments in support of the idea that information and communication technologies do not bring significant changes to human activities using the case of education. Education is one of the main human functions. Information and communication technologies bring significant changes to instruction: however, the same can be said for paper, ink and projector. Information and communication technologies perpetuate social reproduction alongside the division between digital haves and digital have-nots called the digital divide (van Dijk & Hacker, 2003); however, the issue of access to education is also much older than computer. Following this line of reasoning, one may safely conclude that information and communication technologies do not bring significant changes to education.

Now let us explore arguments in support of the idea that information and communication technologies bring significant changes to education. According to leading theorists of the network society, information and communication technologies have profoundly changed the structure of our society. For instance, Castells asserts that

> the Internet is the fabric of our lives. If information technology is the present-day equivalent of electricity in the industrial era, in our age the Internet could both be linked to the electrical grid and the electric engine because of its ability to distribute the power of information throughout the entire realm of human activity (2001: 1).

In order to focus this discussion, let us examine features of information and communication technologies which are relevant for the context of education.

- Technologies create new artefacts – smart boards, virtual learning environments, videoconferencing systems etc.

- Technologies increase scale of many human activities. For instance, governments and corporations had been using videoconferencing systems based on TV technology at least since the fifties (van Dijk, 1999; Castells, 2001). However, contemporary

information and communication technologies provide access to computer supported education to billions of people.

- Technologies simultaneously decrease inequalities between their users, and increase inequalities between information haves and information have-nots (van Dijk & Hacker, 2003).

- Technologies create new kinds of information (Stallman, 2002). For instance, almost any virtual learning environment provides teachers with information such as number of clicks per page and duration of stay – traditional, paper-based knowledge sources are simply unable to provide this kind of information.

According to Drucker, the main feature of information and communication technologies is their ubiquity. For this reason, even if we suppose that each of the listed features is not unique in its own right, together they do make a unique qualitative change (Drucker, 1999). Similarly, van Dijk and Castells assert that each individual change brought by information and communication technologies is quantitative. However, all those changes are interconnected. Society is much more complex than arithmetic sum of its constituting elements. For this reason, the overall impact of information and communication technologies to the society is qualitative (van Dijk, 1999; Castells, 2001). Based on this line of argument, information and communication technologies bring significant quantitative and qualitative changes to education.

This discussion has arrived to two confronting conclusions. Using the first line of argument, information and communication technologies do not bring significant changes into education because educational issues such as accessibility are essentially always the same. Using the second line of argument, information and communication technologies bring significant quantitative and qualitative social changes. Education is dialectically intertwined with the society. Hence, information and communication technologies bring significant changes into education.

In order to resolve this problem, let us examine a simple example and convey a short dimensional analysis of accessibility. Indeed, accessibility is a general theme in all education from the beginning of history – in this fairly general dimension, information and communication technologies do not bring significant changes into education. Moving on to more detailed dimensions, however, things radically change. For instance, educational achievement in the First World is directly linked to computer access (Castells, 2001). Therefore, in the sociological dimension oriented at the First World and concerned with social reproduction, information and communication technologies bring significant changes into education. It is obvious that the above conclusions are not contradictory. Instead, they simply explore different dimensions i.e. different levels of the reality.

This example can easily be generalised. Looking at a very general humanistic dimension, education is always essentially the same. Looking at relevant dimensions for critical educational praxis, information and communication technologies create new ways of doing the existing tasks such as writing. They introduce new practices such as e-learning. They create various needs for doing new, previously un-needed tasks such as computer programming. On such basis it is clear that, in relevant dimensions for this study, information and communication technologies possess theoretical and practical possibilities for development of radical monopoly.

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Critical Education in and Against Radical Monopoly of Information and Communication Technologies

In 1979, London Edinburgh Weekend Return Group issued the famous pamphlet *In and Against the State* (Mitchell, Mackenzie, Holloway, Cockburn, Polanshek, Murray, McInnes & McDonald, 1979) which polemicizes the contradictory position of teachers, community workers and other professionals who simultaneously receive money from the state and struggle against it. The position of critical educators in the context of radical monopoly of information and communication technologies is very similar. In order to keep up with technological and social developments, critical educators use information and communication technologies in their private and professional lives. At the same time, critical educators have the moral duty to struggle against development of radical monopoly caused by information and communication technologies.

London Edinburgh Weekend Return Group identified eight oppositional possibilities for critical action from the position in and against the state. The identified possibilities are independent of social structure and immediate context (Mitchell, Mackenzie, Holloway, Cockburn, Polanshek, Murray, McInnes & McDonald, 1979). For this reason, they can be adapted to various contexts, including critical education in and against radical monopoly of information and communication technologies.

On such basis, this study uses the oppositional possibilities identified by London Edinburgh Weekend Return Group as the relevant dimensions for counterfoil research of radical monopoly of information and communication technologies. The oppositional possibilities are: defining our problem our way, overcoming individualisation, rejecting misleading categories, defining ourselves in class terms, stepping outside the brief, refusing official procedure, rejecting managerial priorities and alternative organisation in struggle (Mitchell, Mackenzie, Holloway, Cockburn, Polanshek, Murray, McInnes & McDonald, 1979).

Defining Problem

Critical educational praxis provides the rich tradition of inquiry into the relationships between technology and education. In order to narrow this wide spectrum of theories and practices down to a manageable extent, this paper briefly considers relevant works of two leading critical theorists of education: Freire and Illich.

Freire was aware that information and communication technologies possess strong potential to take control over human activities and exclude non-industrial activities from competition. In one of his later works, he asserts that technology sometimes "ceases to be perceived by men as one of the greatest expressions of their creative power and becomes instead a species of new divinity to which they create a cult of worship"(2000: 63). Using Illich's terminology, this represents a prime example of radical monopoly. At the other hand, however, Freire asserts that rejecting information and communication technologies would only result in widening the gap between the oppressor and the oppressed. For this reason, critical education should embrace information and communication technologies despite their potential to constitute radical monopoly.

Illich's analyses are based on completely different starting points. Whereas Freire's Promethean politics was mostly focused on social and economic relationships, Illich promoted an "Epimethean sentiment and style that looked to the historical past, and to the earth itself, for guidance in revealing the limits which, upon being transgressed, become counterproductive to life"(Kahn & Kellner, 2007: 438). Despite radical differences in their approaches, Freire and Illich fairly closely agreed in their attitudes towards information and communication technologies. In order to appropriate their conclusions to the contemporary context, this

study defines critical attitude towards the problem of radical monopoly of information and communication technologies through Kahn's and Kellner's interpretation of Freire's and Illich's ideas in the context of network society.

All cultures which now confront an ever evolving and expanding global media culture have a responsibility to utilize new technologies with a critical (but hopeful) curiosity, thereby remaining committed to a pedagogy that both rigorously interrogates technology's more oppressive aspects and attempts, through the conscientization of technology, to foster reconstruction of the social, political, economic and cultural problems that people face (Kahn & Kellner, 2007: 437).

Overcoming Individualisation

Human individualization consists of various dialectically intertwined dimensions. On an individual level, information and communication technologies provide people with more power to do things on their own. For instance, only few decades ago music lovers had to visit the physical shop and interact at least with the shopkeeper in order to buy a record; nowadays, everyone can buy music online without any human interaction. Only few decades ago one had to interact with ten or more people in order to publish a book; nowadays, each personal computer is a powerful desktop publishing machine.

Information and communication technologies – mobile phones, electronic books and signatures, online banking etc. – are all devised to turn human interaction into interaction with machines (van Dijk, 1999). However, individual struggle against interacting with machines is futile. For instance, the person who refuses to pay his or her bills using credit cards is unable to use many useful services such as online bookshops. In this way, he or she soon falls off the track and becomes socially excluded.

Looking at social dimension, late capitalism powered by information and communication technologies brings increasing competition over jobs, school placements etc. This kind of individualization increases social inequalities through the mechanism of social reproduction, and social inequalities bring general social unrest. In Freirean / Gramscian terminology, social individualization generally brings mutual competition amongst the oppressed. Deeply engaged in struggle against each other, the alleged competitors often do not recognize that the real enemy lies in superstructures. In this way precious energy is lost on struggle amongst the oppressed, while the power relations shift further in favour of the oppressor (Giroux & McLaren, 1994; McLaren, 1999).

Contemporary society does not provide much room for critical action of individual educators against radical monopoly of information and communication technologies. Individual struggle against technology results in social exclusion, while individual struggle for resources consists of fighting against the oppressed. The only solution, therefore, is overcoming all sorts of individualisation and channelling efforts into the common struggle for appropriate use of information and communication technologies.

Rejecting Misleading Categories

According to London Edinburgh Weekend Return Group, "the state habitually addresses us according to categories which, though not entirely false, in that they do reflect an aspect of our real situation, are nonetheless misleading and (as with individualisation) tend to obscure the reality of our identity" (Mitchell, Mackenzie, Holloway, Cockburn, Polanshek, Murray, McInnes & McDonald, 1979). If we replace the word 'state' with the word 'technology', this statement will remain as valid as in the original. In the context of information and communication

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technologies, however, the issue of misleading categories is a bit more fundamental.

The world of information and communication technologies is a battlefield of various concepts, technologies and designs. Macintosh users will often say that Windows operating system is boring, unintuitive, slow and insecure; Linux users will emphasize that licensed software is a closed platform that contributes to social inequalities; Microsoft users will say that Windows provide the only workable office solutions… (Stallman, 2002). Each interest group (such as software producers), intellectual group (such as open source developers) or fan group (consisting of consumers who like certain technology) can easily provide an endless stream of arguments proving why 'their' technology is the most efficient, the most creative, or simply the best. In certain periods, software and hardware products such as Internet Explorer and personal computer strongly dominate the market. However, they are always soon replaced by newer, better or simply more fashionable technologies (Klein, 1999).

Radical monopoly of the existing information and communication technologies cannot be abandoned by fighting against company monopolies and/or introducing new technologies. Despite the fact that Microsoft Word has been dominating the world of text processing for decades (Klein, 1999), dominance of text processing over handwriting is completely independent of hardware and software: it is rooted in human psychology, computer availability and overall social expectations. More than half a century ago Horkheimer and Adorno showed that the choice between most products is false, and that engaging in such choice only perpetuates the existing system (2002: 97). Radical monopoly should therefore be treated at a higher conceptual level that rejects misleading categories and possesses potentials to make a real difference.

Defining Ourselves in Class Terms

At the first glance, the call for defining critical educators in class terms may sound a bit outdated. However, let us take a closer look at the relationship between information and communication technologies and class. Classic Marxism is based on dichotomy between two classes: blue collar workers employed in manual jobs, and white collar workers employed in administration and management. According to van Dijk, "it is well known that, during the twentieth century, productivity in factories has increased far more than productivity in offices". Contemporary technologies have shrunk working class to few percent of population, and made white collar workers vast majority (1999: 56).

In this way, globalization has transformed class domination into administration and equalized social strata (Castells, 2001; Beck, 2005; van Dijk, 1999). However, the distinction between blue collar and white collar workers has not disappeared. "The network as the assembly line of the office can have different consequences for various groups of office employees: those who keep managing and communicating informally and those whose tasks are formalized in a factory-like way" (van Dijk, 1999: 57). In this way, information and communication technologies have transformed the traditional distinction between blue collar and white collar workers into the distinction between non-creative, McDonaldized, almost automated jobs and creative, high-profile positions that require high levels of intellectual engagement (Ritzer, 1993).

One of the main features of globalization is the strong tendency toward standardization and simplification of all human activities. For instance, Bologna processes have contributed towards massive standardization of school curricula and teacher engagement in European higher education. These processes take power from teachers into the hands of governments and even corporations (Schatzman, 2007). In the context of this research, it means that teachers have less choice where and how to use information and communication technologies in their daily work. Defining critical educators in class terms implies that they should not allow superstructures to control their engagement with information and communication technologies. Instead, they should insist on their rights to professional judgement regardless government or corporate interests.

On a more basic level, defining critical educators in class terms is important in relation to structure and design of information and communication technologies. Some technologies, such as free software, allow the same freedoms to everyone. Other technologies, such as licensed software, limit access to their source code. In this way they divide population into developers, who can access and change source code, and users, who cannot access and change source code. In effect, such technologies stratify population into two or more distinct classes with various levels of access to resources thus preventing critical emancipation of a large percent of population and causing radical monopolies (Jandric & Boras, 2011). Obviously, such information and communication technologies should be avoided by all means.

Educators who do not understand their position within the society are unable to articulate own interests. For this reason, the call for defining critical educators in class terms is equivalent to Freire's concept of *conscientização*, which is prerequisite for any critical action (1972). In order to get ready for struggle against radical monopoly of information and communication technologies, critical educators should define themselves in class terms in the ways that insist on their rights to professional judgement and avoid technologies that cause class divisions.

Stepping Outside the Brief

In the world powered by information and communication technologies, personal responsibilities become increasingly fragmented. Let us illustrate this statement with a longer quote from Beck's *Risk Society*:

> Corresponding to the highly differentiated division of labour, there is a general complicity, and the complicity is matched by a general lack of responsibility. Everyone is cause *and* effect, and thus *non*-cause. The causes dribble away into a general amalgam of agents and conditions, reactions and counter-reactions, which brings social certainty and popularity to the concept of the system.
>
> This reveals in exemplary fashion the ethical significance of the system concept: *one can do something and continue doing it without having to take personal responsibility for it*. It is as if one were acting while being personally absent. The one acts physically, without acting morally or politically. (…) This is the slave morality of civilization (2005: 33).

Let us examine such fragmentation using the example of educational technologies. Educational institutions typically have departments and/or persons that deal with issues related to information and communication technologies. Such departments typically make hardware and software related decisions and maintain all computers in the institution. More often than not, teaching staff do not have administrative access to their computers (Jandric & Boras, 2011). In such settings, educators can use the offered infrastructure without having to take any personal responsibility for their actions.

This seemingly comfortable situation has dear consequences. People who do not know much about information and communication technologies tend to seek professional help. For as long as someone else takes care of their problems, people lose practical rationale to learn how to do things on their own. In this way, critical emancipation from information and communication technologies is replaced by the vicious circle of dependance on institutions, technology producers and experts. According to Illich, this vicious circle is simultaneously cause and effect of radical monopoly of any technology (1973).

It would not be reasonable to expect all critical educators to become experts on information and communication technologies. In order to struggle against radical monopoly of information and communication technologies, however, critical educators should take more responsibility within the system. They should try to learn as much as they can about various aspects of information and communication technologies. They should question decisions made on various organizational levels and struggle for the right to adequate design and usage of

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information and communication technologies. In short, they should step outside the brief and take up their own share of responsibility for technology related decisions.

Refusing Official Procedure

London Edinburgh Weekend Return Group asserts that "by the ritualised practices in which it involves us, the state tends to prevent any direct disruptive expression of our needs". For instance, anybody who has tried to complain about a government service has experienced a tedious sequence of various letters, documents and procedures with little practical effect (Mitchell, Mackenzie, Holloway, Cockburn, Polanshek, Murray, McInnes & McDonald, 1979).

The ritualized practices regarding usage of information and communication technologies in education are based on several important myths (Friesen, 2008). Let us examine the myth that more technology is always better. Applied to practice, it translates to the myth that "computers can provide solutions to any problem encountered in education" (Tsantis, Bewick & Thouvenelle, 2003: 2). For instance, if a certain information and communication technology does not correspond to specific educational needs, the ritualized practices based on the above myth(s) do not look for alternative, non-technological solutions. Instead, they immediately seek solutions in introducing newer, 'better' technologies, or better links between classroom learning and computer based learning (Laurillard, 2008). Such ritualized practices perpetuate radical monopoly of information and communication technologies, and do not provide opportunity for radical changes which is prerequisite for stepping out of the mythological framework.

Myths are dialectically intertwined with ritualized practices (Friesen, 2008). For this reason, the only way to abandon myths is to abandon the associated ritualized practices. In order to provide space for critical action against radical monopoly of information and communication technologies it is therefore necessary to refuse official procedures, reject commonly accepted myths and open-mindedly seek alternative solutions.

Rejecting Managerial Priorities

Much has been written about the perils of managerialism in education (Deem & Brehony, 2005; Meyer, 2002). At this particular historic moment, the ferocious battle between its proponents and opponents takes place in politics, academia and streets. However, managerialist approach still seems natural in the field of technologies, or more generally, in the fields of production and services (Krajewski, Ritzman & Malhotra, 2010). According to Kahn and Kellner,

> one need not commit to Illich's indictment of education, however, to realize that one of his enduring contributions is the manner in which he perceived the deep ideological relationships between modern institutions like schooling, the church, factory production, medicine, the media and transportation systems as aspects of unchecked industrial society (2007: 438).

Information and communication technologies are integral parts of the society, and, by simple extension, they are integral parts of contemporary education. In First World countries, education and information and communication technologies are dialectically intertwined through formal and informal education from earliest age. It is therefore impossible to conceive critical, non-managerialist education powered by information and communication technologies that are governed by managerialist principles.

In order to provide space for critical action against radical monopoly of information and communication technologies it is necessary to bring on board Illich's holistic view to the society.

Critical educators should expand the struggle against managerialism beyond their narrow field of expertise, and take the firm stand against it in all aspects of their praxis.

Alternative Organisation in Struggle

Paraphrasing London Edinburgh Weekend Return Group, one can say that the struggle against radical monopoly of information and communication technologies is not only an opportunity to test and develop more humane technologies, but can in itself challenge the existing social relations and therefore pose an important threat to the stability of our society (Mitchell, Mackenzie, Holloway, Cockburn, Polanshek, Murray, McInnes & McDonald, 1979). This conclusion posts a typical 'in and against radical monopoly' conflict. From the position against the radical monopoly of information and communication technologies, critical educators should insist on alternative technological and social arrangements that would benefit the whole society. At the other hand, critical educators have the responsibility for proper functioning of our society here and now.

In such situation, the struggle against radical monopolies makes sense only if it presents the society with viable alternatives. Critical education therefore has the responsibility to aim beyond radical monopolies by creative improvements of our reality rather than engaging in destructive struggle against the existing superstructures. The call for alternative organization in struggle, therefore, is not a threat for the existing information and communication technologies but the call for wide social consensus about the improvements in their structure and in the ways they are utilized. After all, probably the only firm postulate of critical theory is that it should always act for the benefit of the whole society.

Discussion

The position in and against radical monopoly of information and communication technologies is conceptually identical to the position in and against the state. In this sense, the conclusions developed in 1979 by London Edinburgh Weekend Return Group can be easily applied to the context of contemporary information and communication technologies. However, the world has radically changed during the past two decades. The 1979 conclusions might be overly restrictive for the age of computer – perhaps this study should look for fresh oppositional possibilities offered by information and communication technologies, globalization or another recent development.

However, one of the main strengths of the pamphlet *In and Against the State* lies in the fact that it was written by a fairly large group of researchers. Moreover, *In and Against the State* accepted numerous contributions from the community: apart from authors, 16 people contributed to writing the first chapter (Mitchell, Mackenzie, Holloway, Cockburn, Polanshek, Murray, McInnes & McDonald, 1979). Unfortunately, creating such group is beyond the scope of this paper. For this reason, identifying further opportunities for critical action against radical monopoly of information and communication technologies is left to future researchers.

Counterfoil research methodology is directed from consequences of information and communication technologies towards their sources. In cases when consequences are yet unknown, this direction of inquiry requires a great deal of imagination and scientific vigour. In this sense, it is similar to the method which is extensively used in various fields from science to philosophy called the thought experiment. Stanford Encyclopedia of Philosophy classifies objections to thought experiments into the following categories: "the sceptical objection, the intuition based account, the argument view, conceptual constructivism, experimentalism, and the mental model account" (Brown & Fehige, 2011).

One may become tempted to use these objections in order to explore the nature of

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counterfoil research and validity of its results. However, the relationship between counterfoil research methodology and thought experiment is not straightforward. For instance, associating official procedures with certain myths of contemporary education does not present a functional relationship: in this sense, it is not subject to experiment. Despite those important differences, counterfoil research methodology might probably learn a lot from a well-researched methodology such as thought experiment. However, this line of research requires pursuing a new direction of study. For now, results of this paper should be taken with certain caution until their theoretical confirmation by further research into the relationship between counterfoil research methodology and thought experiment.

One of the rare conclusions shared equally by critical theorists and their opponents is that the nature of critical theory is utopian (Giroux & McLaren, 1994; Freire, 1972; Carr & Kemmis, 1986). According to Encyclopædia Britannica, utopia is "an ideal commonwealth whose inhabitants exist under seemingly perfect conditions. Hence 'utopian' and 'utopianism' are words used to denote visionary reform that tends to be impossibly idealistic" (2011).

However, critical utopia is significantly different from this definition. Freire asserts that superstructures use the myth that individual actions are unable to influence wide social trends as one of the main means of reinforcement of the existing, unjust social relationships. For this reason, Freire's utopia is based on dialectical relationship between theory and action. Critical utopia "requires one to maintain a clear balance between the imagined and hoped-for future, and the critical analysis and concrete action that was needed to achieve that future" (Boyd, 2007: 7). It does not only dream about the perfect future society, but struggles for free and just social relationships that provide the oppressed with the means of liberatory action (1972). According to Shor and Freire,

> This is imagination. This is the possibility to go beyond tomorrow without being naively idealistic.This is Utopianism as a dialectical relationship between denouncing the present and announcing the future. To anticipate tomorrow by dreaming today. The question is, as Cabral said, Is the dream a possible one or not? If it is less possible, the question for us is how to make it more possible (1987: 187).

Finally, let us briefly comment the scale of this research. Illich's powerful concept of radical monopoly can be applied to any aspect of the society. Following the tradition of great critical thinkers such as Marcuse and Heidegger, this study could reach far more general. In any critical research, however, the quest for generality inevitably results in loss of detail. The choice of critical education as the subject for this study has been deliberately chosen as a compromise between generality and detail. It is easy to imagine a similar piece of research conducted in corporate environment. Although every human environment has to consider education, parts of such research would employ very different lines of argument.

Conclusion

This study shows that information and communication technologies have the potentials to develop Illich's radical monopoly and that critical educators have the moral duty to act against such development. Based on similarity of the position in and against radical monopoly of information and communication technologies with the position in and against the state, it adapts the conclusions developed in 1979 by London Edinburgh Weekend Return Group (Mitchell, Mackenzie, Holloway, Cockburn, Polanshek, Murray, McInnes & McDonald, 1979) to the context of contemporary information and communication technologies. On such basis, it identifies oppositional possibilities for critical action against radical monopoly of information and communication technologies in the context of educational praxis.

Critical education in and against radical monopoly of information and communication technologies should be based on interrogating technology's oppressive aspects and the conscientization of technology. The struggle should be collective and reject misleading categories: as a wholesome concept that encompasses all aspects of the society, radical monopoly of information and communication technologies should be treated at a conceptual level that possesses potentials to make a real difference. Class issues are as important as ever, and critical educators should define themselves in class terms in the ways that insist on their rights to professional judgement and avoid technologies that cause class divisions. The necessary prerequisite for the struggle against radical monopoly of information and communication technologies is taking personal responsibility for own actions. For this reason, critical educators should take more responsibility within the system and take up their own share of responsibility for technology related decisions.

The struggle against radical monopoly of information and communication technologies should refuse official procedures, reject commonly accepted myths and open-mindedly seek alternative solutions. Critical educators should reject managerialist principles in all aspects of their praxis. The last but not the least, critical struggle against radical monopoly of information and communication technologies should be utimately constructive. Instead of engaging into destructive struggle against the existing superstructures, it should aim to provide viable alternatives through achieving wide social consensus about all aspects of information and communication technologies.

In line with dialectical relationship between critical research and its context, this study does not produce a list of firm guidelines. Balancing back and forth between humanistic ideals and highly technological reality, it develops an idea what it means to be critical thinkers in the context of the relationship between education and information and communication technologies. On such basis, it invites critical educators to develop strategies for critical struggle appropriate for the context of own praxis.

References

Beck, U. (2005). *Risk Society: Towards a New Modernity* (1st ed.). London: Sage Publications.

Beeson, I. (2002). Convivial Information Systems. *Synergy Matters*, 6, 295-300.

Boyd, D. (2007). Paulo Freire's Spirituality of Hope. In what does it mean to be a citizen? Proceedings of the 13th Annual Pedagogy and Theater of the Oppressed Conference 2007. Minnesota: University of Minnesota.

Brown, J. R., & Fehige, Y. (2011). Thought Experiments. In E. N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*. Retreived October 8, 2011 from http://plato.stanford.edu/archives/fall2011/entries/thought-experiment/.

Encyclopædia Britannica (2011). Frankfurt School. Retreived October 8, 2011 from http://www.britannica.com/EBchecked/topic/217277/Frankfurt-School

Carr, W., & Kemmis, S. (1986). *Becoming Critical: Education, Konwledge and Action Research* (1st Ed.). Great Britain, Basingstoke: Taylor & Francis Ltd.

Castells, M. (2001). *The Internet galaxy: reflections on the Internet, business, and society* (1st Ed.). Oxford: Oxford University Press.

Cuypers, S. E. (2004). Critical Thinking, Autonomy and Practical Reason. *Journal of Philosophy of Education*, 38(1), 75-90.

Deem, R., & Brehony, K. J. (2005). Management as ideology: the case of 'new managerialism' in higher education. *Oxford Review of Education*, 31(2), 217-235.

Drucker, P. F. (1999). Beyond the Information Revolution. *The Atlantic*, 10.

Feenberg, A. (1996). Marcuse or Habermas: two critiques of technology. *Inquiry*, 39, 45-70.

Feenberg, A. (2002). *Transforming Technology: A Critical Theory Revisited* (2nd Ed.). New York: Oxford University Press.

Freire, P. (1972). *Pedagogy of the Oppressed* (1st Ed.). Harmondsworth: Penguin Education Specials.

Freire, P. (2000). *Cultural Action for Freedom* (1st Ed.). Cambridge, Massachusetts: Harvard Educational Review.

Friesen, N. (2008). Critical Theory: Ideology Critique and the Myths of E-Learning. *ACM Ubiquity*, 9 (22).

Giroux, H. A., & McLaren, P. (Eds.). (1994). *Between Borders: Pedagogy and the Politics of Cultural Studies*. New York, London: Routledge.

Heidegger, M. (1981). "Only a God Can Save Us": The Spiegel Interview. In T. Sheehan (Ed.), Heidegger: The Man and the Thinker (pp.45-67). Chicago: Precedent Press. Retreived October 8, 2011 from http:// www.ditext.com/heidegger/interview.html.

Horkheimer, M., & Adorno, T. W. (2002). *Dialectic of Enlightenment: Philosophical Fragments*. Stanford: Stanford University Press.

Huxley, A. (1932). *Brave New World* (1st Ed.). London: Penguin.

Illich, I., & Robert, J. (1992). Autostop. In Proceedings of the Symposium on bicycle freedoms. Berlin.

Illich, I. (1971). *Deschooling Society* (1st Ed.). London: Marion Boyars Publishers Ltd.

Illich, I. (1973). *Tools for Conviviality* (1st Ed.). London: Marion Boyars Publishers Ltd.

Jandric, P., & Boras, D. (2011). Ivan Illich Gone Digital: Convivial Information and Communication Technologies for Critical e-Learning. To be published in *Critical Education*.

Kahn, R., & Kellner, D. (2007). Paulo Freire and Ivan Illich: technology, politics and the reconstruction of education. *Policy Futures in Education*, 5(4), 431-448.

Klein, B. (1999). Microsoft's Use of Zero Price Bundling to Fight the „Browser Wars". In J. A. Eisenach & T. M. Lenard (Eds.), *Competition, innovation, and the Microsoft monopoly: antitrust in the digital marketplace* (pp. 217-255). Washington, DC: Progress & Freedom Foundation.

Krajewski, L., Ritzman, L. & Malhotra, M. (2010). *Operations Management: Processes and Value Chains* (9th Ed.). New Jersey: Pearson Prentice Hall.

Laurillard, D. (2008). Technology Enhanced Learning as a Tool for Pedagogical Innovation. *Journal of Philosophy of Education*, 42(3-4), 521-533.

Marcuse, H. (1964). *One-Dimensional Man* (1st Ed.). Herbert Marcuse Archive.

McLaren, P. (1999). *Che Guevara, Paulo Freire and the Pedagogy of Revolution* (1st Ed.). London: Rowman & Littlefield Publishers.

Meyer, H. D. (2002). The new managerialism in education management: corporisation or organisational learning? *Journal of Educational Administration*, 4(6), 534-551.

Mitchell, J., Mackenzie, D., Holloway, J., Cockburn, C., Polanshek, K., Murray, N., McInnes, N & McDonald, J. (1979). In and Against the State. Retreived October 8, 2011 from http://libcom.org/library/against-state-1979.

Orwell, G. (1949). *1984* (1st Ed.). London: Secker and Warburg.

Pauly, J. J. (1983). Ivan Illich and Mass Communication Studies. *Communication Research,* 10(2), 259-280.

Ritzer, G. (1993). *The McDonaldization of society: an investigation into the changing character of contemporary social life* (1st Ed.). Thousand Osaks: Pine Forge Press.

Schatzman, M. A. (2007). The Bologna Process: Impact on Transatlantic Exchange from the North American Credential Review and Admission Perspective. Institute of International Education Network. Retreived October 8, 2011 from http://www.iienetwork.org/?p=Schatzman.

Shor, I., & Freire, P. (1987). *A Pedagogy for Liberation: Dialogues on Transforming Education* (1st Ed.). Westport, CT: Bergin & Garvey.

Stallman, R. M. (2002). *Free Software, Free Society: Selected Essays of Richard M. Stallman* (1st Ed.). Boston: Free Software Foundation.

Tsantis, L. A., Bewick, C. J., & Thouvenelle, S. (2003). Examining Some Common Myths about Computer Use in the Early Years. *Young Children on the Web*, 11.

Van Dijk, J. & Hacker, K. (2003). The Digital Divide as a Complex and Dynamic Phenomenon. *The Information Society*, 19, 315-326.

Van Dijk, J. (1999). *The Network Society* (1st Ed.). London: SAGE.

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