

**INFORMATIZATION OF A NATION:
A CASE STUDY OF SOUTH KOREA'S
COMPUTER GAMING AND PC-BANG CULTURE**

by
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Thesis submitted in partial fulfillment of
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OF SOUTH KOREA'S COMPUTER GAMING &
PC-BANG CULTURE**

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ABSTRACT

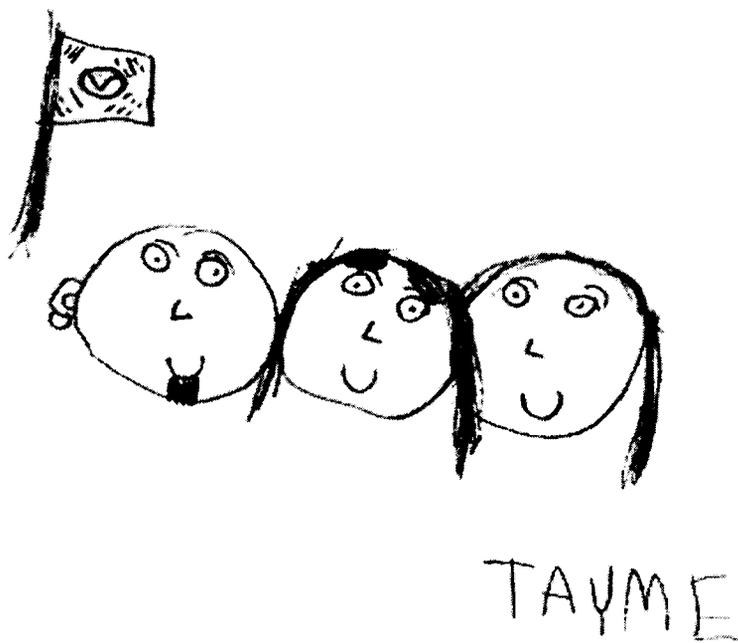
In an attempt to prepare its public for the computer age and stimulate the information economy, the Korean government has encouraged mass, inexpensive Internet access. Governmental programs have targeted equalization of access and computer enhanced training through policies supporting development of the gaming industry. The goal of this study was to assess the impact of these public initiatives on students' patterns of new media use at home and at the PC-Bang. The research involved participatory observations at 30 PC-Bangs, numerous interviews as well as media audits administered to 1467 school-aged students, 870 university students and 617 mothers of grade four students.

The success of these policies is evidenced in the fact that 77% have access to network media, predominately (80%) broadband access. However, there is little evidence that Korean youth use this technology for educational purposes. The study further suggested that the Korean youth favoured new media as an entertainment source spending the most time playing game, chatting and emailing online. Their enthusiasm was so great that some Korean youth reported that new media had become a disruptive entertainment source leading to excessive use and displacement of sleep, homework and time with friends. The media audit results also revealed a classic gender divide in media use patterns; male students preferred to play games, especially at the PC-Bangs, while female students tended to use computers at home for non-gaming activities such as chatting and emailing.

Confronted by signs of children's changing entertainment practices, mothers were not particularly concerned about the amount of time their children spent with new media, but they did desire more educational experiences for their young children. The study suggested that although Korea has pioneered a novel pathway to the information society, it is a long way from universal access and may not be achieving the information worker training goals, though it may be further creating risks of excessive use.

DEDICATION

To Dana and Tayme with all my love.



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INTRODUCTION

"It appears that this is the only way forward: Initiation in the processes of information handling, transmission, storage and retrieval is the key to future prosperity and to qualitatively different ways of life. Failure to proceed in this direction carries dire consequences. Punishment for national laggards will be relegation to 'Third World' status (NEDO, 1984, Crisis facing information technology, London, National Economic Development Office, August)" (Lyon, 1995, p.54).

In transforming themselves from 'smokestack' to 'information' economies, many industrialized nations around the world have successfully implemented Alvin Toffler's prophecy that computer based IT industries would lay the foundation for economic and social progress (Toffler, 1990). Yet Toffler also predicted that to succeed in the new global economy, developing nations must "scrap their traditional economic strategies" and strive to accommodate this information revolution (Toffler, 1990, p. 9). Most have done so by using Information Communication Technology (ICT) sectors as "tools for releasing the creative potential and knowledge embodied in people" (Frederick & McIlroy, 1999, p. 182). And as some believed, *Newly Industrialized Countries (NIC's)* had certain competitive advantages over Developed Nations because they could select from the shelf of technologies and strategies tried and tested by more advanced nations (Timmer, 2003, p. 405).

The following presents a case study of South Korea, a country which had already successfully navigated the competitive global market by imitating Developed Nations and by adopting a strategy of 'Picking the Winners'. Yet upon emerging as an industrial powerhouse Korea found itself, in the 1980s, having to re-evaluate its strategies in order to accelerate onto the information superhighway. Setting out to make Korea "an IT powerhouse" (Kim, 2002), government policies adopted ICT industries as the enablers of social and economic change. Fuelled by national pride and a need to rebuild their nation, Korea set out towards a post-industrial future to ensure that they would avoid relegation to the rank of a *Third World Nation*. As this

thesis will show, Korean policy makers were instrumental in directing and supporting change through heavy investment in a nation-wide information infrastructure and emphasizing ICT education and training to ensure that the population was ready for the future; as information workers, consumers and citizens. However, its cultural, historical and geo-political circumstances were unique, and as I will argue, played major roles in shaping the policies, industry developments and ultimately the social uses of ICT technologies that defined the Korean information revolution.

Korea's historical march

“South Korea may have been slow to industrialize, but we will lead the world in computerization” (Akira, 1998).

Korea's rapid expansion of its communication infrastructure leading into the information era was quite apparent during my first visit to South Korea in 1996-1997. From the booming construction of high-rise apartments to the fledgling, publicly promoted ICT industries such as pagers and satellite television and computerization of the classrooms. This progress was quite astounding given that only 43 years prior to my visit, the nation had been ravaged by three years of war, and had, prior to that, been under stifling Japanese occupation since 1911. The quick climb from the devastation of hostile occupation and the Korean War which "destroyed what little industrial base existed in the South" (Jeong & Mason, 2003, p. 1495) was aided by important political incidents including the military coup by General Park Chung-Hee. General Park's militaristic regime quickly shifted the political environment by rebuilding Korea's national identity via strategies for rapid industrialization and economic expansion.

Following Japan's lead, Korea in the 1960s, focused on its heavy industry exports, targeting steel, ship-building and agriculture sectors to further strengthen the economy. An export-driven industrial theory was implemented based on 'duplicative imitation'; the reverse engineering of foreign products and goods, enabling Korea to develop similar products sold at a cheaper price (Timmer, 2003, p. 405). This highly successful strategy of 'following the leaders' not only prompted economic growth through new export markets, but most importantly, it expanded the infrastructures of knowledge-based industries needed to progress to the next step in Korea's industrial

history, the innovation phase, which was state supported through an intensive plan to expand the training and research programs in Korean universities.

Observing its former occupier's profitable exploration of electronics, Korea began to imitate Japanese technology in the late 1970's, developing the infrastructure to shift towards an information economy. This effective progression was heavily based on their 'Picking the Winners' strategies, which included tax incentives and subsidies for the successful companies in various industrial sectors, thus encouraging and supporting their continued success in their field (Jeong & Mason, 2003, p. 1493). Through well-planned initiatives, strong control of the mass media and increased nationalistic pride, the nation was driven to collectively engage in "the most remarkable economic growth ever seen" (Korean overseas information service, 1996, p.87).

By the late 1970s Korea had effectively progressed to compete in the global economy, becoming the leader of the so-called 'Newly Industrialized Countries' (NICs) (Toffler, 2001, p. 8). The 1980s saw increased emphasis on ICT industries in Korea, but most importantly, the nation's economic status rose as they invested in research & development of the semi-conductor, electronics and biotechnology sectors. Within a twenty year span, Korea transformed itself from farm-based to a heavy industry export-driven nation, becoming what the *Economist* called "a textbook example of development" (Toffler, 2001, p. 8). Korea's economic shift towards telecommunication and information industries began with Korea's Telecom Research and Development Center's promotion of a national telephone infrastructure, in preparation for what it hoped would be a wholesale repositioning of its economy stimulated by a telecommunications explosion, and ending with Korea's rise to a broadband nation. Korea's remarkable ascension prompted Toffler (2001) to marvel at its accomplishments through the 1960s and proclaim that "Korea astonished the world" by committing themselves to "leap up many rungs in the ladder and join the ranks of the leading industrialized nations"(Toffler, 2001, p. 8).

Traditional merges with the modern

My interest in South Korea began in 1994 when I started to train in the traditional Korean Martial Art of Taekwondo. Two years later in 1996 I arrived in a small city near the western coast of the Korean peninsula. Korea's rapid industrialization was evident throughout the nation in 1996. The deregulation of television was one of the first indicators of change. Television was first introduced in the early 1960s, but at the beginning of 1996 many cities still only had three stations, all of which were governed by the State and heavily reflected Korean cultural values. For example, in keeping with the societal importance placed on gathering to eat with family and friends, the stations took an hour long station break at noon and simply played the Korean national anthem whilst patriotic images displayed on the screen. The summer of 1997, however, saw a major shift in government run television sector, as cable television was introduced throughout Korea. Its introduction was widely publicized and in our city often took a 'pied piper' approach, with a 'TV truck' parading through the streets¹.

As the mass media reflected changes of the time so too did the communication field with mass implementations of technologies like the pager, or 'beep-beep' as it is known in Korea. The 'beep-beep' trend impacted all facets of the population, from the business world to young elementary students, and became a frequently used communication technology. The unpopularity of answering machines in the home, frequent out-of-home activities, the highly social nature of Korean society and lack of flat rate fees for land lines, I believe, led to the popularity of the pagers. With the new technologies being enjoyed by much of the nation, it seemed to me that in 1996 Korea did not appear to be suffering any ill effects from information era culture shock; rather it seemed to be a nation enthusiastically anticipating the spoils of an impending information boom.

Though the public seemed to be eagerly anticipating the information boom, the speed by which Korea had modernized revealed a unique consequence of rapid shifts in economic structures; while the nation had rapidly moved forward, segments of the population had seemingly been left behind. Traditional elements of Korean society and

¹ This was a flat bed truck with multiple sets stacked on the back to show the various channels you would be able to get if you ordered cable. This truck often went to the massive apartment complexes and sat for about 20 minutes as the children poured out onto the streets to view.

culture were commonly seen interspersed amongst the growing signs of modern progressive elements: Elders uniformed in their traditional Korean dress still played 'paduk' (Korean chess) in the parks, traditional homes were tucked away amongst modern complexes and 'halamoni' (grandmothers) still sold their produce on the streets in the many markets lining downtown and residential lanes. These juxtapositions alerted me to the conflicting pressures that Korean citizens must have felt as they quickly ventured into an information era following their rapid modernization. I became deeply intrigued by this ongoing process of transition as Korea began to transform their industrial economy to a market-inspired information society.

My time spent in Korea allowed me to explore, understand and appreciate many aspects of Korean culture, including the independence given to young children within the community, the strength of families and friends and the strong sense of Korean nationalism and pride in their recent accomplishment. As my year long stay in Korea ended, I pondered what impact cable television, computers and the Internet would have on the children's street culture and domestic lives, which were so vibrant and somewhat traditional in 1996-1997. Would the new media and cable television lure children inside, away from peers and the street play culture? What would the consequences of the Korean intensive information infrastructure policies have on Korean families and their media use in the home, schools and in the public realm? These questions were increasingly important as Korea faced hurdles in 1997 which disrupted their information society plans.

Economic crisis; the re-evaluation of Korean information society strategies

As Korea rapidly moved towards an information society they encountered an economic obstacle in 1997, caused by what Toffler (2001) suggested were industrial based practices of the past failing to evolve as the world market changed. He warned that state-driven policies "do not work in today's hypercompetitive, world economy in which currencies and investments cross borders instantaneously" (p. 11), causing technology to become obsolete overnight. After a series of missteps often attributed to governmental corruption, mismanagement by the family run conglomerates (Chaebols) and improper lending practices by banks in the spring and summer of 1996,

the Korean Won depreciated 112% in a two month period from October to December (Han, 1999, p. 6). A disaster ensued forcing Korea to sign a 55 billion U.S dollar IMF emergency credit package fund in an attempt to stabilize the economy.

Years of past occupation and proximity amongst large, powerful nations such as China and Japan had prompted Korea to “constantly to be on guard lest its sovereignty be violated” (Han, 1999, p. 12). Korea historically has frowned upon foreign investment and its policies towards such investment have been both conservative and nationalistic in nature (Han, 1999). Following the market crash the Korean government re-evaluated and shifted their economic and industrial strategies as they continued to forge toward the information era. The Ministry of Information and Communication (MIC) suggested in 2002 that Korea “discarded its old way of thinking and practices of the industrial society, and embraced new mindsets and economic structures, fitting for the digital era” (MIC, 2002). As Korea’s economy strengthened and it became an industrialized power, it gained confidence and, following the 1997 market crash which has been somewhat blamed on these closed door policies, it was “psychologically ready to accept foreign direct investment and had become more positive toward globalization” (Han, 1999, p. 13). Although these reformed policies would take many years to be fully completed, Korea had learned that a global outlook would allow them to quickly adapt in the new world market. As the nation re-evaluated and re-directed its energy towards a global market, the Ministry of Information and Communication (MIC), through increased R & D funding, assured the creation of more jobs within the IT sectors. This encouraged competition among telecommunication service providers, and provided inexpensive, easily accessible broadband “to create an environment where people can access information and knowledge anytime anywhere at low cost” (MIC, 2002, message from President)².

When I returned to Korea in 2001, I noticed significant shifts in Korean society from my previous visit only four years earlier. It seemed as though fewer children could be seen playing outdoors. However, I cannot conclusively interpret that this phenomenon was due only to four years of intense informatization; the impact of the 1997 market crash ushered in a new era which brought more mothers into the work force and spurred a corresponding increase of early childhood education facilities.

² Usual rates for PC-Bangs were 1000 Won/ hour, or during the evenings some PC-Bangs would have ‘all night specials’ from midnight until 8:00 am for 5000 Won. In February 2002 1000Korea Won was worth US \$0.82 and CAN \$1.31 for one hour of Internet use during the day.

What had not changed significantly was the Korean enthusiasm for technological advancements. A major shift in personal communication technologies, was observed where the cell phone market flourished causing the 'beep-beeps' to become a technology of the past. As communication forms shifted, so did living styles, with many families moving from traditional homes to high-rise apartment complexes, fully modernized with high speed APT LAN networking in all the units. Thanks in part to KII Initiatives, high-speed Internet and computers also became commonplace in educational facilities and in the public domain.

The successful implementation of information networking systems in Korea was in large part due to the national policies, but its rapid development can be attributed to Korea's geographical and population characteristics. The Korean peninsula is not only quite small in comparison to Canada and the United States, but is also one of the world's most densely populated countries in the world, thus further intensifying the speed and ease of networking the nation and providing home throughout the nation with high-speed internet access.

The PC-Bang; Korea's unique public market

Don Tapscott (1998) has suggested that the decline of public play spaces has contributed to American children's embrace of digital media. With such an immense population density of the cities, green spaces and outdoor playing areas, are rare in Korea and often only small plots of land allotted to school playgrounds exist within their cities. As Fuentes & Straubhaar (2001) suggested adoption of new technology also depends on "social uses, attitudes and economic aspects" (p. 8).

The lack of home space and green space has contributed to the development of a distinctly Korean public entertainment venue, the 'Bang' (public room). Unlike North American home-entertainment environments, South Korea has developed a thriving entertainment industry outside of the home within the various 'Bangs' such as the *Manwhabang* (comic reading room), *Norebang* (singing room), *Video-Bang* (video viewing rooms), *DVD-Bang* (DVD viewing rooms), and more recently the *PC-Bangs* (PC/Internet room). This Bang culture has become an integral part of the socializing environment for the Korean population. Though I understood the popularity of Korea's Bang culture from my 1996 visit, I was not familiar with its newest addition, the PC Bang. From 1996 to 1997 only a few Internet cafés were available to the public. In

these cafés the Internet connection was often quite slow and the fee quite expensive, so word processing and emailing were among the most popular observed activities. The Internet café's clientele most often was comprised of Korean university students, but was also frequented by expatriate English teachers. The Korean Internet cafés, were similar to those illustrated by Stewart (2000) in his study of Scottish cyber-cafes: "not a transitory phenomenon, but the evolution and extension of a very old and traditional institution, the café" (p. 320). The Korean internet cafés provided a quiet, yet social coffee-shop atmosphere, accentuated by a small cluster of computers.

Only a few years later, the mellow environment of the Internet café, which encouraged socializing over coffee and perhaps Internet browsing, gave way to the dark, loud, smoky computer-rich environment of the PC-Bang, which had seemingly de-socialized the computer using environment through the segregation of computer users via individual computer work stations. University aged male students dominated the clientele and their activity of choice was without doubt, gaming. The rise of the PC-Bang started in 1998, sixteen years after the introduction of the Internet to Korea (Lee, 2001). The PC-Bangs can be characterized as a computer-rich environment complete with numerous amenities including coffee vending machines, cigarettes and a variety of food items. Much of its appeal may have been the fact that it provided high-speed Internet access at a very low price and was easy to locate within cities and towns throughout Korea. With an average of 30 computers in each PC-Bang, the number of public computers was calculated to be between 750,000 to 1 million.

Although it seems equal access is provided to Korean society via the PC-Bangs, my observations indicated that the PC-Bangs have become a male-dominated gaming environment enjoyed by the youth. However, the incredible popularity of gaming at the PC-Bangs has not deterred the Korean government from striving towards their goals of becoming the most computerization nation of the world, rather it has fuelled a new means of obtaining those goals; a shift from 'information society' strategies based on providing access and computer literacy skills to strategies based on a gaming culture and the game industry both within Korea and as a leading export industry.

Korea the 'Online game capital of the world'

"Today, dressed in white-and-gold gladiator tunics, Kang and his challenger emerge through a dry-ice fog to wild cheers from several hundred spectators crammed into a crescent-shaped arena. The contestants sit at facing computers. An oversize screen displays the progress of the game, which is a variation on cyberwarfare. Two analysts on TV explain the players' strategies and highlight spectacular moves. In less than 30 minutes, Kang routs his opponent, who surrenders by flashing "GG"—for "Good Game"—on his computer screen" (Kandell, 1993, p.3).

Korea's status as the "online game capital of the world" (Watts, 2001) is less a matter of happen-stance than of government policy. Building on its Korean Information Infrastructure (KII) strategy from 1993, the government began targeting the gaming industry as part of the information economy. The Ministry of Information and Communication helped launch a Korean gaming industry with upwards of \$2 billion US allocated to promote "the country's role in multimedia and application software" (Burnstein & Kline, 1995, p. 307) including \$3 million US dollars earmarked to launch a Korean game developer's sector (Park, 2001). The Korean government illustrated its commitment to the gaming industry when in 2001 The Ministry of Culture and Tourism, the Korean Game Promotion Center and Samsung Electronics, hosted the first annual 'World Cyber Games' (WCG)³. This event, billed as the largest online computer game event in history, attracted 427 competitors from around the world. World Cyber Games further solidified the notion that Korea was becoming the computer gaming Mecca of the world. The Korea gaming circuit was thriving with three computer pro-gaming leagues and 50 different teams (Macintyre, 2000), often competing in various PC-Bangs across the nation and being featured on the many TV stations dedicated to gaming.

³ The World Cyber Games official opening ceremony began with a pre-recorded speech from the Korean President Kim Dae-Jung.; "Cyber games are a business with high added value, based on knowledge and cultural creativity. It also serves as a link that interconnects young people of the world," (IT matters, 2001) " I hope that the first WCG will help our nation to become recognized as one of leaders in game, knowledge industry and IT infrastructure, as well as help the world's game-loving young people exchange information and build friendships" (gamma-seven, 2001).

This influx of new media in Korea has dramatically influenced policies regarding the IT industry and Korea's move to become a powerful information-rich nation able to compete in the new economy. Thus the expansion of the gaming culture provided new directions for my research and I therefore sought to investigate;

- 1) The cultural adjustment of the Korean population to deal with the rapid industrialization and the currently rapid informatization and its impact on the family and the children.
- 2) The public policies used to promote the computerization of the public as a strategy to promote Korea as a leader in the new world economy.
- 3) The uniquely Korean PC-Bang phenomenon and its impact on students' patterns of use
- 4) The role gaming has played in government policies and an examination, of the what I believe to be, a shift from strategies based on access and education to a strategy based on the nurturing of the gaming industry.

Korea has succeeded in the intensification of their computer using environment and the establishment of a broadband revolution. Their success has been noted with "International organizations such as the organization for Economic cooperation and development (OECD) and the international telecommunication union (ITU) hav(ing) recommended that Korea's progresses in broadband Internet services be used as a benchmark for other countries" (MIC,2002). The rise of Korea's computer nation has resulted from factors including key planning initiatives led by the Korean government to further promote computer use and computer access, intensive competition among Internet providers, high-housing density, fertile entertainment culture allowing computer gaming to thrive and finally the role that cultural has played in emphasising education for Korean children such that computer technology has been a readily accepted educational tool into homes. Therefore, the Republic of Korea provided an excellent case study by which to examine in detail their information society policies and the impact these policies had on the equality of access, education and training programs and the development of an entertainment culture used to press the nation towards the Third Wave

To situate my thesis within a theoretical framework, Chapter 2 will briefly examine the theories of an information society, with specific emphasis on the need to build an information infrastructure to provide access to users, and most importantly, the notion of a well-trained and educated information-based workforce. This will be followed in Chapter 3 by an in-depth examination of the steps taken by Korea since the 1960s to ensure their strength and competitiveness to become a world leader in

the new world economy. Chapter 4 will provide a framework by which the social impacts of ICTs in Korea will be examined using methodological tools suitable for a cross-cultural new media study. Once the methods have been detailed I will examine the data in Chapter 5 providing quantitative and qualitative data collected from numerous media audits used to analytically examine the impact of Korea's public policies on actual use of ICTs in the home and in the Korean PC-Bangs. Finally Chapter 6 will review the result of the Korean policy framework and examine in-detail the role ICTs have played in the lives of Korea students and families in 2000-2001.

CHAPTER ONE: THE COMING INFORMATION REVOLUTION

"Computing is not about computers any more. It is about living. The giant central computer, the so-called mainframe, has been almost universally replaced by personal computers. We have seen computers move out of giant air-conditioned rooms into closets, then onto desktops, and now into our laps and pockets. But this is not the end" (Negroponte, 1995, p. 7).

The idea of an 'information society' has heavily impacted global developments over the last half-century (Toffler, 1990). Although the term 'information society' was developed in the 1960s, it has yet to be defined, though many nations have similar ideas of what the definition would entail. These similarities include a definition of its use through public policies; complete with a prediction of future outcomes and an analysis of the social implications for nations' citizens (Lyon, 1995, p. 55). These policies, which often include industry-based funding and support, have become the basis of a nation's strategic information society plans. To understand Korea's strategic planning of their informatization public policies, I will first provide a brief outline of a few information society theories to provide the basis for my analysis of Korea's ICT environment and PC-Bang culture in later chapters.

Factors involved in a successful information society are not only related to the industry and technology itself. Often the information revolution prompts nations to shift their former economic and social means of exchange to further explore new ways of creating and retrieving knowledge as the elements of work and workers evolve to become part of the information society (Lyon, 1995, p. 55). Though innovative means of economic and social exchanges are facilitated by an information society infrastructure, the use of the technology is of utmost importance, and ICT usage must be promoted within educational facilities and citizen's domestic lives (Kline et al., 2003).

Though the long term impact of the information revolution is uncertain, it is possible to identify several consistent beliefs that underscored these initiatives;

- 1) our societies are undergoing a revolution precipitated by computerization and global telecommunications, and industries like the micro-electronics and communication technologies will be the sectors of greatest economic growth in the future.
- 2) that the production and diffusion of ICT provides the key to economic growth in a globalizing market economy.
- 3) that to stay competitive in the knowledge economy will require investment in the education and training of future knowledge workers and consumers, and near universal access to these new tools of communication.
- 4) that historical, cultural and geographical conditions and circumstances in each nation lay the foundations for their information infrastructure development.

The Third Wave

Combining many of these themes, Alvin Toffler's book the *Third Wave* (1990) was influential for not only popularizing the idea of an information revolution, but for further theorizing the impact that computer technologies will have on the everyday domain of social life. He has characterized these impacts through a discussion of three main stages in the technological history of our economic development; the first began with the invention of agricultural technologies of animal husbandry and farming. This was followed many centuries later by the industrial revolution, in which science and industrial technology not only helped bring about a growth in productivity, but also prompted a shift from farm to factory labour. This second shift was followed by what Toffler argued was a Third Wave Revolution, caused by the computer's ability to change all prior technologies into intelligent systems, both in the factory and the home, thereby inciting changes not only in the workplace, but throughout every aspect of our lives as nations engage in an information revolution (Toffler, 2001, p. 7).

Paths to the Information Society

The shift towards an information society has been traced back to a 1963 seminal article written by Tadao Umesao entitled 'Joho Sangyo Ron' or 'On Information Industries' (Tehrani, 1990, p. 4-5). In this article, Umesao articulated a new vista for Japanese modernization based on "a progressive movement from agriculture to material and spiritual industries in order to fulfil the increasingly more complex, organic needs of human survival, locomotion, and cybernetic control" (Tehrani, 1990, p. 4-5). This prognostication of fundamental transformations of the economic foundations was important in the shift in Japanese economic strategy towards 'knowledge industries', allowing them to develop high-tech electronic consumer products. These strategic moves allowed Japan to become a leader of new technology innovations (Toffler, 1980, p. 192). Further pursuing this idea, Japanese government ministries, such as MITI (Ministry of International Trade and Industry) have, since the early 1980s, targeted the technological infrastructures for advanced micro-electronics, computers and telecommunications as the catalyst for economic competitiveness in the global information society (Toffler, 2001, p. 79-80). The so-called economic miracle that propelled Japan's economic expansion through to the 1990s was often touted as a model for Asian rejuvenation, but the momentum was unable to sustain its rapid growth through innovation, resulting in tremendous economic instability (Toffler, 2001).

Japan's road to the information society

The economic instability of Japan's early rush has been blamed on cultural factors leading to an inadequate emphasis on an information workforce. Kenichi Ohmae (2000), author of 'The Invisible Continent; Four Strategic Imperatives of the New Economy', pointed out that although a technologically savvy young generation of computer users, the 'Nintendo Generation', was seen as the future Japanese workforce, the economic transition had become stalled because the Japanese educational system failed to evolve with the changing information environments⁴.

⁴ This is particularly valuable for developing countries, which have no sophisticated infrastructure and no expertise to build one- but which have the incalculable resource of an energetic population of fifteen-to eighteen-year-olds. All it takes is giving a sufficient number of these people a five-year education in skills in computers and communication, and the ability to act on the education (Ohmae, 2000, p. 227).

Ohmae (2000) claims these inadequacies are fatal and " (t)he most fundamental lever for success is education...the best telecommunications system in the world will not help a country thrive if the people are not equipped to use it effectively, or to offer their services in the global marketplace" (Ohmae, 2000, p. 227-228). It is the people, rather than the technology, that will become the producer, consumers and marketers of the knowledge-based products, therefore it becomes imperative to produce a highly-skilled information workforce.

Knowledge-based information workers

Educational programs for the information age students, according to Ohmae (2000), should not only include technical structured curricula to provide awareness of the technology and its use, but it should also include elements that promote the development of well-rounded technologically savvy citizens, able to learn freely via the new technology.⁵ Ohmae (2000) believed that networked computers were a perfect learning tool, providing the essential elements needed to produce well-rounded citizens. The computer technology would also further subvert 'drill and rote-learning' practices often seen in the Japanese mass education system, thereby freeing the learner and permitting them to explore learning on their own. Allowing for self-exploration, via new communication technologies will create, according to Ohmae, innovative, creative and inquisitive, citizens capable of joining the knowledge-based work force and furthering the nation's progression towards becoming an information society.

Although Japanese theorists may have coined the term 'information society' many prominent economists in the United States were prophesying the new revolution with similar conclusions and effects. John Kenneth Galbraith (1967), observed the restructuring underway in the Post-War US economy, arguing that a 'new industrial state' formation was taking shape. This restructuring was also examined by management theorist Peter F. Drucker who, also surveying the changing economy, argued that "*Knowledge* rather than *science* has become the foundation of the modern economy" (p. 265). Drucker (1967) explained the implications of these changes for

⁵ "emphasize a 'T-shaped' human being, with the horizontal bar representing the knowledge and experience of humanity, global issues, social values, and common sense, while the vertical bar represents special skills, such as information technology, marketing, finance operation, and variations thereof" (Ohmae, 2000, p. 228-229).

managers of the new economy: "In the last twenty years the base of our economy shifted from manual to knowledge work and the center of gravity of our social expenditure from goods to knowledge" (p. 287). To accomplish this, a knowledge-based workforce was seen as a major factor in the transition to a post-industrial economy as well as the ability for, organizations to adjust to "(d)iversity, flexibility, and competition" within the new knowledge economy (Drucker, 1967, p. 364).

Although the USA had a long tradition of subsidizing science and technology research within its key military and industrial sectors, Galbraith (1968) argued that as the leading edge nation of social progress, the USA policy had to broaden, thus becoming more 'diverse and flexible' in their knowledge development and education of future citizen workers. Drucker (1967) agreed with the notion of expanding knowledge industries and suggested that "the main investment, and the main product of the advanced economy" should be in facilities which help develop a new class of workers who are able to deal with the ever changing diversity of knowledge-based computer applications (p. 264-265).

Impact of the computer

As the computer became the basic tool of the transition to an information economy, governments, managers, workers, consumers and citizens would all have to engage with and adapt to these new technologies. The impacts of a knowledge-based economy and the introduction of computer technology would first be felt within the workplace and work processes. Alvin Toffler in his 1990 book 'Power Shift' concluded that the most important and substantial changes to the economic system of nation-states was "the rise of a new system for creating wealth, based no longer on muscle but on mind" (Toffler, 1990. p. 9). This substitution of knowledge for brute labour was, he suggested, the reason why nations such as Japan had become the economic miracle of the 1980s, catching up with and surpassing the United States in some key sectors like car production and electronics. He analogized that "while GM still thought the earth was flat, Japan explored its edges and discover(ed) otherwise"(Toffler, 1990. p. 9). Toffler (1990) further explained that information, unlike factories or land, can be generated without resources and energy, and "applied by many different users at the same time" allow the development of innovative capital based on creative ideas (p. 213).

As nations' economic strategies and changing notions of capital shift, so will their notion of work, and nations will "radically reduce the need for land, labour, capital or, for that matter time, energy and other inputs" which "explodes the assumptions that underpin both Marxist ideology and classical economics"(Toffler, 2001, p. 17). However, unlike older forms of production which were mainly materialistic, this new form of production often is dependent on a "new kind of autonomous employee...who, in fact, does own the means of production" through creativity and imaginative entrepreneurial endeavours and information-based employment. This creative production is aided by intensive ICT education and the development of a workforce capable of using and producing these technologies.

A nation's emphasis on an educated workforce, according to sociologist Daniel Bell in a collection of essays called 'The Winding Passage' (1980), is evident in the communication and service sector's rapid expansion of their "entire work process and the specifications of the different kinds of analytical skills and functions" used by all levels of information workers, especially those in the service sectors (Bell, 1980, p. 48). This increase and restructuring of communication and service sectors results in an 'information explosion' resulting from the "growing demand for news, entertainment, and instrumental knowledge, all in a context of a rapidly increasing population" therefore the government information society strategies have provided extensive access to these expanding fields of telecommunication and communication technologies (Bell, 1980, p. 53).

Information explosion and the telecommunication era

As the fields of telecommunication and communication technologies expanded, their impact on the workplace, government and cultural domain of everyday life continued. Cairncross (1997) argued that "technological change always has the power to revolutionize the way people live", and the convergence of media currently taking place around ICT's "will be no exception ... It will alter, in ways that are only dimly imaginable, decisions about where people work and what kind of work they do, concepts of national borders and sovereignty, and patterns of international trade" (Cairncross, 1997, p. 1). For many nations the converging communication infrastructures seemed destabilizing and threatening of national cultures, but as Cairncross (1997) enthusiastically stated, ultimately the "death of distance" and the

“global diffusion of knowledge” at the heart of the information economy would be a progressive force for modernizing nations. This modernization however, would often be delivered to nations through governmental policies asking their public to accept significant changes in their lives and alter past habits. As computers provide tools for change in the economic and social patterns of everyday life, so too will new products and uses of the technology be discovered, thus furthering the automation and customisation of all fields of social life.

The notion of a mass 'market of one' is facilitated by networked media which allow for diversity and segmentation of the population into particular taste cultures as well as the increase of online access and commerce to suit various different needs in a de-massified digital marketplace (Toffler, 2001). People could then telecommute to work, shop in their bedrooms or engage in distance customized learning because of ICTs. This means that de-massification brings greater diversity of goods, services, products and knowledge which are continually market to smaller and more specialized segments of the population. Naturally, populations would have to adjust to the new structures of de-massified production and consumption and learn to appreciate the benefits of these new ways of delivering goods and services.

Populations often need to adjust to these new technologies within unique political and social realms. For example, the support for the information infrastructure and regulation of the mass media had diminished significantly during President Reagan's term because Republicans understood the problem of American enterprise as the “excessive state intervention and rigidity, which private enterprise would be called upon to resolve” (Gonzalez-Manet, 1992, p. 4). The neo-conservative dismantling of “the so-called *welfare state*” proposed that US economic policies for information society should be facilitated by “privatization, deregulation of institutional standards, and the removal of social services from state responsibility” (Gonzalez-Manet, 1992, p. 4). Except for military and space, the support for advanced ICTs had become less contingent on the development of a state infrastructure than the ability to create and sell new informationalized commodities in the market. In this respect “US companies were the first to realize the importance of computers and information technologies and (had) invested massively in them” so that by the early 1990s the U.S. accounted “for over 40% of the world's investment in computing”, with their access exceeding that of Europe and Japan five-fold (Frederick & McIlroy, 1999,

p. 192). Significant shifts in economic strategies such as those taken by the United States, allowed their nation to gain momentum and strength in the new world economy, and according to Frederick and McIlloy (1999), allowed them to dominate the knowledge-based industrial sector in the new world market⁶.

American's National Information Infrastructure strategy

These shifts in the American information society structure and the reluctance to achieve informatization through government regulations and dissemination of the public information sector was reversed to some degree by the implementation of the National Information Infrastructure (NII) policies by President Clinton's government, which recognized a role for government in creating the knowledge infrastructure as the primary "tools in a corporate expansionist strategy" (Gonzalez-Manet, 1992, p. 20).

"An advanced information infrastructure will enable U.S. firms to compete and win in the global economy, generating good jobs for the American people and economic growth for the nation. As importantly, the NII can transform the lives of the American people—ameliorating the constraints of geography, disability, and economic status—giving all Americans a fair opportunity to go as far as their talents and ambitions will take them" (CPSR, 1993, p. 1).

This NII vision heralded the Internet as a revolutionary form of technology and social infrastructure that would propel America in the information age. Its basic strategy was the commercialization of the Internet in February, 1993, when President Clinton formed the Information Infrastructure Task Force (IITF)⁷. This opening vista of a commercial information super-highway was heralded by business leaders such as Jeffery Sachs who suggested the gains made in the market would likely be the result of lower prices for consumers and higher wages for workers, caused by the "basic aspect of Internet technology, freedom of entry of new firms, and therefore the very high contestability of markets" (Toffler, 2001, p. 14). Although it went through several

⁶ Another major advantage in the advancements made in the United States information society was their domination of the World Wide Web with "90% of Web sites" originating in the United States. This incredible domination is often seen as the result of the American culture and their emphasis on "individualism, entrepreneurship, pragmatism, and novelty" thereby promoting risk taking within the new economy "(Frederick & McIlloy, 1999, p. 192).

⁷ This task force was responsible for the development and implementation of "the Administration's vision of the National Information Infrastructure (NII)" (CPSR, 1993, p. 1)

iterations⁸, the core themes of this initiative remained the same; commercializing what had been a state subsidized Internet technology⁹ would launch the American economy into the global information economy by becoming the leading innovator in the Internet marketplace. Although the Internet's development was going to be market-driven, the NII policy also served the public interests of access to information, knowledge and education, with the motto 'that no one should be left behind in the information age' (CPSR, 1993), thus promising the levelling and liberating of the public through informational and educational programs meant to increase equal access in to the technology and the knowledge eliminating the digital divide, though this task was proven to be extremely difficult.

Bridging the Digital Divide

Bridging the knowledge gap between citizens with access, the 'information haves' and those without, the 'have-nots' becomes necessary through the integration of networked computers into every facet of the American public's lives (Harris et al. 2002). Tapscott (1998) agrees that the technological and knowledge gap must be narrow but also technological inequality "not only exacerbates the fluency gap but also the gap in different economic classes' capacity to learn and to have successful lives. Have-nots become know-nots, and do-nots" (Tapscott 1998, p. 11). Those who gain access also gain knowledge which can be readily implemented into the new economic strategies. However, those who lack the access also lack skills in the information era and will be unable to reach the same levels of success as their technologically savvy counterparts (Toffler, 1990). Toffler (1990) predicted this emergence of an 'underclass' caused by unequal distribution of technology "is not only a moral affront to affluent societies but a menace to social peace, and ultimately a threat to democracy", he further explained that the rise of the knowledge-based working class and increase in employment within the field will have a disastrous affect on the ability of the underclass to obtain employment (Toffler, 1990, p. 366-367).

⁸ The version was later refined in a report entitled 'The National Telecommunications and Information Administration (NTIA)' (CPSR, 1993,p. 1).

⁹ Though the Internet was originally created by research funded by the American government, called ARPANET, it has now become an integral element in the public's commercial business practices (see Kline et al., 2003, p. 100).

The NII therefore, promised to subsidize access to information resources in homes, libraries and, most importantly, in schools to ensure the next generation would grow up Internet literate. For this reason, based on the idea that computers were essential to democracy, President Clinton set "a national goal that every high school student know how to log onto the Internet before graduation" (Atkin, 2002, p. 23-24)

"Whether it is the demographics of the Internet, the use of Nintendo and Sega, or even the penetration of home computers, the dominant forces are not social or racial or economic but generational. The haves and the have-nots are now the young and the old" (Tapscott, 1998, p11)

Computers as the future tool of intellectual movements has expanded beyond the classroom. Homes have increasingly become computerized and the information society, particularly the digital revolution, according to Tapscott, (1998) seems to be driven not by national and ethnic forces, but by the young. For this reason, the success of a nation's information society is often dependent on the enthusiasm for digital media felt by children of the 'NetGen' population (Tapscott, 1998, p. 36). This generation is comprised of cohorts who, in 1999, were between ages two and twenty-two, were raised among a variety of digital technologies including video game consoles, computers, and the Internet in various locations including their homes, bedrooms and schools, and have readily adapted to the new media environment (Tapscott, 1998, p. 3).

Not only have children become the primary users, but increasingly Internet providers gear content towards this target market (Turow et al., 2000, p. 5). Though few parents may be technologically savvy, they seem to value the technology for their children. A 2000 APCC (Annenburg Public Policy Center) study indicated that approximately 90% of parents suggested that the Internet would help their children with their schoolwork and provide a new means of discovering fascinating information which would allow them to succeed in the future information society (Turow et al., 2000, p. 12). The study also indicated that 74% of parents suggested that children who lack Internet access are at a disadvantage, 40% worry about their children going online and many do not have the computer skills to fully help or understand the technology itself (p. 13). The rush to connect families to the Internet has occurred "despite parents' substantial insecurity" and growing concerns about violence, stalkers, and pornography online (Turow et al., 2000, p. 7), and parents often find themselves

caught between their concerns and the growing sense that they must provide computers and Internet access to prepare their children for the future.

CHAPTER TWO: TOWARDS MODERNITY; INFORMATION SOCIETY COMES TO KOREA

Role of Mass Media in Korea's modernization phase

It has long been maintained that mass education and communication are the central engines of economic and social development. For this reason, modernization theorists such as Lerner and Schramm equated progress with mass media and education systems as the “principal indicators of general societal development” (Mosco, 1996, p. 122). For this reason too, the introduction of new media and education systems have been seen by developing nations as key steps in their rising status from Third World to modern industrial nation-states.

In this sense, Korea's first steps towards modernization began in 1883 with the development of its first official gazette, the state-run *Hangsong Sunbo* (Kim, 1973). The subsequent introduction in 1896 of the first *privately operated* newspaper in Korea, the *Dongnip Sinmun*, was perhaps even more important, because unlike prior newspapers, *Dongnip Sinmun* combined both a nationalistic and democratic vision in its mandate, stating that it “will not discriminate people according to their social status... ‘we will not do service only for those living in Seoul but for all Koreans living in Korea” (Kim, 1973). The *Dongnip Sinmun*, in its decree to provide for its nation's people and promote its newspaper industry, had also succeeded in unifying the Korean written and spoken language for the first time in the history of Korea (Kim, 1973)¹⁰. Unlike previous newspapers, which used Chinese characters or printed both Chinese characters and Korean Han'gul alphabet, the *Dongnip Sinmun* newspaper was printed only in Han'gul. The development of a Han'gul newspaper was essential for Koreans to maintain their language and their sense of nationalism through years of colonial occupation. This formation of their national identity would become an important element in 1910, when Korea was forced to endure thirty-six years of restrictive

¹⁰ Han'gul, the first Korean alphabetic, rather than character, script was developed by King Sejong in 1446 (Korean Overseas, 1996, p. 106).

Japanese imperialism. During this period with the help of the Korean newspapers the language and history of the Korean peninsula survived (Hahn, 1978).

Even under strict rules outlawing the Korean media and severe fines for those caught disobeying Japanese law, the Korean press “defended the Korean cultural identity against all Japanese attempts to submerge it” (Jacob, 1985, p. 118). The Japanese occupation shifted and reorganized much of the Korean infrastructure, both industrial and social, including their education system. For example the *Educational Act* in September 1911 aimed at “securing manpower for the operation of the colonial establishment” through the tightening of Japanese control of the Korean school system (Korean Overseas, 2003, p. 15). This led to nearly 90% of the school-aged children in Korea being denied the opportunity to go to school and learn, thus “keeping them illiterate...such was the dire effects of the efforts of the Japanese colonial masters to extinguish Korea’s national consciousness” (Korean Overseas, 2003, p. 16). Though much of the population was illiterate, communities would gather around those who could read, thereby strengthening Korean nationalism within the communities. As organs of state nationalism, the legacy of these early newspapers must be seen within the cultural, historical and socio-economic environment in which they are produced.

The importance of mass media cannot be underestimated, for throughout Japanese occupation and the Korean War, Korean nationalism continued to play a significant role in the ‘modernization’ process of Korea. Following the liberation of the Korean peninsula in 1945, the newspapers and radio stations were reformatted and became the Korean national cultural content disseminators. By the early 1950s a Korean television system was developed and in 1956 the first commercial television stations began in Seoul, followed by the KBS (Korean Broadcasting Station) in 1961 which became the first full-scale television station in Korea.

Korea's New Military Regime; industrialization begins

The devastation resulting from Japanese occupation and World War II “left Korea with very few industries in the modern sense and no technical personnel pool. Indeed, in 1945 Korea had only a dozen or so university graduates who held a B.S. degree in physics” (Kim, 1973, p. 126), and it was not until 1962 that the military government, commanded by Park Chung Hee, was able to renew the Korean education system. Though numerous policies were refined during the Park Chung Hee regime, the most important lay in the 1954 constitution which proscribed the economic plans towards modernization. For this reason, Korea's industrialization can be said to have begun in the early 1960s when Hee's governmental policies first began to target the development of heavy industries and business infrastructures.

Korea's main industrial theory of the 1960s was rooted in the notion of 'duplicative imitation'. These policies, following the lead of their ex-colonizer Japan, emphasized an “outward-looking” export orientation as the key to Korea's economic growth (Rhee, 1984, p. 5). These strategies not only promoted production for export to stimulate growth in the economy, but acknowledged that to do so required the foundation of knowledge-based infrastructures. It was during this period that Korea began laying the foundation of an expanded university sector and launched a nationally controlled mass media system, thereby investing in the two essential elements to initiate the information society movement, education and ICT industries. In 1971, the government established the *Korea Research Institute of Telecommunication* (KRIT) to monitor the development of communications. Its efforts to lay this communication infrastructure were so successful that by the mid-1970s, Korea had surpassed the UNESCO norms set for radio, television receivers, and newspaper circulation, thus allowing the government to communicate with “nearly all parts of the country through the use of the mass media” (Hahn, 1978, foreword).

Regime's control of the Mass Media

Hahn (1978) suggested that the basic means of obtaining and maintaining strength of the mass media system in a nation was to ensure the state's involvement. Korean television stations, by the 1970s, were forced by law to integrate up to 30% cultural and education programming for the Korean population. The Korean media had reach a high level of popularity and had become essential conveyors of news and "moulders of public attitudes and opinions" (Hahn, 1978, p. 240). According to Hahn (1978) the development of a successful media system consists of two major steps; *penetration* and *identification*. The penetration phase is comprised of governmental policies promoting the use of mass media to enter "into regions that hitherto were inaccessible to the governmental machinery" (Hahn, 1978, p. 12). In this process the role of the government is to use the mass media as a means of providing a cohesive "political consciousness or identity to the masses" (Hahn, 1978, p.12). Once a national identity has been established, governmental public polices must promote the necessary elements to ensure the completion of the identification phase. This phase ensures that the mass media will present a set of common norms and values to the masses in order to establish common ground between the masses and the leaders of the nation. Once a common national set of values has been established "the media will begin to mirror society itself. With national identity firmly established, political elites can increase feedback from society in order to gain more fundamental integration from below" (Hahn, 1978, p. 12).

Prior to Park Chung Hee's military government, Korea, upon liberation from the Japanese, was governed by Syngman Rhee. Unlike Hee's powerful hold on the Korean media, Rhee provoked the newspaper to criticise rather than support his government. However, in doing so he was unable to develop a national identify within the governments' ideals and was easily overthrown by Hee's military. Park Chung Hee, however understood the power of the mass media and was able to capitalize on the penetration theory through intensive control of the mass media.

Though Korea had succeeded in its efforts to foster a successful export economy, these policies were mainly achieved "through direct control and intervention" and the government generally showed less interest "in patiently educating the populace to appreciate and support what it (was) trying to do by way of

modernizing the economy” (Jacob, 1985, p. 118)¹¹. With a military run government enhanced by central control of the mass media “few other policies were allowed to conflict with outward-looking economic policies” (Rhee, 1984, p. 5). The success of the era promoted the notion that nationalistic goals could be heavily impacted through mass media and serve Korea well as it rapidly industrialized.

Though Korea had made incredible strides in their industrialization, by the 1970s many economists still considered Korea “too fragile to stand on their own and compete internationally”, thus the government was forced to maintain a strict authority used to “benevolently guide the commercial and industrial economy for some time to come” (Jacob, 1985 p. 113). President Park Chung Hee's five-year plan stated three basic nationalistic goals reflecting the political and economic environment of that period: establishment of national discipline and national pride; improvement of standards of living in Korea; and repelling any aggression against the Korean nation (Hahn, 1978). This period is very much considered a catch-up phase as the government regulated the mass media to support intensive economic shifts in the nation. The strategy promoted further nationalistic ideals driven by the success of the ‘Backing the Winners’ (National Champions) campaigns; campaigns based on strategic plan by the government to heavily support successful companies (Jeong & Masson, 2003). Less successful companies were quickly abandoned or merged with more successful partners to further strengthen the sector¹² resulting in what came to be primarily family owned conglomerates comprised of “ ‘independent’ firms in different industries connected through financial ties, such as a common credit pool and [partial] equity interests” called ‘Chaebols’ (Jeong & Masson, 2003, 1493).

¹¹ Jacob (1985) further suggested that the guidelines set up by Japan in their road to modernization have been lost because of the Korean government's “persistent institutional assumptions which are not conducive to the development process” (Jacob, 1985, p. 118).

¹² Jeong and Masson (2003) suggested that Korea's development was significantly different from other countries, with only Taiwan and Japan showing slight commonalities in the development of intensive investment for small public sector industries and labour market competition. Taiwan did not, however, adopt the backing of ‘winners’ strategy, and Japan focused on wider initiatives that encompassed a more diverse selection of industries (p. 1496).

Korea's Computer phase (1978-1986)

Strict Korean governmental control was seen as detrimental to Korea's informatization process, but it was also a positive force in the early 1980s as the Korean information society began with early emphasis on IT through their electronics industry. Since the 1980s the expanding vistas of economic growth and freedom painted by the theories of the information society have made modern ICTs a beacon to advanced and developing nations alike. Following the model pioneered by Japan, Korea set out to "establish a more balanced innovative system that encouraged a cooperative and competitive tripartite partnership among industries, academia, and public research organizations" (MOST, 2002) which would lay the foundation of its high-tech 'knowledge economy'. The goals of computerization during this period were based on increased efficiency of governmental affairs. These policies were initiated in a national plan in 1978; *The Government Computerization Basic Plan*, which initiated the development of the information society in South Korea (Han, 1999, p. 5).

Pressure to produce information based workforces

Based on a belief that both workers and consumers must have access to the latest ICTs, educational and access driven policies continued the modernization model by emphasizing the continual upgrading of communication technologies in schools, industry and homes as the foundation of Korea's economic growth. The goals of these initiatives were to promote the manufacture and usage of the new media technologies throughout Korea. To complement computer access, Korea developed extensive ICT education curricula which began with the exploration phase in the 1960s and ended in the 1980s with a period of development and implementation (KERIS, 2000, p. 20-21). In the early 1970s the ICT education program was based on the '*Electronic Computer Education Plan*' funded by the Ministry of Education and supported by the '*Basic Plan for the Education and Research Network*', thereby prompting an emphasis on ICT use and programming within the school system. This plan was followed in the mid 1980s by the '*Support and Implementation Plan for Computer Education in the Schools*' (KERIS, 2000, p. 20) that supported networking of schools, government organizations and the public's use of the technology.

Advancements in Korea's telecommunication industry

Tremendous telecommunication and computer technology advancements during the 1980s increased speed and efficiency of network systems including Korea's telephone system. The Korea Telecom Authority, was founded in 1981, and was used to advance public communication infrastructures through efficiently managed and modern telecommunication services (KT, 2004). This was a tremendous step in reducing government controlled telecommunication industries and thus increasing the telecommunication fields. The following year, further technological advancements allowed "the System Development Network (SDN), a joint project of the precursor to the State-run Electronics Telecommunications Research Institute and Seoul National University", to introduce the Internet network to the Korea peninsula. Within a year it was linked with US Internet networks and HANAnet, the link between the US and Korea, was formed (Hong, 2002). Though HANAnet's growth was extremely slow, and limited to universities and colleges in Korea, these networks provided an important foundation in the upcoming information infrastructure and prompted the development of the Academic Network Committee, which became responsible for "laying the groundwork for Internet operation and management" during the 1980s (Hong, 2002, p. 10).

During the 1980s other coalitions also formed increasing awareness of the new information infrastructure. *The Federation of Korean Information Industries*, a civilian based group which prompted 200 information industry organizations and companies, including computer hardware, software, communication, and semiconductor manufactures, to encourage the use of computers within Korea by providing policy recommendations and industrial research used in information dissemination to conduct "enlightenment activities for the general public" (KERIS, 2000, p. 35).

Korea's Networking Phase (1987 to 1996)

Policies used to endorse computer development and networking during the 1970s and 1980s continued during the next phase, called the networking phase (Han, 1999). The goals of this phase were to advance universal networking of computers and improve computer literacy rates among Korean users. The networking was increased in 1985 when Dacom was introduced and effectively ended KT's

monopoly of the telecommunication industry thus increasing competition among service providers and thereby allowing for more access. Further developments included *The Act on Promotion of Dissemination and Utilization of Computer Networks* of 1987. An initiative by the *National Basic Information System Nation Plan* developed by *Ministry of Communication (MIC)*, *Ministry of Science and Technology (MOST)* and *Ministry of Education*, which provided a well-funded plan to improve nationwide information infrastructures and provide public access to communication technology through the computerization of the schools.

Endeavours such as the *Korean Education Reform Council* further pushed research concerning the introduction of computers and computer education curricula into classrooms (KERIS, 2000, p. 20). By 1987 the *Fifth Education Curriculum* was produced and continued the plan to develop a future information-based workforce by “expansion of knowledge and development of science” through reforms to the education curriculum (KERIS, 2000, p. 23). A ‘*Reinforcement Plan for Computer Education in Schools*’ prompted the use of the *Fifth Education Curriculum* in schools, and increased the utilization of computers at the student and administrative levels (KERIS, 2000, p. 66). This was followed one year later by the *Computer Network Coordination Committee* which revised the *Support and Implementation Plan for School Computer Education* policy in July 1989 and focused on “training of teachers in charge of computer education, and administrative and financial supports” and delivery of hardware technology and software programs to schools, to both increase access to the technology and also to provide substantial support for its use (KERIS, 2000, p. 23). The importance placed on technical ability rather than access was further revisited in 1992 with the *Sixth Education curriculum* campaign called *Computer Operation and Writing with the Computer* for grades five and six (KERIS, 2002, p. 23). Like education programs before it, the Ministry of Education did not require the material to be taught, rather its implementation and time spent on the curriculum was completely left to the schools’ discretion (KERIS, 2000, p. 23).

Broadband brought to Korea (1994)

Though computerization of the schools was slow, the network services continually grew and in July 1990 with the *First Telecommunication Business Structure*, which officially introduced competition as the primary principle of the

telecommunication market in Korea. From 1992 to 1994 policies developed by the *Ministry of Communication, Ministry of Trade & Industry* and the *Economic Planning Board* advanced diversity in IT policies and heavily promoted reforms to further encourage the information industry (Han,1999). These policies were followed by the de-monopolization of the telecommunication industry, separating Dacom from Korea Telecom in 1992, reducing the century long monopoly held by KT and forcing competition within the international telephone market (KT, 2004). Korea Telecom (KT) however, would only hold onto the Korean local telephone market until 1999, when Hanaro Telecom, a competing telecommunication company, was introduced. This increase in technological development continued in 1994 when KT opened their ISDN commercial service to enable both voice and data communication services using telephone lines, therefore setting the stage for Internet use in Korea. This was immediately followed in June by KT's introduction of KORNET (Korea-telecom interNET), which became the first commercial Internet service provider and opened the telecommunication market allowing the Internet to increasingly gain popularity by an immediate increase in Internet service providers (ISPs) willing to provide the Korean public with competitively priced access (Hong, 2000).

Korea Information Infrastructure (KII)

The tremendous advancements within the telecommunication industry provided Korea with the foundations for a nationwide information infrastructure. The *Establishment of Basic Plans for KII (Korean Information Infrastructure)* was introduced in June 1993. It's policies were instrumental in the construction of a broadband IT infrastructure which would become the foundation of an advanced knowledge based society (Han,1999). The plan was followed in March 1994 by the establishment of a comprehensive plan for KII infrastructure construction and in May of the same year the *Information Promotion Committee* planned the construction of a nation-wide broadband network.

To promote further equality of access, the Ministry of Education, supported by President Kim Dae-Jung, encouraged 'free' networking of all schools. The challenge of connecting 10,064 schools and their 220,000 classrooms prompted the merging of industry and government, encouraging major computer development companies like Sun Inc. to become instrumental in the distribution of hardware to the schools (Sun

Microsystems, 2004). The educational value of the Internet was championed within the IT industry by KOREN (Korea Advanced Research Network), a not-for-profit research network linking universities, laboratory and the industrial institutions in hopes of promoting, through funding from MIC, further innovations in IT technology and application services¹³.

The merging of academia and IT based industries were further examined by the Korea Database Promotion Center in 1993 as a means of promoting the public's interest and participation in information society industries and ICT use (KERIS, 2002, p. 34). This was completed through the development of database services, policy research for future database industries, and the standardization of database systems (KERIS, 2002, p. 34). The intensive emphasis on the development of Internet related curricula, databases and information sectors for the public spurred additional reforms in 1994 allowing increased competition among the service providers and thus the Internet became more widely available for public access. This restructuring allowed for the development of the two largest Korean broadband service providers; Korea Telecom's KORNET launched in June 1994 and Dacom's BORANET, followed in October. By the end of 1994 Korea had three pioneering Internet service providers, including PSINet's NURINET. 91 ISPs were to follow by August 2002 (Han, 1999). With the reorganizing of service providers to better adapt to the information society, the Korean government in December 1994 established the *Ministry of Information and Communication (MIC)*, formerly the *Ministry of Communication*. This shift provided an increase in the government's responsibility to actively implement informatization policies, manage information processes including the computer and CATV industries and further train and educate the public (Han, 1999). In the early 1990s informatization (Saegaehwa) was the nation's primary goal continuing through 1995 with the investment and implementation of fiber-optical cable networks used to connect governmental institutions (Han, 1999). The intensification of global telecommunication systems reached new levels in August 1995 with the launch of Koreasat 1, Korea's first satellite, ushering in a new era of communication (KT, 2004).

¹³ Currently, KOREN provides member institutes with 155Mbps~1Gbps of network service and expands its domestic research base by integrating with HPCNet/KREONet2. Besides, KOREN is integrated with U.S./Japan/Singapore/Europe through an APII Test-bed and TEIN so as to allow various global collaborative researches to progress efficiently (Han, 1999).

Implications of this new technological milestone were felt one year later with the introduction of satellite cable television to South Korea.

Adapting Korean education for the Information Age

Prior to 1995 few schools had yet to fully engage in ICT programs, therefore in May 1995 the *Ministry of Education* supported the *Education Reform Committee* and the *Comprehensive Plan for Adapting Education to the Information Age*, a following-up policy on previous education reforms used to encourage the education and training of an information workforce (KERIS, 2002, p. 24). In addition to this reform the Korean government passed a state-level policy called the '*New Directions for Information and Communication Policy*', backed by the '*Framework Act on the Promotion of ICT*', which effectively began on January 1, 1996 (KERIS, 2002, p. 24). The framework emphasized innovation within the school curricula, which previously had been lacking, through emphasis of five strategic areas of concern; hardware and software infrastructure, multimedia content, ICT training and education, e-administration and legal programs and finally policy measures to encourage the information society (Sun Microsystems, 2004).

The emphasis on the construction of various computer curricula allowed for the development of the *Education Software Promotion Association*, a subcommittee of MIC, which aimed to further support R&D and dissemination of educational software (KERIS, 2002, p. 34). Educating the public became a major campaign during the 1990s, and the MIC, "as the highest deliberating body for various informatization policies and measures" coordinated agencies to develop the *Basic Act on Information Promotion* and thus developed four subsequent committees; IPC, IPWC, IPS and IPAC (Han, 1999). The *IPC (Informatization Promotion Committee)*, which comprised ministerial level officials from the legislative, judiciary and administrative branches was set up to further investigate the major governmental policies and plans related to computerization and informatization. The second committee, the *IPWC (Informatization Promotion Working Committee)* was composed of vice-ministerial level officials from government bodies who were in charge of reviewing policies developed by the IPC. The third committee, the *IPS, (Informatization Promotion Subcommittee)* an 18 subcommittee group, was

responsible for the administrative, education and industrial sectors. Finally the MIC developed a promotion agency, the *IPAC (Informatization Promotion Advisory Council)* which was responsible for the support and facilitation of IPC and IPWC in the coordination of government, industry and information-based experts to further educate the committees regarding planning and strategies for the development of the information society in Korea (Han, 1999). This development of separate committees became an imperative means of dealing with the immense information infrastructure development (Han, 1999).

Korea's Informatization phase (1996-2000)

By 1996 the government had achieved their goals of developing an information infrastructure. Their goals and strategies then shifted to emphasize the Informatization phase characterized by a 'transparent' government based on an e-government service, allowing citizens to be more aware of governmental decisions and policies (Han, 1999; NCA, 2000). As the networking system paved the road towards increased access to Internet services, schools were encourage, once again, to provide ICT education for their students and in July 1997 the *Seventh Education Curriculum* was released. It included 'Computers' as a component of the elementary Practical Arts subject, and for older grades the '*Information Society and Computers*' course was developed (KERIS, 2000, p. 54), though, like previous curricula these reforms were elective subjects within the school program.

Schools were increasingly provided with Internet access through the development of LAN lines. Through initiatives planned by the *Korean Education Network (KREN)*, Korean schools and universities were to be connected to these LAN lines by 2002. In order to utilize these networks, hardware and software for school computer labs became essential. Plans to acquire such material were formulated such that donations from companies and businesses in Korea would provide a 20% upgrade per year in the school labs. Although 433,500 computers were needed by 1998 only 130,000 were donated and three years later this number dropped to only 20,000 computers (KERIS, 2000, p. 39). Although the 1997 market crash undoubtedly hindered the donation drive, the determination of the Korean government to continue the project and complete the total computerization of the schools was not diminished. To ensure continued efforts in promoting access and educational training to the Korean

public, *KERIS (Korea Education & Research Information Service)*, a central body responsible for the organization of ICT education and information literacy certification, effectively produced and distributed educational program packages to schools. Their programs were unique because they also provided the means for teachers to engage in ICT teacher trained programs (KERIS, 2000, p. 44); training which would become increasingly needed as new technologies entered the classrooms accompanied by various ICT educational curricula.

Revaluation of information society after economic crisis

In June 1996 the government presented to the public a three phase plan for the coming years. *The Master Plan for Informatization Promotion* in 1995 outlined the first phase of the project with an anticipated completion date of 2000. It identified a list of priority tasks including e-government, increased public access to computers, further development of the educational information infrastructure, support for rural networking, development of a national safety management data system and the securing of Korea's defense information system. These initiatives explored as steps towards the completion the information infrastructure as laid out in the KII (Han,1999). Yet these promotional plans came at time of turmoil and uncertainty in Korea with the Asian crisis negatively impacting the Korean economy in 1997. The second phase dealt with the issues of economic restructuring and contained the *Action Plan for Informatization Promotion* to be completed in conjunction with the *Master Plan for Informatization Promotion* (Han, 2002). The action plan consisted of specific tasks develop by various information infrastructure committees and ministries to promote, support and facilitate structural readjustments of the public and private sectors through increased productivity enhancement and employment opportunities to promote an early economic recovery and relief from the IMF program (Han, 2002).

KII Upgrade Plan

The economic devastation of 1997 caused massive changes economically, structurally and politically, therefore, in September 1997 the third phase, the *Establishment of KII Upgrade Plan* (completed by the end of 2000) was developed to further e-government and e-business. E-commerce and e-government were revealed as means of promoting a “pleasant and happy life for families and individuals through on-line purchase, civil service, and participation in policy decision” (Han, 2002, p. 20). Initiatives to promote e-commerce spurred new growth in the IT equipment industry “stimulating the development of state-of-the-art communication technology needed for KII upgrade” (Han, 2002, p. 20). The IT industry was further funded by The Ministry of Science and Technology as a means of promoting the establishment of an efficient, competitive nation while raising Korea to the same level as other G-7 countries (MOST, 2002; Han, 2002).

Economic recovery a period of re-evaluation and new steps forward

As the economy underwent significant changes in 1997, the *Fourth Telecommunication Business Structure Reform* emerged and encouraged further IT industries through the “initiated tax cuts for high-tech businesses and businesses in foreign investment zones” (KISDI, 2002, p.12). These reforms added service providers to the telecommunication sector and increased fair competition among these telecommunication service providers (Han, 2002). Changes to the telecommunication industry included the lifting of bans on foreign investment, allowing unlimited “foreign ownership of special and value-added telecommunications services carriers” (KISDI, 2002, p.12). These changes in ownership laws resulted in Korea’s oldest telecommunications company, Korea Telecom (KT), becoming publicly owned through joint shares by May 1997. This shift in ownership paved “the way for the independent and responsible management system of Korea Telecom”, as the Korean government no longer controlled the telecommunications giant, and by 1998 Korea telecom was listed on the Korea Stock Exchange becoming a full fledged private company (KT, 2004).

Increased need for IT workers

As the IT market grew so did the need for IT workers. A 1997 five-year report by MOST (Ministry of Science and Technology) aimed to "narrow the gap between demand and supply" by increasing R&D workers to 40 researchers for every 10,000 new employees (MOST, 2002). A shift in the workforce towards information workers, became top priority for many companies, including Samsung whose chairman planned to devote 90% of new workers to fields of science and engineering in an attempt to strengthen their IT and semiconductor sector. He further issued a statement to his vast workforce suggesting that the company needs to "trade in the company's stodgy, clonish image for one that is state of the art and leading edge. Do it by innovating, as well as by acquisition" (Burnstein & Kline, 1995, p. 307).

As industries reassessed their images after the economic crisis, so did many other agencies with numerous upgrading and reform committees developing in 1998. In May 1998, the Korean government established the *2nd Phase of KII Upgrade Plan* which focused on efficiency and productivity within the IT industry (Han, 2002). To increase efficiency, additional broadband services were launched by Korea Thurnet Co. in July using the recently developed cable TV network, and in early 1999 Hanaro Telecom "commercially unveiled the world's first broadband Internet technology in the asymmetric digital subscriber line (ADSL) format, which uses the existing copper-line telephone network", this was followed soon after by the traditional market leader, KT Corp., initiating their ADSL service in June 1999 (Han, 2002). With an increase in broadband connections, the MIC developed their first *Digital Signature Act* and the Digital Signature Certification System in early 1999, to ensure reliable and safe e-commerce transactions through education of password protection and database security issues (KERIS, 2000, p. 13).

CyberKorea 21

Though Internet service provider competition was enhanced by earlier government initiatives, by 1999 the government had realized that even though the infrastructure was sound and accessible, the users and the base of sharing knowledge and information was quite weak (Han, 1999). To continue the goals of the information society, *Cyber Korea 21* became "the blueprint of becoming a leading nation in knowledge and information in the 21st century, within the term of the People's

Government” (Han, 1999, p. 23). The basis of this plan was to “improve national competitiveness and the quality of life to the level of the advanced nations” with a goal of becoming one of the top ten advanced OECD information nations by 2002 (Han, 1999). These plans have been heralded as the reason Korea is “one step closer to the realization of the information society with the construction of an advanced information infrastructure”, thus paving its way to becoming a major player in the 21st century new economy (MIC, 2002b , p. 9).

The telecommunication industry continued to grow and by October 1999, Korea Telecom announced its vision for the new Millennium; to be the leader of the cyberworld and launch KT to the top rank among global communication companies, through further development of the Internet/Data business and e-commerce (KT, 2004). They plan to meet this goal through the investment of 14 trillion Won into a ‘super-speed communication infrastructure’ by 2005 with the anticipation that the telephone industry will slowly decline and the Internet industry will dramatically increase and become the dominant communication medium (KT, 2004).

ICT enlightening campaigns for the Korean public

In addition to reforms within governmental organizations in 1998, a new civilian organization comprising institutions and organizations from various fields of Korean society, called the *Korean Council Information Culture Movement*, was established with the notion that ICT industries will thrive and the transition towards an information society will succeed if the rate of interest at all levels, especially the public level, is increased. This council has been responsible for “enlightening activities, information society campaigns, academic conferences, contests, and exhibitions in order to promote the acceptance of the information society among the general public” (KERIS, 2000, p. 36).

Since the 1980s, Korea has striven to educate their public by providing access to computers and linking schools to the Internet. However, by the 1990s little had been achieved and additional reforms were needed (KERIS, 2000, p. 21). The success of these reforms were encouraged by advancements in the technological and infrastructure sectors and were used to promote the public’s active engagement within ICTs. Additional training programs “to teach Internet use to one million housewives over the next 18 months” were developed with the thought that “Korean mothers are

famous for their devotion to educating their children, and Koreans who succeed have generally one thing in common: an eager and devoted mom" (Hong, 2000, p. 11). Therefore, these policies sought to increase enthusiasm and computer skills among the mothers to further emphasize their children's computer education. The program consisted of a 20 hour a month Internet course at a highly reduced rate (\$20.00 per month) compared to the regular rate of \$100.

The program seemingly succeeded with over 70,000 mothers registering within the first 10 days of the campaign and over 70% of the computer school classes filled for the first two months of the program. President Kim Dae Jung's New Year policy address (2000) stated;

"We will complete within this year Comprehensive Plan for adapting education to the information age, which was originally targeted for 2002. By helping young people enhance their information capabilities, they will serve as the main players in the information society" (KERIS, 2000, p. 25).

Programs, such as these aimed to increase computer skills for citizens, also expanded to include members of the Korean army where "approximately 270,000 Korean soldiers (were) to take a Web search specialist certification exam before being discharged from the service" (Hong, 2000, p.11). Since the Korean government officials anticipated a massive shortage of information society workers by 2000 the official goal of this program was to supply the nation with skilled workers. To further encourage computer use in the army the Korean government created "Cyber Defense Corps", a volunteer program where users would compete in hacking contests, the winner obtaining a job with the cyber terrorism and anti-hacking defense team (Hong, 2000).

Growing Telecommunication Industries

Programs to educate the public and supply the nation with information workers became increasingly important as the Korean optical transmission network (155 Mbps-40 Gpbs backbone network) linking 144 cities and an ATM network consisting of ATM switches" expanded (MIC, 2001, p. 19). Additional plans to increase telecommunication investments were encouraged in 2000, with rates of Internet users rapidly increasing; KT estimating they had "4.58 million broadband subscribers, while Hanaro and Thurnet each boasted 2.86 million and 1.31 million subscribers respectively" (Kim, 2002). The Korean government continued to combat the digital

divide through investments in infrastructure developments including loans amounting to 1.5 billion US dollars from 1999- 2005 to provide rural areas broadband services (NCA, 2000b).

Internet service providers were encouraged to expand their networking system in 2000 and in doing so Korea witnessed the merging of KT with “Hansol Group, the controlling stakeholder of Hansol M.com and Bell Canada International (BCI) along with American International Group (AIG)” as a means of maintaining momentum and increasing flexibly in the company needed to keep up with the convergence of wire/wireless and voice/data technologies (KT, 2004). This shift reduced the overlap among telecommunication companies and provided fair competition within the telecommunication environment (KT, 2004), thus allowing lower rates of broad band service including flat rates ranging from \$19 to \$34 USD per month, the “least expensive Internet access rates compared with all 29 members OECD at “\$16.66 to login to the Internet for 20 hours during peak hours, compared to \$33.07 in the U.S. and \$73.98 in Belgium” (Hong, 2000, p. 11). Reasonable rates and increasing subscribers prompted KT’s status to reach the “10th largest wireless communications companies in terms of size and status, not to speak of its powerful presence in the fixed line of the communication area” (KT, 2004).

Protecting ICT users

Increased rates of access may result in increased need to protect users’ private information and prevent spamming, therefore, in July 2001 the government sought to further protect the users through the Information Network Usage Act. This law was used to educate businesses and individual users on the proper technique of protecting the distribution of private information. From April to November 2001, some 23,000 people from 1320 organizations were trained on private information protection tactics and the new laws against spamming and hacking (MIC, 2001, p .13). Hacking became a major issue in 2002 when it increased “an astonishing 174% from 1,943 case in 2000 to 5,333 cases in 2001” and the number of damaged computers from viruses reached over 65,000 (MIC, 2001, p. 12). This program was followed by the establishment of an Anti-Hacking day every month starting in October 2001 to education the public about the dangers and prevention of hacking and computer virus attacks (MIC, 2001, p. 12).

e-Korea Vision 2006

As the Internet telecommunication field and Internet use environment changed a third master plan was put forward in 2002, '*e-Korea Vision 2006*'. These guidelines included a re-examination of the public sector's focus on informatization in the schools and e-government by the end of 2002. As more educational facilities become wired, the educational content is constantly scrutinized and pressured to modernize. As a response, the Korean government anticipated a more progressive and flexible education system capable of shifting with changes in the technological environments (MIC, 2002b). This change in the education system would rely on computers and Internet services as tools to educate citizens and to develop computer literacy within Korea.

ICT Training for citizens and public access centres

To support the schools and reduce the digital divide, the Korean government sought the training of more segments of the population, therefore public access centers were added in public libraries¹⁴, post offices, social welfare centers and computer training centers at universities across the nation with the hopes of "training about 100,000 seniors by the end of" 2001 (Hong, 2000, p. 11). Public access is considered a key component of the computerization of the nation by allowing citizens who do not own a computer ready and feasible public access. Though the government failed to provide access centers, the private industry developed numerous PC-Bangs to complete the task of providing public access to computers and Internet.

PC-Bangs; the Korean Public Market

The Korean media environment is unique in that not only do many families have computers in their homes, but they have been given a great deal of access to computers in the large number of PC-Bangs present in Korea. Therefore, unlike other countries, both the public (PC-Bang) and private (home) spheres allow for a tremendous amount of computer and Internet access. Borzekowski & Rickert (2001) have suggested that public access centers may serve as equalization tools in providing citizens with Internet and computer access regardless of their socio-economic

¹⁴ Public libraries in Korea are not as numerous as in Canada, in Ulsan for example, with a population of 1 million I was told there were no public libraries.

background or level of education. As of 2001 only 45 Learning centres, 25 Internet Plazas, and 16 public computer education centers existed compared with the 25,000 PC-Bangs that had arisen in the previous five years (Mun, 2001)¹⁵. Thus many may deem the introduction of the PC-Bang a welcome advantage for those individuals who do not have access to computer technology. Jung, Qui & Kim (2001) suggested that the “claims of closing these digital divides may be addressing only the most superficial issues of Internet access, thereby masking larger communication technology and inequality issues” (Stewart & Choi, 2003, p. 66). Indeed, the façade of equal access is quickly uncovered through an analysis of PC-Bang culture and its users.

The PC-Bang, unlike other government funded PC access centers, was better managed and did not fall into the category of poorly operated government funded agencies, thus, a PC-Bang became a new venue; a public market to add to the numerous public entertainment venues within the Bang-culture (Stewart & Choi, 2002). The ability of the public and private industries to supply *public goods* to nations’ citizens has long been debated. Economists differentiate public from private goods as those which are not easily divisible amongst the population that uses them (Stein, 2001). These goods are considered a common necessity for all living in a particular community; therefore, they may differ depending on the value sets of a nation. There appears little debate regarding the supply of public goods where consensus concludes that “the market reigns supreme and unchallenged” (Stein, 2001, p.50). Stein (2001) suggested that the concept of public goods and the debate as to who should supply them to the public stems from the inaccurate conception of efficiency. Supporters of the state suggested that it is the only true provider of ‘public goods’ as it provides an efficient environment to maintain and allow the economy to flourish. Critics such as Adam Smith, Fredrich von Hayek and Milton Friedman have all argued that the state “gets in the way of the individuals who, in the pursuit of their own interest, would collectively pursue the common good” (Stein, 2001, p. 38-39).

Contemporary critics suggest that if the State does provide public goods they do so in a biased and perverse way with unintended consequences, since the officials are human and have their own person agendas. Furthermore, if one does believe that the State may be able to make an unbiased decision from a neutral position, the cost

¹⁵ The Ministry of Information and Communication estimated in 2000 there were 26,000 PC-Bangs.

of government management would exceed its benefits (Stein, 2001). The history of the market however, suggests that it too is riddled with persistent inefficiencies when providing public goods. Douglas North, a historian on the global economy suggests that the public market is incapable of providing the public goods because, “there is no individual incentive in the marketplace to supply public goods” (Stein, 2001, p.32), suggesting that individuals are incapable of producing public goods within a public market.

Stein (2001) also suggested that public goods become a necessity and the state is obliged to promote the development and production of these public goods, yet in order to maintain efficiency, the public markets often deliver these public goods. These public markets are thus created when the state “moves from directly providing social protection and invites others- public institution, private and not-for-profit organizational- to compete for government funds to supply a public good ...Competition is the magic that promises efficiency” (Stein, 2001, p.89). Competition is also an essential element in the development of an information society. Schofield-Clark (2003) suggests the notion of ‘social good’ is “often dissolve into the rhetoric of sectarian group interests that tend to stifle rather than facilitate debate”, however, with the advent of new media technologies their exists two assumptions that undeniably explain the relationship between new communication technologies and the American culture’s notion of social good and access to computers and the Internet;

“(1) it is believed that access to information technologies and the internet enables a person of lower income to develop skills that will translate to better-paying jobs, hence levelling the economic playing field; and (2) it is believed that access is an important way in which underserved communities, previously marginalized by the current political process, might better participate in public culture and democracy” (Stein, 2001, p. 97-98).

Concepts such as public markets and public goods can be used in the examination of the computer industry in Korea and the development of the PC-Bangs. The PC-Bang industry has thrived since its introduction in 1997. Korea’s rapid industrialization and informatization within the past 30 years has changed the notion of computer access from a private need to a public need, thus becoming a public good. Korea reacted by providing numerous computer access points for its public as a

means of promoting the computerization and informatization of the nation. In doing so it was discovered that the public access computer centers initiated by the Korean government in the form of Internet plazas were not able to provide adequate access to the public. Where the government had failed in developing successful Internet plazas the private industry took over and mimicked the government's initiatives and developed the PC-Bang, as Stein (2001) has suggested, "the State is branded as wasteful, and market mechanisms are heralded as the efficient alternative" (Stein, 2001). Though quite similar in design, the PC-Bang are often run by individual families, like many business in Korea, performed the task of providing access in a better-managed means. With the support of the government, via tax breaks and development incentives, the PC-Bang industry was allowed to thrive (NCA, 2000). Governmental policies, such as The Act on Closing the Digital Divide, presents plans for universal access, suggested that if the government is unable to complete the task of closing the digital divide, they will permit outside investors to take over the task, thus the policies allow them to 'farm-out' these endeavours (NCA, 2000a).

This tremendous access provided by the PC-Bangs, were used to provide reliable high-speed computer access, though their popularity resulted in as suggested by Stein (2001) "some unexpected and significant consequences. At times, public markets help in unanticipated ways to build community and to broaden choice among people who historically have had little or none" (Stein, 2001, p.124). The PC-Bang phenomenon in effect supports this theory. Not only did it become a public market providing a *public good* of computer access, it produced a community of computer users and theoretically choices to those users who may have been unable to gain access in any other space. These choices, however, are quite limited to computer gaming activities and therefore not as broad or as economically productive as the government officials might have originally anticipated. This gaming trend, however, provided Korea with new platform to compete in the new world market, gaming and the gaming industry.

Entry into the World Gaming Market

President Kim Dae-Jung has acknowledged that ‘In the 21st century...intangible elements such as knowledge, information and cultural creativity will be the source of a nation’s competitiveness’ (Toffler, 2001, p. 8). If Korea is to succeed in the new world economy its policies and actions must remain flexible to “assure that Korea avoids being caught in the downward spiral of competition from lower wage countries” like China or Africa who will compete for spaces on the economy ladder (Toffler, 2001, p. 14)¹⁶. In light of this the Korean government has invested heavily in access and educational and training programs. They have also, unlike other national governments, invested in the world gaming market.

Entry into the world gaming market was sought as an essential element in the task of maintaining a competitive edge within the new world market. This edge however, is often dependent on government expenditures and support and in 1997 the Korean Cultural Industry Bureau and The Ministry of Culture & Gymnastics developed policies to further promote the game industry. These policies included “game-related legal and systemic improvements, private investment promotion, and specialized development” (KGDI, 2003, p. 6). Further investments led to the establishment of a gaming support infrastructure; the Korea Game Development & Promotion Institute (KDGI) (officially opening in 1999), a non-profit foundation associated with the Korean Government’s Ministry of Culture & Tourism. Their philosophy and goals were based on the development of the gaming industry (software and hardware) as a leading export. This was encouraged through the support of game development, production and design and through the continued enhancement of gamers abilities through sponsored events and marketing (KGDI, 2003). These goals of nurturing professional gaming were realized with the development by KDGI of a ‘Gaming Academy’ to be used as a gaming support center (MIC, 2001).

¹⁶ Toffler suggested changes need to be made in their telecommunication and information technology advancements through increasing management flexibility, technological flexibility, financial flexibility and informational flexibility, without these changes it will become impossible for Korea to develop towards the new wave economy.

The Korean government during the late 1990s examined the culture of gaming that had erupted in Korea and understood the value of the technology ; “Korea, which lagged in arcade and video game capacity, now has the opportunity to claim a leadership position in the world game market on the basis of its achievements and advances in on-line game technology” (KT, 2004).The gaming market was expected to flourish within Korea as the government seeks to invest \$300 million (US) towards their gaming export industry based and \$800 million towards gaming production by 2003 (MIC, 2001, p. 10).

New policy direction: Online gaming Market

As the government continues to invest in the gaming market the popularity of gaming continues to rise. According to a MIC user survey conducted in March 2003, online game users increased 14% compared to the same period in 2002. In particular, female users and users above the age of 30 showed a net increase of 23% and 15%, respectively. This increase of online game users further encourages the diversification of online games and related services (MIC, 2001, p. 10). A closer examination of the games used by these players indicated that in 2001 over 75% of the Korea gaming market was occupied by foreign-made games, thus decreasing the distribution of domestic games (MIC, 2001, p. 12-13). As a response, the Korean gaming industry has sought means of publicizing Korean-developed games both domestically and to the world.

Korea has developed a unique way of showcasing new Korean games to game players around the world. The First World Cyber Games (WCG) in 2001, known as ‘the Olympic Games of world gamers’, has become an annual gaming competition involving players from 55 countries who may compete in one of six PC games (WCG, 2001)¹⁷. Players compete on various stages during the three-day televised event for a total purse of USD \$300,000. Not only does this provide a venue for world gamers to show their gaming talent, but it also provides an international platform to showcase the heavily supported gaming culture in Korea, as well as the domestic game production industry. Professional gamers taking part in WCG also compete in year round competitions at PC-Bangs throughout Korea, with top winners’ matches broadcast on

¹⁷ Online Games include StarCraft:Brood War, Half-Life:Counter-Strike, 2002 FIFA WORLD CUP, Age of Empires:The Conquerors Expansion, Quake III Arena, Unreal Tournament.

numerous gaming-dedicated channels. These year round competition circuits have encouraged professional gaming teams which are subsequently supported by large companies such as Samsung, and engage in Olympic style training, complete with coaches and daily regimented routines¹⁸. Recently professional gaming had been added to the Korean nationally recognized official job categories (MacIntyre & Kim, 2000). Professional gaming has increased in popularity, and to further entice new players to actively choose gaming as a profession, the KDGI plans “to enhance the status of the gaming industry by upgrading the Korean grand prize” thus increasing the money and status of game winners “and expand(ing) the incubation of games by operating Crocess.com” (MIC, 2004, p.7-8).¹⁹

As domestic games become more popular, the Korean gaming industry must combat piracy at an increasing rate. Thought pirated software are easy to find in markets the high rates of broadband networking has allowed file sharing and downloading methods like GOD (Games On Demand) to increasingly contribute to the vast amount of pirated software. These online means of sharing do not fall under the same legislative restrictions as traditional gaming distributors and makers (MIC, 2004, p. 29), thus are cannot be regulated in the same way. Therefore the industry is often seeking new ways of reducing the likelihood of piracy and games with monthly registration fees such as those popularized for massively-multiplayer online role-playing game (MMORPGs) such as Lineage and Ragnarok, have become more attractive means of distribution for the video game industry. With the rising popularity of these MMORPG games among players, the gaming industry has, in their goal of ensuring the growth of the industry, began to favour this genre of gaming because of both its popularity and the fact that piracy become more difficult when players are forced to register and pay a monthly fee (MIC, 2004)

Diversification within the market has also been examined through the development of educational computer games, a market that up until this point was virtually ignored even though the Education Software Promotion Association made its

¹⁸ They rise at 6 a.m. and head to the gym for an hour-long workout... they watch playbacks of games to study moves, and do finger exercises to improve their agility. Most of all, they practice: Doo spends up to 13 hours a day learning the intricacies of StarCraft...The daily regime helps him focus, says his team's full-time coach Chung Soo Young: 'Mental discipline is important' (MacIntyre & Kim, 2000).

¹⁹ Crocess.com is a game portal site that will support companies exploiting new markets such as the green game zone and educational game zone, among others.

debut in 1996. Marketers anticipate educational games will provide the largest profit, based on the hopes that Korean parents may buy educational games for their children (MIC, 2004, p. 29). This will promote the development of a new Korean gaming market for young children, which was previously ignored by the software industry in Korea²⁰.

In an attempt to strengthen export, the Korean online gaming industry plans to enter the Japanese and southeast Asian market in 2003. A high success rate is anticipated because of their success in China and Taiwan. Also, they assume that the cultural specific knowledge obtained from their own market such as collectivism and Confucius may be used in the marketing of games to other culturally similar Asian nations (MIC, 2004). Geographical similarities including dense population and lack of green space has lead to similar PC-Bang culture infiltration into other Asian nations and is spreading quickly with the diffusion of high speed Internet connections, therefore allowing online gaming to become popularized and creating “favourable conditions for entry into the markets ” (MIC, 2004, p.10). Current business plans in Korea include the increasing support for the global dissemination and exports of Korean made games through aggressive overseas marketing and beta testing in China and Japan to localize and promote more export-friendly games. The Korean government plans to invest \$50 million to export locally developed music, entertainment, film, animation, advertising, creative writing, and other digital products overseas, and this will be enhanced by Koreabase, a translation service company developed by the Korea Information & Contents Business Association and used to increase the domestic digital content export industry (Hong, 2000).

²⁰ A study by the MIC found that of 1 out of every 22 online games (4.5%) were rated for over 18 year of age in 2000 and the rate increased to 8 out of 96 online games (8.3%) in 2001. Currently in Korea the ratings systems differs greatly from that of the ESRB, in Korea there are only two categories for online games, Everyone and Over 18. Plans to increase this scale to include above 12 and 15 years of age will increase the scale to four segments of ratings for online games classification (KGDI, 2003, 1p. 16).

Korea's unique gaming culture

With intensive emphasis on online and computer gaming it becomes apparent that video game console markets are often ignored in Korea. Until Sony's PS2 (PlayStation 2) was launched in Korea in February 2002, South Korea had not entered the video game market²¹. They had neither built up their own video game industry nor engaged in the abundance of Japanese and American built consoles during the 1980s and 1990s. Since the Japanese colonization, Korea had develop a strong sense of nationalism and pride in Korean made products, emphasizing goals of a self-reliant and autonomous economy set up in the 1960s by President Park Chong Hee's government. "(T)hese policies have deeply manifested themselves into the Korean political and international attitudes and have often been expressed in the multiple anti-import campaigns and occasionally xenophobic reactions to those who buy imported goods" (Ahearn, 1998, p. 196). These attitudes continued until Japanese Prime Minister Keizo Obuchi, in October 1998, formally apologized for the hardship felt by the Korean public during the 35 year occupation by Japan. Until this apology was offered few Japanese goods were available to the Korea public and not until July 1999 did a complete lift of the ban on Japanese goods occur, thus "abolishing a 21-year-old measure originally enacted to protect infant industries and to help reduce a persistent bilateral trade deficit" (Castellan, 2000). This new trade partnership allowed Japanese goods such as films (except those rated as restricted), musical recordings, Personal computers, TVs, camcorders and Internet games, though "content produced exclusively for video game machines (would) be denied access" (Castellan, 2000)²². However, the lifting of the century old ban did not result in a thriving video game industry in Korea. During the launch of the PS2 in February, followed quickly by Microsoft's X-box and Nintendo's Game Cube in December 2002, many video game enthusiasts expected the Korea market to flourish and fully engage in the video game

²¹ Video game market consists of video game consoles such as Ninendo, Sega, MlcroSoft X-Box and the games associated with these console formats.

²² The lifting of the ban was set in stages, first stage the ban on manga was lifted completely in 1998 and Japanese films were partially liberalized. Second stage saw ban on popular music and a complete lift of the film ban followed by a lift on feature animation in 2003, computers, on-line, arcade-style games were allowed. And finally in January 2004, all music, films, video games and console games, cable TV programs (though a total liberation of animation will not be completed until 2006) (Suzuki, 2004).

industry²³. The Korean market, however only plays a minor role in the video game industry. The gaming market in Korea is monopolized by the online/PC market (45%) and the arcade games (50%) markets in 2002, whereas the video game consoles only took up a small fraction of the gaming market (2%) (MIC, 2001, p. 10)²⁴. Cultural reasons have mostly been blamed for the poor adoption rates, including the Korean public's unfamiliarity with the video game console and games, and secondly and most importantly, families did not deem video games to be healthy or educational for their children. Further, the video game console is often marketed to teens and young adults, the segment of the population in Korea who are still mostly supported by parents, and because the parents often "prioritize the education of their children" they do not recognize the video game consoles as a valuable technology for their children to have and "as long as parents do not dismiss old prejudices, it will be very difficult to sell video games to the Korean public" (MIC, 2001, p. 11-12).

²³ Currently, PS2 took 80% of the domestic video gaming market. It leads the market by offering over 100 titles, 5 times as many as that of X-BOX, and by distributing over 70 Korean versions of titles.

²⁴ In terms of the average development period of each game platform, video games took the longest time with a record of 20.9 months. Online games development period took 15.7 months, while PC games took 11 months. Mobile games had the shortest development period with only 3 months. (KGDI, 2003, p. 24).

CHAPTER THREE: METHODS

Media studies

Since the introduction of television, issues regarding television violence, displacement of traditional childhood games and oral culture, the promotion of passivity in children viewers and the displacement of traditional family life have all become popular subjects of debate within academia and the public arena (Kline, 1993). Media theorist Marie Winn (1985) argued that although television may physically bring a family together within the same viewing environment, the nature of television itself might only lead to the destruction of familial qualities making each family unique from one another. However, many of these debates have yet to be resolved. Drastic contradictions in research results and claims may be explained to a certain extent by the fact that much of the research often “concentrated on the direct effects of the medium and, in general, ignored the importance of mediating factors” (Van den Bergh & Van den Bulck, 2000, p. 154). Mediating factors, such as family media regulation patterns and the home viewing environments in which media use takes place have often promoted variations in viewing styles of children and families. Therefore, it becomes important to include mediating factors in an analysis of media use within the home and family environment.

A holistic approach to Media Studies

Prior to the exploration of home media environments and the significant impact of television in the lives of children by Himmelweit et al. (1958), few studies had examined media use in the home. Not only had Himmelweit et al. (1958) examined media use in the home, but they had also expanded their study to include the child’s opinions and attitudes of their media consumption as well as the impact television may have had on the child’s home and family environment. Their study examined the role of television in the lives of children with a conscious understanding that television could not influence every child in the same way, but that “different ages, intelligence levels, personality, (and) home background” all became important

factors influencing the child's media use, and therefore were warranted as elements to be further examined with respect to the media habits of children (Himmelweit et al., 1958, p. 2).

New media research

Media research was broadened with the increased introduction of computer and Internet technologies, thereby allowing a further examination of children's growing media environment in the home and school. Researchers at the Annenberg Public Policy Center examined media use in the home, specifically the Internet and its influence on the family environment. Such research projects provided extremely detailed and valid information about the specific relationships between media and families in the United States, though it does not examine the child's total media use environment which becomes essential components of media research as homes increasingly become media saturated. Steinfeld, Dutton and Kovaric (1989) "theorized that one step in understanding how personal computers might alter home life is to study links between social context of the home and applications of personal computing" (Morrison & Krugman, 2001, p. 136). Currently, additional research studies have taken similar methodological and theoretical approaches and have enriched and expanded the literature relating to media saturation in the lives of children, Livingstone et al. (1999) and Kline (2001, 2003).

Children's total media environment, however, as examined by Livingstone et al. (1999) and Kline's (2001) qualitative methodological designs allows for a more in-depth examination of the mediated environment in the home. Livingstone et al. (1999) discussed the introduction of new media technologies with the goals of understanding the "meanings, uses, and impacts of the screen in the lives of children and young people" (p. 6). Kline examined BC teens' total media usage patterns in 2000, with special consideration of newly forming Internet habits, as well as a total audit of the child's media use in the home, thus furthering the understanding of the child's rich media environments. Complementing a total media examination in the studies was the development of a 'child-centered' approach rather than a family, school or home approach, which provided richness to the data and allowed the researcher to understand media use, media preferences and the home media environment from the child's perspective. These methodological approaches, because of their examination

of access and use of media in the home has further allowed for a fuller understanding of the child's everyday activities and may help illustrate the importance of environmental factors.

Korea as a case study

Lull suggested that adoption rates and acceptance of a new technology is often a process of the nations' social and cultural properties. Therefore nations need to assess their media adoption patterns within their own cultural system, with knowledge of their own cultural, social and physical properties. Lull framed his analysis of familiar viewing patterns around the world as

“Life with television can best be understood by examining the rituals that individual family members and (often partial) families create at home. These rituals embody extensions of the normative values, mental orientations, and day-to-day behavior as rules of social interaction and communication. Rituals and underlying rules are located in, influenced by, and definitive of some of the most central features of culture” (Lull, 1988, p. 238).

My Korean study is unique because not only does the Korean population have media access in their homes, but they also have a great deal of access to media, including television and computers in the public sphere. Though the media audit was easily transferred from a British (Himmelweit), European (Livingstone et al.) and Canadian (Kline) context, the interpretation and analysis of the results required a comprehensive understanding of the Korean culture, specifically how geographical, historical and cultural factors have influenced adoption of new technologies, such as the computer and Internet. This cultural knowledge was obtained through daily informal interviews with families, professors and student, thus allowing an essential understanding of the Korean media culture.

To fully understand the out-of-home media environment, the public space must be considered as a variable and a unit of analysis. Bahrtdt (1996) and Schott (1991) consider the 'situation' to be a "concrete place in space and time, and communication activit(ies) occur under specific local rules and conditions" (Krotz & Eastman, 1999, p. 10). The user and the audience then become factors in the media use environment, therefore, within each context different forms of communication need to be taken

into account and analyzed with respect to the situations and sphere in which the communication takes place. Public media-use situations thus greatly differ from the home media use environments with different rules, different groups of spectators and different environment conditions. An understanding of environmental factors was an essential element in understanding Korean usage patterns, therefore, PC-Bang participatory observations became an imperative and rich tool of research.

The PC-Bang observations were initiated without prior knowledge of the PC-Bang environment, and as Glaser and Strauss (1967) have suggested “the theoretical essence of our work emerges quite spontaneously within each research project”, therefore proposing the notion that the data should speak for itself and research should encourage a “naturalistic tradition” of interpretations (Lull, 1988, p. 16). I therefore spent many months engaging in interviews, focus groups and participatory observations at the PC-Bangs before preparing the questions for the media audit. I knew that a media audit would provide a great deal of evidence of Korean students’ media use and media access and therefore I needed to make a conscious effort to ensure that the media audits consisted of appropriate Korean media environment questions, were in a format consistent with Korean school surveys and also were translated into Korea to ensure that participants felt secure about divulging personal information.

The Kline and Botterill (2000) media audit was used as a template because it examined various forms of old and new media within the home and also out of home use. The data was aided by my participatory observations and informal interview data. The participatory observations and data collection at PC-Bangs led to the development of the first media audit based on various gaming environments including preferences of media and non-media activities. Time spent and their notions of addiction and displacement were distributed to 441 University of Ulsan students in fall of 2001.

Table 1. University Student sample (University of Ulsan)

age	18-20	21-23	24-26	27-33	total
male	11	19	135	12	177
female	89	162	6	2	259
missing					5
total	101	182	141	14	441

This university media audit subsequently led to numerous discussions with student focus groups at the University of Ulsan, in-depth conversations with university student informants and a continuation of the participatory observations at the PC-Bangs to further understand the Korean culture and the impact new media seemed to have had on family life.

Further analysis of the gaming phenomenon led me to Seoul in December 2001 to observe the First World Cyber Games. During the conference and competitions I conducted informal interviews with pro-gamers from Australia, Canada and France as well as conversed with game developers including Mark Rein from Epic Games (US) and Alex Garden from Relic Games (Canada). These short interviews with pro-gamers led to more in-depth interviews in February 2002 with two Canadian pro-gamers, a former Korean pro-gamer and the second ranked Star Craft player in the world from France²⁵.

Observations at the PC-Bangs were conducted throughout the year (August 2001-August 2002) in numerous cities (Ulsan, Pusan, Chonju, Seoul, Kyoungju, Pusan) and in various unique PC computing spaces including the Pusan-Seoul Cyber-train and various bus stations and train stations throughout Korea. These observations were completed on a weekly basis at various times, including early morning, days, evenings and nights. Observations were also conducted on national holidays such as Christmas, New Years and Korean (Chinese) New Years Day. These observations at the PC-Bang provided an educated understanding of the gaming environment and of the participant demographics of the PC-Bangs and the common patterns of gaming. During numerous visits to PC-Bangs in Ulsan I was able to become acquainted with a few PC-Bang

²⁵ Though interviews were taped, they were not transcribed and added to the data in this study, rather they were used to further understand the gaming circuit, PC-Bang game environment and sponsorship of gaming in Korea.

owners. This allowed for additional data to be obtained from their databases and used to record PC-Bang memberships. One thousand three hundred and forty-two PC-Bang user's statistics were collected from three PC-Bangs surrounding the University of Ulsan in January and February of 2002²⁶.

Knowledge gained through PC-Bang observation, university pilot audit, The World Cyber Games and focus groups were imperative in the development of additional media audits to be distributed nation-wide to children in elementary, middle and high school, as a means of examining younger students' media use in the home and in public spaces such as the PC-Bang. The school-aged surveys were initially developed in English and followed a similar protocol developed during the university audit; various pre-tests to examine the format of the questions and the content. Once the surveys were deemed appropriate for each age level, two versions were produced; one for elementary students and one for middle and high school students. These two versions were translated into Korean and then re-translated back into English by a different assistant to ensure the questions were translated correctly. They were then pre-tested again and once an approved copy was developed they were duplicated and sorted for distribution²⁷.

Each of the schools were selected through networking among teachers, and then contacted by Dr. Hyewon Park, a child researcher at the University of Ulsan. The schools were provided with details about the project and their role in the distribution of the surveys, and were then given time to complete the appropriate ethical procedures before they became participants of the study. Once ethical approval from each school was secured the surveys were packaged and delivered with a self addressed returned envelope and mailed directly to each school. Six cities were selected to provide a better assessed of the media environment of Korea across the nation. Each city was selected on the basis of their geographical location and population size. Selected cities included; Seoul, the capital city of Korea located in the North with a population of 10 million, the southern city of Pusan with a population

²⁶ The data included birth date, gender, occupation and time spent at the PC-Bang in the last 30 days.

²⁷ Dr. Hyewon Park Choi was instrumental in developing contacts throughout Korea to distribute the media audits. She was also able to secure funding and provided each teacher participating in the study with a 20,000 Won gift certificate in appreciation for their participation in the study.

of 3.6 million, Ulsan a smaller southern city with population of 1 million, and from Chonju with the population of 600,000.

A total of 1467 student media audits from all three grade levels were completed for the project (See table 2). Each teacher distributed the surveys in class and was asked to allow time for the students to complete the survey during class time, rather than sending the surveys home as homework. The students were asked to answer the questions as honestly as possible and neither their names nor any specific information would be made available to the public. The survey assessed the level of media saturation in their home, amount of time children spend with various forms of media at home, at school and at the PC-Bang and the rules and regulations for their media use in various locations (see appendix 2). Parental surveys for the younger group; grade four students were also developed and administered along with the children's surveys. The children completed their own surveys at school and were asked to take the parents' surveys home, to be completed by their parents. Dr. Hyewon Park Choi indicated that prior research with parents in South Korea revealed that the mothers were often the parent primarily responsible for the child's schooling and were often the ones who would complete school related forms²⁸. There was a tremendously high return rate from the students, due to the survey being completed during class time. The mothers also had a high rate of return, and according to Dr. Park Korean parents often had a high level of respect for Korean teachers, therefore when forms are sent home from school it is customary to complete the forms and return them, even if they are not part of the regular school instruction. A total of six-hundred and thirteen mothers responded to the media audit. All the students and mothers surveys were returned in about a 3 week period and were then entered into a SPSS database.

²⁸ Dr. Hyewon Park has been the primary investigator for numerous parent related studies and has found this to be true in her research in South Korea.

Table 2. Media Audit distribution

		North	West- central			South-east coast		N
		Seoul	Chonju	Kunsan	Chonnam	Pusan	Ulsan	
Elem	M	124		49			122	569
	F	127		36			111	
	T	251		85			233	
mom	M	90		21			94	613
	F	164		41			203	
	T	254		62			297	
Middle	M	47			76	131	45	441
	F	61			78	3	0	
	T	108			154	134	45	
High	M	102	32				36	457
	F	100	154				33	
	T	202	186				69	
t								1467

As a non-native speaker of the Korean language and expatriate in Korea, my research was conducted in numerous ways in order to best understand the Korean media culture. To add to the research, focus groups conducted in Korean by a Korean researchers would have promoted a more well rounded study, but due to a lack of funds and lack of students willing to take on an aspect of the project the focus groups were all conducted in English. Each focus group began with a short workshop on American and Canadian Internet and computer culture then allowed time for students' questions. The remainder of the time was spent conversing about the Korean Internet culture with questions specifically detailing the PC-Bang phenomenon. These focus groups took place in the months of December, January and March. Many of the students seemed eager to discuss a topic that was often not used in classroom discussion; the media. This allowed for a lively and causal in-depth conversation about media usage by the students themselves, it also included an analysis of media use by their friends and family members and included an analysis of media use by the Korean public as a whole.

Additional university surveys were developed in the spring following the focus groups at Ulsan University. A total of 429 surveys were developed and administered in English to students in conversational English classes as part of their homework assignments during the spring of 2002 (see appendix 15 and 16).

Table 3. Additional University of Ulsan surveys

	Male	Female	Total
Additional survey #1	86	52	138
Additional Survey # 2	102	83	185
Stats survey	71	35	106
Total	259	170	429

CHAPTER FOUR: RESULTS

As Chapter Two revealed, Korea had begun to develop their information society in the early 1970s, through extensive information infrastructure and numerous computer education curricula within Korean schools. Though various educational reforms continued for 30 years, network and high levels of computer access in the schools were not possible until the 1990s when technological changes and telecommunication advancements within Korea allowed for mass computerization.

Frederick & McLloy (1999) suggest that nations “respond to this new (media) environment in different ways, as a consequence of their different cultures, national priorities, economic status, size, geography, and population” (Frederick & McLloy, 1999, p. 184). South Korea, because of these factors has indeed responded to the need to increase the informatization of their nation in a culturally specific way, developing PC-Bangs and allowing intensive government control of the information strategic plans. Korea’s adoption rates of new media technologies were examined through the media audits distributed to students in the fall of 2001 and spring of 2002.

I. Demographics

a) Age

85% of the grade four students were 10 years-of-age and 14% were 9 years of age. 83% of the middle school students were 13 years of age and 17% were 12. The high school students ranged from 15 to 16 years of age 20% and 77% respectively. A significant gender difference occurred in the university student sample. This results from two main reasons. Firstly male university students are on average two years older than their female peers because of their mandatory military service after high school, and secondly because the classes at UOU tend to be highly gendered, for example very few women are in engineering and very few men are in the social sciences, the media audit participants sample came from two separate departments, thus the male students may have started their program earlier. The UOU data suggested that 32% of the female students were 20 years of age and 43% were 21 years of age compare with 35% of the males who were 25 and 22% who were 26.

b) Living styles

Data regarding where the students lived was only available for the middle school, high school and university student population. The data reveals that the majority of students lived in either Korean houses or new apartments²⁹, with few living in businesses (homes attached to street-side businesses) and few of the university students living in dorms, room and board places or single rooms (see appendix 5, table 4).

c) Class³⁰

The mothers were asked to provide their family monthly income. The results indicated that 10% of the mothers had an income level of 1 million won (CAN \$799.99) /month or less, 33% had 1-2 million and 28% had 2-3 million and 30 % had a family income of over 3 million won per month.

²⁹ Korean houses are usually quite old and the newer style of living are the high rise apartments.

³⁰ Thought class often becomes an important variable for analysis of media access and issues surrounding the digital divide, because we were dealing with very young Korean students, who according to Dr. Park would not know their families' income level it became increasingly difficult to ascertain their families income level. The survey did provide a bit of evidence, but not enough to conclusively use these pieces of data as class based variable. The students were asked their parents level of school (see appendix V table 1& 2). Though it was still unclear as to the family income level.

II. Equality of access

An understanding of Korean cultural factors became essential in the analysis of the data revealed from these surveys. Unlike Canadian culture, where children often go to a friend's house to play, Korean children rarely ever go to a friend's home. If they are to play together they often do so outside of the home, and increasingly may have spent time within the Bangs. The PC-Bang and Bang culture in Korea therefore provides children with media use opportunities outside of their home, away from parental rules and regulations and among groups of friends, which does not often happen within the Korean homes.

The media audit provided data on in-home media access, time spent with various media and the rules and regulations in the home. The audit revealed that even though students have a great deal of access to technology within their homes, especially computers and the Internet, PC-Bang usage was also popular. Therefore the media audit provided an analysis of both in-home and PC-bang usage.

1) Korean home media environments

A goal of the project was to understand the impact public policies have had on the computerization of the homes. To understand adoption rates of computers in the home, it also becomes important to examine rates of access to other forms of media. The media audit provided data on children's home media environment and suggested that computers had been added to an already thriving mediated home culture. Television and VCR access in Korea was high, with over 93% of the elementary through high school students having access to a TV and over 79% having access to a VCR (see Appendix 6, Table 2). Therefore access to televisions and VCRs in Korea seems to parallel children's access to these technologies in North America. Where Korea did greatly differ was in access to electronic gaming devices such as video game consoles and hand-held gaming devices.

a) Video games; a turning point in modern culture missed by the Korean youth

As the video game console phenomenon swept North America in the 1980s Canadian homes increasingly became media saturated (Kline, et al., 2003). The initial game, 'Pong' was the first to merge computerized gaming technologies with the entertainment console of television. Dr. Timothy Leary, an expert on new technologies' impact on human consciousness, proclaimed Pong to be a "major turning point in modern culture" (Rushkoff, 1994, p. 30-31). Children were now able to manipulate what was on the television screen as a form of play, allowing generations of children to engage in a new form of play. While Canadian and American children enjoyed the new gaming opportunities via video game consoles, the Korean market did not enjoy this same gaming phenomenon. The ban on Japanese goods prevented imports of video game products, thus as expected the Korean video game access in the home was relatively low compared with Canadian children, 72% of elementary students (Kline & Stewart, 2003) in Canada compared with only 41% of children with access to video games in Korea(see Appendix 6, Table 2). Though, unlike the Canadian data, there were not significant gender differences for video game access in the Korean sample.

The data indicated that though the Korean students seemed to have very little access to video games compared with the Canadian students, they have increasingly gained access since the reversal of bans on Japanese imports and the launch in 2002 of video game consoles such as X-Box and PS2. The introduction of video game consoles into the Korean market accounted for no more than 30% of the video game industry set market goal. Recently the market grew tremendously, 864% increase from 2001 to 2002 (MIC, 2004)³¹. The growth was due to the opening of the video game market, rather than a true increase in consumption.

The recent development of a video game market in Korea has revealed that the elementary students had slightly more access to video games in their homes than the older students, though the rate of access for elementary students was fewer than 41%. Korea provides for a unique examination of gaming patterns, particularly because the students had entered the video game market late and for the most part had skipped

³¹ Currently, PS2 took 80% of the domestic video gaming market. It leads the market by offering over 100 titles, 5 times as many as that of X-BOX, and by distributing over 70 Korean versions of titles.

the console stage of gaming, yet computer access was quite popular among the students and as the results will reveal so was computer gaming.

b) Computer technologies in the Korean home

“ Today, as we construct a new info-sphere for a Third Wave civilization, we are imparting to the ‘dead’ environment around us not life but intelligence. The key to this revolutionary advance is, of course, the computer” (Toffler, 1980, p. 168).

The media audit results indicated that 95% of elementary, 77% of middle school, 81% of high school and 96% of university students had access to computers in their homes in the spring of 2002 (see Appendix 6, Table 2). Therefore these results revealed that governmental initiatives to computerize homes have indeed succeeded.

By 2002 school-aged students, on average, had computer access in their homes for the past 36 to 48 months (1999 to 1998). The university students were given access, on average, two years earlier (1996) (see Appendix 6, Table 7).

It is interesting to note that only the high school students’ results revealed a gender difference, with the male high school students gaining access to computers 54 months prior to the survey, compared with their female counterparts who gained access 8 month later (46 months).

c) Broadband access in the home

Korean public policies have not only encouraged computerization, but through government led initiatives to increase competition among Internet service providers, they have also provided a nation-wide networking system. The results have confirmed what Korean government reports have indicated, that Korea was truly becoming a high speed nation, Appendix 6 (Table 4) indicates that 85% of middle school and 91% of high school students and university students revealed they had high-speed Internet in their homes³² . The data further suggested that the lowest rate of access was seen among elementary students where 77% indicated they had high-speed Internet in their home. The mothers’ data revealed that the majority of students were interested in the

³² Living situation data indicated that over 50% of university and high school students lived in apartments and 56% of middle school students lived in house.

internet and only 4% of the mother thought their children had very little interested in the Internet and only 15% said their grade four children were 'somewhat' not interested.

The elementary mother's data (see Appendix 5, Table 4) revealed that 18% of the families' computers may 'not have been powerful enough to handle a high-speed Internet connection'; therefore those without Internet may have been hindered by technical reasons. 30% of the mothers also revealed that they thought it was very expensive for monthly Internet service. 14% of the mothers further suggested they 'very much' agreed and 26% 'somewhat' agreed that they had 'better things to do with money than spend it going online'. Though expense was a factor for some of the mothers, the majority of the mothers felt Internet was a good investment for their families.

When asked what benefits they thought the Internet would provide their children, 27% of the mothers said it would 'very much' help their children with their schoolwork, 56% said the Internet could help 'somewhat' with schoolwork. Asked if the Internet could be used to help their children 'discover fascinating useful things', one quarter of the mothers felt the Internet would 'very much' help and 46% 'somewhat' help their children expand their horizons through searches on the Internet. The audit further revealed that 15% of the mothers thought the Internet would 'very much' and 36% thought it would 'somewhat' help provide diversity and tolerance for their children. Therefore the data revealed that the mothers' often regarded the Internet as an educational tool for their children.

When asked if the Internet would help bring their children closer to community groups and churches only 6% said it would help 'very much' and 16% said 'somewhat'. Therefore revealing the mothers though the Internet did not generate interest in community organizations or communal social behaviours for the children (see Appendix 10, Table 4).

Though many of the mothers sought to provide their children with Internet access, Appendix 7 (Table 4) revealed that only 3% considered themselves 'very good' computer users, compared with 64% who thought they were 'not very good'. The results also indicated that 25% of the mothers thought they would not be able to help their child explore the Internet as well as other parents. These results confirmed

government reports which have indicated that adult computer literacy rates were quite low, despite government efforts to increase literacy programs for adults, especially for mothers and housewives. Even with such a low rate of computer literacy skills, however, the mothers did seem to agree that computer access for their children would be beneficial. 42% of the mothers thought their children would be at a 'disadvantage compared with their peers if they do not have Internet access'. Many felt pressured to provide access to computer and Internet in their homes, though only 4% thought that parents' computer knowledge would be an asset to their children's computer literacy (see Appendix 10, Table 4). Therefore, the lack of parental computers skills did not seem to deter computer access in the homes. A few mothers did, however, indicate they were computer savvy, and the time results suggested some mother spent on average 74 minutes per day on the computer (see Appendix 7, Table 3).

Overall, the inexpensive high-speed access combined with the pressure to wire homes for the future, have impacted families' decisions to provide computers and high-speed Internet in their homes.

2) Bedroom culture in South Korea

" As digital circuitry become smaller, cheaper, and more plentiful, and as computer networks become larger and more pervasive, new-media implementations are likely to show up any-where, including the nursery and the playground" (Montgomery, 2000, p. 147).

With the introduction of cheaper technologies and the continued acceptance of a highly wired child's environment, the bedroom culture of many children is thriving in North America. The Kaiser Family Foundation (1999) research on children's media use indicated that 32% of American teens had television in their bedrooms and only 6% of the students had computers in their bedrooms (Roberts et al, 1999). The Canadian BC teen media audit revealed that 25% of the elementary students had televisions in their bedrooms, 17% had video games and 24% had computers in their bedrooms (Kline, 2001).

The Korean data also suggested that access to media in a child's bedroom was quite common, though unlike American and Canadian data, computers were more popular than television sets, with over 40% of the school-aged students having computers in their bedrooms, compared with less than 30% with television sets in their bedrooms. It is likely that computers are seen as an educational tool for the child and therefore they are given more access to this medium in their bedrooms to help them with their homework. The lack of home space may have also played a major role in this decision, as interviews and visits to families homes have indicated that computers are rarely in a common space and are almost always located in the study room or the child's bedroom.

a) Gender differences and media in the bedroom

Unlike home access results, there were significant gender differences with regards to bedroom access to video games for the middle school data, with 27% of male students having access to video games compared with only 11% of female middle school students. Gender differences were also seen in the high school data with regards to access to television in the students' bedroom with the female high school students having more access (33%) compared with their male counterparts (17%). For the university student population, gender differences did not exist for video games, but did exist in their access to TVs, VCRs, computers and the Internet; in all these cases the male students had more access to media in their bedrooms (see Appendix 6, Table 5).

3) New media use outside of the home

Though computers and the Internet were introduced sixteen years prior, it was not until 1998 that the Korean population was given broad access to these technologies (Lee, 2001). The PC-Bang phenomenon was a result of Korean government initiatives to provide public access centres for citizens unable to purchase their own home computers following the severe market crash in 1997. Government developed public access centres did not, however, thrive and it was not until private business entrepreneurs provided PC-Bangs that Koreans were extensively provided

with access to computers in public. This increase in access led to an unexpected consequence, the PC-Bang gaming phenomena.

Though this study indicated that over 77% of the students had access to computers in their homes, the PC-Bangs still remained a popular venue for game playing for the students. So popular, that I believe it is not considered to be a public venue anymore. This notion was further confirmed by the mothers' responses when asked if they thought their family could go without access at home because of the many PC-Bangs or computer access points elsewhere, only 3% said this was 'very much' the case and 13% said this was 'somewhat' the case (see Appendix 10, Table 4) .

Therefore, the PC-Bangs did not seem to be only used by students lacking access to computers or the Internet at home, rather even those with access to high-speed internet and top-of-the line computers may still go to the PC-Bang. A university survey suggested that 56% of the university students had 'top of the line' computer in 2002, followed by 27% with fairly 'top of the line' computers and only 18% with older computers lacking 'top of the line' graphics.

Observations at the PC-Bangs indicated that the majority of computer users were male university students³³. Data from a GETO KOREA PC-Bang databases suggesting that of the membership holders in three PC-Bangs, 98% of there users were males. These rates did not, however, include the irregular users who dropped-in to various PC-Bangs, or who did not opt to register for membership cards. The media audits and further participatory observations thus provided more thorough analysis of the PC-Bang users.

³³ Fuentes and Straubhaar (2001) however did find that *students* were the main users throughout nations, which coincided with the argument that prior knowledge promotes users to become more acquainted and comfortable using the technology therefore may be more comfortable in using the technology in a public center.

a) Did the PC-Bang provide equality of access?

Initial observations at PC-Bangs indicated that this computer using environment had become male-dominated with few female users present at any given time of day. I found that most of the clientele seemed to be university aged, with some middle school and high school students and few elementary students. The media audit results in Table 8 (see Appendix 9) indicated that 54% of elementary, 84% of middle school, 76% of high school and 97% of university students had recently visited a PC-Bang.

Significant gender differences were expected because of the participatory observations at the PC-Bangs, yet gender difference only existed for the elementary and middle school data. The middle school data revealed that male students were indeed the most frequent users, with 89% of the males compared with 74% of the females recently going to the PC-Bang. The elementary data also suggested it was the male students who most often went to the PC-Bang with 65% of female elementary students reporting not going to the PC-Bang. This is in comparison to 74% of the male grade four students suggesting they have been to a PC-Bang.

Though the female students' mothers' data closely resembled their daughters responses, the male students' responses greatly differed with 74% of these male students suggested they went to the PC-Bang, and only 49% of their mothers thought this was the case. The significant gender differences within the PC-Bang may be the result of the computer and Internet technology itself.

Research on computer mediated communication has suggested that the Internet is often a male domain and to maintain this predominantly male domain, women are often harassed and intimidated to either leave or comply with the rules of the setting (Soukup, 1999). The need to comply with the rules of the setting may create an undesirable atmosphere for the females at the PC-Bang³⁴. Focus group and interviews indicated that many women disliked the smoke filled atmosphere and the dirty and dark conditions of some PC-Bangs; therefore, they may prefer to use the

³⁴ My interviews with several female university students indicated they are often shy or feel intimidated when entering the PC-Bang or other male dominated social environments like the Pool Hall. They have often blamed it on the Korean education system because Korean middle schools and high schools not co-ed when they are placed into classes with male students at the university level they say they are often shy and do not answer questions in class because of their male peers.

computer at home or at school. Male students, however, because of their preference for peer group play seem to be forced, by lack of home space, to play at the PC-Bang. Space and cultural factors, combined with limited game genres³⁵ may have added to the continuation of the PC-Bang as a male dominated environment and thus reducing the likelihood that the public computer centres of the PC-bangs will be used as equalizing agents in the hopes of decreasing the digital divide in South Korea.

III. Education and Training of an Information Society Workforce

As Korea seeks to transform itself into an information society, they continue their strategic plans set out to encourage computer literacy skills in hopes of developing a knowledge-based workforce. To understand the computer environment the media audit sought to provide evidence on rates of access and patterns of use.

1) Computers used for homework at home

These results indicated that of the home computer use activities, homework was among the least preferred. The high school students seemed the most likely to use the computers for homework, though only 17% 'always' used the computer to contribute to their academic work. This rate was closely followed by 16% of the elementary students and 11% of the high school students who reported 'always' using the computer for schoolwork (see Appendix 8, Table 1).

³⁵ Often only a handful of games were bought by PC-Bang owners and available for the clientele to play, they most often included Diablo, StarCraft, various FiFa versions and occasionally a CounterStrike game

2) Emailing

Though homework was not often a major computer activity in the home, the results revealed that email was much more popular, especially for female students with 58% of female high school students 'always' using email at home, compared with only 26% of male high school students. Similar gender differences were seen for the middle school data with 50% of the female students 'always' using email compared with 29% of the male middle school students (see Appendix 8, Table 2).

3) Online communication activities

Technological innovations have further promoted the computer and Internet as a new form of communication via email and messaging programs. Table 4 (see Appendix 8) suggested that chatting and messaging programs did not show similar gender differences. They did, however indicate a grade difference with 12% of the elementary students 'always' using the computer for chatting, compared with 52% of the high school and 29% of the middle school students. Thus preference for chatting and email revealed that the female high school students often preferred communication activities rather than entertainment activities on the computer.

An analysis of additional computer related activities indicated that, like messenger programming, Internet searching data also revealed age- defined difference with in the sample population, with 46% of high school students compared with only 23% of elementary students and 33% of middle school students suggesting they 'always' use the computer for Internet searching (see Appendix 8, Table 7).

4) Gaming activities

Gaming was an extremely popular activity. The data revealed that all student samples had significant gender differences with male students more often playing at home than their female counterparts. 50% of the elementary school males compared with only 24% of the female elementary students frequently played games at home. This trend was also seen in the higher grades with 53% of high school males and 46% of middle school males compared with 22% of high and 16% of middle school female students 'always' playing games at home.

The data revealed that the male students were most likely to engage in game playing at home, though only 24% of the female elementary students suggested they played games at home, the mothers' data however, suggested that 44% of their daughters 'always' played games at home (see Appendix 8, Table 5).

i) Elementary school time data

The data for elementary students indicated significant gender differences for gaming on the weekday and weekend with the average male students spending 83 minutes on the weekday and 144 minutes on the weekend compared with 54 minutes on the weekday and 75 minutes on the weekend by the average elementary female students. As for computer related non-gaming activities no gender significance existed but the elementary students spent less time than their older counterparts at 69 minutes on the weekend and 56 minutes on the weekends.

ii) Middle school time data

The time data for the middle school students revealed that on average the students spent 55 minutes per weekday using the computer for non-gaming activities (homework, emailing, chatting, searching) compared to 76 minutes playing games on the computer, therefore indicating the popularity of gaming on the weekdays.

The weekend data revealed significant gender differences with the male students spending 176 minutes playing games and only 39 minutes using the computers, compared with their female peers who spent 96 minutes using the computer and 93 minutes gaming.

iii) High school time data

Similar results for the high school non-gaming activities were revealed for the older students. Though they spent more time on the computer than the younger students there was no significant gender differences for the high school sample. The data revealed that on average the students spent 87 minutes on non-gaming activities. The weekend data however did reveal a significant gender difference where the female high schools students spent more time using the computer, 166 minutes compared with 115 minutes spent by their male peers.

A further examination of computer activities revealed that the male high school students spent more time gaming at 96 minutes of the weekday compared with

45 minutes by the female and 227 minutes on the weekends compared with only 84 minutes spent by the female high school students.

2) Social Patterns of computer use at the PC-Bang

My study suggested that home computers were often used for communication activities and gaming, rather than for homework. I therefore sought to examine the patterns of use at PC-Bangs. My conversations with parents and professors often revealed the supposition that the numerous PC-Bangs around schools were developed to help alleviate the burden of providing students with 'top of the line' computer access at school; that the students went to the PC-Bang to complete homework assignments. However, my observations indicated that few computers at the PC-Bang were connected to printers and even fewer had word processing programs such as Microsoft word or Han'gul.

Observations at the PC-Bang over the year and throughout many different cities also indicated that parents rarely accompany their children to the PC-Bang, therefore, parents may not always know what their children are doing at the PC-Bang and this may account for the lack of parental knowledge of PC-Bang gaming.

a) Homework at the PC-Bang

This lack of educational computer use was confirmed by the audit with the majority of students from all the grade levels suggesting that the PC-Bang computers were 'never' used for completing homework assignments. Of all the computer related activities, homework was the least common with under 4% of the students from all different grade levels frequently using the computer at the PC-Bang for homework. The parental data suggested that 25% of the mothers thought their children 'sometimes' used the computer at the PC-bang for homework, the students' responses suggested that only 13% 'sometimes' did homework at the PC-Bang. The university student's data further suggested that searching for information online for 'no reason'

was not a popular activity compared with other computer related activities at the PC-Bang (see Appendix 9, Table1)³⁶.

b) Emailing at the PC-bang

'Emailing' data at the PC-Bang revealed similar patterns of use as did emailing activities at home. The high school data suggests that 14% of the male students and 42% of the female students frequently emailed at the PC-Bang. The trend for female students to be high email users continued for the middle school students with only 17% of the male students compared with 55% of the female students suggesting they 'always' used the computer at the PC-Bang to email. Therefore, of the female students that went to the PC-Bang, emailing was the most common activity. This closely follows the female students' patterns of internet use at home

Emailing was also popular for the female university students, who most often went to the PC-Bang, compared with other female students. They suggested that emailing at the PC-Bang was one of the few online favourite activities along with chatting and shopping online (see Appendix 9, Table 4).

c) Chatting and searching for information at the PC-Bang

'Information searching' data suggested that few students (less than one-quarter) 'always' used the computer at the PC-Bang to search the Internet for information. Chatting was also not a common activity with the highest rate of users in the school aged population being the high school students with 35% 'always' using chatting programs at the PC-Bang, however the data also suggested that 35% 'never' use the computers for chatting (see appendix 9, Table 2 & 5).

Computers have also been deemed a useful tool in searching for information. This activity was also not seen as a popular computer activity, with 10% of elementary students and fewer than 23% of middle and high school students using the technology to search for information. On a few occasions during my year-long study I did witness

³⁶ These results and the school aged students results may be attributed to the fact that the students had to pay to use the computer at the pc-bang and surfing for 'no reason' or surf for information, which was may not be dependent on high speed connections may have seemed like a waste of their money.

middle aged couples coming in to the PC-Bang and asking for assistance in searching for information on products or shopping online.

d) The popularity of gaming at the PC-Bang

The PC-Bang data revealed significant gender differences for the male university students who suggested that they more often preferred to play games at the PC-Bang rather than engaging in other activities, including downloading music and multimedia activities (see Appendix 9, Table 11). Gaming was one of the few popular activities at the PC-Bang that did not reveal differences with regards to the ages of the students. All other activities seemed to peak in high school for the school-aged students and then again in university. This seems to coincide with the long hours spent out of the home by the high school students. Interviews with parents suggested that in preparation for standardized university entrance exams, the high school students spent long hours at school followed by hours at the academic institutes (Hogwan time see Table 4 below). The high school male students spent 139 minutes per day at hogwans and the high school female students spent 189 minutes each day in out of school academic classes. Therefore, students in Korea often spend a great deal of time travelling or in activities away from home each day. Interviews with parents indicated the high school students often return home about 10:00pm, at which time they are expected to continue studying for another couple of hours. Therefore, this time out of the home probably gives them more free time to spend at various Bangs, including the PC-Bang. Their time at the PC-Bang, however, is limited because of a 2001 law passed disallowing them from entering the PC-Bang after 10:00pm³⁷. Many parents feared their high school children were spending too much time at the PC-Bang instead of studying, so they pressured the government to pass this by-law.

³⁷ Hand-made signs or stickers were posted on the PC-Bang doors explaining that minor were not permitted after 10:00pm.

Table 4. Mean time spent at Hogwans (extra-academic institutes) on the weekdays and on the weekends³⁸

Students data		Male			female			t	P
		M	N	Sd	M	N	Sd		
Hogwan weekday	Elem	117.74	291	94.39	127.33	272	91.70		.222
	Mom	135.78	154	65.83	123.56	322	58.27		.041
	Middle	139.43	298	121.06	188.88	138	176.22	2.62	.001
	High	127.39	168	134.78	71.73	276	110.16	4.74	.000
Hogwan weekend	Elem	38.10	290	84.27	32.74	271	74.84		.427
	Mom	131.42	21	76.76	122.94	34	84.51		.710
	Middle	63.	274	108.95	92.46	134	118.90	1.92	.014
	High	73.99	168	125.89	33.43	273	91.67	3.63	.000

A significant gender division in PC-Bang activities was further confirmed by the surveys with a high percentage of the male students, including elementary students, suggesting they ‘always’ played games at the PC-Bang. 41% of the male elementary students, 62% of male middle school and 68% of male high school students suggested this was the case. This was highly significant in comparison to 18% of elementary female students, 22% of middle school female students and 20% of high school female students who also suggested they ‘always’ played games at the PC-Bang (see Appendix 9, Table 3).

The significant gender differences also extended to include the elementary school mothers’ data. However, it was interesting to note that the mothers thought their daughter were slightly more likely to engage in gaming activities at the PC-Bang compared with their sons, 32% versus 24%. It should also be noted that the 32% of the mothers suggested their daughters engaged in gaming at the PC-Bang, in comparison with only 18% of the daughters who suggested they played games at the PC-Bang. The male data however revealed that 41% of the male elementary students’ stated they played games at the PC-Bang compared with 24% of mothers who suggested their sons played games at the PC-Bang.

³⁸ Hogwans often includes math, Korean, English, music, art or other classes that do not take place during school hours.

3) Has the PC-bang and home computer use encouraged a computer literate youth?

The Korean government policies have encouraged computerization in the schools as well as at home to increase access to computers for the Korean public, though the research has suggested that the computers are primarily used for gaming. Further analysis of game playing and educational values by Myers (1984) suggested that although hours are spent playing these games and gaining knowledge and skills related to the games, there seems to be little to no connection between gaming and real world activities, though some may say that gaming itself requires a great deal of logic.

Schofield-Clark (2003) suggested that “for the most part, the young computer users at the Lab were no closer to finding lucrative jobs, let alone becoming more involved in the political process, than they had been before they began going to the Lab” (p. 105-106). She further suggested that US based policies have failed because of the strength of the entertainment and video game industry and the “common concern that increasingly entertainment-oriented uses of the Internet stand in the way of its potential for educational and civic use (Seiter, 2001; Shah et al., 2001)” (p. 108).

The video game and currently the computer gaming industry have indeed quickly developed their own niche market with many parents and educators left wondering the results of this new form of play. While Canadian and American school policies have continued to encourage the development of a computer literate culture in hopes of developing a generation of information workers, Korea has examined the role gaming has taken in the lives of the computer users and geared their policies towards encouraging the development of gaming and the gaming industry. They have decided that rather than fighting against the tide of the gaming phenomenon, they would encourage the trend and used it to further their information society plans.

IV. Korean PC-Bang culture

The Korean public has been granted access points outside of their homes in computer centres, the PC-Bangs. These were borne from the economic crisis of 1997 which interrupted governmental initiatives to computerize the nation. The PC-Bang industry is said to be “a promising industry which is expected to be a 1.3 trillion won market” (MIC, 2001). With growing government support, by 2002 25,000 PC-Bang had been created to bridge the technological gap left by the economic crisis.

1) Peer based PC-Bang gamer culture

The participatory observations at the PC-Bang provided additional analysis of game playing habits, including who the gamers most often went to the PC-Bang with. Initial observations at the PC-Bang seemed to indicate that many players were engaging in game play alone, however, further investigation led to a better understanding of the peer interaction and relationships of gamers at the PC-Bang.

Very few of the elementary students, fewer than 10%, went to the PC-Bang ‘alone’. The rate of students going to the PC-Bang alone slightly increased as the students aged; particularly for the female students with 13% of the male university students and 21% of the female university students suggesting they most often went to the PC-Bang alone (see Appendix 9, Table 9). It became clear through additional PC-Bang observation and the media audit that most game players did not go to the PC-Bang alone, but came and left as a group. The surveys revealed that this was indeed the case. Friends were overwhelmingly selected as the top choice for PC-Bang companions. With 67% of elementary students and over 80% of other students suggesting they most often went to the PC-Bang with friends.

Elementary students were the only group that revealed a significant gender differences with 75% of the male students and 54% of the female selecting friends as their choice of PC-Bang companions. This was followed by 18% of the male and 41% of the female students going to the PC-Bang with siblings.

2) What drives the PC-Bang phenomenon?

The media audit provides a clear picture of the PC-Bang as a gaming venue for the male students. Focus groups, interviews and additional surveys were used to further understand why students enjoyed going to the PC-Bang. The male students indeed listed gaming as their number one reason, followed by the comfortable atmosphere. Once again due to the small living spaces, it was often difficult, and often unheard of for children to congregate with their friends in their home, therefore the PC-Bang provided a space to gather and use the technology. Further examination of what attracted the students to the PC-Bang indicated the male university students most often cited going with friends as the leading factor in going to the PC-Bang. The female students also suggested that comfort was an incentive to go to the PC-Bang and that playing games with friends was not a top priority as it was for the male students. The university data also suggested the technical characteristics, such as a 'top of the line' computer and high speed Internet prompted them to go to the PC-Bang. As previously indicated many university students had computers that were up to 6 years old, thus the frequently updated and improved computers at the PC-Bang were seen as more attractive and more capable of handling the graphics of new online games.

3) Genre of games at the PC-Bang

Gaming was further examined with regards to the popularity of specific genres. A significant gender difference occurred in the university student population with Massively Multi-players (Lineage) games as the most popular genre for the male students compared with female university students, who seemed to preferred the 'skills' genres (i.e. Tetris) (see Appendix 9, table 12).

Only two game genres did *not* reveal significance gender differences, these included educational game and adventure game genres. These genres, however, did reveal age differences with younger children more often preferring these games compared with the older students. It is interesting to note that the genres most popular, massively multi-player and skill games were readily available at the PC-Bang venues, whereas, 'Educational' games were often unavailable.

4) Relation between peers and gaming

The majority of PC-Bang players went with friends to play games. I was told by many players, including Pro-Gamers, that particularly games such as StarCraft and Diablo encourage the development of teams and competition, therefore, further promoting a peer culture at the PC-Bang. My observations indicated, however, that there was little to no verbal communication between players at PC-Bangs. As Etzioni and Etzioni (1999) stated, face-to-face communication is not guaranteed when participants' experiences are within the same environment. Observation within the PC-Bang has revealed this phenomenon on various occasions. A group of male users or a group of female users will enter the PC-Bang and sit for hours without saying a word to one another. Although on occasion a group of gamers will enter the PC-Bang and engage in heckles and shouting at each other while playing a multiplayer game, the majority of the time players are fully engaged in their own game play³⁹. The study indicated that over half of female students and over three-quarters of male students stated that they went to the PC-Bang with friends; therefore it may be misleading to infer that these friends engage in much face-to-face communication during their period of stay at the PC-Bang. Choi (2001) suggested that Korean university students' Internet usage "negatively affected their use of other media and face to face communication" (Choi, 2001). Future studies of the users' personal definition of face-to-face communication with friends while in the PC-Bang will promote an understanding of whether or not they find this activity to be an interactive play activity or a parallel play activity.

5) Frequency of PC-Bang use

When the students were asked how often they went to the PC-Bang, the data revealed significant gender differences for all grade levels. The results suggested that very few of the students (under 5%) went everyday, but 'Once or twice a week' was a popular response for male students with 31% of the elementary, 41% of middle school, 36% of high school and 47% of university students suggesting they went to the PC-Bang 1-2 times a week, whereas their female peers most often went 1-2 times a month. The mothers overestimated the frequency of time spent at the PC-Bang suggesting that

³⁹ Many players were so involved in their game play that as a foreign female researchers I was often able walk behind the players and take notes on their gender, age and game or computer activities without interrupting their game playing or computer using.

47% of their children went 1-2 times a week, yet 27% of male students and 28% of female elementary students the students claimed they went 1-2 times a week (see appendix 9, Table 7)⁴⁰.

V. Time spent with computers in the home

Statistical analysis of the access levels of families who own computers or have internet access provides valuable evidence of the pace of development of an information society. Though adoption rates are helpful in understanding access to new technologies, these rates do not reveal the reasons or frequency of use of the technology. Therefore, the media audit provides a methodological tool for capturing the patterns of media use within the home. With the advent of new technologies, researchers have suggested that as computers entered the home, media time usage of the students may shift and older media such as television may be displaced. This however, was not always the case and often computers added, rather than displaced time spent using media in the home (Montgomery, 2000, p. 147-148).

1) New media displacement patterns

The Korean data suggested that 35% of the elementary students, 46% of the middle school and 54% of the high school students' television time decreased with the introduction of computers in their lives⁴¹. It may be assumed that the novelty of the computer led to a decrease in television time, but because many of the Korean students had computers in their rooms, we may also assume this new media provides a freedom of media access not otherwise seen in the Korean home setting. To further investigate patterns of media use and time spent with the media, the students were asked to estimate the amount of time they spent with various media in their home on the weekdays and weekends. Media studies conducted using time diaries have often

⁴⁰ An in-depth analysis is needed to further examine the differentiation in time spent among heavy and light users, though for this exploratory study the total sample was analysed.

⁴¹ A further investigation into the number of television sets in the home and their location can help account for this difference.

revealed significant gender differences with regards to time spent with electronic gaming devices and computers. These studies have often reported a higher percent of time spent by the male subjects than females, "both at home and with arcade gaming venues (Dominick, 1984; Griffiths, 1991; Kubey & Larson, 1990)" (Funk and Buchman, 1994, p. 13). The Korean study also confirmed this pattern, with school aged female students spending more time watching television on weekdays and weekends than any other activity (see figure 5 and 6) compared to the middle school and elementary male students who spent more time using the computer.

The media audit asked the students and mothers to estimate the number of minutes the students spent with media. The mothers' under-estimated the time spent with all the media, especially for gaming and computer use, particularly those of male students who seemed to underestimate more so than the mother of the females students. The mothers, however, did not seem to underestimate the time spent with television as their estimates were often very similar to the students responses (see Table 5 below). It may be assumed that because many students had computers in their bedrooms the time estimates of the mothers may have been underestimated because they may not have known what their children were doing online within the confines of their rooms, where as the TV was most often in a location where the parents could monitor more carefully.

Table 5. Mean time spent with media on the weekdays.

weekdays		Male			Female			P
		M	N	SD	M	N	SD	
music	E*	22.48	288	56.96	37.58	273	67.19	.004
	mom	16.08	194	30.49	23.26	396	99.86	.328
	M	42.59	294	80.25	60.54	139	69.34	.024
	H	80.00	168	99.87	93	282	101.57	.199
Cell phone games	E	4.59	290	18.56	5.46	273	24.54	.788
	mom	4.35	191	30.38	.78	390	5.64	.025
	M	5.43	296	25	4.45	140	12.05	.661
	H	9.50	165	40.39	6.21	277	28.96	.321
TV	E	112.46	292	95.01	114.49	273	83.72	.788
	mom	114.38	192	67.36	111.73	393	80.37	.694
	M	113.09	299	104.23	123.18	140	111.47	.356
	H*	89.97	166	79.80	130.13	284	109.04	.000
Vcr	E	14.54	290	34.16	23.39	270	66.36	.046
	mom	9.96	191	30.61	10.47	391	33.97	.859
	M	13.47	295	45.13	15.24	136	50.65	.718
	H	11.45	165	33.86	10.71	281	51.22	.868
TV and vcr	E	126.46	290	105.09	138.11	270	113.31	.207
	mom	124.77	191	76.08	122.01	391	86.39	.706
	M	126.14	295	121.66	136.45	136	136.38	.432
	H*	101.49	164	94.53	139.78	281	123.59	.001
Cmp for games	E*	83.21	292	84.56	53.87	271	72.13	.000
	mom	58.49	191	67.13	56.05	393	61.16	.661
	M	82.78	299	89.41	62.09	139	81.98	.021
	H*	95.74	168	110.68	44.62	282	74.44	.000
Cmp not for games	E	41.83	292	79.45	40.88	272	61.81	.875
	mom	31.43	192	40.64	32.20	391	101.25	.920
	M	50.00	298	79.39	67.39	138	74.92	.031
	H	76.74	164	160.41	92.26	284	122.41	.250
Cmp total time games and not games	E*	125.04	292	124.89	94.85	270	112.79	.003
	mom	89.77	191	85.64	88.52	391	126.05	.901
	M	132.76	298	130.66	129.34	137	135.96	.792
	H	172.56	168	221.61	135.89	281	150.56	.038
Screen media	E	256.58	288	187.19	128.12	268	204.65	.267
	mom	218.92	191	131.05	211.38	288	159.46	.572
	M	264.55	292	200.38	271.01	134	246.98	.775
	H	283.41	162	279.14	281.24	275	205.89	.926
Total gaming	E	88.16	290	88.49	58.90	271	83.67	.000
	mom	62.86	191	75.51	57.16	390	61.60	.331
	M	88.33	296	93.49	66.80	138	85.90	.022
	H	104.43	165	122.11	50.67	275	80.26	.000

2) Time spent with media on the weekdays

a) Weekday computer time

Time spent on the computer indicates that the computer was quite popular for all the grade levels, and the data reveals that high school students spent the most time with computers (for games and not for games) with a total of 172.56 minutes per day for males and 135.89 minutes per day for females, though the data did not reveal a significant gender difference. Gender differences also did not exist for middle school students, though the data did reveal that overall the students did spend less time than their high school peers, 133 minutes of males and 130 for female middle school students. Therefore, the trend for the high school students to spend more time with the computer correlated with previous data which revealed the male students most often engaged in computer related activities, particularly games.

A significant gender difference did exist for the elementary school population with male elementary students using the computer more at home, but less than their older male peers. The female elementary students also used less than other female students and less than their male peers at only 95 minutes per day compared with 125 minutes spent by the male elementary students.

b) Weekday TV time

The computer time data in Table 5 revealed that the elementary students used the least amount, though the television and VCR time suggested that these media were more popular with the younger students than the older students. On average the elementary and middle school males each spent 127 minutes per day, compared with their female peers who spent slightly more, at just under 138 minutes per day, though no significant gender differences existed.

The high school students' data revealed a significant gender difference with the male high school students spending less time than the younger male students and also less than the female high school students at 102 minutes per day compared with 140 minutes per day spent watching TV and VCR by the girls. The male high school students' computer data was much higher than other students', therefore; it may be assumed that they are displacing their television time to use the computer

which seems to be correlated with their indication that 54% of the students had decreased their TV time since the introduction of computers in their lives.

c) Weekday screen time

Although the high school male students spent less time watching television and movies on their VCR at home, their computer time was much greater than other male students. The estimates of total screen time (TV, VCR, computer games, computers) was for the male high school students greater than all other male students at 283 minutes compared with 257 minutes for elementary students and 265 for high school students (see Figure 5.) The Kaiser Family Foundation study in 1999 indicated that American school aged children spent on average 117 minutes per day with (TV, computer, videogames and Internet time) and Canadian elementary school data from the Media Risk Reduction (Kline, 2003a) project revealed that on average the children spent about 116 minutes per day with screen media (TV, VCR, computers and video games), therefore, my data suggested that the Korean children spent on average over 200 more minutes a day with media than Canadian children and American children. It is interesting to note that unlike Canada and the United States, Korean communities do not generally have organized sports for children, with the only exception being martial arts and extra school related subjects (hogwan). I found no evidence of organized soccer teams or basketball teams neither out of school nor in-schools.

These high rates of time usage may also be explained by a lack of home regulations. As section VII of my results section indicates, few students are regulated with regards to their media use compared with the Canadian students. The Media Risk Reduction project indicated that 83% of the mothers revealed they had rules regarding their children's computer with over 60% concerned about the time their children spent on the computers and over 64% concerned about the content their children were exposed to on the computer (Kline, 2001). The Korean data however, indicates that very few of the mothers were concerned with their children's media use, thus they may not restrict their child's access as much as Canadian mothers suggest they do, therefore more Korean children may have access and are able to use media more than Canadian children.

Political and historical differences in Korea and Canada will result in variations in child rearing practices. Korean home life has rapidly changed, especially since the economic crisis of 1997, which according to my interviews with parents and professors, caused many mothers to enter the work force. The results revealed that 93% of the male students' mothers and 57% of the female students' mothers worked outside of the home. Also, the mothers of male students not only were more likely to work outside of the home but spent twice as much time working outside of the home; (515 minutes) compared to the mothers of female students (283 minutes). The data did reveal that many of the students were not alone when they come home from school, however, 23% of the male students and 21% of the female students came home to an empty house, and from interviews and knowledge of 'latch-key' Korean children, media was often used to pass the time between school and Hogwan.

d) Weekday gaming time

Overall time spent with the media was quite high, but a closer examination of the time indicated that a large percentage of the time was spent gaming, especially for the male students. Elementary and high school students who compared with their female peers often spent much more time involved in gaming activities. The middle school students' data did not reveal a significant gender difference, rather, the data revealed that middle school female students spent more time playing games at home than their elementary and high school female peers and only slightly less than their male peers at 67 minutes compared with 88 minutes of the male middle school counterparts. The elementary students revealed significant gender differences with the male students spending 88 minutes per day compared with only 59 minutes. The female high school students spent the least amount of time playing games at only 50 minutes per day compared with their high school peers, who spent the most at 104 minutes per day (see figure 5.)

3) Time spent with media on the Weekends

a) Total TV time⁴²

The audit data in figure 6 indicated that high school students also spent a great deal of time watching television and movies at home, where female students spent more time than the male high school students, 335 minutes and 251 minutes on the weekend respectively. The data, however, did not reveal gender differences for the elementary and middle school students, though the time they spent was less than the high school students.

b) Total Computer time

The time spent on the computer revealed more gender differences than television and movie time, with both the high school and elementary school students' data suggesting that the male students spent more time using the computer than the female students. The high school students spent 342 minutes on the weekend compared with the female students who only spent 248 minutes on the weekend. The elementary students spent less, but the trend for male students to use more than their female peers was also revealed with the male students spending 200 minutes on the weekend compared with 132 minutes on the weekend for the female students (see figure 6.)

c) Total screen time

i) Male

As expected after an analysis of the computer and television time on the weekends at home, the high school students were the heaviest users of screen media with the students on average spending 597.53 minutes on the weekend compared with

⁴² The students were asked to estimate the amount of time they spend with media on the weekend. The weekends was not separated into Saturday and Sunday, though all Korean students go to school for half a day on the weekend, therefore the data of time spent on the weekends would include Saturday afternoon until Sunday evening for all the students in the sample.

453 minutes spent by the middle school students and 409 spent by the elementary students. Though no significant gender differences occurred, the trend for high school students to spend more time followed by middle school then elementary students was also seen in the female data (see figure 6)

ii) Female

Like their male counterparts, the female high school students also spent the most time with media on the weekend, with the female high school students spending on average 590 minutes on the weekend. This was a much higher average compared with 458 minutes spent by the middle school female students and 351 spent by the elementary female students (see figure 6).

d) Total time gaming

The total time spent gaming revealed significant gender differences with the male students at all age levels spending more time playing games than their female peers; the elementary male students spent 151 minutes compared with only 83 minutes spent by the female elementary students. The male middle schools students spent 183 minutes and the female students spent 99 minutes, the highest of the female school aged sample. Finally the high school male students, who spent the most time playing games spent on average 231 minutes on the weekend compared to only 86 minutes by their female peers (see figure 6).

Table 6. Mean time spend with media on the weekend

weekends		Male			female			P
		M	N	SD	M	N	SD	
music	E	43.71	292	99.65	54.83	273	69.06	.16
	mom	17.84	194	39.68	20.11	395	70.20	.674
	M	78.25	295	139.55	97.91	141	88.98	.127
	H	152	168	196.70	156	284	157.34	.833
Cell phone games	E	7.78	290	33.38	7.71	273	35.44	.980
	mom	2.14	192	22.12	1.17	390	7.85	.441
	M	5.70	295	30.69	5.20	140	17.29	.858
	H	8.52	165	49.14	3.47	274	15.50	.116
Tv	E	171.85	292	158.50	176.92	272	124.62	.675
	mom	131.72	192	122.19	151.20	392	193.38	.202
	M	194.13	298	149.63	227.48	141	133.56	.025
	H	207.46	166	176.85	297.19	284	215.54	.116
Vcr	E	31.33	298	72.04	34.37	271	58.45	.585
	mom	17.95	191	62.80	15.56	392	42.08	.587
	M	37.88	295	71.24	36.99	136	74.97	.905
	H	42.06	165	63.00	37.07	282	59.94	.405
TV and VCR	E	202.99	298	180.75	211.86	270	143.81	.523
	mom	108.42	192	117.35	111.71	391	133.75	.771
	M	231.62	294	178.64	263.57	136	161.45	.076
	H*	251.21	164	239.62	335.08	282	225.01	.000
Cmp for games	E*	143.92	291	126.16	75.44	270	798.56	.000
	mom	74.07	192	91.90	79.64	394	117.84	.565
	M*	176.37	299	170.80	93.02	139	90.27	.000
	H*	226.79	168	239.62	83.84	281	112.88	.000
Cmp not for games	E	56.17	292	143.56	55.99	272	132.20	.988
	mom	34.35	192	56.56	31.87	391	52.18	.599
	M*	38.67	296	53.65	95.72	139	90.83	.000
	H*	115.39	168	176.16	166.28	284	173.42	.003
Cmp total time games and not games	E*	200.29	291	203.53	131.49	269	169.49	.000
	mom	149.89	191	135.89	166.76	392	196.53	.286
	M	215.92	296	185.57	187.50	138	140.89	.111
	H*	342.18	168	325.00	248.40	280	209.03	.000
Screen media	E	408.52	287	314.88	351.24	267	258.34	.020
	Mom	260.71	191	208.46	279.40	390	251.76	.375
	M	452.51	291	272.12	457.58	138	140.89	.853
	H	597.53	162	429.18	589.87	270	131.69	.831
Gaming activities at home	E*	151.27	289	136.65	83.16	270	93.76	.000
	mom	76.20	192	97.21	79.36	390	118.34	.633
	M*	183.14	295	174.54	98.71	138	92.63	.000
	H*	231.24	165	257.15	86.30	271	115.43	.000

e) Gender differences in time spent gaming

Media studies have indicated that “a large body of research shows that boys spend more time and have more interest in computer and video games than do girls (Huston & Wright, 1997)” (Huston & Wright et al, 1999, p. 922-923). Many of the significant gender differences seen in my study revealed these common assessments, though the female students still engaged in game playing, with an estimated 99 minutes spent on the weekends, time spent was lower than that of the males. It is interesting to note that unlike American gaming trends, where there is a sharp decrease as the female student ages, the Korean data suggested that the times stay fairly consistent with an increase in middle school student data (see table 6). This is quite different from American data which suggested that younger children were more likely to play games. Funk & Buchman (1994) suggested that “ Fourth grade girls reported playing electronic games about 5 1/2 hours a week on average, while eighth grade girls played only about 2 1/2 hours” (p. 14).

This trend for Korean female gaming continued into the university data with the female university students spending time gaming in various venues, including at home, PC-Bang and at the arcade, though the data also revealed gender differences with the male students always spending more time gaming. The female data, however, indicated that they spent 288 minutes a week playing games at home and 156 minutes outside of the home for a total of 486 minutes per week playing games. The male students played significantly more per week with 461 minutes at home, 457 minutes out of home and a total of 914 minutes per week of gaming playing (see Table 7 below).

Table 7. Mean time spent gaming for the university sample

University data	male			female			P
	M	N	SD	M	N	Sd	
Total home gaming ⁴³	460.84	126	532.71	287.92	162	371.58	.001
Total out of home gaming ⁴⁴	457.37	132	690.20	155.80	129	255.93	.000
Total gaming per week	913.88	104	957.97	467.53	99	527.57	.000

4) University students' preference for media at home

Significant gender differences occurred in the university data which suggests significant gender variation in media; female students most often enjoyed going to movies, watching television and going to the norebang (singing room). Their male counterparts however, seemed to gear their interests towards gaming and computer use activities at home and at the PC-Bang (see figure 8).

Table 8. Preference for time spent by university students with various media at home and at the PC-Bang

MEDIA	male			female			t	p
	N	M	SD	N	M	SD		
Use computer at home not for games	166	1.92	.68	243	1.93	.71	-0.25	.803
Use computer at home for games *	161	1.98	.85	230	2.50	.90	-5.82	.000
Use computer at school	158	2.37	.71	243	2.46	.61	-1.35	.178
Go to PC-Bang *	158	2.28	.84	216	2.80	.86	-5.80	.000
Play PC-Bang games *	159	2.20	.92	163	3.00	.87	-7.90	.000
go to arcade	157	2.42	.817	249	2.41	.81	0.08	.935
Watch tv *	164	2.12	.69	254	1.74	.65	5.65	.000
Go to movies *	170	1.82	.74	255	1.55	.61	4.09	.000
Go to norebang *	166	2.27	.84	251	1.92	.75	4.50	.000
Go to manwhabang	168	2.11	.78	252	2.13	.72	-0.30	.768
go to study room	167	2.63	.68	252	2.73	.65	-1.48	.141

(Based on a 4-point Likert scale 1(really like) to 4 (don't really like)
 (* significant gender differences)

⁴³ online games, computer games, video games, hand held games and cell phone games.

⁴⁴ PC-Bang online games and computer games, arcade games, other gaming machines outside of the home.

5) Entertainment venues Outside of the Home

Many out-of-home entertainment venues are presented to the Korean population. Although younger students may not spend time in Video-bang or Norebang (singing room) without their parents, the older students had more freedom to spend time at these Bangs.

The data for female students in table 9 indicated that they enjoyed going to the Comic-Bang; the elementary students spent 12 minutes per day and the high school students spent 11 minutes which were the highest levels of use for the female students out-of-home media use. The middle school students spent on average 18 minutes a day the Comic-Bang. The Comic-Bang provides Korean citizens access to numerous magazines, comics and chapter books at a very minimal rental charge or it allows individuals or groups of friends to sit in comfortable chairs and sofas and read magazines or books.

The data also revealed that the students did not often go to the Video-Bang. When examining the time spent by the male students outside of the home, it became apparent that the male students spend most of their out-of-home media time at the PC-Bang, elementary students spent 22 minutes per day, middle school students spent 24 minutes and high school students spent 30 minutes per day. The female students spent much less time at the PC-Bang, from only 6 minutes for elementary students to 16 minutes for the middle school female students (see table 9).

The PC-Bang data revealed gender differences for elementary and high school students but not for middle school students. A gender difference was also revealed for the small video game machines for the elementary and middle school students with the middle school students spending 7 minutes a day compared with the elementary students who spent the most at 18 minutes per day (see table 9).

Table 9. Mean time spent at various Bangs on the Weekdays

Weekdays bang media use		Male			female			P
		M	N	SD	M	N	SD	
Video-Bang	E	2.60	291	17.72	3.77	273	27.66	.546
	M	1.56	295	11.51	.44	137	5.13	.276
	H	2.34	167	18.03	2.88	274	18.04	.757
PC-Bang	E	22.38	289	39.53	5.97	273	26.85	.000
	M	23.57	298	41.23	15.14	138	37.11	.041
	H*	30.24	167	80.54	9.29	273	32.19	.000
Small video game machines	E	17.82	291	39.43	3.91	273	24.12	.000
	M	6.67	296	17.43	.44	137	5.13	.000
	H	1.04	168	7.07	1.98	273	21.28	.581
Arcade	E	8.70	291	24.31	3.65	273	23.29	.012
	M	11.24	296	24.98	11.78	138	37.19	.861
	H	12.52	168	32.03	5.57	273	22.12	.007
Comic-Bangs	E	13.05	291	40.03	11.94	273	34.26	.725
	M	6.30	296	22.30	17.84	138	45.92	.000
	H	13.09	166	45.75	10.28	274	25.60	.410
Total screen media use out side of the home	E	49.83	289	78.94	17.31	273	80.24	.000
	M	42.00	293	65.57	28.20	136	57.86	.038
	H*	45.11	166	114.08	19.25	272	59.79	.002
Total gaming outside of the home	E	47.53	289	71.40	13.54	273	58.50	.000
	M	40.43	293	62.90	27.55	137	59.67	.045
	H	43.52	167	102.59	16.83	273	50.90	.000

Once again the video-bang did not seem very popular, often because the students had television sets in their homes and perhaps did not need to go to the Video -Bang; the Video-Bang was usually a place for groups of friends to go and watch movies. The weekend data revealed similar media use patterns as the weekday bang data. The female students continued their weekday Bang trend of going to the Comic-Bang with the students suggesting they went between 19 minutes (high school

females) and 27 minutes (middle school female students) on the weekend (see figure 10).

Significant gender differences were seen in the gaming data with the male students spending more time gaming than their female counterparts, often twice to three times as much. The male students continued to spend their out-of-home Bang time at the PC-Bang, with elementary students spending 40 minutes on the weekend, followed by the middle school students who spent 59 minutes and finally the high school male students at 65 minutes on the weekend. Gaming in other venues were also popular for the elementary students who spent an additional 18 minutes at the small video game machines and 15 minutes at the arcade. Total gaming time outside of the home revealed that the elementary students spent on average 70 minutes on the weekend; middle school male students spent 82 minutes and finally the high school males students spent 95 minutes (see table 10). The data revealed the female elementary students only spent 22 minutes gaming outside of the home; middle school female students spent the most time of the female sample with 37 minutes and the high school female students spend slightly less at 34 minutes (see table 10).

6) Popularity of gaming in public spaces

Gaming within the public space of Korea is easily accessible through various small and large arcades, small street side arcade games and finally in the numerous PC-Bang, most of which seem to be conveniently located near schools and universities. Therefore, during lunch time and after school while the children walk home or go to their extra-curricular study institutions (hogwans) they are often given numerous opportunities to play games at a minimal charge. The elementary students were the most likely to engaged in video game playing at small video game (street-side) machines. The small arcade games have been quite popular since the early 1990s because of their location near elementary schools in small convenience stores, and due to their nominal price (10 won). The male elementary school students spent approximately 18 minutes per day playing these smaller versions of platform style arcade games. The small video games were not as popular for the older students with middle school spending time at the comic bang followed closely by the arcade. High school students also went to the arcade, though time spent at these venues was only around 10 minutes a day (see table 10). Unlike North America, Korea has provided

more entertainment venues for the children inside their homes as well as outside of their homes and coupled with the freedom given to Korean children to engage in out-of-home activities with friends rather than parents, these venues have greatly added to the students media use during the weekend and weekday.

Table 10. Mean time spent at various Bangs on the Weekends

Weekends Bang media use		Male			female			t	P
		M	N	SD	M	N	SD		
Video-Bang	E	4.51	292	22.46	3.96	273	28.17		.794
	M	2.40	294	13.40	1.90	137	12.40		.712
	H	4.94	166	33.41	3.41	273	19.36		.543
PC-Bang	E*	39.86	291	58.17	9.05	273	31.01		.000
	M*	59.43	298	87.89	25.01	138	43.88		.000
	H*	64.88	166	137.79	20.13	272	52.38		.000
Small video game machines	E	18.11	292	54.49	7.18	273	54.49		.015
	M*	6.67	296	17.43	.44	137	5.13		.000
	H	1.04	168	7.07	1.98	273	21.28		.581
Arcade	E	14.68	291	54.49	5.35	273	43.76		.016
	M	17.94	296	37.43	11.30	138	32.86		.075
	H*	29.04	167	60.85	12.79	275	33.09		.000
Comic Bangs	E	14.19	292	46.08	21.48	273	64.12		.119
	M	24.63	295	60.90	26.72	138	72.78		.755
	H	22.89	166	87.74	18.47	274	52.28		.508
Total screen media use outside of the home	E*	74.06	290	119.78	25.54	273	122.20		.000
	M*	84.32	291	108.49	37.88	136	60.07		.000
	H*	99.61	165	205.80	37.30	270	52.28		.000
Total gaming outside of the home	E*	69.86	290	112.16	21.58	273	101.43		.000
	M*	81.99	292	106.65	37.01	137	60.97		.000
	H*	94.97	166	182.75	34.17	271	71.99		.000

VI. Unanticipated negative consequences of heavy media use

As computers and Internet access increasingly become available to the public both at home and at the PC-Bangs, the notion of Internet addiction and displacement of other media and non-media activities comes into question. Other research projects however, have concluded that the merging of old and new technologies will allow for two or more media to be used simultaneously. Media Metrix (1999) suggested that 49% of households with TV and computers use this media in such a simultaneous manner (Subrahmanyam et al., 2001). Whether the new media displaces old media or non-media-related activities, the results suggested that the daily lives of children in the 21st century are mediated and will continue to be so, especially in Korea where the need to lead the world in informatization promotes an abundance of new media technology. American data suggested that 81% of students would “actually forego the chance to meet up if they had to choose between going online and going out with friends” though “19 per cent felt otherwise, preferring to meet friends online than go through the hassle of arranging to meet them offline” (Goby, 2002, p.88).

1) Displacement

Focus groups with Korean university students indicated that pool halls were the Bang of choice before the PC-Bangs gained popularity. The Pool hall provided a space for young male students to ‘hang-out’, smoke and engage in youth culture including competition and gambling. Though the activities of playing pool and computer use are not the same, the environments provide similar attributions that were important to the young male students. Himmelweit, Oppenheim and Vince (1985) indicated that displacement of media in the home may more often take place if the new medium serves “the same functions or offering the same gratifications” as the old medium (Kayany & Yelsma, 2000, p. 216). While the pool halls often provided a space conducive for conversation, the PC-Bang seemed to have promoted a literate rather than oral culture of communication. Robinson et al. (1997) suggested that computer mediated communication increased users’ time with written material, however, the study also indicated that computer mediated communication did not displace time spent with radio or television (Kayany & Yelsma, 2000). The Robinson (1981) study also found that the television not only reduced time spent with other forms of media, but

it directly impacted time spent engaging in non-media related activities such as socializing, therefore, indicating that users spent more time engaged with the media than with friends or families. Kraut et al. (1998) also confirmed this notion suggesting that studies found that the introduction of the Internet often “reduced communication in the household, smaller social circles, and greater sense of depression and loneliness” (Papacharissi & Rubin, 2000, p 176). These findings were similar in Korea, where participatory observation indicated the lack of oral conversation in the PC-Bang environment.

a) Parental concerns about children’s media use ; displacement

Further investigation of the media and regulation in the home suggested that very few mothers felt that their children ‘always’ displace time with friends to engage in online activities or television viewing. 33% of the mothers suggested that television use ‘sometimes’ displaced time with friends for their children, and this percentage increased slightly to 38% of the children who ‘sometimes’ displaced time with friends in order to spent time online (see appendix 10, Table 2).

The mothers were also asked if they felt that families who engaged in a great deal of Internet use would talk less to one another; 35% agreed ‘very much’ and 39% agreed ‘somewhat’. These statements suggest the feeling that the Internet could interfere with their families’ social life. They were further asked if they felt that the Internet might interfere with the family values that they had taught their children and only 11% suggested this may be ‘very much’ the case while 43% thought the Internet could ‘somewhat’ interfere with the values and beliefs they had taught their children (see appendix 10, Table 4) .

I also asked if their child’s behaviour had changed with the introduction of the Internet by asking if they seemed withdrawn at all since its introduction. The results indicated that 30% thought their children ‘sometimes’ seemed withdrawn since the introduction of Internet into their home and 25% suggested their child seemed fatigued or tired after using the Internet for an extensive period of time. The displacement of sleep was also assessed and the results indicated that 31% of the mothers suggested that their children’s Internet habits caused them to go to bed late at night (see appendix 10, Table 2).

b) Friends

CMC activities are often examined as a means for users to find new friends online and to engage in anonymous chatting activities.

The data suggested that the male high school students were the most likely to meet new friends online with 36% 'often' chatting to strangers online compared with only 18% of female high school students. The middle school data did not reveal gender significance and only 15% of the total middle school students 'often' met new friends online.

The students were also asked how often they met their friends online to chat on messenger or chat-room programs, the data indicated that the students, both middle school and high school, were more likely to meet strangers online than to chat with friends. Only 3% of high school students 'always' used the Internet to chat with friends online and only 5% of middle school students. The results also indicated that 32% of high school students compared with 17% of middle school students 'sometimes' used chatrooms to meet their friends (see appendix 12, Table 11).

The Korean university students data indicated that only 9% 'sometimes' missed a meeting with friend because they were at the PC-Bang, and 13% said they 'sometimes' selected spending time at the PC-Bang over a chance to meet with friends, therefore the data suggested that university students did not seem to displace meetings with friends very often in order to use the computers at the PC-Bang. However, the Korea PC-Bang culture allows for friends to engage in game playing among a group of friends, often forming Guilds or Squads, therefore we may be able to assume that the culture of gaming at the PC-Bang allows friends to play together, thus decreasing the likelihood of gaming alone at home. The data from PC-Bang environment suggested that many of the PC-Bang users often went with their friends to the PC-Bang, therefore indicating that for this sample, the PC-Bang did not often interfere with their peer relations. It may be inferred, however, that the time spent with friends out of the PC-Bang may be replaced with time spent with friend at the PC-Bang, and as observations indicated, few players engaged in face-to-face conversations or interactions with one another, therefore their time with friends is highly mediated by the technology rather than composed of face to face and oral conversation.

b) Sleep

The students were asked 'how often do you lose sleep due to late-night log-ins?' The results in table 9 (appendix 12) indicated that the majority of elementary students (82%) 'never' lost sleep because of their Internet use. The elementary populations revealed significant gender differences with male students more likely to lose sleep than their female counterparts. These higher levels of displacement of sleep 'sometimes' was also seen in the middle school and high school data (44%), which did not reveal significant gender differences, but as access and time spent with media indicated, the high school population was the heavier users compared with other school aged students, and thus were more likely than other grades to lose sleep.

A significant gender difference was also seen in the university population, though their data showed a much higher likelihood of losing sleep compared with the elementary students, with the university data revealing 45% of male students and 24% of female students 'sometimes' displace sleep. This high level of displacement, however did not seem to displace school, with 58% of university students suggesting they were 'never' too tired to go to school after using the Internet. Just over 40% of the students' school attendance was impacted by the computer use; 36% of middle school students suggesting they 'often' neglect their homework to spend more time online. However, no gender differences existed for the higher grades; the likelihood of neglecting homework decreased in the high school sample and an even further decrease for the university student population.

d) Homework

The high school students suggested that 20% of the students 'always' and 36% of the students 'often' displaced homework to go online. This was much higher than their middle school male student counterparts of whom only 11% 'always' displaced homework and 22% 'often' displaced homework to be online. This is an interesting point and it seems to follow the trend of the high school students' high level of time spent on the computer at home; male students claim they spent on average 173 minutes per day with computers (for games and not for games), compared with 133 minutes for the middle school male and 125 minutes for the elementary male students. the female students overall spent less time, but still the trend for high

school students to spend more time than their female peers remains constant at 136 minutes, 129 minutes and 95 minutes for high school females, middle school and elementary female students respectively.

A significant gender difference existed for the elementary students with 48% of the female students suggesting they were more likely to 'sometimes' displace homework for Internet use compared with 40% of their male peers. Once again it was the male students who seemed to spend more time online thus were more likely to displace homework than their female counterparts who enjoyed watching television. An examination of homework displacement because of TV use did not show a significant gender difference and was quite similar with 45% 'sometimes' displacing homework to watch television (see appendix 12, Tables 1 & 2).

2) Addiction

"Once I started playing StarCraft I could not communicate with my friends anymore" (UOU male student)

The notion of computer related addictions have recently become a topic of debate within many computer rich nations, specifically as computers increasingly find a place in media saturated homes of users. Greenfield (1999) and Young (1996) have estimated that five to fifteen million Internet users exhibit Internet addictive symptoms (Choi, 2001). This figure according to Choi could possibly account for six to ten percent of regular Internet users (Choi, 2001)⁴⁵. Suler (1996) suggested that Internet related disorders were first examined by Goldberg (1996) who proposed a 'pathological computer user disorder' patient could be defined as a user who expresses distress in physical, psychological, interpersonal, marital, economic or social functioning because of their excessive computer use habits (Choi, 2001).

The mothers' data suggested that 32% thought that their children's online usage would 'very much' lead to their children becoming isolated from others and an

⁴⁵ Choi suggests that though several researchers such as Greenfield (1999,2000), King (1996) and Young (1996) have chosen to use the word addiction, he suggests that this is a misrepresentation and the word dependency should be used instead. He quotes Potera (1998) who suggests that since Internet addiction cannot be located in the Diagnostic and Statistical Manual of Mental Disorders.

additional 42% suggested this isolation would 'somewhat' be an issue in their children's Internet use patterns. The mothers also indicated that too much Internet could cause a child to exhibit anti-social behaviours; 45% said this could 'somewhat' be the case and 26% agreed 'very much' that the Internet could negatively impact their child's behaviour (see Appendix 10, Table 4).

a) Does your family get mad because of the time spent with media?

My study also asked the Korean students if their computer use interfered with family life to the point that family members were angered about their Internet use. Of the participant, 54% of middle school and 66% of elementary school students suggested this was 'never' a problem. The high school data revealed that although 40% of the high school said it was 'never' a problem, a small percentage of these students, 16%, also suggested they 'often' thought a family member became angry at them for their Internet use, thus further confirming the trend of high school students as heavy users of computers and the Internet. The high percentage of elementary students that did not seem to be punished for computer use may be related to the fact that few of the students disobeyed the computer rules set for them in their homes. The high school students, however, were more likely to disobey rules and were also more likely to be pressured to excel in school thus their computer and Internet use was more likely to cause tension in their home.

The high school students were not only more likely to anger a family member, but the male high school students were more likely than their female peers with the results suggesting a significant gender differences of 46% who 'sometimes' feel they anger family members compared with 32% of the female middle school students (see Appendix 12, Table 8).

b) Korean students' media addiction results

Korean university students were asked if they agreed on the addictive characteristics of various media they use in their lives. The students' results in figure 10 (appendix 12) indicated that 44% of the students 'totally agreed' that the Internet could be addictive. This rate was followed by arcade and video games use, though both of these gaming activities revealed significant gender differences; the male

students were more likely to consider arcade games and video games more addictive than the female university students.

Additional surveys (English) indicated that of those students that did not enjoy going to the PC-Bang, 28% of the males and 14% of the females did not go because they thought it would be addictive.

c) Media as integral part of students' life

Goby (2002) found that 77% of student had become so accustomed to using the Internet that without access they often felt "helpless, bored, handicapped and even frustrated"(p. 88) thus fitting the definition of Internet dependent users. Similar results were found in the Korean middle school and high school data with 55% and 44% respectively suggesting life without Internet would 'never' be boring, empty or joyless, thus close to 50% indicated their lives would be somewhat less exciting without the Internet.

I also sought to understand how important media was to students by asking them if they ever dreamt or wished to go online when they were unable to do so. This question was developed because of the increasing popularity of Lineage, a Massively Multiplayer game whose virtual world continued to expand and remained dynamic even when an individual's avatar was not online. Through my interviews I found students who would spend a great deal of time playing Lineage, often late into the night, and I wondered if they sought to play during the day while at school or at work.

The students were further asked if they ever dreamt of going online, and the results indicated that 32% of middle school students and 49% of high school students suggested they dream of going online 'always' to 'sometimes' when they were unable to do so (see Appendix 12, Table 5).

While online 28% of the high school students and only 15% of the middle school students suggesting they 'always' used the computer more than they wanted to, further suggesting online computing has become a prominent activity in their life.

VII. Family policies and the new media environment

1) New media in the Family

"(t)he television robbed children of hours of play each day. The digital media is restoring this precious time. When asked why they like computers and the Net, their first response is that 'it's fun'. However, while they're having fun-playing-they are also developing. Time spent on the Net is not passive time, it's active time "(Tapscott, 1998, p. 8).

US based surveys, such as the Annenburg Public Policy studies have suggested that for the most part, American parents have welcomed the new technology into their families' lives. This acceptance has been heavily encouraged by the industry. Many software developers suggest that computer technology would promote children's creativity through their interactive platforms and problem solving games. Collis et al (1996) suggested that this may be the case for some children, but a study conducted by Knezek and Miyashita (1994) indicated that there may be negative consequences of computer use. These negative consequences have included children using the computers "as a place to hide from their daily problems, such as school work, or difficult social interactions" (Collis et al, 1996,p.111). This may be cause for concern for many, including parents who have welcomed the technology as a means of developing an information society.

2) Parental hopes for the future

Some enthusiasts have suggested that the computer engages "the child in an interactive experience, developing hand-eye motor skills, giv(es) the child a sense of accomplishment, keep(s) the child off the streets" and encourages them to have fun with the technology, this fun however may often be "judged by many parents to be valuable or, at worst, benign" (Tapscott, 1998, p. 162).

I sough to further examine mothers' responses to the new media environment, their fear, anxieties and anticipations of the computerization of Korea and their homes. I asked the mothers what they wished the future would hold for their children. The results indicated that 66% of the mothers would like to see 'more emphasis on technology' and 'greater emphasis on family'. This was followed by just under 50% of the mothers wanting a 'simpler and more natural life' (see Appendix 10, Table 1). A

popular misconception of technology is that it may alleviate work and increase leisure time, thus leading to a simplification of life.

The Korean mothers' surveys seemed to reveal they sought computer technology as a means of educating their children for the future. Montgomery (2000) indicated that though many parents stressed the need to embrace the new technology, they did so with some hesitation and concerns of the possible "exposure to indecent and violent material, predation, and similar harms in cyberspace" (p 146).

3) Mother's concerns about children's media use

The majority of Korean mothers indicated that they were 'not really concerned' with their children's media use and only about 10% of mothers suggested they were 'very concerned' with their male child's arcade usage, PC-Bang usage and online game usage. This was not, however, reflected in the female students' mothers concerns to the same extent. Only 7% of the mothers were really concerned with their daughters' online usage, which may be because of media -use patterns in the home; males were higher users of the technology compare with their female counterparts (see Appendix 10, Table 5).

a) Computer blocking software

This lack of concern from the mothers was further reinforced by the mothers when asked if they had ever heard of parental control software. The Korean study indicated that 87% had never heard of these types of programs, fewer compared to US studies which indicted that " Nearly one-third of all parents with online access already use protective software of some sorts" (Montgomery, 2000, p. 159). Though the Korean mothers did not seem to have much knowledge of parental control programs, 60% were concerned that their children might view sexually explicit images while surfing the Internet and one third were also concerned their children would give out personal information on websites or chat-rooms. Although there was concern about material the children might view, there were few regulations in the home.

4) Children's rules and regulation for computer use

a) Chatting

The results indicated that high school students had few online chatting restriction compared with their younger peers. The data for the high school students suggested that 17% were 'never' allowed to chat and 41 % were 'always' allowed to chat online at home. Though many students did not seem to have restrictions, of those that did, 24% 'often' to 'always' disobeyed these chatting rules at home.

The middle school students' data by comparison, indicated similar results with 40% 'never' allowed to chat and 25% 'always' allowed to chat at home, though they had more restrictions they were less likely than the high school students to disobey these rules with only 10% 'always' to 'often' disobeying rules about Internet chatting in their homes.

The data indicated that as the child aged, their rules decreased. The elementary students, being the youngest were the most restricted with regards to their chatting rules at home with only 19% of the students allowed to 'always' chat at home and 51% 'never' allowed to use chatting programs at home. Although they were the most restricted, they were also the least likely to disobey these rules with approximately 5% 'always' to 'sometimes' disobeying these rules. This could possibly be linked to a lack of interest the elementary students had in chatting programs as they were the least likely to 'always' chat online at home or and even at the PC-Bang where there were no adults to supervise (see Appendix 11, Table 3).

b) Gaming at home rules

Playing computer games and chatting online at home did not seem to be very regulated for the middle and high school student population; it was slightly more regulated for elementary children with 33% of the elementary students 'always' able to play games at home compared with 35% of middle school students and 46% of high school students. Less than 6% of the students were 'never' allowed to play games at home (see Appendix 11, Table 2).

Once again in the high school population, though almost half were allowed to play games, the data suggests that 32% ‘always’ to ‘often’ disobeyed these gaming rules at home. Like the chatting data, the middle school student rate of cheating was quite low with only 19% suggesting they ‘always’ to ‘often’ cheated and played games when they were not suppose to. The rates of cheating were also quite low for the elementary students with 72% suggesting they ‘never’ disobeyed the rules. Of those with rules, less than 6%, a low percentage 8% ‘always’ to ‘sometimes’ disobeying the rules.

c) PC-Bang rules

Female elementary students were the most regulated when asked about rules related to PC-Bang use; 59% said they were ‘never’ allowed to go to the PC-Bang compared with only 29% of the male elementary students.

A significant gender difference continued in the elementary data with 64% of the males compared with 81% of the females suggesting they ‘never’ disobeyed computer game rules. Therefore, even though the female students were more regulated they were least likely to disobey those rules. When examining the elementary female students’ preferences, PC-Bangs were not a top preference coinciding with patterns of media use and less frequent PC-Bang use. The students’ estimates of cheating were relatively high compared with the mothers’ responses which suggested that only 19% of males and 15% of females students ‘never’ disobeyed, indicating that the mothers thought the students ‘sometimes and ‘often’ disobeyed computer game rules more often than the students response⁴⁶.

The high school students were the least regulated with 43% ‘always’ allowed to go to the PC-Bang. Middle school students, who were two to three years younger, were more regulated with 46% suggesting they were ‘sometimes’ allowed to go to the PC-Bang (see appendix 11, Table 5).

⁴⁶ This difference may be linked to a lack of clarity in the rules and regulations of media use in the home.

CHAPTER FIVE: CONCLUSION

Prophesized by Alvin Toffler's *Third Wave* (1980), the 'information revolution' idea has become a global driver of change, achieved through the diffusion of ICT's around the world. Various nation states adopted policies for developing an information economy based on high-tech and software industries and a generalized technological entrepreneurialism. With the communication infrastructure the goals of these policies were to provide citizens and consumers with a communication infrastructure through which knowledge diffusion and creativity would flourish.

Following the USA's lead, Korea engaged in the development of an information infrastructure (Korean Information Infrastructure), which like its American counterpart (National Information Infrastructure) provided public access to and use of computer networks. The 1993 Korean Information Infrastructure (KII) initiatives included funding of high-speed Internet networks for homes, free networking for educational facilities and computer education programs as the preferred strategy for protecting their successful national, political and economic structures.

Where other nations, such as the United States have allowed the market to control the Internet, the Korean government continued its industrial strategy of 'Picking the Winners' to support a skilled knowledge industry workforce and supply their citizens with computer access. These strategies have included targeting access points in public spaces such as bus stations, train stations, 'cyber trains', airports, post offices, etc., and offering generous benefits to entrepreneurs willing to open PC-Bangs. But perhaps most unique was their commitment to the provision of computer access to training the computer savvy population and to develop a gaming industry.

From the late 1990s there has been growing evidence that these industrial strategies were successful in Korea. Since 1998, for example, the need for software workers has increased at an average annual rate of 14.7%, and by 2007 the Ministry of Communication and Information (MIC) expects an IT workforce of approximately 840,000 (MIC, 2003, p. 29). Although the IT industry employs 5.3% of the total workforce in Korea it accounted for 26% of Korean exports and 20% of their imports in

2001 (MIC outlook Korea, 2003, p. 17). With this in mind, the Ministry of Communication and Information suggested that “(t)here is no doubt that the IT industry will continue to be the main contributor and core industry of the Korean economy” (p. 105). Anticipating the need for knowledge workers, the government has initiated several programs “aimed at expanding the IT manpower supply” including the enlarging of overseas training opportunities, appealing to foreign workers, funding a research and development environment, and encouraging a general informatization of business” (MIC, 2002a, p. 24).

As Korea leapt up the rungs of the information society ladder, government funding and constant exhortations to once again modernize the Korean economy have been constant drivers of the country’s attempt to build its communication infrastructures. During the late 1990s the cable, satellite and telecommunication industries played a significant role in these strategies, allowing the Korean telecommunication industry to reach a global market through its extensive advancements in cell phone technology (KT, 2004). At the turn of the millennium, a time when service providers such as “AT&T of the United States, NTT of Japan and BT of Britain were experiencing difficulties growing revenues”, Korea was investing 11 trillion won into its broadband sector precipitating an astounding high-speed Internet boom (MIC, 2002a).

Access rates

“I will make Korea the best internet users in the world” president Kim Dae-Jung proclaimed as his government unveiled additional plans to promote the information society (Jee, 2002). In fact, within six short years of the launch of the first Korean Internet provider, Korea led the way with, as of 2001, 24.38 million Internet users including 7.81 million high-speed Internet users (MIC, 2002b, p. 10). This increase in broadband penetration, reaching 40% of the total households in June 2001, established Korea as the fourth largest Internet using population market, preceded only by the US, Japan and Germany in December 2000 (MIC, 2002b, p. 10). By January 2001 they had taken the title of ‘most avid Internet surfers in Asian-Pacific region’ (Toffler, 2001, p. 26). By the end of 2002, “25.6 million people, or 58 percent of the country’s population, use(d) the net at least once a month” and close to “60 percent of South Koreans over the age of six surf(ed) the Internet on a regular basis” (MIC (e),

2002). Online shopping and online stock trading have also been increasingly successful with government officials estimating that by 2002 “about 67 percent of stock investors trade online (MIC, 2002b).

In the hopes of fulfilling its goals of becoming a Third world leader, South Korea has adopted a unique route to the information society. One that establishes it as a nation worthy of further examination. Though a policy analysis provides detail of government’s intentions, it rarely considers the success or failures of these information society programs. My in-depth analysis of Korea’s unique support of their gaming industry and the actual patterns of computer use in home and in the PC-Bangs contributes to our understanding of the diverse ways information society policies can impact a nation’s media environment. Its’ highly wired educational facilities, where the majority of students have ready access to networked computers, the regular media usage in homes and numerous PC-Bangs are evidence of this fact. My media audit provided evidence to suggest that, much like Canadian and American children Korean children live in a media saturated environment. Therefore, if the information society is defined by access to the technology alone, Korea has indeed been successful. The notion of information society however is quite complex yet as seen in this Korean case study, often unintentional consequences such as digital divide, addiction, displacement and the question of computer literacy are issues that need further research.

Digital Divides

Factors contributing to the success of broadband in Korea include the government supported infrastructure development, the country’s high housing density, implementation of numerous PC-Bangs and the competitiveness created by government policies between innovative and successful IT companies (MIC, 2002a). Although extensive networking targeted universal access and computer literacy, a digital divide still exists within geographical regions in Korea. Hwang (2000) has suggested that only 15% of the rural population compared with 34% of the urban population has been given access to the Internet at home (Mun, 2001).

Though a divide exists, rates of access still remain quite high. In a short period of time Korean homes have become increasingly media saturated. The data suggested that of students surveyed upwards of 80% had access to computers and high-speed

Internet in their homes. Moreover, the heaviest users have been reported as children between six and nineteen years of age, with the Ministry of Information and Communication suggested approximately 93.4% of children in Korea are connected to the Internet in their homes. Yet the rate of connection quickly drops to only 67% of citizens in their 30s and “people in their 40s and 50s fell off at 38.9 percent and 9.6 percent, respectively” (MIC, 2002a). As in many other nations the digital divide is generational.

This tremendous drop in computer use may be attributed to the inability of the education systems to conform to the changing communication environment, particularly adult continuing education and lifelong learning programs, as evidenced in Korea’s low rates of adult usage; the lowest rates of adult participation in the advanced nations (MIC, 2002b). Though adult ICT programs may lack funding, children’s ICT schooling has remained top priority. Though nations preparing for the information society may deem computers a mandatory tool in the school setting, a debate still resonated concerning the implementation of computers in schools and the impact they may have on the development of computer literacy skills and the information society citizens of the future.

Computer Literacy

Regardless of the generational divide the Korean government has been mindful that its future workforce depended on computer savvy future workers, for this reason it has invested heavily in Internet access and IT education programs within schools. Yet my surveys revealed that although schools in Korea have been wired and numerous ICT based programs have been funded, students have not reported using them. The university data suggested that only 6% of the students ‘really like’ to use the computer at school. Similar results were found when the school-aged students were asked if they used the computer for homework assignments; only 16% of elementary students, 17% of middle school students’ and 11% of high school students use the computer at home for homework. Numerous reasons exist for the slow adoption of the computer within the school system, including lack of proper IT training for teachers, lack of appropriate curricula and support of IT education programs and a failure to understand that the technology itself is unable to impart creativity to the future workforce. Therefore,

until educational paradigms shift in Korea it is unclear how access will itself prepare the information worker.

Ohmae (2000) suggested that one of the most critical challenges of nations moving into the information society has been developing a modern education system. He suggests;

“Children should be free at school to explore ideas and inventions of their own design. Computers should be naturally available as tools- not to be taught by rote, with a teacher at the front of the room, but for students to use in simulations, research, and inquiry” (Ohmae, 2000, .p. 228-229).

I agree with Ohmae’s goals, but I am not convinced that Korea has found the way to achieve them. Though ideally the computer may be used as a tool to expand the child’s ability to search knowledge, my data suggested this was rarely the case and few children used the Internet to explore or search. Rather they geared their usage patterns towards gaming and communicating. A further examination of the data revealed that high school students, the segment of the school-aged population who are most pressured to excel in school, were often the heaviest users, suggesting they may gravitate towards the new technology as a form of escape from their continued educational regime rather than to further their education. I believe that a computer literacy society would be characterized by more than access. A computer literate society would provide its citizens, but also its educators, with the ability to use ICTs creatively and critically.

The Korean government like many nations has provided access, however, often due to lack of funding and support, they have been unable to shift the educational paradigm or even support educators in dealing with the technology used in the schools. My interviews and life experiences at the university provided evidence of the lack of technical support for faculty members and researchers, and often professors and researchers were left to their own devices to deal with numerous viruses and technical issues with regards to their computers at work.

Though technical support for research and teaching has been limited within educational institutions, one activity has continued to thrive regardless of the support systems, gaming. With abundant access at PC-Bangs offering popular titles at very reasonable fees, gaming in Korea has become as wide-spread as it is popular.

However, game playing and computer literacy are not synonymous. Though games are often the activity of choice for students, particularly male students, the question remains; what educational value may be obtained through game playing? Often games may teach the students to work within boundaries of that game, but do they teach creatively or skills that students can transfer to the work place?

Some theorists such as Ohmae suggested that the young generation of children, the Nintendo kids, will succeed in the future work force as a direct result of their gaming skills. He suggested that the games they play, particularly Role Playing games, will develop their life skills thus creating workers much more flexible, creative, imaginative, enthusiastic and more willing to take more risks than generations before them (p. 227-228). Because of their involvement with games "such as Final Fantasy, children learn to be proactive in exploring untapped terrain, and adventurous and courageous in undertaking difficult task" all skills which will be valued in the information society revolution (Ohmae, 2000, p. 227). Ohmae (2000) further contends that their only downfall will be;

"When times get tough, they react as if life were a computer game- by pushing the 'Reset' button. They seek a new job, a new location, a new career. 'Game over. Start again'" (p. 227-228)

So will games create a 'reset' culture and displace forms of learning, determination and life skills that students have traditionally acquired in their non-schooling activities, such as sports, music and peer culture?

PC-Bang Gamer Culture

"(T)his revolution will be achieved by the cultural contents industry including the game industry" (MIC, 2002a, p. 6).

Policy-makers realized that "games are no longer recognized as simple play activities; rather, they are now categorized and fostered as a new viable Korean industry" (MIC, 2002a, p. 6). Korea has supported this digital entertainment sector, particularly software developers, in hopes of transforming Korea into a gaming-export nation. Gaming has increasingly become popular among Korean youth, both at home and at the PC-Bang. Although the PC-Bang was conceived with intent to narrow the

digital divide, my media audit data and participatory observations confirmed that the PC-Bangs had become a male-dominated gaming environment. This study found that even students with high rates of access to high-speed Internet in their homes often enjoyed gaming at the PC-Bang. Though female participants were not excluded, they often did not enjoy the smoky, dark atmosphere nor the selection of games available, and as a result made up only a small minority of PC-Bang users. Also, results indicate that their preferred computer activities did not require high speed Internet nor ‘top-of-the-line’ graphic capabilities, therefore, many female users preferred to stay at home and email or chat online.

One of the most prominent features of Korea’s approach to rapid modernization is its support of gaming. The culture of gamers is further encouraged to play computer games by professional gamers (pro-gamers) who have realized ever increasing success and fame. With pro-gamers’ annual winnings reaching upwards of \$100, 000 (US), high profiled sponsorships and television programs of pro-gaming events, pro-gaming has recently become a popular career choice for high school boys (Kim, 2004)⁴⁷. A young pro-gamer revealed to the Korean Herald newspaper (2000) that “Being online helps me to be a whole person”. He further offered that his mother was worried about his excessive game playing, but now that it has become his job, a job sponsored by a major corporation, Samsung, she feels more at ease (MacIntyre & Kim, 2000). Korean pro-gamers are not only supported by the industry but have also been supported by government agency such as the KDGI (Korean Development Gaming Institute).⁴⁸ Recent KGDI’s initiatives have included educating families on effective gaming techniques through a ‘Family Game Camp’ (KGDI, 2003, p. 7-8).

Government policies to encourage the gaming industry have been helped immensely by the proliferation of 25,000 PC-Bangs across Korea. One consistency within the elementary through university student sample was the preference of attending the PC-Bang with friends. The emphasis of going to the PC-Bang with friends

⁴⁷ Information obtained from interview with pro-gamers suggested that despite the hype of economic success in the pro-gaming circuit, on average, pro-gamers make less than foreign English teachers and often have to pay for room and board from their 1 million won a month salary

⁴⁸ Finally, to expand the base for game education through the preparation and distribution of technical books and remote education, the institute will establish a game teaching material developing committee and carry out open and lifelong education for both existing and new employees in the gaming (KGDI, 2003, p. 7-8).

and forming teams or guilds further promoted the gaming culture through reinforcement within the peer culture. Educational psychologists Joon-Mo Kwon suggested that "If everyone you know plays Lineage, you have to play it", suggesting that the game's goal of winning and working in clans or guilds "speaks to the Korean spirit" (Lavander, 2001).

The PC-Bang data revealed that the primary users were high school- and university-aged males, thus revealing both significant gender differences and variations in rates of attendance related to the students age. Though Korean enthusiasm for education may play a role in their school participation and their studying habits, it is interesting to note that of the school-aged student, it was the high school student that frequented the PC-Bang the most. This is intriguing in that they must study hardest of all Korean students in order to fulfil university entrance exam requirements and they are generally under more pressure to achieve academic prowess. The question then arises, are they using this to escape from the pressure of academia, and if so, how has it impacted their rates of displacement of homework and academic based activities?

Gaming and the Internet have provided Korean youth with a freedom which, because of strict social conformity, has not existed in their lives. Korean society is based on Confucian ideals, which prescribe strict language and behavioural rules dictated by social hierarchy. The Internet, unlike real life, provides a space where these rules may not apply; where gender and age can be fictional and the hierarchical status of citizens can change, thus, I believe allowing Korean users to feel a sense of freedom that they may not enjoy in their everyday lives. A 2001 Time Magazine article exploring the Korean gaming culture quoted one Lineage player: "In reality, I have few ways to express myself or show off, ...But in the game, if I put in a little effort, many people will know who I am" (Lavander, 2001).

The current youthful population has, unlike their parents and grandparents, not experienced economic, political or social hardships, and have considerably more freedom both financially and leisurely. Lack of green space in urban areas necessitates the PC-Bang to be one of the few spaces where youth can collectively engage in playful leisure activities. The competitive nature of the Korean culture has fuelled the increasing popularity of gaming by providing accessible spaces where young people can play competitively among friends.

Future Shock

The rapid industrialization and informatization have resulted in the current Korean population having to quickly assimilate and merge their traditions with the modern as Korea enters the information society. These changes have rapidly altered children's mediated environment at home and increasingly out-of-the-home. These changes have also been compounded by increases in maternal employment, shifting in extended family living styles, and the rise of consumer culture, all within the rapidly shifting economic, political and cultural framework of the push towards an information society.

Though gaming has become a state sponsored entertainment activity, support for gaming industry have not resulted in equality of access, a computer literate citizenship nor has it narrowed the knowledge gap among generations. The situation is similar to that found by Livingston in Britain where,

“parents can no longer rely on their own childhood experiences to guide them in managing the spatial and temporal structures of their children's' moral, domestic an family life- and this is particularly evident in relation to new media” (Livingstone, 2004).

The widening of the generational divide between parents and children was found in this study as well. Korean parents are increasingly pressured to adopt new technologies into their families for the good of the nation, and most importantly to enable their child to succeed in their highly competitive workforce. However, as these children readily adapt the new technology into their lives, concerns of excessive use and the impact of the new technology haunt Korea families. Akira (1998) has suggested that those “parents who couldn't buy computers found that their children were unable to follow their classmates' conversations, and were subjected to bullying. Some of these kids were even driven to suicide”, thus are increasing the parental pressure to provide computer and Internet access for their children within their homes. Therefore, I believe that Korean parents are increasingly pressured to agree with and have faith in the long term strategies developed by their government; even if they have concerns about their children's increasingly media saturated lives.

The audit data has suggested that parents have indeed provided access to ICTs in their home. Though the data does not seem to reveal a digital divide among the genders with regards to access to the technology, the time estimates reveal that

indeed the computers and Internet are more popular with the male than the female students who spend more time watching television. Though the allotment of time within the female population may vary slightly, gaming is overwhelmingly the most favoured activity for the male population.

In their rapid movement towards the future, Korea has not only astonished the world by rising to become a world power, but it has faced difficulties in its society, including issues directly related to the highly supported industry of gaming. Though Ohmae's promised the game-educated population would become leaders of the new economy the Korean case study also provides a closer look at the impact gaming may have on a nation, particularly in the light of the recent development of addiction centers and several unintended consequences. Though the Korean government, through the KGDI, encourages gaming, they acknowledge the proliferation of 'hard-core' gamers and the possible problems resulting from excessive use and addiction (KDGI, 2003). A survey in 2001 by the state-run Information Culture Center of Korea and Yonsei University's professor Hwang Jong-min indicated that "62 percent of domestic users are 'moderately' addicted to various online activities" and " 72.3 percent of them were reported to have little awareness of their addiction"⁴⁹ (Kim , 2001).

My study indicated that 44% of the university students 'totally agreed' that Internet use could be addictive. It also indicated that close to one-quarter of high school and middle school students wished they could go online when they were unable to do so.

The Korean government has also addressed the need to develop 'game-aholic' treatment programs with local public psychiatric treatment centers to help those in need. Treatment centres opened in April 2002 and approximately 30 new cases were reported each week. Addiction Centre Counsellor Lee Su-Jin suggests that "(p)arents are only now becoming aware of the seriousness of the problem" (Bramwell, 2004). Concern reached a new level in winter 2001 when a 24 year-old PC-Bang user in Kwanju died after 86 hours of straight game playing (Gluck, 2002). Kim Kyung-Jae's

⁴⁹ "those Internet users are spending five to 10 hours a day surfing the internet, compared with a daily average internet use of three hours, showing the possibility of acceleration of the new kind of addiction" (Kim, 2001).

death added to the rising concern over students' PC-Bang usage patterns. Earlier that same year the Korean government disallowed minors in the PC-Bang after 10 p.m. under pressure from Korean parents concerned that their children were wasting valuable study time at the PC-Bang.

The impact of massive informatization has recently been seen as a “major channel for the darker aspects of society” with Korean “Teenage girls... offering their bodies for sex at Internet chat lines” and “husbands complain(ing) that their wives are frittering away too much of their day chatting on the Internet, thus stirring a social controversy that online chatting has generated the seeds that could rupture family cohesion” (Kim, 2001)⁵⁰. With the rapid changes within Korea society over the past 50 years, new elements of social change have often been blamed on new technologies, as these technological uses become inherently linked with family and everyday life. My research in Korea not only helped me understand the gaming phenomenon, but also provided a personal look at the impact of computer gaming on family and friends. A close friend had lost his house, wife, child and a small fortune because of massive debt and now has delved heavily into his online persona in Lineage; another friend, a bright 17-year-old, became so addicted to Lineage that she ran away from home because her parents would not accept her heavy gaming habits and dropped out of high school, thereby ruining any chance of gaining a post-secondary education. She now spends her days in the PC-Bang.

Though the gaming industry is now associated with various crimes and misdemeanours, these pale in comparison to the recent incidences of actual physical retaliation for online unsportsmanlike conduct such as killing or stealing in online games, in which retribution is sought via physical assault. In 2001 offline player-killings (offline PK)⁵¹ hit the international news when a 21-year-old player was severely beaten in a Seoul PC-Bang by gaming rivals. These offline-PKs have become a concern for the Seoul authorities as they see the merging of real life gang crimes expanding into children's virtual gaming environments.

⁵⁰ the information culture centre of Korea (ICCK) report also suggested that “of the 1,167 cases that have negatively impacted family function, internet chatting was the origin of an illicit affairs 44.2 percent of them, and in 22 percent of cases a wife's online chat addiction led to divorce” (Kim, 2001).

⁵¹ The term ‘Offline Player Killing’ to describe an assault is a Korean invention. No one has reportedly been killed as a result of gaming vengeance.

Although addiction is often at the forefront of Internet debate, other negative impacts have resulted in the development of a cyber-crimes policing unit in Seoul. Korean authorities investigate three common types of cyber-crimes: “hacking into others’ accounts to steal weapons, stealing users’ online identification and fraud connected to the sale of virtual arms” (Levander, 2001). The Korean gaming industry itself has been forced to deal with issues of piracy and cheating, from amateur hackers such as a young 14-year-old runaway who has been convicted of 128 fraudulent deals resulting in “about \$10,000 by promising to sell (gamers) virtual weapons but not delivering the goods after he was paid” and increasingly from organized crime groups currently engaged in a “brisk side business trading in virtual weapons and levying taxes in the game”, taxes that assure the livelihood of players’ avatars in the game; “They guard people for money in the game, says the sweet-faced girlfriend of one gangster, as she leans back into a red plush couch at a Seoul bar. It’s just like reality”(Levander, 2001).

The flourishing gaming market is expected to further grow as gaming ‘Bangs’ merge with other media rooms and virtual reality gaming environments as multimedia capabilities increase ⁵². Though the Korean population has seemingly embraced the computer and Internet, this Korean case study provides a unique examination of the choices made to harness the power of the gaming industry and use this momentum to further Korea’s goal of becoming an information society, but it is also posed the question about whether a gaming culture will lay the knowledge and skills infrastructure foretold of that information society.

⁵² The size of the Korean game market is expected to reach US\$ 3,389 million in 2003 and US\$ 4,293 million in 2005. However, the growth of arcade games and game rooms is expected to decrease for the time being (KGDI, 2003, p. 22).

APPENDICES

APPENDIX 1. MOTHERS SURVEY (SPRING 2002)

- 1) Please put your phone number for ID purposes _____-_____-_____
- 2) Gender (circle one) Male Female
- 3) Family Income level per month?_____
- 4) Do you (the mother) work outside the home? ____yes ____no
- 5) How many hours a day do you usually work outside the home? _____
- 6) Who is home when your child comes home from school?
(Please check all that apply)
- ____ Mom ____ Dad ____ Nanny/babysitter
 ____ Grandparents ____ No one at home ____ other ()
- 7) How much time do they spend doing the following? In Your opinion (please try to guess and please don't consult with your child)

	School Day	Non-School Day
a) Go to hogwan	__ hours __ mins.	__ hours __ mins.
b) Listen to music	__ hours __ mins.	__ hours __ mins.
c) Watch TV at home	__ hours __ mins.	__ hours __ mins.
d) Watch movies on the VCR at home	__ hours __ mins.	__ hours __ mins.
e) Play video/computer games at home	__ hours __ mins.	__ hours __ mins.
f) Use computer (not for games) at home	__ hours __ mins.	__ hours __ mins.
g) Play cell phone	__ hours __ mins.	__ hours __ mins.
h) Go to video bang	__ hours __ mins.	__ hours __ mins.
i) Go to PC-Bang to play online games	__ hours __ mins.	__ hours __ mins.
k) Go to play small road side arcade games	__ hours __ mins.	__ hours __ mins.
j) Going to the arcade	__ hours __ mins.	__ hours __ mins.
l) Go to comic room or book room to read	__ hours __ mins.	__ hours __ mins.

8) Of the above activities which media related activity would you like to see your child engage in more?

_____.

9) How many hours a DAY? Do you (the mother) spend watching TV at home?

_____hours _____minutes

10) How many hours a DAY? Do you (the mother) spend on the computer at home?

_____hours _____minutes

11) How computer savvy do you consider yourself? How good are you at the computer?

_____ *Very good*

_____ *So-So*

_____ *Not very good*

_____ *Not good at all*

12) How often does your child do the following computer activities **AT HOME**.

	Always	Sometimes	Rarely	Never	Don't have a computer at home
Homework (hangul)					
Games					
Surfing the net					
Chatting online					
Messenger					
email					
other					

13) Have you ever heard of a blocking software programs for the computer?

_____yes _____no

a) If so what is the name of the program you have?

17) How concerned are you about your child using the following media

- 1- *very concerned*
- 2- *somewhat concerned*
- 3- *not concerned*
- 4- *not at all concerned*
- 5- *don't use*

	1	2	3	4	5
Watch TV at home					
Play online computer games at home					
Playing video games at home					
Reading comics					
Play internet games on cell phone					
Play computer and online games at pc bang					
Going to the arcade					
Other activity_____.					

18) What is your child's favourite video/computer game?_____.

19) What is their favourite video/computer game rated as?_____

20) These are some changes that we will face in the future. What are the three changes that you think will come true?

- _____ *reduce of materialism*
- _____ *work will be less important*
- _____ *advance in technology*
- _____ *strengthening in education*
- _____ *respect for the authority*
- _____ *simple and natural friendly lifestyle*
- _____ *increase in importance of family life*

21) We'd like to know your opinion on the Internet. Please answer the following questions

- 1) *always* 2) *often* 3) *sometime*
 4) *rarely/never* 5) *doesn't apply to me*

	1	2	3	4	5
How often does you child disobey time limits your set for their computer usage?					
How often does you child disobey time limits your set for their Television viewing?					
How often does you child prefer to spent time on-line rather than with the rest of the family?					
How often does you child prefer to spent time watching television rather than with the rest of the family?					
How often does your child seem withdrawn from others since discovering the Internet?					
How often have you caught your child sneaking on-line against your wishes?					
How often does you child seem more tired and fatigued than he or she did before the Internet came along?					
How often does your child choose to spend time on-line rather than doing once enjoyed hobbies and /or outside interests?					

22) We'd like to know your opinion on the Internet.

1) *strong agree* 2) *somewhat agree* 3) *neutral* 4) *somewhat disagree* 5) *strongly disagree*

	1	2	3	4	5
Access to the Internet helps my child with their schoolwork					
Online, my child discover fascinating useful things they never heard of before					
I am concerned that children would give out personal information about themselves when visiting Web sites or chat rooms					
I am concerned that my child/children might view sexually explicit images on the Internet					
Children who do not have Internet access are at a disadvantage compared to their peers who do not have Internet access.					
Going online too often might lead children to become isolated from other people					
The Internet can help my children learn about diversity and tolerance					
People worry too much that adults will take advantage of children on the Internet					
Families who spend a lot of time online talk to each other less than they otherwise would					
My children's exposure to the Internet might interfere with the values and beliefs I want to teach them.					
Children who spend too much time on the Internet develop anti-social behaviour.					
The Internet is a safe place for my children to spent time					
The Internet can bring my children closer to community groups and churches					
Having Internet access at home is really for children whose parents know a lot about computers					
It is expensive to subscribe to an Internet service					
I have better things to do with my money than spend it going online					
My family can get access to the Internet from other places so we do not really need it at home					
I often worry that I won't be able to explore the web with my children as well as other parents do					

	1	2	3	4	5
I do not mind when advertisers invite my children to web sites to tell them about their products					
My children are not interested in having an Internet connection at home					
My computer is not powerful enough to handle an Internet connection					

APPENDIX 2. ELEMENTARY STUDENT SURVEY

1) Phone number for id purpose only ___-___-_____

2) Personal Information

a) Birth year; 19__ __

b) Gender; *male*_____ *female*_____

3) How many years ago did you get a computer? ___months ___years

4) Do you have Internet access?

*High speed*_____ *Modem*_____ *don't have Internet*
*access*_____

5) What kind of media do you have at home?

	Total at home
Stereo/CD player	
Game-boy/ handheld/ video game console	
Disk-man, walkman, Mp3 player	
Computer	
Computer games	
VCR	
TV	
Cell-phone	
Phone	

6) What kind of media do you have in your bedroom?

	Total in bedroom
Stereo/CD player	
Game-boy/ handheld/ video game console	
Disk-man, walkman, Mp3 player	
Computer	
Computer camera	
VCR	
TV	
cell-phone	
Phone	

7) How much time do you spend with the following media on an average school day and weekend day

(0 minutes, 10 minutes, half an hour, 1 hour, 3 hours.....)

	School day	Weekend
b) Listen to music		
c) Watch TV at home		
d) Watch movies on your VCR at home		
e) Video/computer game at home		
f) Computer not for games at home		
g) Hand phone games		
h) Watch movies at video-Bang		
i) Computer/video games at PC-Bang		
j) Small street side arcade game		
k) Arcade		
l) Comic and book-Bang		
a) 'Hogwan'- Institute		

8) Of these entertainment activities above, tell us the name of the *one* activity you wish you could do *more* of _____

9) How often do you do the following computer activities **AT HOME?**

	Always	Sometimes	Rarely	Never	Don't have a computer at home
Homework (hangul)					
Games					
Surfing the net					
Chatting online					
Messenger					
email					
other					

10) How often do you do the following computer activities at the PC-BANG?

	Always	Sometimes	Rarely	Never	Don't have a computer at home
Homework (hangul)					
Games					
Surfing the net					
Chatting online					
Messenger					
email					
Other					

11) Currently how often do you go to the PC-Bang?

- _____ *everyday*
- _____ *3-4 times a week*
- _____ *once to twice per week*
- _____ *once or twice per month*
- _____ *once or twice per year*
- _____ *other ()*

12) Who do you go to the PC-Bang with?

- _____ *alone* _____ *friends* _____ *sibling* _____ *other ()*

13) When you go to the pc-bang on average how long do you stay?

_____ *hrs* _____ *mins.*

14) What is the longest amount of time you have ever spent at the pc-bang?

_____ *hrs* _____ *mins.*

15) What is your favourite *computer/video* game?

First favourite _____
 Second favourite _____

16) What is your favourite *TV show*?

First favourite _____
 Second favourite _____

17) Please use the following scale for the following questions

1-always 2-often 3-rarely 4-never 5- *doesn't apply to me*

	1	2	3	4	5
a) Are you allowed to play computer games at home?					
b) Do you play computer/video games at home when you are not supposed to?					
c) Are you allowed to chat online at home?					
d) Do you chat online at home when you are not supposed to?					
e) How often do you meet someone you have been chatting to online that you have never met before?					
f) How often do you form new relationships with fellow on-line users?					
g) Are you allowed to go to the PC-Bang?					
h) Do you always tell your parents when you go to the PC-Bang?					
i) Do you ever go to the PC-Bang when you are not supposed to?					
j) Are your computer privileges taken away when you are being punished for something?					
k) Are your TV privileges taken away when you are being punished for something?					
l) How often do you find that you stay on-line longer than you intended?					
m) How often do you find yourself watching TV longer than you intended?					
n) -How often do you neglect homework to spend more time on-line?					
o) How often do you neglect homework to spend more time watching TV?					
p) How often do you fear that life without the Internet would be boring, empty, and joyless?					
q) How often do you fear that life without TV would be boring, empty, and joyless?					
r) How often do you lose sleep due to late-night log-ins?					
s) How often do you lose sleep due to late-night TV viewing?					
t) How often do others in your life complain to you about the amount of time you spend on-line?					
u) How often do others in your life complain to you about the amount of time you spend watching TV?					
v) How often do you feel preoccupied with the Internet when off-line, or fantasize about being on-line?					
w) How often do you feel preoccupied with TV when not watching, or fantasize about watching?					

	1	2	3	4	5
x) How often do you choose to spend more time on-line over going out with others?					
y) How often do you choose to spend more time watching TV over going out with others?					
z) How often do you or your parents buy video game CD's					
i) How often do you or your parents rent video game CD's					

18) How many email addresses do you have? _____

19) When did you get your first email address? _____ Year

20) Who got/helped you get an email account?

parents____ sibling____ friend____ myself_____

21) Are your parents computer savvy?

very____ somewhat____ not really____ don't have a clue_____

22) How much of an allowance do you get per week? _____ won

23) What do you most often spend your allowance on?

a)_____ b)_____ c)_____

24) How has your TV viewing changed since the introduction of the computer into your home?

_____ Watch more TV

_____ Watch less TV

_____ Watch same amount as before

25) What is the birthing order of your siblings (this is a common question for Korean students).

_____ brother _____ sisters _____ yourself

Your Height; _____ cm Your Weight; _____ kg

26) Mother: a) Occupation; _____
b) Highest grade finished; _____

27) Father: a) Occupation; _____
b) Highest grade finished; _____

28) Where do you live?

Apartment _____ *house* _____ *shop/house* _____ *other()* _____

29) Where were you ranked last year in your class (they rank their students instead of giving them letter grades

honours _____ *above average* _____

average _____ *below average* _____

30) Do you have your own bedroom (you are alone and don't have to share with anyone)?

Yes _____ *No* _____

31) Do you have anything to add about the survey or your media usage at home or elsewhere? _____

APPENDIX 3. MIDDLE SCHOOL AND HIGH SCHOOL STUDENT SURVEY (SPRING 2002)

1) Personal Information

a) Birth year; 19__ __

b) Gender; male_____ female_____

2) How many years ago did you get a computer? ____months ____Years

3) Do you have Internet access?

*High speed*_____ *Modem*_____ *don't have Internet access*_____

4) What kind of media do you have at home?

	Total at home
Stereo/CD player	
Game-boy/ handheld/ video game console	
Disk-man, walkman, Mp3 player	
Computer	
Computer camera	
VCR	
TV	
Cell-phone	
Phone	

5) What kind of media do you have in your bedroom?

	Total in bedroom
Stereo/CD player	
Game-boy/ handheld/ video game console	
Disk-man, walkman, Mp3 player	
Computer	
Computer games	
VCR	
TV	
Cell-phone	
Phone	

6) How much time do you spend with the following media on an average school day and weekend day

(0 minutes, 10 minutes, half an hour, 1 hour, 3 hours.....)

	School day	Weekend
b) Listen to music		
c) Watch TV at home		
d) Watch movies on your VCR at home		
e) Video/computer game at home		
f) Computer not for games at home		
g) Hand phone games		
h) Watch movies at video-Bang		
i) Computer/video games at PC-Bang		
j) Small street side arcade game		
k) Arcade		
l) Comic and book-Bang		
a) 'Hogwan'- Institute		

7) Of these entertainment activities above, tell us the name of the *one* activity you wish you could do *more* of _____

8) How often do you do the following computer activities **AT HOME**?

	Always	Sometimes	Rarely	Never	Don't have a computer at home
Homework (hangul)					
Games					
Surfing the net					
Chatting online					
Messenger					
email					
other					

9) How often do you do the following computer activities at the PC-BANG

	Always	Sometimes	Rarely	Never	Don't have a computer at home
Homework (hangul)					
Games					
Surfing the net					
Chatting online					
Messenger					
email					
Other					

10) Currently how often do you go to the PC-Bang?

- everyday
 3-4 times a week
 once to twice per week
 once or twice per month
 once or twice per year
 other ()

11) Who do you go to the PC-Bang with?

- alone friends sibling other ()

12) When you go to the pc-bang on average how long do you stay?

___hrs ___mins.

13) What is the longest amount of time you have ever spent at the pc-bang?

___ hrs ___mins.

14) What is your favourite *computer/video* game?

First favourite_____

Second favourite_____

15) What is your favourite *TV show*?

First favourite_____

Second favourite_____

16) Please use the following scale for the following questions

1-always 2-often 3-rarely 4-never 5- *doesn't apply to me*

	1	2	3	4	5
a) Are you allowed to play computer games at home?					
b) Do you play computer/video games at home when you are not supposed to?					
c) Are you allowed to chat online at home?					
d) Do you chat online at home when you are not supposed to?					
e) How often do you meet someone you have been chatting to online that you have never met before?					
f) How often do you form new relationships with fellow on-line users?					
g) Are you allowed to go to the PC-Bang?					
h) Do you always tell your parents when you go to the PC-Bang?					
i) Do you ever go to the PC-Bang when you are not supposed to?					
j) Are you computer privileges taken away when you are being punished for something?					
k) Are you TV privileges taken away when you are being punished for something?					
l) How often do you find that you stay on-line longer than you intended?					
m) How often do you find yourself watching TV longer than you intended?					
n) -How often do you neglect homework to spend more time on-line?					
o) How often do you neglect homework to spend more time watching TV?					
p) How often do you fear that life without the Internet would be boring, empty, and joyless?					

	1	2	3	4	5
q) How often do you fear that life without TV would be boring, empty, and joyless?					
r) How often do you lose sleep due to late-night log-ins?					
s) How often do you lose sleep due to late-night TV viewing?					
t) How often do others in your life complain to your about the amount of time you spend on-line?					
u) How often do others in your life complain to your about the amount of time you spend watching TV?					
v) How often do you feel preoccupied with the Internet when off-line, or fantasize about being on-line?					
w) How often do you feel preoccupied with TV when not watching, or fantasize about watching?					
x) How often do you choose to spend more time on-line over going out with others?					
y) How often do you choose to spend more time watching TV over going out with others?					
z) How often do you or your parents buy video game CD's					
i) How often do you or your parents rent video game CD's					

17) How many email addresses do you have? _____

18) When did you get your first email address? _____ Year

19) Who got/helped you get an email account?

*Parents*____ *sibling*____ *friend*____ *myself*_____

20) Are your parents computer savvy?
very_____ somewhat_____ not really_____ don't have a clue_____

21) How much of an allowance do you get per week? _____ won

22) What do you most often spend your allowance on?
a)_____ b)_____ c)_____

23) How has your TV viewing changed since the introduction of the computer into your home?

_____ *Watch more TV*

_____ *Watch less TV*

_____ *Watch same amount as before*

24) What is the birthing order of your siblings (this is a common question for Korean students).

_____ *brother* _____ *sisters* _____ *yourself*

Your Height; _____ cm Your Weight; _____ kg

25) Mother: a) Occupation; _____
b) Highest grade finished; _____

26) Father: a) Occupation; _____
b) Highest grade finished; _____

27) Where do you live?
*Apartment*_____ *house*_____ *shop/house*_____ *other()*_____

28) Where were you ranked last year in your class (they rank their students instead of giving them letter grades)

*honours*_____ *above average*_____

*average*_____ *below average*_____

29) Do you have your own bedroom (you are alone and don't have to share with anyone)?

*Yes*_____ *No*_____

30) Do you have anything to add about the survey or your media usage at home or elsewhere?_____

APPENDIX 4. UNIVERSITY STUDENT SURVEY (FALL 2001)

Personal information;

Gender: male _____ female _____

Age: _____ years

Education: what year of university are you in? _____

1) Do you have a computer at home? Yes _____ No _____

a) Do you have an internet connection at home? Yes _____ No _____

i) if yes, how do you access the Internet?

Modem _____ broadband _____

2) Please check the kind of media that you have in your room at home.

- a) _____ TV
- b) _____ VCR
- c) _____ stereo/CD player/radio
- d) _____ video game consoles (including game-boy, handheld game machines)
- e) _____ computer
- f) _____ Internet
 - i. if yes, how do you access the internet in your room at home
_____ modem _____ Broadband
- g) _____ phone (excluding cell-phones)
- h) _____ cell phones
- i) _____ books

3) Parental jobs; MOM _____
DAD _____

4) What is your total house-income per month?

- a) _____ 100,000 won
- b) _____ 100-200,000 won
- c) _____ 200-300,000 won
- d) _____ 300-400,000 won
- e) _____ 400-500,000 won
- f) _____ 500,000 won

5) What was your GPA in the last term/semester? _____ point.

6) Where do you live?

- a) _____ house
- b) _____ apartment
- c) _____ dorm
- d) _____ home-stay
- e) _____ live by myself
- f) _____ other

7) Who do you live with now?

- a) _____ parents
- b) _____ relatives
- c) _____ brother, sister
- d) _____ friend/fellow students (including dorms)
- e) _____ other

8) Do you have a boyfriend or a girlfriend? Yes _____ No _____

9) Please rate how much you like the following

1) really like	2) like	3) don't like	4) really don't like	5) never
----------------	---------	---------------	----------------------	----------

- a) _____ drinking alcohol
- b) _____ travelling
- c) _____ shopping
- d) _____ homework
- e) _____ working out or do sports
- f) _____ spent time with family
- g) _____ meet with friends
- h) _____ listen to music/ hobbies
- i) _____ other

10) rate how much you like to do the following media related activities

1) really like	2) like	3) don't like	4) really don't like	5) never
----------------	---------	---------------	----------------------	----------

- a) _____ use computer at the PC-Bang (not for games)
- b) _____ go to the PC-Bang to play games
- c) _____ use computer at home (not for games)
- d) _____ play computer games at home
- e) _____ use computer at school (for _____) (ex. Chatting)
- f) _____ watch TV at home
- g) _____ watch TV other places (_____) (ex. Video-Bang)
- h) _____ go to the movies
- i) _____ go to the singing room (norebang)
- j) _____ go to the arcade
- k) _____ read books (comics, novels, etc.)
- l) _____ read books for school (textbooks)
- m) _____ other _____

11) Rate how much you like to play the following types of games

	Really like	like	Don't like	Don't really like	Never play
Adventure, maze (Super Mario Bros)					
Puzzle (Tetris, etc.)					
Educational games					
Fighting games (Mortal Kombat, etc)					
Shooting games (Rainbow 6, etc)					
Sports (fifa)					
Racing (car racing games)					
Role playing (sims, etc)					
Multiplayer or online games (fortress, Lineage)					
Other (_____)					

12) How much time per week do you spent for each activity?

- a) play online games at home _____ hours _____ minutes
- b) play computer games at home _____ hours _____ minutes
- c) play video games at home _____ hours _____ minutes
- d) play other electronic games at home _____ hours _____ minutes
- e) play online games at the PC-Bang _____ hours _____ minutes
- f) play computer games at the PC-Bang _____ hours _____ minutes
- g) go to the arcade _____ hours _____ minutes
- h) play small hand-held games _____ hours _____ minutes
- i) play internet games on cell-phones _____ hours _____ minutes

13) Have you ever used the PC-Bang? ____ yes ____ no

i) if yes, please answer the following

a. Which time of the day do you most often go to the PC-Bang?

- i. ____ Morning
- ii. ____ Afternoons
- iii. ____ evening
- iv. ____ night
- v. ____ irregular
- vi. ____ other

b. currently how often do you go to the PC-Bang

- i. ____ everyday
- ii. ____ 3-4 times a week
- iii. ____ once to twice a week
- iv. ____ once to twice a month
- v. ____ once to twice a year
- vi. ____ other (_____)

c. Who do you go to the PC-Bang with?.

- i. ____ alone
- ii. ____ friends
- iii. ____ family
- iv. ____ other (_____)

d. Why do you go to the PC-Bang? (please be specific)

e. How much do you like to do the following activities as the PC-Bang?

1) really like	2) like	3) don't like	4) really don't like	5) never
----------------	---------	---------------	----------------------	----------

- i. _____ email
- ii. _____ chatting
- iii. _____ visit websites (hobbies or community interest groups)
- iv. _____ online games
- v. _____ research for school assignments or get educational information
- vi. _____ watch TV, broadcast, listen to radio or watch videos
- vii. _____ downloads music for free
- viii. _____ shopping on the internet/find shopping information
- xi. _____ other (_____)

f. Which of the following have you experienced because of your PC-Bang use?

	always	sometimes	rarely	never	N/A
Get home late					
Skip classes because I am too tired					
Couldn't finish my homework					
Late for appointment					
Didn't meet friends as much as before					

14) Do you think students are becoming addicted to the following media?

	Strongly agree	agree	disagree	Strongly disagree
Comics				
TV				
Videogames/computer games				
Online games				
Internet				
Chatting				
PC-Bang				
Other (_____)				

- ii. Thank you very much for taking the time to answer these questions. If you're interested in a focus group on PC-Bangs or wish to engage in a more in-depth interview in the future please leave your name and telephone number and we will contact you.

Name _____ Telephone _____

(please indicate which language you would be able to use during the interview or focus group)

_____ English interview or focus group (this may be a great opportunity to practice your conversational English!)

_____ Korean interview or focus group.

- iii. Is there anything else you would like to add regarding PC-Bangs?

APPENDIX 5. PERSONAL INFORMATION

(* denotes a significant difference of < .005 within the data set)

1) Highest grade mother finished in school

		middle		high		university		other		N
		%	N	%	N	%	N	%	N	
Elementary student	M	3	7	33	77	48	113	17	39	236
	F	6	14	41	94	44	100	9	20	228
	t	5	21	37	172	46	216	13	59	468
Middle school student	M	14	32	66	149	20	45	0	0	226
	f	7	8	60	70	33	39	0	0	117
	t	12	40	64	219	25	84	0	0	343
High school students	M	15	20	68	93	18	24	0	0	137
	F	25	58	63	145	12	28	0	0	231
	t	21	78	65	238	14	52	0	0	368
University students	M	39	40	58	60	3	3	0	0	103
	f	22	26	58	82	8	9	0	0	117
	t	30	66	65	142	6	12	0	0	220

2) Highest grade Father finished in school

		middle		high		university		other		N
		%	N	%	N	%	N	%	N	
Elementary student	M	4	10	25	57	57	133	14	33	233
	F	5	12	32	73	52	120	12	27	232
	t	5	22	28	130	54	253	13	60	465
Middle school student*	M	11	25	57	128	31	70	0	0	223
	f	3	3	47	52	51	56	0	0	111
	t	8	28	54	180	38	26	0	0	334
High school students	M	11	15	53	71	35	47	0	0	226
	F	19	43	59	133	22	50	0	0	133
	t	16	58	57	204	27	97	0	0	359
University students	M	23	23	57	58	21	21	0	0	102
	f	10	12	64	76	26	31	0	0	119
	t	16	35	61	134	24	52	0	0	221

3) Income level for families

Mother's responses	male		female		total	
	%	N	%	N	%	N
100	10	20	9	37	10	57
100-200	33	65	33	136	33	193
200-300	29	58	29	109	28	167
300-400	10	19	15	57	13	76
400-500	10	20	10	38	10	58
500	8	15	6	23	7	38
total		197		394		589

4) Where do you live? Student responses

		house		apartment		dorm		R&B		Single room		business		total
middle	M	44	109	51	127							5	12	248
	F	49	63	50	65							2	2	129
	T	46	172	51	191							4	14	377
high	M	56	86	41	64							3	5	155
	F	57	101	38	101							5	14	265
	T	56	236	39	165							5	19	420
university	M	35	62	42	73	5	8	1	1	18	31			175
	F	36	88	58	144	4	9	0	0	3	7			248
	t	36	150	51	217	4	170		1	9	38			423

5) Do you have your own bedroom (you are alone and don't have to share with anyone)?

		yes		no		total
		%	N	%	N	N
elementary	M	55	158	45	131	289
	f	60	160	40	106	237
	Total	57	318	43	237	555
high	M	61	159	39	100	259
	F	71	95	29	38	133
	Total	65	254	35	138	392
middle	M	82	134	18	29	163
	F	72	201	28	77	278
	Total	76	335	24	106	441

6) Do you (the mother) work outside of the home?

		yes		no		total
		%	N	%	N	
Elementary*	male	93	185	8	15	200
	Female	57	240	41	165	405
	total					605

7) How many minutes a day do you work outside of the home?

Gender of students	M	N	SD
Male	515.49	195	210.07
Female	282.94	401	268.29
total	359.03	596	273.28

8) Who is home when your child comes home from school?

	male		female	
	%	N	%	N
Mom	58	114	66	268
Dad	12	24	8	31
Nanny/babysitter	2	3	2	6
Grandparents	14	28	12	49
No one at home	23	46	21	86

9) Where were you ranked last year in your class

		high		middle		low		total
		%	N	%	N	%	N	
elementary	M	29	81	56	156	16	44	281
	F	30	78	60	157	10	26	70
	t	29	159	58	313	13	70	542
middle	M	40	114	40	113	21	60	287
	F	29	40	44	60	27	36	136
	t	36	154	41	173	23	96	423
high	m	27	43	48	76	25	40	159
	F	22	58	52	137	26	69	264
	t	24	101	50	213	26	109	423

APPENDIX 6. ACCESS TO MEDIA IN THE HOME

1) How has your TV viewing changed since the introduction of the computer into your home?

	gender	increase		decrease		Stayed the same		total
		%	N	%	N	%	N	
Elementary	M	18	50	38	105	44	123	278
	f	19	47	38	95	43	108	250
	Total	18	97	38	200	44	231	528
middle	M	13	37	50	139	37	105	278
	F	19	25	39	52	43	58	135
	total	15	62	46	191	39	160	413
high	M	6	9	60	96	35	56	161
	F	13	37	50	139	37	101	277
	total	11	46	54	235	36	157	438

2) What kind of media do you have at home?

		TV		VCR		Video games		computer	
		%	N	%	N	%	N	%	N
Elementary	M	99	292	78	230	44	129	96	282
	f	99	271	84	230	38	104	94	257
	t	99	563	81	460	41	233	95	539
Middle*	M	90*	267	78	232	28	83	76	225
	F	98*	139	82	116	31	44	80	114
	t	93*	406	79	348	29	127	77	339
High		97	165	88	148	32	54	83	141
		97	278	83	238	27	76	80	229
		97	443	85	386	29	130	81	370
university	M							93	165
	F							98	253
	t							96	418

3) What kind of media do you have at home?

	stereo		Cell-phone		landline		Mp3 play		Computer cam	
	%	N	%	N	%	N	%	N	%	N
Elementary	91	517	96	548	98	560	67	381	17	96
middle	87	395	90	412	97	454	67	306	13	60
high	88	384	86	378	93	414	69	304	15	64

4) Do you have Internet access?

	gender	modem		High speed		No internet		total N
		%	N	%	N	%	N	
elementary	M	12	34	77	216	10	29	279
	f	15	37	76	195	9	24	256
	T	13	71	77	411	10	53	535
middle	M	9	25	85	244	7	19	288
	F	5	7	85	116	10	13	136
	T	8	32	85	360	8	32	424
high	M	3	4	92	155	6	10	169
	F	3	9	91	252	6	16	277
	t	3	13	37	407	6	26	446
university	M	5	7	95	128			31
	f	11	24	89	192			320
	t	8	31	91	320			351

5) What kind of media do you have in the bedroom?

		radio		TV		VCR		Video games		computer	
		%	N	%	N	%	N	%	N	%	N
Elem	M	51	149	26	77	17	49	25	74	<u>58</u>	<u>171</u>
	f	56	152	27	73	19	51	20	55	<u>47</u>	<u>130</u>
	t	53	301	26	150	18	100	23	129	<u>53</u>	<u>301</u>
middle	M	49	145	35	105	20	60	27*	<u>79</u>	45	134
	F	66	94	32	46	16	23	11*	<u>16</u>	43	61
	t	54*	239	34	<u>151</u>	19	83	22	<u>95</u>	44	195
high	M	69	116	17*	29	8	14	16	27	57	96
	F	66	190	33*	<u>95</u>	13	38	10	29	46	133
	t	67	306	<u>27</u>	<u>124</u>	11	52	12	56	50	229
Univ	M	74	130	<u>62*</u>	<u>110</u>	<u>48*</u>	<u>85</u>	6	10	<u>85*</u>	<u>149</u>
	F	76	198	<u>32*</u>	<u>82</u>	<u>19*</u>	<u>50</u>	5	12	<u>62*</u>	<u>159</u>
	t	75	328	<u>44</u>	<u>192</u>	<u>31</u>	<u>135</u>	5	22	<u>71</u>	<u>308</u>

6) Do you have Internet access in your bedroom

bedroom	gender	modem		High speed		total
		%	N	%	N	
university	Male	6	11	63*	112	177
	female	8	20	45*	116	258
	total	7	31	52	228	435

7) How many years ago did you get a computer?

	male			female		
	N	M	Sd	N	M	sd
Elementary	272	36.54	28.42	245	37.48	32.39
middle	285	41.04	25.41	134	44.22	23.17
high	165	53.64	24.74	276	45.81	25.76
university	68	6.22	3.41	35	5.89	3.10

APPENDIX 7. TIME SPENT WITH MEDIA

1) How much time does your child spend with the media per week?

Mother's responses		male			female			t	P
		M	n	SD	M	N	SD		
Music	Weekday	16.08	194	30.49	22.26	396	99.86	-1.31	.382
	wkends	17.84	194	39.68	20.11	395	70.20	-0.50	.674
TV	Weekday	144.37	192	67.36	111.73	393	80.37	0.42	.694
	wkends	131.72	192	122.19	151.20	392	193.38	-1.48	.202
VCR	Weekday	9.96	191	30.61	10.47	391	33.97	-0.18	.859
	wkends	17.95	191	62.80	15.56	392	42.08	0.48	.587
gaming	Weekday	58.49	191	67.13	56.05	393	61.16	0.42	.661
	wkends	74.07	192	91.91	79.64	392	117.84	-0.63	.565
computer	Weekday	31.43	192	40.64	32.20	391	101.25	-0.13	.920
	wkends	34.35	192	56.56	31.87	391	52.18	0.51	.599
Cell phone games	Weekday	4.35	192	30.38	1.0	390	5.64	1.61	.025
	wkends	2.14	192	22.14	1.17	390	7.85	0.59	.441

2) How much time does your child spent with media outside of the home per week?

Mother's responses		male			female			t	P
		M	N	sd	M	N	Sd		
Video-Bang	days	.60	192	6.16	1.0	390	12.91	-0.48	.703
	wkends	1.12	192	13.16	1.0	390	7.97	0.29	.734
PC-Bang (games)	days	7.51	192	28.69	5.30	390	25.20	0.91	.342
	wkends	11.56	192	31.18	10.91	389	34.13	0.30	.824
Small videogames	days	10.08	192	49.64	7.46	390	37.18	0.65	.477
	wkends	4.92	192	25.92	4.71	390	35.83	0.08	.941
Arcades	days	2.19	192	12.76	1.03	389	6.23	1.19	.141
	wkends	1.83	192	12.79	2.28	390	12.52	-0.41	.680
Comic-Bang	days	11.55	192	30.37	7.19	389	19.95	1.81	.039
	wkends	10.59	192	34.65	8.66	388	26.80	0.68	.460
Hogwan	days	107.78	194	80.43	101.23	393	71.04	0.96	.315
	wkends	14.23	194	47.82	10.61	394	42.36	0.90	.351

3) How many hours a day? Do you (the mother) spend watching TV and using the computer game?

	male			female			t	P
	M	N	SD	M	N	Sd		
TV	94.17	161	163.85	63.22	315	121.87		.021
computer	136.19	193	77.54	129.89	396	83.92		.381

4) How computer savvy do you consider yourself? How good are you at the computer?

Mother's responses	Very good		So-so		Not very good		Not good at all		total
	%	N	%	N	%	N	%	N	
Male	5	10	31	60	58	113	7	13	196
Female	2	6	27	108	67	271	5	18	403
	3	16	28	168	64	384	5	31	599

APPENDIX 8. MEDIA USE AT HOME

1) How often do you do homework on your computer at home?

	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem*	M	13	36	39	106	32	88	16	44	274
	F	18	45	45	111	31	76	7	17	249
	T	16	81	42	217	31	164	12	61	523
middle	M	14	39	47	135	33	96	6	17	287
	F	23	32	42	57	26	36	9	12	137
	T	17	71	45	192	31	132	7	29	424
high	M	9	15	47	77	35	57	9	15	164
	F	12	32	49	134	35	97	5	12	275
	t	11	47	48	211	35	154	5	12	439
mom	M	19	33	57	101	19	34	5	9	177
	F	10	39	57	212	26	96	7	27	374
	t	13	72	57	313	24	130	7	36	551

2) How often do you the computer at home for Email

	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem*	M	14	36	15	39	19	51	52	137	263
	F	22	53	29	71	18	44	32	79	247
	T	18	89	22	110	19	95	42	216	510
Middle*	M	29	76	26	68	30	80	16	41	265
	F	50	67	32	43	11	43	9	10	134
	T	36	143	28	111	24	94	13	51	399
High*	M	26	41	35	56	26	41	14	22	160
	F	58	157	20	54	12	33	9	25	269
	t	46	198	26	110	17	74	11	47	429
mom	M	11	15	28	38	16	22	44	59	134
	F	13	38	21	61	18	51	48	139	289
	t	13	53	24	99	17	73	47	198	423

3) Who got/helped you get an email address account?

	gender	parents		Siblings		friends		alone		T
		%	N	%	N	%	N	%	N	N
Elementary* 0.001	M	29	68	36	85	12	28	24	58	239
	F	36	79	24	52	22	49	19	41	221
	T	32	147	30	137	17	77	22	99	460
middle	M	5	13	20	58	54	154	21	59	284
	F	7	9	19	26	56	75	19	25	135
	T	5	13	20	84	55	229	20	84	419
high	M	1	1	6	10	49	80	44	72	163
	F	1	3	12	33	57	159	31	86	281
	T	1	4	10	43	54	239	36	158	444

4) How often do you use chatting or Messenger programs at home

	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem	M	13	35	10	27	14	37	63	165	264
	F	12	27	17	41	15	35	56	132	235
	T	12	62	14	68	14	72	60	297	499
middle	M	25	69	17	47	21	58	37	104	278
	F	37	50	16	21	14	19	33	44	134
	T	29	119	17	68	19	77	36	148	412
high	M	57	93	18	29	14	23	11	17	162
	F	49	133	16	43	13	36	22	58	270
	t	52	226	17	72	14	59	17	75	432
mom	M	5	7	19	25	21	28	55	72	132
	F	6	18	17	48	16	44	61	171	281
	t	6	25	18	73	18	72	59	243	413

5) How often do you play Online game at home

	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem	M	8	22	11	29	15	40	66	175	266
	F	8	20	15	35	17	40	60	144	239
	T	8	42	13	64	16	80	63	319	505
middle	M	16	44	13	38	24	67	48	135	284
	F	5	7	13	17	25	34	57	78	136
	T	12	51	13	55	24	101	21	213	420
high	M	19	31	15	24	43	70	43	70	163
	F	12	30	15	40	26	69	48	130	269
	t	14	61	15	64	25	107	46	200	432
mom	M	2	3	12	16	20	26	66	87	132
	F	3	8	13	36	14	41	71	203	288
	t	3	11	13	52	16	67	69	290	420

6) How often do you play computer games at home

	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem*	M	50	139	35	98	12	34	3	9	280
	F	24	61	41	102	26	64	10	24	251
	T	38	200	38	200	19	98	6	33	531
middle*	M	46	133	36	104	13	37	5	13	287
	F	16	22	32	44	30	41	22	30	137
	T	37	155	35	148	18	78	10	43	424
High*	M	53	86	29	48	14	22	4	7	163
	F	22	61	29	79	27	74	22	60	274
	t	34	147	29	127	22	96	15	67	437
mom	M	47	89	39	74	14	26	1	1	190
	f	44	162	38	139	14	52	5	17	370
	t	45	251	38	213	14	78	3	18	560

7) How often do you use the computer for Internet searching at home

Internet search	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem	M	23	61	36	97	17	46	24	63	267
	F	24	57	39	93	22	52	16	39	241
	T	23	118	37	190	19	98	20	102	508
middle	M	32	90	43	122	17	47	9	25	284
	F	37	50	36	49	18	24	10	14	137
	T	33	140	41	171	17	71	9	37	421
high	M	45	73	42	68	9	15	4	6	162
	F	46	124	37	99	11	31	6	17	271
	t	46	197	39	167	11	46	6	23	433
mom	M	19	30	43	68	27	42	11	17	157
	F	15	51	44	151	27	94	15	51	347
	t	16	81	44	219	27	136	14	68	504

APPENDIX 9. COMPUTER USE AT THE PC-BANG

1) How often do you do Homework at PC-Bang?

homework	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem	M	1	2	13	22	16	27	71	122	173
	F	8	7	13	11	19	16	59	49	83
	T	4	9	13	33	17	43	67	171	256
middle	M	2	4	13	27	25	53	61	129	213
	F	2	2	13	13	29	28	56	55	98
	T	2	6	13	40	26	81	59	184	311
high	M	1	1	7	8	31	38	61	74	121
	F	4	7	9	16	34	63	53	97	183
	t	3	8	8	24	33	101	56	171	304
mom	M	7	4	33	19	14	8	47	27	58
	F	7	8	21	25	17	20	55	65	118
	t	7	12	25	44	16	28	52	92	176

2) How often do you use chatting or Messenger programs at the PC-Bang?

	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem	M	5	8	5	9	8	13	83	144	174
	F	9	7	8	6	7	5	76	58	76
	t	6	15	6	15	7	18	81	202	250
middle	m	21	44	12	25	15	31	53	112	212
	f	33	31	16	15	16	15	35	33	94
	t	25	75	13	40	15	46	47	145	306
high	M	35	42	13	16	20	24	31	37	119
	F	35	62	14	25	13	23	38	68	178
	t	35	104	14	41	16	47	35	105	297
mom	M	4	2	15	7	9	4	72	33	46
	F	7	7	5	5	8	8	80	80	100
	t	6	9	8	12	8	12	77	113	146

3) How often do you play computer games at the PC-Bang?

Game play	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem*	M	41	83	24	48	30	61	5	9	201
	F	18	16	17	15	27	24	38	34	89
	T	34	99	22	63	29	85	15	43	290
middle*	M	62	147	16	27	19	45	3	7	236
	F	22	21	29	28	27	26	23	22	97
	T	51	168	20	65	21	71	9	29	333
High*	M	68	90	17	22	13	17	2	3	132
	F	20	35	21	37	26	47	34	60	179
	t	40	125	19	59	21	64	20	63	311
mom	M	24	20	36	30	32	27	8	7	84
	F	33	56	28	48	31	54	9	15	173
	t	30	76	30	78	32	81	9	22	257

4) How often do you Email at PC-Bang?

email	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem	M	9	15	6	11	10	18	75	129	173
	F	9	7	6	5	16	13	69	55	80
	T	9	22	6	16	12	31	73	184	253
middle*	M	17	34	20	41	23	48	40	82	205
	F	55	52	15	14	18	17	12	11	94
	T	29	86	18	55	22	65	31	93	299
High*	M	14	17	17	20	29	35	40	47	119
	F	42	77	18	33	21	39	19	35	184
	t	31	94	18	53	24	74	27	82	303
mom	M	9	4	9	4	20	9	63	29	46
	F	6	6	7	7	9	9	78	79	101
	t	7	10	8	11	12	18	74	108	147

5) How often do you use the computers at the PC-Bang to Search for information online?

Searching for info	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem	M	9	16	18	32	15	26	58	102	176
	F	12	10	18	15	16	13	54	44	82
	T	10	26	18	47	15	39	57	146	258
middle	M	16	34	27	59	25	55	32	71	219
	F	30	28	29	27	19	18	22	21	94
	T	20	62	28	86	23	73	29	92	313
high	M	21	25	31	38	29	35	20	24	122
	F	24	44	28	51	24	43	24	43	181
	t	23	69	29	89	26	78	22	67	303
mom	M	8	4	28	14	20	10	45	23	51
	F	6	7	16	18	18	20	60	66	111
	t	7	11	20	32	19	30	55	89	162

6) How often do you play Online games at the PC-Bang?

Online games	gender	always		sometimes		rarely		never		Total
		%	N	%	N	%	N	%	N	
Elem	M	7	12	10	17	8	14	75	132	175
	F	9	7	12	9	10	8	69	54	78
	T	8	19	10	26	9	22	74	186	253
middle	M	15	31	14	29	12	25	61	129	214
	F	13	12	15	14	22	21	50	47	94
	T	14	43	14	43	15	46	57	176	308
high	M	13	16	19	23	21	25	47	57	121
	F	17	30	14	25	23	41	46	83	179
	t	15	46	16	48	22	66	47	140	300
mom	M	2	1	17	8	6	3	75	36	48
	F	5	5	6	6	12	13	77	81	105
	t	4	6	9	14	11	16	77	117	153

7) Currently how often do you go to the PC-Bang?

		everyday		3-4 times a week		1-2 times a week		1-2 times a month		1-2 times a year		total
		%	N	%	N	%	N	%	N	%	N	
Elementary Sig. 000	M	3	5	11	21	31	58	27	51	28	53	188
	F	2	2	2	2	15	12	28	23	53	43	82
	t	3	7	9	23	26	70	27	74	36	96	270
middle	M	6	14	9	19	41	91	35	77	10	21	222
	F	0	0	9	8	29	27	47	43	15	14	92
	t	5	14	9	27	38	118	38	120	11	35	314
High* Sig. 0.002	M	5	7	8	10	36	47	41	54	10	13	131
	F	2	3	3	6	27	53	45	87	24	46	195
	t	3	10	5	14	31	100	43	141	18	59	326
University Sig. 0.000	M	5	8	15	24	47	75	26	41	8	12	160
	F	1	1	5	10	18	39	39	86	39	86	222
	t	2	9	9	34	30	114	33	127	26	98	382
mom	M	0	0	7	6	16	14	47	41	31	27	88
	F	1	1	4	8	13	25	47	89	35	65	188
	t	1	1	5	14	14	39	47	130	33	92	276

8) Do you go to the PC-Bang?

		yes		no		total
		%	N	%	N	
Elementary Sig. 0.000	M	74	198	26	71	269
	F	34	87	65	172	259
	t	54	285	46	243	528
middle *	M	89	232	11	29	261
	F	73	101	27	37	138
	t	84	333	17	66	399
high	M	81	135	19	32	167
	F	74	206	26	74	280
	t	76	241	24	106	447
university	M	99	173	1	2	175
	F	95	249	5	12	258
	t	97	419	3	14	433
mom	M	53	96	47	86	182
	F	56	218	45	175	393
	t	55	314	45	314	575

9) Who do you go to the PC-Bang with?

	gender	alone		Friend		relative		Total
		%	N	%	N	%	N	N
Elementary Sig. 0.000	Male	7	16	75	165	<u>18</u>	<u>39</u>	220
	female	6	7	54	68	<u>41</u>	<u>52</u>	127
	total	7	23	67	233	<u>26</u>	<u>91</u>	347
middle	Male	<u>11</u>	<u>27</u>	80	190	9	22	239
	Female	2	3	89	110	<u>8</u>	<u>10</u>	123
	total	9	30	83	300	<u>9</u>	<u>32</u>	362
high	Male	<u>7</u>	<u>12</u>	92	150	1	1	163
	Female	<u>7</u>	<u>17</u>	88	230	5	14	261
	total	<u>7</u>	<u>29</u>	90	380	4	15	424
university	Male	<u>13</u>	<u>21</u>	85	143	3	4	168
	Female	<u>21</u>	<u>50</u>	74	175	5	12	237
	total	<u>18</u>	<u>71</u>	79	318	4	16	405
mom	Male	5	9	32	57	<u>12</u>	<u>22</u>	178
	female	3	10	32	118	<u>17</u>	<u>64</u>	371
	total	4	19	32	175	<u>16</u>	<u>86</u>	549

10) How much do you like to do the following activities as the PC-Bang?

<i>University students</i>		Really like		like		Don't like		Really don't like		T
		%	N	%	N	%	N	%	N	N
like to use websites	M	8	12	54	83	31	47	7	11	153
	f	23	52	62	143	13	29	2	5	229
	t	17	64	59	226	20	76	4	16	382
surf online for no reason	M	5	5	36	33	46	50	16	17	108
	f	10	19	35	65	37	70	18	34	188
	t	8	24	34	101	41	120	17	51	296
like to shop online*	M	8	11	26	34	42	56	24	31	132
	f	14	28	41	79	34	66	11	21	194
	t	12	39	35	113	37	122	16	52	326
like to download music*	M	14	19	47	64	27	37	12	17	137
	f	30	62	51	106	14	29	6	13	210
	t	23	81	49	170	19	66	9	30	347
like to use multimedia activities*	M	3	4	30	39	52	68	16	21	132
	f	13	27	47	99	32	67	9	18	211
	t	9	31	40	138	39	135	11	39	343
Like to use the computer for online games*	M	36	54	42	63	14	21	9	14	152
	f	14	24	31	53	35	60	20	35	172
	t	24	78	36	116	25	81	15	49	324

11) Rate how much you like to do the following media related activities

<i>University students</i>		Really like		like		Don't like		Really don't like		Total
		%	N	%	N	%	N	%	N	
schoolwork at the	M	7	11	42	63	41	62	10	15	151
	F	6	13	51	119	37	87	7	16	235
	t	6	24	47	182	39	149	8	31	386
chat at the PC-Bang	M	8	11	33	46	42	58	17	24	139
	F	10	22	42	90	41	88	7	14	214
	t	9	33	39	136	41	146	11	38	353
email at the PC-Bang *	M	22	36	58	96	14	23	6	10	165
	F	36	88	56	135	7	16	1	3	242
	t	31	124	57	231	10	39	3	13	407
PC-Bang to play games*	M	25	40	38	61	28	44	9	14	159
	F	7	12	16	26	47	77	29	48	163
	t	16	52	27	87	38	121	19	62	322
online games at the PC-Bang *	M	36	54	41	63	14	21	9	14	152
	F	14	24	31	53	35	60	20	35	172
	t	24	78	36	116	25	81	15	49	324
Use websites*	M	8	12	54	83	31	47	7	11	153
	F	23	52	62	143	13	29	2	5	229
	t	17	64	59	226	20	76	4	16	382
Use for multimedia*	M	3	4	40	138	39	135	11	39	132
	F	13	27	47	99	32	67	9	18	211
	t	3	31	40	138	39	135	11	39	343
Download music*	M	14	19	47	64	27	37	12	17	137
	F	30	62	51	106	14	29	6	13	210
	t	23	81	49	170	19	66	9	30	347
Shop online*	M	8	11	26	34	42	56	24	31	132
	F	14	28	41	79	34	66	11	21	194
	t	12	39	35	113	37	122	16	52	326
Surf for no reason	M	5	5	33	36	46	50	16	17	108
	F	10	19	35	65	37	70	18	34	188
	t	8	24	34	101	41	120	17	51	296

12) Rate how much you like to play the following types of games

University students	gender	Really like		like		Don't like		Really don't like		total
		%	N	%	N	%	N	%	N	N
adventure	m	12	16	42	58	38	53	9	12	139
	f	13	26	47	95	30	61	10	19	201
	total	13	42	45	153	34	114	9	31	340
Skill*	M	15	23	48	72	29	44	7	11	150
	f	28	67	59	140	1	25	3	6	238
	total	23	90	55	212	18	69	4	17	388
education	M	8	11	32	45	47	67	14	2	143
	F	2	5	46	97	41	86	10	2	209
	total	5	16	40	142	44	153	12	41	352
Fighting*	m	23	34	38	55	27	39	12	1	145
	F	6	9	19	28	40	58	35	50	145
	total	15	43	29	83	33	97	23	67	290
fps	M	23	33	37	53	31	44	9	13	143
	F	6	9	28	42	38	58	28	42	151
	total	14	42	32	95	35	102	19	55	294
Sports*	M	24	35	36	53	28	41	12	17	146
	F	0	0	10	12	47	57	43	52	121
	Total	13	35	24	65	37	98	26	69	267
Racing*	M	24	35	46	68	24	35	7	11	149
	F	8	15	41	75	31	56	19	35	181
	total	15	50	43	143	28	91	14	46	330
Role playing*	M	24	34	33	47	34	48	9	12	141
	F	9	12	17	22	50	67	24	32	133
	total	17	46	25	69	42	115	16	44	274
MMRPG*	M	40	62	37	58	19	29	5	8	157
	F	19	33	35	62	31	55	15	26	176
	total	29	95	36	120	25	84	10	34	333

13) Mean for how much like various computer game genres

University students	male			female			t	p
	Genre	N	M	SD	N	M		
Adventure	139	<u>2.44</u>	.81	201	2.36	.83	0.84	.40
Education	143	<u>2.67</u>	.81	209	2.59	.70	1.02	.31
Fighting	145	2.27	.95	145	<u>3.03</u>	.89	-7.01	.00
Fps	143	2.26	.92	151	2.88	.89	-5.91	.00
Sport	146	2.27	.96	121	<u>3.33</u>	.65	-10.32	.00
Racing	149	2.15	.87	181	2.61	.89	-4.79	.00
Role playing	141	2.27	.93	133	2.89	.87	-5.75	.00
Multi-player	157	1.89	.88	176	2.42	.96	-5.22	.00
skill	150	2.29	.81	238	1.87	.69	5.36	.00

Based on a 4-point range from 1 (really like) to 4 (don't really like)

(also see table—in appendix for individual % of each preference)

APPENDIX 10. MOTHER'S RESPONSES

1) These are some changes that we will face in the future. What are the three changes that you think will come true?

Mothers data	gender	yes		No		total
		%	N	%	N	N
less emphasis on money	Male	16	30	84	157	187
	female	12	47	88	338	385
	total	14	77	87	495	572
decrease the emphasis on work	Male	29	55	71	132	187
	female	35	136	65	249	385
	total	33	191	67	381	572
more emphasis on technology	Male	70	131	30	56	187
	female	63	244	37	141	385
	total	66	375	34	197	572
Greater emphasis on education	Male	43	80	57	107	187
	female	49	188	51	197	385
	Total	47	268	53	304	572
Need to have greater respect for others	Male	14	26	86	161	187
	female	62	16	84	323	385
	total	15	88	85	484	572
Greater emphasis on family	Male	165	122	35	65	187
	female	67	257	33	127	384
	total	66	379	34	192	571
Have a simpler and more natural life	Male	51	95	49	92	187
	female	47	179	54	206	385
	total	48	274	52	298	572

2) Mother's opinions on Internet and computerization

Mother's data	g	always		often		sometimes		never		t
		%	N	%	N	%	N	%	N	N
child prefer to watch TV than to be with friends	M	3	5	10	17	37	63	49	63	167
	f	6	20	10	36	30	105	54	189	350
	t	5	25	10	58	<u>33</u>	<u>168</u>	52	271	517
child prefer to play online rather than be with friends	M	4	7	9	15	45	72	41	66	160
	F	4	15	15	50	<u>35</u>	<u>119</u>	46	159	343
	t	4	22	13	65	<u>38</u>	<u>191</u>	45	225	503
child prefer to watch TV than to be with friends	M	3	5	10	17	<u>38</u>	<u>63</u>	49	82	167
	f	6	2	10	36	<u>30</u>	<u>105</u>	54	189	350
	T	1	5	4	18	<u>29</u>	<u>134</u>	66	302	459
child seem withdrawn since discovering the Internet	M	1	2	3	4	<u>30</u>	<u>46</u>	66	101	153
	f	1	3	5	14	<u>29</u>	<u>88</u>	66	201	306
	t	1	5	4	18	<u>29</u>	<u>134</u>	66	302	459
child caught your child sneaking online	M	2	3	3	5	<u>33</u>	<u>50</u>	61	92	150
	f	1	3	5	15	<u>32</u>	<u>96</u>	62	187	301
	T	1	6	32	146	<u>32</u>	<u>146</u>	62	279	451
child tired or fatigued after using the Internet	M	3	5	5	8	<u>24</u>	<u>36</u>	67	100	149
	f	1	4	4	11	<u>26</u>	<u>77</u>	69	209	301
	t	2	9	4	19	<u>25</u>	<u>113</u>	69	309	450
child go to bed late because of the Internet	M	3	4	8	13	<u>30</u>	<u>47</u>	59	92	156
	f	1	4	7	20	<u>31</u>	<u>94</u>	61	184	302
	t	2	8	7	33	<u>31</u>	<u>141</u>	60	276	458
child displace other things because of their internet use	M	3	5	14	23	50	82	33	53	163
	f	2	7	16	52	47	150	34	109	318
	t	3	12	16	75	48	232	34	162	481

3) What is their children's favorite video/computer game rated as

Mom's data	gender	adult		Teen		Don't know		total
		%	N	%	N	%	N	N
	Male	46	5	55	5	0	0	11
female	20	2	70	7	10	1	10	
total	33	7	62	13	5	1	21	

4) Mother's thoughts on Internet and computers in their children's lives

Mother's data	Very much		somewhat		So-so		Not really		Not at all	
	%	N	%	N	%	N	%	N	%	N
Access to the Internet helps my child with their schoolwork	27	163	56	334	13	77	3	20	1	5
Online, my child discover fascinating useful things they never heard of before	28	165	46	275	19	114	4	26	3	15
I am concerned that children would give out personal information about themselves when visiting Web sites or chat rooms	33	198	32	191	18	105	8	46	9	52
I am concerned that my child/children might view sexually explicit images on the Internet	60	354	24	140	5	31	3	20	8	46
Children who do not have Internet access are at a disadvantage compared to their peers who do not have Internet access.	13	75	42	246	24	139	14	81	9	51

	Very much		somewhat		So-so		Not really		Not at all	
	%	N	%	N	%	%	N	%	N	%
Going online too often might lead children to become isolated from other people	32	190	42	245	13	78	7	43	6	33
The Internet can help my children learn about diversity and tolerance	15	90	36	212	26	155	16	96	6	36
People worry too much that adults will take advantage of children on the Internet	28	164	48	281	15	89	7	38	3	15
Families who spend a lot of time online talk to each other less than they otherwise would	35	202	39	226	15	85	7	40	6	33
My children's exposure to the Internet might interfere with the values and beliefs I want to teach them.	11	65	43	250	26	151	15	85	6	37
Children who spend too much time on the Internet develop anti-social behavior.	26	155	45	265	16	95	10	56	3	18
The Internet is a safe place for my children to spent time	3	18	12	68	25	147	32	186	29	169
The Internet can bring my children closer to community groups and churches	6	33	16	93	31	183	31	180	16	94
Having Internet access at home is really for children whose parents know a lot about computers	4	24	15	87	23	137	35	206	23	136
It is expensive to subscribe to an Internet service	30	174	34	196	26	152	7	40	4	23
I have better things to do with my money than spend it going online	14	82	26	150	30	175	19	109	12	67
My family can get access to the Internet from other places so we do not really need it at home	3	20	13	77	24	139	34	199	26	154

	Very much		somewhat		So-so		Not really		Not at all	
	%	N	%	N	%	N	%	N	%	N
I often worry that I won't be able to explore the web with my children as well as other parents do	4	25	25	144	31	178	25	148	15	88
I do not mind when advertisers invite my children to web sites to tell them about their products	9	52	16	93	17	101	25	148	32	188
My children are not interested in having an Internet connection at home	4	21	15	90	27	159	28	161	26	152
My computer is not powerful enough to handle an Internet connection	6	36	12	67	20	117	26	153	36	212

5) What media are you most concerned with your child using?

Mother's data		Very concerned	Somewhat concerned	Not really concerned	Not concerned at all	t
child's TV usage	M	6(12)	36(71)	46(89)	12(23)	195
	f	4(14)	<u>38(150)</u>	50(198)	9(36)	398
online game usage	M	<u>10(15)</u>	31(47)	48(73)	12(18)	153
	f	7(21)	<u>40(127)</u>	43(136)	10(31)	315
video game usage	M	4(3)	28(21)	49(37)	19(14)	75
	f	2(3)	18(24)	53(70)	<u>27(35)</u>	132
comic usage	M	2(3)	10(14)	56(81)	<u>32(46)</u>	144
	f	2(4)	8(24)	63(190)	<u>28(84)</u>	302
Hand phone game usage	M	0	19(7)	57(21)	24(9)	37
	f	4(3)	10(7)	50(35)	<u>36(25)</u>	70
PC-Bang usage	M	<u>10(6)</u>	25(16)	43(27)	<u>22(14)</u>	63
	f	3(5)	32(48)	45(66)	20(29)	148
arcade usage	M	<u>10(6)</u>	30(19)	43(27)	18(11)	63
	f	5(6)	<u>37(43)</u>	38(44)	19(22)	115

APPENDIX 11. RULES AND REGULATIONS OF STUDENTS' MEDIA USE

1) Are you allowed to play computer games at home?

		always		often		sometimes		never		Total
		%	N	%	N	%	N	%	N	N
Elementary	M	38	104	23	62	34	94	<u>6</u>	<u>16</u>	276
	f	27	67	21	51	47	116	<u>5</u>	<u>13</u>	247
	t	33	171	22	113	40	210	<u>6</u>	<u>29</u>	523
middle	M	34	92	30	81	30	82	<u>6</u>	<u>17</u>	272
	F	38	48	33	41	25	31	<u>5</u>	<u>6</u>	126
	t	35	140	31	122	28	113	<u>6</u>	<u>23</u>	398
high	M	42	67	36	58	19	30	<u>3</u>	<u>5</u>	160
	F	49	117	25	59	21	49	<u>6</u>	<u>13</u>	238
	t	46	184	29	117	20	79	<u>5</u>	<u>18</u>	398

2) Do you play computer/video games at home when you are not supposed to?

		always		often		sometimes		never		Total
		%	N	%	N	%	N	%	N	N
Elementary*	M	7	16	6	13	<u>23</u>	<u>50</u>	64	137	216
	f	2	4	1	1	<u>17</u>	<u>32</u>	81	154	191
	t	3	11	2	7	<u>7</u>	<u>23</u>	87	278	319
middle	M	11	28	8	19	<u>30</u>	<u>75</u>	51	127	249
	F	11	10	12	11	<u>26</u>	<u>24</u>	52	48	93
	t	11	38	9	30	<u>29</u>	<u>99</u>	51	175	342
high	M	16	22	20	28	34	47	<u>31</u>	<u>43</u>	140
	F	12	21	17	30	<u>30</u>	<u>54</u>	41	74	179
	t	14	43	18	58	32	101	37	117	319
mom	M	5	8	<u>24</u>	<u>43</u>	52	93	19	34	178
	f	6	21	<u>19</u>	<u>67</u>	60	216	15	54	358
	t	5	29	<u>21</u>	<u>110</u>	58	309	16	88	536

3) Are you allowed to chat online at home?

		always		often		sometimes		never		Total
		%	N	%	N	%	N	%	N	N
Elementary	M	20	38	8	15	23	44	49	92	189
	f	17	30	5	9	24	42	53	91	172
	t	19	68	7	24	24	86	51	183	361
middle	M	26	55	15	32	20	44	39	85	216
	F	24	23	7	7	31	30	38	37	97
	t	25	78	13	39	24	74	39	122	313
high	M	46	56	19	23	21	25	15	18	122
	F	38	77	16	33	27	54	19	38	202
	t	41	133	17	56	24	79	17	56	324

4) Do you chat online at home when you are not supposed to?

		always		often		sometimes		never		T
		%	N	%	N	%	N	%	N	N
Elementary	M	4	6	4	6	7	11	86	139	162
	f	3	5	1	1	8	12	89	139	157
	t	3	11	2	7	7	23	87	278	319
middle	M	4	9	6	12	16	32	74	150	203
	F	6	5	3	2	14	11	77	60	78
	t	5	14	5	14	15	43	75	210	281
high	M	14	15	16	17	24	26	46	49	107
	F	10	16	11	17	26	41	54	87	161
	t	12	31	13	34	25	67	51	136	268

5) Are you allowed to go to the PC-Bang?

	gender	always		often		sometimes		never		Total
		%	N	%	N	%	N	%	N	N
Elementary*	Male	11	26	8	18	53	126	29	68	238
	female	5	8	3	5	33	57	59	101	171
	total	8	34	6	23	45	23	41	169	409
middle	Male	25	67	14	38	46	123	16	42	270
	Female	21	25	14	17	47	57	19	23	122
	total	24	92	14	55	46	180	17	65	392
high	Male	46	72	21	33	29	45	5	8	158
	Female	41	103	16	40	35	88	8	19	250
	total	43	175	18	73	33	133	7	27	408

6) Do you always tell your parents when you go to the PC-Bang?

		always		often		sometimes		never		Total
		%	N	%	N	%	N	%	N	N
Elementary*	M	5	10	4	8	<u>12</u>	<u>22</u>	79	147	187
	f	1	1	1	2	<u>4</u>	<u>6</u>	94	145	154
	t	3	11	3	10	<u>8</u>	<u>28</u>	86	292	341
middle	m	8	18	4	10	<u>23</u>	<u>55</u>	65	153	236
	F	7	6	6	5	<u>16</u>	<u>14</u>	72	63	88
	t	7	24	5	15	<u>21</u>	<u>69</u>	67	216	324
high	M	17	23	13	18	<u>33</u>	<u>44</u>	37	50	135
	F	15	25	5	9	<u>26</u>	<u>44</u>	54	91	169
	t	16	48	9	27	<u>29</u>	<u>88</u>	46	141	304

APPENDIX 12. DISPLACEMENT AND ADDICTION

1) How often do you neglect homework to spend more time on-line?

		always		often		sometimes		never		T
		%	N	%	N	%	N	%	N	N
Elementary*	M	10	27	17	43	40	105	33	85	260
	f	4	8	5	11	48	103	43	93	215
	t	7	35	11	54	44	208	38	178	475
middle	m	8	23	21	59	47	134	24	68	284
	F	16	20	25	32	39	49	20	25	126
	t	11	43	22	91	45	183	23	93	410
high	M	19	30	39	63	30	48	12	19	160
	F	21	56	34	89	34	90	12	31	266
	t	20	86	36	152	33	138	12	50	426

2) How often do you neglect homework to spend more time watching TV?

		always		often		sometimes		never		Total
		%	N	%	N	%	N	%	N	N
Elementary*	M	12	30	13	34	43	109	32	81	254
	f	6	14	16	36	48	111	30	70	231
	t	9	44	14	70	45	220	31	151	485
middle	m	7	21	18	51	44	124	31	87	283
	F	17	22	22	29	39	51	32	29	131
	t	10	43	19	80	42	175	28	116	414
high	M	17	26	34	52	31	47	18	27	152
	F	23	61	32	86	32	84	13	35	266
	t	21	87	33	138	31	131	15	62	418

3) How often do you find that you stay on-line longer than you intended?

		always		often		sometimes		never		Total
		%	N	%	N	%	N	%	N	N
Elementary*	M	4	8	3	6	<u>18</u>	<u>37</u>	76	161	212
	f	0	0	1	1	<u>11</u>	<u>20</u>	88	158	179
	t	2	8	2	7	<u>15</u>	<u>57</u>	82	319	391
middle	m	4	9	7	19	<u>25</u>	<u>64</u>	65	168	260
	F	4	4	7	7	<u>70</u>	<u>74</u>	70	74	106
	t	4	13	7	26	<u>23</u>	<u>85</u>	66	242	366
high	M	5	7	16	24	<u>45</u>	<u>67</u>	34	50	148
	F	8	20	13	32	<u>43</u>	<u>108</u>	37	94	254
	t	7	27	14	56	<u>44</u>	<u>175</u>	36	144	402

4) How often do you find yourself watching TV longer than you intended?

		always		often		sometimes		never		Total
		%	N	%	N	%	N	%	N	N
Elementary	M	2	4	5	9	<u>24</u>	<u>48</u>	70	141	202
	f	0	0	2	4	<u>24</u>	<u>43</u>	74	136	183
	t	1	4	3	13	<u>24</u>	<u>91</u>	72	277	385
middle	m	3	8	5	14	<u>28</u>	<u>72</u>	64	166	260
	F	4	5	5	6	<u>33</u>	<u>37</u>	58	65	113
	t	4	13	5	20	<u>29</u>	<u>109</u>	62	231	373
high	M	6	8	19	27	<u>33</u>	<u>47</u>	43	61	143
	F	5	14	16	42	<u>46</u>	<u>118</u>	33	85	259
	t	6	22	17	69	<u>41</u>	<u>165</u>	36	146	402

5) How often do you feel preoccupied with TV when not watching, or fantasize about watching?

		always		Often		sometimes		never		total
		%	N	%	N	%	N	%	N	N
middle	M	2	6	7	17	29	74	63	162	259
	F	3	3	4	4	22	23	72	76	106
	t	3	9	6	21	27	97	65	238	365
high	M	5	7	8	12	23	33	64	97	143
	F	2	4	8	19	28	66	63	150	239
	t	3	11	8	31	26	99	63	241	382

6) How often do you feel preoccupied with the Internet when off-line, or fantasize about being on-line?

		always		Often		sometimes		never		Total
		%	N	%	N	%	N	%	N	N
middle	M	3	7	9	22	<u>23</u>	<u>59</u>	65	167	256
	F	1	1	5	5	<u>20</u>	<u>20</u>	74	72	98
	t	3	9	8	27	<u>22</u>	<u>79</u>	68	239	354
high	M	4	5	13	18	<u>32</u>	<u>45</u>	52	75	143
	F	2	4	7	16	<u>25</u>	<u>59</u>	66	153	232
	t	3	9	9	34	<u>28</u>	<u>104</u>	61	228	375

7) How often do you fear that life without TV would be boring, empty, and joyless?

			always		Often		sometimes		never		t
			%	N	%	N	%	N	%	N	
Life without Internet would not be exciting	high	M	10	16	18	27	30	46	42	65	154
		F	10	27	13	34	32	85	45	118	264
		t	10	43	15	61	31	131	44	183	418
	middle	M	8	21	10	25	26	68	57	149	263
		F	7	8	9	11	32	38	52	62	119
		t	8	29	9	36	28	106	55	211	382
Life without TV would not be exciting	high	M	12	18	14	21	37	56	38	57	152
		F	12	31	18	47	35	94	35	94	266
		t	12	49	16	68	36	150	36	151	418
	middle	M	5	14	8	21	27	72	60	159	266
		F	7	8	12	14	35	41	46	53	116
		t	6	22	9	35	30	113	56	212	382

8) How often do others in your life complain to you about the amount of time you spend on-line?

		always		often		sometimes		never		Total N
		%	N	%	N	%	N	%	N	
Elementary	M	3	7	6	13	24	52	66	142	214
	f	0	0	6	11	28	56	66	132	199
	t	2	7	6	24	26	108	66	274	413
Middle*	M	3	7	8	21	37	95	52	131	254
	F	4	4	9	9	29	30	59	61	104
	t	3	11	8	30	35	125	54	192	358
High	M	9	13	16	23	46	67	29	42	145
	F	5	11	16	38	32	76	47	110	235
	t	6	24	16	61	38	143	40	142	380

9) What was displaced when going to PC-Bang ?

<i>University</i>	<i>g</i>	<i>always</i>		<i>sometimes</i>		<i>rarely</i>		<i>never</i>		<i>Total</i>
Displace sleep*	M	5	7	45	69	35	53	15	23	152
	F	3	4	24	35	47	69	27	39	147
	T	4	11	35	104	41	122	21	62	299
too tired for school	M	1	1	12	16	33	44	54	71	132
	F	1	1	5	5	31	31	63	63	100
	t	1	2	9	21	32	75	58	134	232
Didn't do homework	M	2	2	15	20	33	43	51	67	132
	F	0	0	5	5	37	39	59	62	106
	T	1	2	11	25	35	82	54	129	238
didn't keep promises with friends	M	2	2	10	13	35	45	54	70	130
	F	0	0	7	7	34	34	59	59	100
	t	1	2	9	20	34	79	56	129	230
didn't meet with friends	M	1	1	14	18	34	43	52	66	128
	F	0	0	11	11	33	34	56	58	103
	t	0	1	13	29	33	77	54	124	231

10) Do you think students are becoming addicted to the following media?

University students		Totally agree		Somewhat agree		Don't agree		Really don't agree		t	sig
		%	N	%	N	%	N	%	N		
comics	M	6	11	40	68	41	71	13	22	172	.261
	F	9	24	38	97	35	88	18	45	254	
	T	8	35	39	165	39	159	16	67	426	
TV	M	9	15	45	77	38	65	9	16	173	.000
	F	29	72	42	106	25	64	4	11	253	
	T	20	87	43	183	30	129	6	27	426	
videogames	M	37	64	38	65	20	34	6	10	173	.005
	F	38	96	28	72	18	45	17	42	255	
	t	37	160	32	137	19	79	12	52	428	
arcade	M	47	82	33	58	14	25	5	9	174	.005
	F	39	98	30	75	16	40	16	41	254	
	t	42	180	31	133	15	65	12	50	428	
internet	M	38	66	43	75	15	26	4	7	174	.124
	F	48	123	39	100	10	26	2	6	255	
	T	44	189	41	175	12	52	3	13	429	
chatting	M	29	49	30	52	30	51	12	20	172	.200
	F	33	85	32	81	21	53	14	36	255	
	T	31	134	31	133	24	104	13	56	427	
PC-Bang	M	27	46	35	60	28	48	11	19	173	.009
	F	20	52	36	91	21	54	23	58	255	
	T	23	98	35	151	24	102	18	77	428	

11) How often do you make new friends online or meet your friends online?

			always	often	sometime s	never	total
How often do you make new friends online	High	M	12(18)	36(52)	38(55)	14(20)	145
		F	7(15)	18(40)	50(114)	25(57)	226
	Middle*	M	12(29)	15(36)	34(81)	40(96)	242
		F	6(6)	14(15)	38(39)	42(44)	104
How often do you meet your friends online	High	M	4(5)	6(9)	29(41)	61(87)	142
		F	3(5)	4(7)	35(68)	59(117)	197
	Middle	M	7(16)	5(11)	19(43)	69(155)	225
		F	0	2(2)	12(10)	85(70)	82

APPENDIX 13. ADDITIONAL UNIVERSITY SURVEY ONE

1) Birth data ___ month ___ year 2) gender ___ male ___ female

3) Major _____ 4) GPA _____

5) What do you do for fun with your friends? _____

6) Do you have a computer at home? ___ yes ___ no

7) Where is your computers?

___ living room ___ your bedroom ___ study room
___ other ()

8) How many hours a week do you use the computer at home? _____

9) What do you do on the computer at home?

___ homework
___ surfing the internet
___ chatting
___ email
___ listen to music
___ other ()

10) Do you use the computer at school? ___ yes ___ no

11) How many hours a week do you use the computer at school? _____

12) What do you use the computer at school for?

- homework
- surfing the internet
- chatting
- email
- listen to music
- other ()

13) Do you go to the PC-Bang?

14) Do you like the Pc-Bang yes no

Why? _____

15) How many hours a week do you use the PC-Bang? _____

16) What is the longest amount of time at the PC-Bang? _____

17) What do you use the computer at the PC-bang for?

- homework
- surfing the internet
- chatting
- email
- listen to music
- other ()

18) Who do you go to the PC-Bang with?

- alone
- friends
- other ()

19) What is your favourite game? _____

20) Please circle the answer

“ I go to the PC-Bang (*more than, less than, the same as*) last year.

21) What do you think of the PC-Bangs?

_____ they are good for Korea

_____ they are bad for Korea

_____ they are so-so for Korea

22) have (you or a friend) ever earned money playing games (for example, Playing Lineage and selling weapons or virtual money).

_____yes _____No

What did you sell?_____

How much money did you get?_____

APPENDIX 14. ADDITIONAL UNIVERSITY SURVEY TWO

Name _____ student number _____

Birth data ___ month ___ year gender ___ male ___ female

Major _____

1) Who do you live with? (circle one please)

parents alone dormitory roommate other ()

2) Do you have a computer in your home? _____yes _____no

3) What do you use your computer at home for?

I use my home computer to

_____.

4) Where is your computers?

___ *living room* ___ *your bedroom* _____ *study room*

___ *other ()*

5) What kind of Internet connection do you have at home?

___ *dial up modem*

___ *high speed (ADSL, cable, LAN)*

___ *I don't have Internet at home.*

6) Please fill in this time diary for your computer and video game use for the next week.

	Monday	Tuesday	Wed	Thurs	Fri	Sat	Sun
Computer at home							
Computer at school							
Computer at Pc-Bang							
Arcade							

Computer and video games

7) What is your favourite computer/video games? _____

8) Where do you like to play these games

___ home ___ PC-Bang ___ School ___ other ()

9) Why do you like to play there? _____

Chatting online

10) Where do you like to chat?

___ home ___ PC-Bang ___ School ___ other ()

11) Why do you like to chat there? _____

PC-Bang

12) What is the longest time at the PC-Bang_____

13) Why do you go to the PC-Bang _____

14) Who do you go to the PC-Bang with?

____alone ____ friends ____ other ()

15) What do you think about the PC-bang?

____ good ____ so-so ____ bad ____ I don't know

16) What is good about the PC-bangs?_____

17) What is bad about the PC-bangs?_____

18) Do you think computers and the internet are addictive? ____yes ____no

Why?_____

19) Why does Korea have so many PC-Bangs and other countries like Canada

have very few?_____

20) Would you allow your children to use a PC-Bang, why or why not?

_____.

APPENDIX 15. ETHICS

SIMON FRASER UNIVERSITY

OFFICE OF RESEARCH ETHICS



BURNABY, BRITISH COLUMBIA
CANADA V5A 1S6
Telephone: 604-291-4370
FAX: 604-291-4860

February 25, 2002

Ms. Kymberley R. Stewart
Graduate Student
School of Communication
Simon Fraser University

Dear Ms. Stewart:

**Re: The Korea New Media Environment: PC-Bags and Media
In the Home**

I am pleased to inform you that the above referenced Request for Ethical Approval of Research has been approved on behalf of the University Research Ethics Review Committee. This approval is in effect for twenty-four months from the above date. Any changes in the procedures affecting interaction with human subjects should be reported to the Research Ethics Board. Significant changes will require the submission of a revised Request for Ethical Approval of Research. This approval is in effect only while you are a registered SFU student.

Best wishes for success in this research.

Sincerely,

Dr. Hal Weinberg, Acting Director
Office of Research Ethics

c: S. Kline, Supervisor

/bjr

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