

A STUDY TO INVESTIGATE THE ELEMENTS THAT AFFECT STUDENTS' WILLINGNESS TO USE ICT IN THE LEARNING AND TEACHING PROCESS IN HIGHER EDUCATION IN UTTAR PRADESH

UN ESTUDIO PARA INVESTIGAR LOS ELEMENTOS QUE AFECTAN LA DISPOSICIÓN DE LOS ESTUDIANTES A UTILIZAR LAS TIC EN EL PROCESO DE ENSEÑANZA Y APRENDIZAJE EN LA EDUCACIÓN SUPERIOR EN UTTAR PRADESH

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ABSTRACT

Greater emphasis is being placed on higher education in India because of developments in Information Communication Technology (ICT). The Internet of Things (IoT) is the driving factor behind the effective delivery of high-quality education in higher education. Over the last two decades, progress in ICT has been integrated into universities worldwide. There is a growing need for highly qualified and capable professionals in today's globalized world. Even though the Indian government sponsors students from basic school through higher education, much more must be done to transform the country into a technologically literate and educated society. Access to high-quality education has emerged as a critical component in the promotion of economic development and growth worldwide. The contribution of online learning courses, as well as distance learning courses, is growing as a method of extending access to quality education and reaching the country's most remote locations. In terms of available communication and information technologies, India is now facing a substantial shift in ICT. Furthermore, it is addressing the demands of people who want to complete their studies for the rest of their life at a low cost. Despite its obvious benefits and possibilities, the use of Information Communication Technology (ICT) in education is fraught with uncertainties and challenges.

Keywords: ICT; Higher education; e-learning; Communication; Digital India; Learning; Teaching.

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RESUMEN

Se está poniendo mayor énfasis en la educación superior en la India debido a los avances en las Tecnologías de la Información y la Comunicación (TIC). El Internet de las cosas (IoT) es el factor impulsor detrás de la entrega efectiva de educación de alta calidad en la educación superior. En las últimas dos décadas, el progreso de las TIC se ha integrado en las universidades de todo el mundo. Existe una creciente necesidad de profesionales altamente calificados y capaces en el mundo globalizado de hoy. Aunque el gobierno indio patrocina a estudiantes desde la escuela básica hasta la educación superior, se debe hacer mucho más para transformar el país en una sociedad educada y alfabetizada tecnológicamente. El acceso a una educación de alta calidad se ha convertido en un componente crítico en la promoción del desarrollo económico y el crecimiento en todo el mundo. La contribución de los cursos de aprendizaje en línea, así como los cursos de aprendizaje a distancia, está creciendo como un método para ampliar el acceso a una educación de calidad y llegar a los lugares más remotos del país. En cuanto a las tecnologías de la información y la comunicación disponibles, la India se enfrenta ahora a un cambio sustancial en las TIC. Además, está atendiendo las demandas de las personas que quieren completar sus estudios para el resto de su vida a un bajo costo. A pesar de sus evidentes beneficios y posibilidades, el uso de las Tecnologías de la Información y la Comunicación (TIC) en la educación está plagado de incertidumbres y desafíos.

Palabras clave: TIC; Educación superior; aprendizaje electrónico; Comunicación; India digital; Aprendizaje; Enseñanza.

INTRODUCTION

In the twenty - first century in various industries, including education, the phrase “technology” is a key problem. This is because the technology of most nations has become the way of information transfer. Technology inclusion has now undergone advances and revolutionized the way individuals think, work, or live of our society (Grabe, 2007). To be able to educate pupils for living in ‘a knowledge society’ schools or other institutions need to look at ICT integration in its program (Ghavifekr, Afshari & Amla Salleh, 2012).

The integration of ICT into term referring to using computer-based communication, which incorporates day-to-day instruction in the classroom. Teachers are considered as the most active actors in the use of ICT in their regular classes and training in the present digital age. They feel this is because ICT can create a

highly proactive learning atmosphere (Arnseth & Hatlevik, 2012). Despite the objective of ICT integration, the accessibility, quality, and cost-effectiveness of education for students will be improved and increased, the networking of learning communities will also be used to address the issues of present globalization (Albirini, 2006). The ICT adoption process is not only a step, but continual stages which completely complement learning and teaching and digital resources (Young, 2003).

Integrating ICT into education generally involves technological learning and teaching processes that are strongly associated with the usage of learning in education. Due to students understanding of technology and studying in the technological world, the issue of ICT use in classroom instruction is essential. The use of technology in schools greatly contributes to educational elements where in ICT application leads to effective learning through the assistance

and support of ICT sections (Jamieson-Procter et al., 2013). It is true that nearly any topic area may be more successfully taught by technological tools and equipment from science, mathematics, languages, arts, and humanism and others. ICT also offers instructors and students with guidance and supplementary support where it includes successful learning with the assistance of computers for learning materials (Jorge et al., 2003). Computers and the internet are not just a substitute for qualified instructors but a supplement to enhanced teaching and learning. The integration of ICT into education is crucial as it is not only in schools that technology, training, and learning are possible but even when teachers and students are physically far away. Therefore, ICT integration is not a one-step procedure but a continual learning process that offers a changing teaching atmosphere (Young, 2003).

ICT is an abbreviation for “Information and Communication Technology,” which may be defined as a toolkit of technological resources and technology that are employed for the primary goal of delivering, distributing, and collecting information. IoT is a major influence on many parts of our everyday life since it connects people and devices and creates opportunity. ICTs encompass software, hardware, networks, and media, as well as services that are delivered in combination with them. Telecommunications services, including physical networks and networks, as well as the software and hardware that allows collection of information, storage, and retrieval, depend on information and communication infrastructure Information Communication Technology. Information Communication Technology has been a popular topic that since late 1990s, discussed for educational use. Previously, TVET training, as well as teacher training, took priority. In recent years, a growing number of international development organizations have recognized the potential of ICT to help the education sector. As ICT is being utilized to promote development for almost a decade, it has not been fully incorporated into development operations, and

more awareness is still necessary.

BENEFITS OF USING ICT IN EDUCATION

In the literature, ICT advantages in education were underlined. The use of ICT has already been determined at:

- **Assist Students with the Efficient and Effective Access to Digital Information**

ICT is utilized as a tool to help students find learning subjects, resolve difficulties, and solve learning problems. ICT facilitates knowledge acquisition and understanding concepts in the fields of learning, while involving students in the use of ICT.

- **Support for Self-Directed and Student-Centered Learning**

Students are increasingly more involved in meaningful computer use. They develop new knowledge through information and data access, selection, organization, and interpretation. Students may use data and information from many sources and critically enhance the performance of the learning resources through learning from ICT.

- **Produce a Creative Environment for Learning**

ICT produces new student knowledge in their subjects of study. ICT provides a wide range of study questions more inventive responses. E-books, for example, are commonly used for reading aloud activities in a reading lesson. From the beginning to the next level, learners may simply access all types of literature via PCs, laptops, PDAs, or iPads. These e-books might feature audio interfaces, proper vocabulary construction activities, reading, vocabulary games and much more. ICT offers applications that provide innovative approaches to satisfy a variety of learning requirements.

- **Promote Cooperative Learning in the Environment of Distance Learning**

ICT allows students to interact, share and cooperate daily. A video conference class, for example, can ask students from various to meet for a subject concurrently. They may be tested and examined, and concepts developed. They might further assess the options of ICT learning. In addition to collecting knowledge, students share learning experiences to evaluate and express their learning.

- **Offer More Opportunities for Critical (Higher) Thinking Skills**

ICT allows students to concentrate on ideas of higher level rather than on less essential activities based on a constructively learning method. Long-term exposure to ICT may promote increased communication skills and critical thinking capabilities for children. Therefore, schools are actively encouraged to integrate technology in all fields of education and at all levels. In some learning settings the learners might use technology to reach a higher degree of cognition.

- **Improve Quality of Teaching and Learning**

According to Lowther et al. (2008), three important characteristics are required to develop high-quality teaching and learning with information and communication technologies: capability, autonomy, and creativity. Autonomy means that students take responsibility for learning with ICT. Capability means that students can communicate effectively with others. As a result, people grow more competent of functioning independently as well as together. Teachers can also give students permission to work with their classmates or in groups to complete certain assignments. Through collaborative learning using technology, students can incorporate new information into their previous knowledge. They also gain greater confidence in taking chances and learning from their failures because of collaborative learning with technology. Serhan (2009) further noted

that ICT promotes instructors' autonomy by allowing them to develop the own material and so offers greater control over their content than is feasible inside a classroom environment. In terms of competency, when students have increased confidence in their active learning, they may learn to apply and transmit information while making efficient and effective use of new technology.

- **Support For the Teaching of Course Access Content**

Watts-Taffe and colleagues (2003) found that instructors may be used as catalysts to integrate technology into the school Information Communication Technology. Institutes can make it simpler for teachers to establish an ICT class if they provide them with the required resources such as motivation, equipment, and technological assistance. They will be responsible for modifying the format of their courses, developing, and describing the new tasks, and assembling for the computer lab, which will be handled by their technology learning assistants or specialists.

IMPACT ON THE CURRICULUM

To have an influence on educational standards, Information Communication Technology must be used in a context where there is a fruitful environment for doing so (Machin, 2006). Previously, it was suggested that there is a two-way connection between information and communication technology (ICT) and the curriculum, in which ICT may be utilized to aid in the delivery of the curriculum while also changing the curriculum content. Research has revealed that the efficacy of ICT in supporting learning is a function of the curriculum material and instructional approach, such that when suitable content and instructional tactics are used to promote learning, both students and instructors will benefit (Cradler and Bridgforth, 2002; Sharma, 2015). The following are some ways to think about the influence of ICT on curricular content:

- Declarative knowledge - this type of knowledge defines things and occurrences by describing the qualities that distinguish them from one another.
- Procedural knowledge - this type of knowledge focuses on the procedures that must be followed to get a result.

According to many teachers, Information Communication Technology has a beneficial influence on the curriculum. Students can utilize more primary sources and be pushed to solve real-world problems while developing analytical and interpretative abilities if they make use of information and communication technology. In an open and continuous conversation, the classroom may be a part of learning. Even while the influence will be noticeable across virtually all fields of study, the degree to which it will be felt will differ significantly (Becta, 2006). It is claimed that ICT allows instructors save some time and enhance production in a variety of tasks, such as those listed below:

- Availability of a wide range of information sources, formats, and kinds
- Making daily lesson plans and keeping them up to date
- Education plans, including the creation of hard copy handouts and visualizations for classrooms, as well as personalized educational plans for students who are slower learners or who have impairments or special needs.
- Visual and oral content resources, activities and questions are presented to the audience in a variety of formats.
- Maintaining up-to-date grade books.
- Compilation of the review database.
- Online student observation and correction on their laptops.
- Maintain records, chronicles and archives of all events and proceedings described above with quick retrieval and easily accessible entries.

ICT may improve education via improving

existing practice or bringing novel and improving ways to learn and teach (European School net, 2004). It has a favorable influence on students' and instructors' motivation, behavior, communication, and process skills.

COMMITMENT OF GOVERNMENT TOWARDS ICT

The government's commitment to efficient delivery of ICT is important and hence the money for developing ICT infrastructure must be set aside every year. The Internet must be readily available and dependable as a provider and information transmitted online in a safe and comfortable place. The Government of India has made huge efforts to expand ICT infrastructure and information technology services through initiatives such as "digital India." The Indian government has made enormous efforts. Digital India is a government of India project that aims to bring together various government agencies as well as the Indian people. Its goal is to ensure that government services are available to individuals online by minimizing the amount of paper that is generated. The idea to link rural areas with high-speed Internet networks is another element of the strategy. There are three essential components in Digital India. These are a few instances:

- The establishment of a digital network infrastructure
- Providing services in a digital format
- Proficiency in the use of the internet and computers

The Government of India has launched several national and state-specific initiatives that combine, at the level of secondary and higher learning in the country, with a considerable number of ICT private-led activities. The drafted National Policy on Information Communication Technology (ICT) is available on the website of the Department of Human Resources Development. To improve the level of ICT accessibility in all 378 institutions and 18064 schools, a National Mission for Education via

Informatics and Communication Technology (ICT) is to be created in the 11th Five-Year Plan. The mission is to focus on the digitalization and networking of universities, the development of cost-effective and low-energy access equipment and, inter alia, bandwidth delivery for educational purposes.

To attain fully electronic institutions and digital campuses, the department of IT collaborates with authorities like the Ministry of Human Resource Development (MHRD), Diploma in Information Technology (DIT), and the Department of Telecommunications (DoT) will be employed. Advanced computing facilities, on the other hand, will be available only a few select universities. Despite the recognition and place in national, and state-specific policy- and plan documents of information and communication technology (ICTs), a nationally focused ICT policy framework would be useful to provide necessary guidance, on strategies throughout all levels of the education institutions.

The Indian education system has had huge developments in recent years, and it has become the largest higher education system in the world including over 70 million students in various programmes. Without the considerable use of ICT such an ability to function properly would have been unthinkable.

Some of the largest ICT-based education projects in India include:

- The teaching-learning process of the (IGNOU) is facilitated via the use of radio, television, and the Internet.
- The National Programme on Technology Enhanced Learning is an idea comparable to MIT's open courseware programme. It makes use of Internet and television technology. "The concept is straightforward: post all of their online courses make online them publicly available to everybody."
- The Eklavya project promotes distant learning via the use of the Internet and

television. Eklavya Technology Channel is a collaborative distance learning project of IIT and IGNOU. On January 26, 2003, it was launched by Prof. Murli Manohar Joshi, Honorable Minister of HRD.

- Brihaspati is an open access e-learning platform created by the Indian Institute of Technology (IIT) Kanpur.
- Premier schools such as the Indian Institute of Management (Calcutta) have formed a strategic relationship with the National Institute of Information Technology (NIIT) to deliver programmes using virtual classrooms.
- Tutorials on the Speaking Tutors is a recent initiative of a National Education Through Mission (NETM) "Talk to a Teacher" activity that was launched as part of the Indian National Education Mission in the year 2015 by the Ministry of Human Resources and Development. The target audience comprises, among other individuals, students, professionals, retired professionals, teachers, trainers, investigators, software users and software developers. Since its creation, more than 12 lakh students globally have been trained in the Spoken Tutorial Project. The spoken instruction additionally allows students to participate in online examinations and diplomas.

THE IMPORTANCE OF ICT IN EDUCATION

Conventional teaching has highlighted material, while current settings favor skills and higher performance curriculums which are highly supported and supported by new educational technologies (Stephenson, 2001). The rising usage of ICTs as a means of everyday living increases the quality of learning for students. ICT supports changes in the way students learn from content-centered to competence-based curriculum and in connection with transferring teacher-centric delivery to student-centered forms (Yusuf et al. 2013). It increases the quality of education and promotes collaborative learning. ICT provides

quick and precise feedback to students (Becta, 2003). It fosters profound learning and enables instructors to better adapt to various learners' requirements (Lau & Sim, 2008). This enables smooth learning and efficient mapping of learning paths. According to (Newhouse P., 2002), ICT assisted learning environments might help a constructivist approach to teaching. One of the great advantages of utilizing ICTs in education is the preparation of current and new generation students for employment where ICTs are becoming more ubiquitous, particularly internet computers and other related technologies. These skilled and technologically knowledgeable pupils have the required skills of using ICTs effectively (Anu Sharma et al, 2011).

THE NEED OF ICT

The fundamental issue is that while all systems have undergone good change because of the industrial revolution and the advent of ICT, the educational system has not undergone such successful changes. For many years, the basic structure of the classrooms has remained consistent. The student-to-teacher ratio is at an all-time high this time of year, which is one of the primary causes of quality deterioration. Now, ICT is universally beneficial in this instance, allowing for the growth of human contact through artificial intelligence and 24 x 7 learning since "doubts of 40 pupils cannot be resolved in 60 minutes of class." Many private companies have arisen and are highly effective for this purpose, but this widespread problem has not received a sufficient formal response from government agencies and educational institutions. Though NPTEL, SWAYAM, and e-PG Path Shala are among of the government's ICT-based initiatives for excellent higher education. More advances in systems are required. Even yet, the average student does not have access to much of the authorized information. This needs to be altered.

As young brains nowadays are attracted by new technology, ICTs are also discovered to be motivational instruments. It also fosters

cooperative and quicker learning, as well as reaching the full potential of the curriculum and gaining a larger readership and attention, among other things. Quality education includes variables such as learners, teachers, the atmosphere, and the instruments utilized. Though ICTs are primarily a tool, they have an influence on the entire system. Their successful usage engages the classroom, avoids one-sided classroom learning, raises, and solves students' curiosity, and creates a better and more regulated atmosphere. Integration of ICT in Higher Education entails improving the quality of teaching, learning, administration, and academic research. Some of the primary consequences of this integration are successful seminars, management development programmers, rapid and secure academic activities, and transparency. Furthermore, the sensory approach employed in ICTs is extremely successful from a psychological standpoint, with imagery being a key component. As a result, learning is both quick and high-quality.

LITERATURE REVIEW

Vijaya & D'Souza (2016), "Focuses on teachers' digital literacy and the use of information and communications technology in teaching and learning" was the focus of the project. A descriptive survey approach was used to gather information from 73 secondary school teachers in the Mangaluru Taluk of Karnataka. The data was gathered using two questionnaires, namely the 'Digital Literacy Inventory' and the 'ICT Use in Teaching-Learning' questionnaires. The study identified an inventory of digital literacy for his investigation. The study found that teachers in both and rural urban secondary schools utilize Information Communication Technology (ICT) on average, without significant statistical differences.

Birwal (2017), "Attitudes of secondary school teachers toward the use of information and communications technology (ICT) in the teaching learning process" were investigated. It was decided to conduct the study using a

descriptive survey approach. The stratified random sampling approach was used to choose 120 teachers (60 from the commercial sector and 60 from the government sector) from Ghazipur, Delhi. A recent survey found that teaching staff had the same attitudes regarding information and communications technology. Gender and the kind of school administration were not obstacles to achieving this.

Biswas (2017), In this project, worked on “research on the current state of information and communications technology utilization in several teacher training institutes in tribal regions.” The questionnaire has been completed by 322 educators from 111 (DIETs). Laser printers accounted for 80.7 percent of all laser printers in India, laptops accounted for 72.1 percent, and PCs accounted for 69.5 percent of all computers in DIETs in tribal regions. According to the findings of the study, all DIETs are under-equipped with required ICT equipment, and the equipment that is available is not being utilized correctly.

Gupta & Dharamveer (2017), The study focused on “prospective teachers’ attitudes about the use of information and communication technology: a comparison study between C.C.S. University, Meerut, and Kurukshetra University, Kurukshetra,” according to the researchers. In the Saharanpur area of Uttar Pradesh and Yamuna Nagar district of Haryana, the researchers selected 160 prospecting teachers using a lot of technique of random selection. Two components of the ICT rating scales were established and standardized by the researchers; (1) ‘Knowledge’ and (2) the ICT attitude scales ‘Presentation.’ According to the study, the opinions of prospective teachers in relation to the use of ICT have not shown any statistically important difference between male and female. Forward instructors of Kurukshetra University (KU) exhibit a better attitude towards the usage of ICT than prospective teachers at university with the presentation component (CCSU).

Singh (2017), To gather information, a survey and interviews were conducted. The investigators used a questionnaire that they created themselves to interview administrators, instructors, parents, and children. The random sample approach was used to pick a total of 560 respondents who fit this description. According to the findings, 78 percent of administrators, 64 percent of instructors, 56 percent of parents, and 65 percent of pupils had a favorable attitude toward information and communications technology (ICT).

Suniya & Lhungdim (2017), “A study of the attitude of secondary school teachers toward ICT in schools in Arunachal Pradesh” was the project on which I worked. To gather information, a descriptive cumulative survey approach was used. In the case of choosing 304 secondary school teachers, the random sampling method was employed to choose from a pool of 24 secondary schools. The resulting group of instructors was then randomly picked from the pool. the IT attitude scale employed was established by the authors (Nasrin and Fatima Islahi) (2012). An analysis conducted of teachers’ attitudes toward Information Communication Technology (ICT) found that 98.3% of secondary school teachers were favorable to it, and male teachers (mean value, 114.4) had a better mindset than female teachers (111.4). Additionally, non (APST) teachers (mean value, 118.6) had a more positive attitude toward ICT than APST teachers (mean value, 117.8). And there was just no big variation in their perceptions toward ICT with regards to the nature of their jobs.

Tyagi & Imrana (2017), worked on “a research of secondary school teachers’ attitudes toward information and communications technology (ICT) in connection to their gender and school type.” The survey approach was used in this research. To choose schools, the random sampling technique was used, and to select instructors, the stratified random sampling approach was used. The research was carried out on 100 secondary school teachers from Modinagar district in Ghaziabad who related to the CBSE Board and

the UP Board. The instrument for the study was the Nasreen Fatima Islahi Attitude Scale towards Information and Communications Technology (ICT). According to the study results, which have a t value of 6.75 at the 0.05 level, female teachers have a much more positive attitude toward (ICT) than their male counterparts, and teachers working in government schools have a more positive attitude toward ICT than those working in private schools.

Babu & Sridevi (2018), "Role of Information and Communications Technology in Higher Education: A Study" was the subject of the paper. The approach used in the study was a review of the literature. The study concluded that information and communications technology (ICT) delivers high-quality education at a cheap cost, and that it has aided the government, higher education institutions, employers, and students in their efforts to achieve sustainable development.

AIMS AND OBJECTIVES

1. To study the use of Information Communication Technology in successful education from the viewpoint of students.
2. To identify if there is a link between ICT adoption and university students' achievements.
3. To examine contemporary difficulties in higher education to better understand how the teachers' experience could be improved.
4. To investigate the elements that affect students' and teachers' willingness to use ICT in the learning and teaching process.

RESEARCH METHODOLOGY

This research is descriptive in a screening approach to identify and assess the influence on students in private colleges of higher education using ICT based education programmers. Descriptive research is utilized in this study. Details about past or present events and how circumstances, differences and changes are explained by current events are necessary for

the development of the features of these research activities.

• Data Collection

In this research, the data collecting instrument is employed as an ICT application study and success studies. The questionnaire is divided into four subdivisions which comprises of demographic questions of respondent. The second section comprises student questions and data on how frequently the pupils use computers and what ICT instruments they utilize. The third section includes questions and inspiration about ICT applications and the last section is based upon the opinion of the student, on the need for ICT applications in the field of education, the willingness to participate in training while it is implemented, applications and the effectiveness of training and learning in ICT applications to identify problems.

RESULT

The department those divide into equal contribution in this engineering contribute up to 33.33% management contributing up to 33.33% and medical also contribute up to 33.33%. Male contributions up to 79.3%, and women up to 20.7% of 132 participants in the sample. Up to 25% of the contributions from the Bundelkhand were centralized by 25%, up to 25% from the East and up from the West. The Institute's contribution is made equally in that respect. Including 50 percent from the government and 50% from the private sector. The main contribution of the 80% student and the teacher was up to 20%. There are 300 students between 20 and 25 years of age, 25 to 30 of them are 180. And between 35 and 40 years of age is 72, 40 to 45, 48.

The entire variance in the dependent variable is ICT, the independent variable for the perception of the student may explain, which in this instance is extremely low, 1.6 percent. In an effective teaching learning process, there was a strong, positive connection between ICT in terms of

the instructor, which was statistically significant since in this table there is less than 0.005 sig that is very excellent, 0.001. In an effective student learning process, there was a substantial and positive association between ICT, statistically significant since the sig value in this table is less than 0.05 which is 0.011. Limited accessibility and network connectivity are the biggest difficulties facing students and instructors. No link exists between the student and instructor face to face online learning process as the sig value is 0.97. The value of significance exceeds 0.05, which is not significant. So, they can infer that our null hypothesis is acceptable. They may claim that there is no significant difference between government and private learning.

CONCLUSION

In the growth of a country higher education is seen as an important mechanism for building a knowledge-based society. Thus, the Information Communication Technology (ICT), if integrated

with higher education, can have a crucial role to play in speeding up the creation pace of new information. ICTs have been strongly involved in the overall education process with particular attention to important problems of access to higher education, equity, management, effectiveness, pedagogy, and quality. ICT provides higher education and its stakeholders generally several advantages. Potential disadvantages also must be addressed by incorporating ICT into the school system. The influence of ICT on higher education was explored in this study. In the previous five decades, higher education systems to satisfy the expectations for excellent education for everyone have developed rapidly. The rapid developments in information and communication technology have given this element more impetus Information Communication Technology (ICT). In current globalized world, need for professional and competent work is growing. Access to excellence in higher education has become a decisive element for economic development and growth for everyone. in this context.

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