AN ICT BASED COGNITIVE BEHAVIOUR IN THE DOMAIN OF PSYCHOLOGY

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ABSTRACT

The scientific domain in which cognitive science is used for the process of simulation, inference, analysis, function and studies of several aspects of human behaviour such as logics, memory, thinking, learning, perception, solving problems, knowledge and language. The science of study called as e-psychology is in close operational relation with the cognitive science domain but has an efficient collaboration of psychology and Information and Communication Technologies (ICTs). Several features offered with an effective usage of ICTs in several areas such as assessment, counselling, tests, diagnosis, therapy etc., the following document aims at giving the readers a flexible, easy and an adaptable form which supports all psychological activities by the usage of information and all communication tools and mediums.

KEYWORDS:

ICT, E-Learning, Evaluation methods, Cognitive Science, Computers in Human behaviour.

I. INTRODUCTION

Nowadays almost many schools are focussing on the use of various ICT tools to create, load, store, access and manage information. ICT has a major role to play in the learning and teaching progress by interaction through many old approaches being replaced. The chalkboards are being replaced with digital boards; also students' mobile phones are used in the process of learning during and out the class time. Flipped classrooms are playing a vital role in ICT based learning and teaching, where the students are able to see the lectures at their home in their comfortable way. Also class room time is being allotted for the individual to submit the exercises in an interactive way on time.

If the teachers are strong in the digital concepts and also well literate and trained enough in the use of ICT, then several ICT based approaches can be used in creative thinking skill for the students to expose a different means of understandings. The students under leave may have a better confidence in every aspects of learning since the content needed for them will be available online. (2. https://learningportal.iiep.unesco.org)

The lethal improvements and advancement in Information and Communication Technologies (ICTs) and the Internet development in the past twenty five years have changed the art of learning in the field of education. In recent days, the educational material which is referred as the e-content is available in internet and can be accessed anytime, anywhere and by anyone. So it is quiet natural and a forced moment for every institutions, and universities to develop and use their own or any ICT tools based on their demand through any course delivery platforms like Ariadne Web based learning environment and e-textbook through authoring tools like Interbook (1. Brusilovski et al., 1998, Durm et al., 2001). It is a common practice for every individual to depend only on the internet for every aspects. Now internet is not only stuffed with good stuffs, but also has bulks and bulks of uncertain and irrelevant contents. Taking all the above things into considerations, it is more apparent to select the absolute content that is needed and also learning how to extract and from where to extract the information is more essential (10). In recent fast world, it has become a practice for people getting addicted to the information in the websites. This becomes an issue when medical field is considered. (3. Eysenbach et al., 2002, Fogel et al., 2001, Gomella, 2000, Matthews et al., 2003).

A recent study on such human behaviour tells that real patients and supported individuals were found to believe and trust the informations shared in well known websites without consulting with any therapist or internet experts. The users used to get knowledge from the websites of several organizations related to health and hospitals. (4. García, Ahumada, Hinkelman, Muñoz, & Quezada, 2004) It has become so crucial for the psychologists to work on this new means of practice and view of websites influence in their psychological process (5. Carlson and Buskist, 1997, Fogel, 2004) Computers is playing a major role in between the therapists and patients, also mere future of psychology lies in computers (10).

ICT leads to improved student learning and teaching methods, a report by the National Institute of Multimedia Education in Japan proved that the use of ICT has improved students' practical knowledge, practical skill and presentation skill when it is integratedwith the curriculum. (6. http://www.ictconnect.in) ICT is mostly linked with a well sophisticated technologies but it has

its own conventional techniques and technologies like radio, TV and telephone. In recent advancement of technology many technologies are connected with people across the world in different locations, this reduces the impact of space, time and distance between participants.

II. E-PSYCHOLOGY AND E-LEARNING

Psychology is divided into major six areas based on the variety of human unusual behaviours. Each and every branch means to point to a group of unusual behaving group of members. The method to handle such a group may vary for individual to individual but the process in accomplishing the goal remains the same like evaluation, test, diagnosis, and treatment. The psychological services are explain in the below drawing. Fig:1.

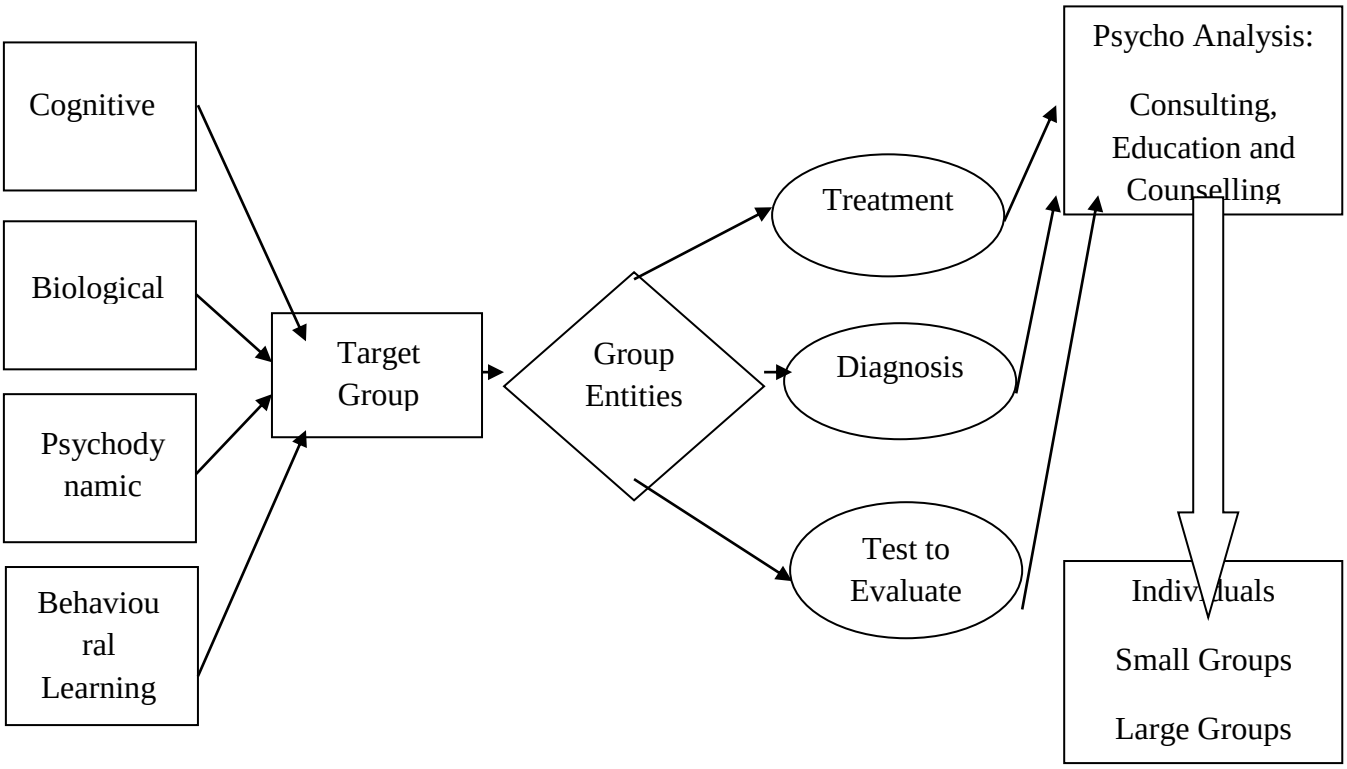


Fig: 1 Psychology Services

Learning is a process or an art in which someone is able to inculcate a deep knowledge in an area concentrated. Learning skills vary from person to person. Here comes the role of psychology in ICT tools. Based on the people who are the group of interest the ICT tools has to be used or changed to have a group to follow that particular technique (7). ICT is the best method for e-learning. It is proved that ICT is the only best skill for e-learning, but it has to be taken into consideration that a mind based or a person based or a group of people based learning is being achieved.

Psychology uses learning and the techniques of education like cognitive, behavioural study etc in all its branches. All the above said skills are used in the varied support and production of all the psychological fields and methods. The varied features of a psychologists or a counsellor in organizing the cycle of psychology uses the learning and education from the supported test evaluation. Also e-learning has showed off that it can used successfully in all fields of ICTs based learning and teaching methodology. The psychology services are mainly used in the field of education and learning as a supporting factor and also it has a drastic role to play in the process of changing the learning methodologies and teaching methodologies.

III. E-PSYCHOLOGY ENVIRONMENT

An uncountable number of cycle of psychological process including diagnosis, test, evaluation, support and intervention between the psychologists and the group of special people used the complete e-psychology environment. This provides all sorts of learning and teaching procedures and aids in all methodologies. Also the e-psychology is serving all the heterogeneous group of listeners, individuals, and counsellors. The ultimate aim is to integrate the traditional psychology services to combine with ICTs giving a strong support for e-psychology (7).

The convergence of all the methods involved in the process of psychological services and methods combined with the ICT learning and teaching methods leads to the formation of the process called e-psychology.

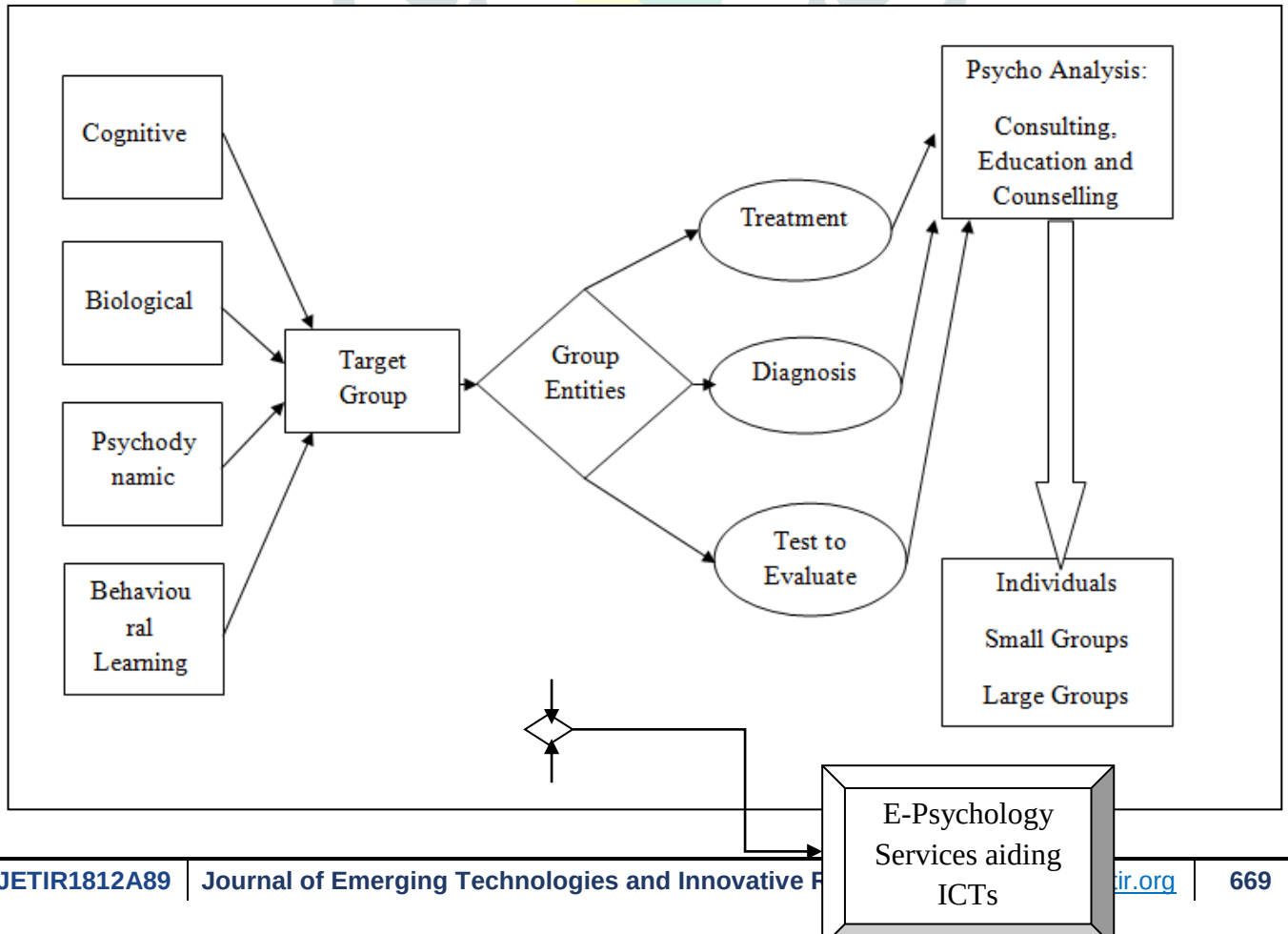
The e-psychology logic structure is explained well in the figure: 2.

Fig 2: E-psychology logic structure

There is an online course that explores a variety of electronic applications used in the promotion of healthy behavior, focusing on cases relating to physical health (electronic cigarettes), mental health (apps and wearables), and social health (e-mediation). In each of these areas, experts will share cutting-edge scientific knowledge and demonstrate some of the latest e-applications to boost healthy behavior. The course consists of 3 modules:

1. **e-Cigarette**: Promoting physical health. In this module, you will learn about the potential implications of e-cigarettes as a Tobacco Harm Reduction Strategy. You will gain contemporary scientific knowledge about the safety, efficacy, and potential health threats of using e-cigarettes.
2. **e-Mental Health:** Promoting mental health. In this module, you will learn about innovations in online, mobile and wearable tools used in mental healthcare (a rapidly expanding field), as well as their potential advantages and disadvantages.
3. **e-Mediation:** Promoting social health. In this module, you will learn about the core principles of mediation, and how you can use electronic communication to prevent escalation and promote conflict resolution during the mediation process.

This MOOC consists of knowledge clips, demonstration movies, exercises, discussion, and homework (reading) assignments. The e-psychology full features are explained well in figure 3.



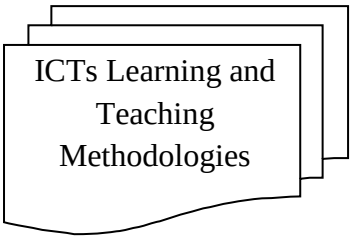


Fig: 3 E-psychology Detailed Logic structure

IV. E-PSYCHOLOGY PLATFORM STRUCTURE AND REPRESENTATION

Based on several discussion, e-psychology platform is abstractly depicted in figure 4 which supports the field of e-treatment, e-diagnosis and after the successful completion of the aim set according to many psychological approach, it reaches the final step of e-psychology, that is e-outcome. The e-psychology framework depends on the target group in which it will be actively used. The target group may comprise of the supported group and it also includes the therapists who fulfil the need of the target group. The supported group may include the small group, groups, couples, children, adults, families, individuals and elderly people.

Training is the major platform to work on when e-psychology is considered. In whatever maybe the field of learning or skills development, training places a vital role. It not only develops the field of e-psychology but also leads to the growth of the cognitive learning skills and the development of the target groups and the supported persons and most importantly the therapists to upgrade their level of perception. Beyond the persons like the users and therapists, there is an important person in this e-psychology namely the e-psychology researchers and the students who access the contents that are widely available in ICTs based platforms and tools.

The ICT tools and services include a combo of the information services and the communication services. A clean picture to depict the same is shown in Figure 4. The e-psychology platform includes four main divisions namely, information services, communication services, synchronous and asynchronous services. The information services give a detailed explanation of in formations about the e platform and the communication services is meant for only communicating the details. The methods are explained in figure below. The methodological framework used to perform the analysis of Information and Communication Technologies tools (ICT) in economics of climate change is built on the combined use of focus groups techniques and questionnaire-based survey.

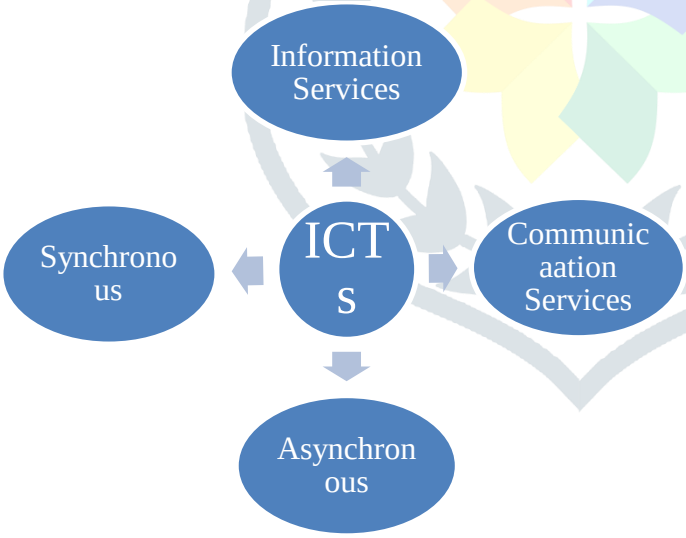


Fig. 4 ICT tools and Structures

Based on the results of certain analysis, and building on the focus groups activities performed with climate change experts, a questionnaire is designed about the use of ICT tools in this context. The focus groups are also used to analyze in depth some of the ICT instruments used in climate change research, their extent of application and the importance of relevant research fields for future research programs.

V. E-LEARNING AND E-PSYCHOLOGY INTERRELATION

Both e-learning and e-psychology uses four tiers of users. They are respectively processor, users, e-content maintenance, and the e-tools users (7). The e-learning includes several skills oriented teaching namely, personal teaching, classes, virtual schools, administrators, instructors, students, seminar, courses, exercises, examples, multiple choice questions, classes etc., and the e-psychology includes the personal consultancy, small groups, psychologists, supported individuals, supported materials, diagnosis, virtual health centre, administrator, therapists, exercises and diagnostic tests. Figure 6 explains well about the e-learning and e-

psychology interrelation.

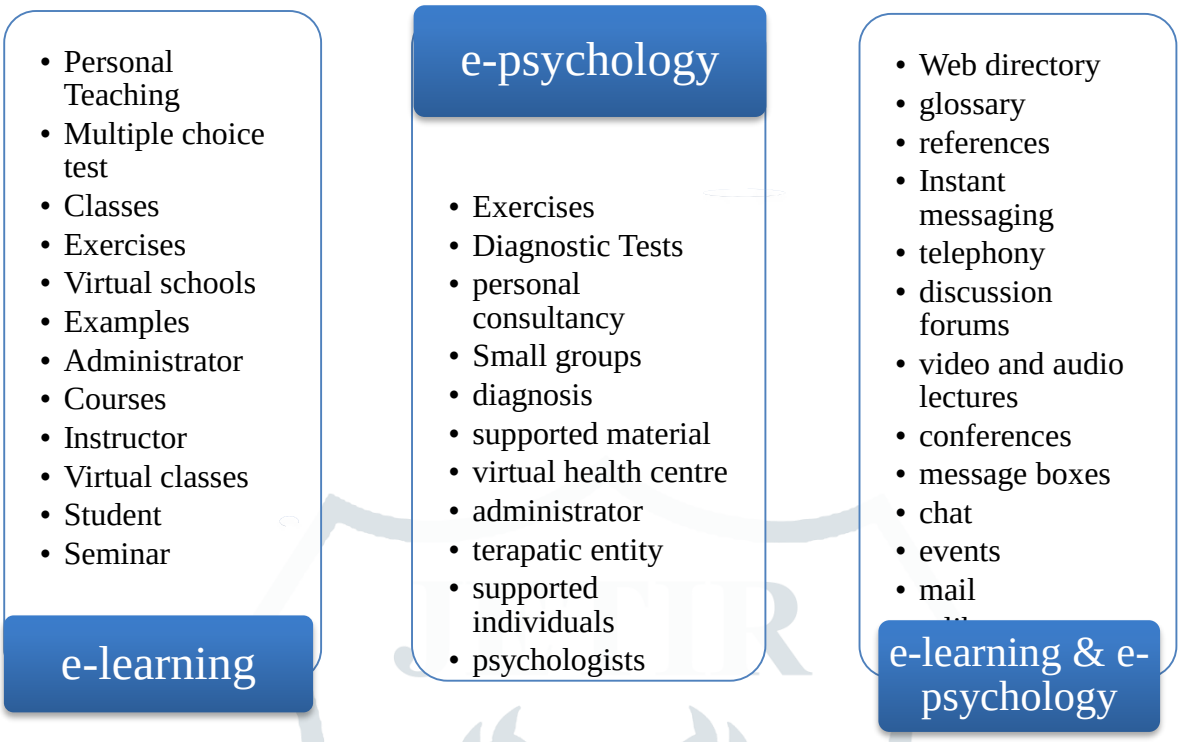


Fig. 5 Interrelation of the e-psychology with e-learning

VI. ICT TOOLS AND SERVICES

The ICT tools and services is mainly of two different kinds. One is informative and the other is communicative. The informative tools consist of informative and supportive tools. The informative tools aim in providing only information to the target group in a special mode. The supportive tools are nothing but the tools whose support is needed for the informative tools. The informative tools include the web directory, mailing list, announcements, news, references, events etc,. The supportive tools include the tests, evaluation schemes and the exercises (7).

There is another one important tool named as communicative tool which is of two main sections. One is synchronous and the other is asynchronous. The synchronous, as the name indicates the tool is highly synchronized. Asynchronous means the chat or any information shared is not in a synced. Chat, video calling, audio calling, instant messages, and telephones are synchronous means of communication, whereas asynchronous includes forums, e-library, e-mail etc,. A detailed explanative diagram of the same is shown in figure 6 and 7 where the informative (Fig 6) and communicative (Fig 7) tools are shown.

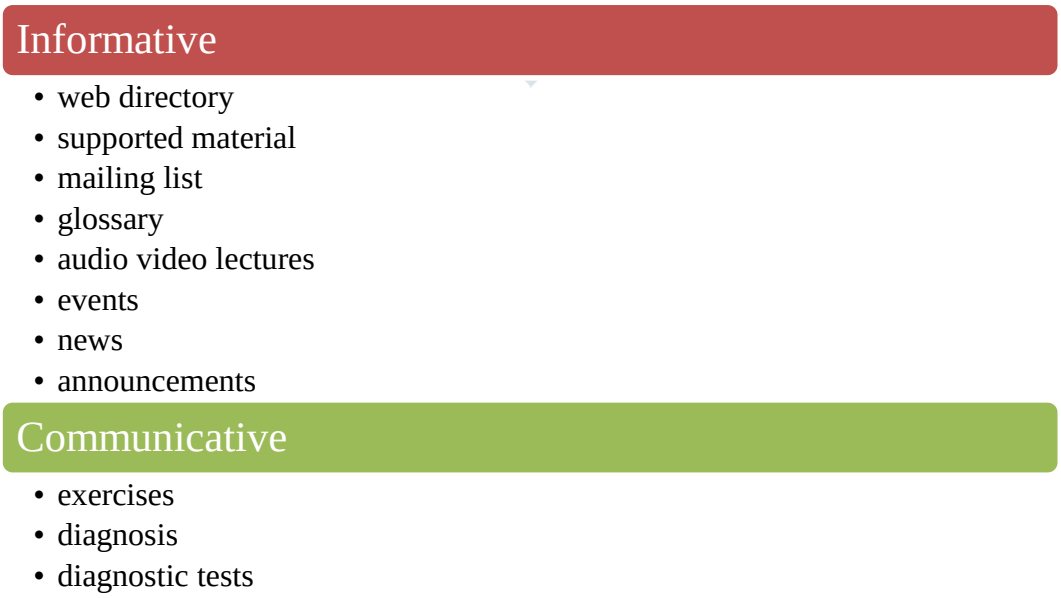


Fig. 6 Informative tools

Synchronous

- chat
- video conference
- instant messaging
- telephony
- audio conference

Asynchronous

- e-library
- discussion forums
- audio & video e-mail
- message boxes
- e-mail

Fig. 7 Communicative tools

VII. ISSUES AND DISCUSSION

The updating technology in the fields of computer and mobile has brought out a huge lot of changes in the ways people live, work, learn, study, and also building up of life. The new graduates who are less familiar are not able to shine in this world. The digital culture has lots and lots of advantage and disadvantage in global and national economy. Digital literacy is skills for learning, searching, information gathering, and the use of media for the society and hence got the important place to be considered for all curriculum frameworks. This modern life with the aid of computer has brought many changes in human life including the work nature, learning skills, the building up of knowledge, and also the influence in the world because of the power of technology. All these have led to several issues which have led to the lots and lots of discussions on the same.

In several countries in the world digital literacy is being incorporated in many fields of education and learning including the information and communication technology (ICT) into schools and colleges. Digital Culture and Digital Literacy: Digital culture means the culture in which the people are using the mobile phones and laptops for each and every work. This digital culture has made a path to the digital literacy which is nothing but the ability to learn using these digital mediums. Digital learning helps in the process of learning and gaining knowledge in an easy mean of communication and technology. It has its own applications as follows:

a) One laptop for a child: In order to use laptops at less expense rates, several laptops has been designed and developed at low cost for the use school students. Also features like low power consumption, low cost operating system, mesh functions and special reusable programming schema have been inculcated in this laptop providing it in a easy and cost efficient manner. Even after this many considerations buying such a laptop may not be possible in some developing countries. (8)
b) Notebook Laptop: All over the world, the binding of the information and communication fields has paved a way to achieve the milestones in ICTs particularly regarding the educational applications. When such application is considered, one laptop is needed for one child. For such educational uses, low price laptops have been used, whereas in developing and below developed countries, getting one laptop for a child is not that much easy. Hence this has to be considered as a major problem in the field of ICTS.
c) Tablets: Tablet is a smaller tool like our personal computers which allows user to input without a keyboard and mouse. Also all the learning software can be downloaded and installed. It has a free platform to learn and improve their skills and creativity and express their understandings. Tablets have a touch screen and come with a keyboard and mouse to give inputs, and it is a small device. It has some good learning software that can be downloaded into it and make more versatile in the art of learning. There are certain apps which will aid in creating personalised options and also to attend exams to express understandings (9).
d) Interactive white boards: The image from a computer can be projected into the interactive white board, also the content in the board can be manipulated, dragged, clicked or copied. The hand written notes can be saved from the board for future use.
e) E-readers: E-readers are electronic device holders of books in digital form and they increasingly use all the reading materials. The skilled readers and reluctant readers are two types of students who read the e-content.

f) Flipped Classrooms: The flipped classroom involves the process of flipping up the class by video conferencing or by recording the lecture and practice at home and transmitting through computer guided instruction and interactive learning activities. Some students like the flipped classrooms but there are some negative feedbacks too for the same (9).

VIII. FUTURE WORK

The future learning methodologies will depend only on the digital media. Hence more work has to be done in this field. The major problems that we will be facing in the future are minority language students, different ways of learning, and the digital divide. The minority language problem arises everywhere within the nation and outside the nation. There will be a group of people using a language which will be a minority language and it has to be incorporated by the digital learning material suppliers. The material should be made available in every language including the minority languages.

Next is the different method of learning and teaching methods. Nearly 85% of students are good in learning through visual aids and participate in many activities, whereas the remaining students have also to be seen through. Some students like text book reading, whereas some like reading in mobile phones, whereas some like videos type of learning. All groups of learning methods have to be considered.

Finally the digital disparities have to be studied like internet access will not be the same across the country. One region will get good internet access whereas other region may not get a good internet access. This digital divide has to be worked on to look over a good digital literacy.

IX. CONCLUSION

The current ICT platform consists of only the basic combination of the e-psychology in the art of learning and teaching. This ICT will become a successful one if it is achieved with hundred percent satisfactions for the differently challenged special people. Since e-psychology and ICT is interrelated with the teaching, learning, supporting, consulting etc., it is aiming at the enhanced skills and easy methodology for the visual and hearing special persons. The implementation of Sign language and the usage of Braille is being worked on and it will be implemented successfully in future. This integrated platform will help in the learning teaching process with the help of synchronous and asynchronous teaching methodologies via the highly superlative communicative and informative tools and services. The conglomerate state of the field called traditional psychology and ICTs along with all modern internet technologies gives way to the emerging e-psychology. Following several recent innovations, the e-psychology has a major role to look into the therapists, supported people and the patients and it can bring up a huge breakup in the patients experience. This platform is being used and also upgraded in several work environment to analyse, test, evaluate, skill study, percept research, simulate etc., also this is emerging in a viral way in the every fields and almost cover all psychological needs of various groups of people using e-psychology. E-psychology is not only a learning tool linked with ICT but it has its own wide applications.

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