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Trends and Development in English Language Teaching (ELT): Review

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This concept review consists of different sections. The first section deals with the meanings of bilingualism from different perspectives. The second part presents critical review on dimensions of bilingualism. The third section presents types of bilingualism and the differences among bilingualism. The forth part discusses cognitive factors that affect bilingualism and how they affect bilingualism. The conclusion comes at the end with the summary of what has been discussed in the body parts.

Keywords: Bilingualism ,Compound Bilingualism, Co-ordinate Bilingualism and Subordinate Bilingualism.

Concept Review on the Meanings of Bilingualism

It is not easy to formulate a generally accepted definition of bilingualism. Bilingualism means different things to different people. The definitions of bilingualism are based up on different approaches. These are maximalist approach, minimalist approach, permissive approach, functional approach, fractional approach and holistic approach. Bloomfield (1933:56) defined bilingualism as 'native-like control of two languages'. However, this definition excludes many people who speak more than one language but do not

have 'native-like' control of one or both of their languages. A large number of people who use two languages regularly may not have 'native-like' control of one of their languages. It is clear that Bloomfield's definition of bilingualism needs to be modified if it is to reflect accurately the reality of people's ability to use languages.

The existence of large numbers of people who speak more than one language, but who do not exhibit native-like control in both languages raises the question of how proficient a person must be to be classed as bilingual. Haugen (1953:7) suggests that bilingualism begins 'at the point where a speaker of one language can produce complete, meaningful utterances in the other language'. Diebold (1961) has even suggested that bilingualism has commenced when a person begins to understand utterances in a second language but is unable to produce utterances.

Bilingualism may be defined as having some ability to use two (or even more) languages. There can, therefore, be degrees of bilingualism at one extreme there are those people who have native-like control over two languages and at the other extreme are those people who have just begun to acquire a second language. Bilingualism is the situation in which an individual is able to understand two languages very easily and to use both of them like a native speaker of the same social and cultural origin in all the communicative situations of his/her social milieu, because he/she knows the second culture which has become like his/her second nature (Philip Riley, 1990).

British pedagogue Deshays Elizabeth (2002) stated that bilingualism means the possession of two languages, the collocation of someone within two linguistic worlds. The same definition is also adopted by Kurt Egger, when he writes that bilingualism means the knowledge of two languages. Bilingualism is the situation in which a person is able to use two languages like a native speaker of the same social and cultural origin in all the communicative situations of his/her social milieu, because he/she knows the second culture which has become like his/her second nature (Philip Riley, 1990). Bilingualism is also contact with possible models in the second language and the ability to use these in the environment of the native language (Diebold, 1961). Further, bilingualism is the practice of alternately using two languages (Weinreich, 1979).

Degrees of bilingualism can be assessed in the individual's command of the four skills of listening comprehension, speaking, reading comprehension and writing in each language. Some children in immigrant communities, for

example, have all four skills only in the official language of their country of residence while in their parents' language they have only the oral skills of listening comprehension and speaking. In addition, people who are bilingual in all four skills can have different levels of skill in each language.

For example, a Vietnamese speaking child educated in English may have a better command of written English than of written Vietnamese, even if the child's spoken Vietnamese is better than his/her spoken English. Finally, bilinguals have different characteristic linguistic features, especially relating acquisition, thinking or interconnections of languages (Baker, 2011).

The Summary on Meanings of Bilingualisms are presented in table form as follows:

Approaches of Bilingualism	*Who is bilingual? What is bilingualism?*	*Definitions*	*Author*	*Date/year*
Maximalist	Bilingualism is the	Native like control of two languages	Bloomfield	1933
Minimalist	A Bilingual can	Produce complete meaningful utterances in other languages	Haugen	1953
Permissive	Bilingualism is the	Contact with possible models in the second language and the ability to use these in the environment of the native language	Diebold	1961
Functional	Bilingualism is	The practice of alternatively using two languages	Weinreich	1979
Functional	Bilinguals are	Those who use two (or more) languages (or dialects) in their everyday lives	Grosjean	1994
Fractional	Bilinguals are	Two monolinguals in one person	Baker	2011
Holistic	Bilinguals have	Different characteristic linguistic features, especially relating acquisition. Thinking or interconnections of languages	Baker	2011

Review on Dimensions of Bilingualism

Bilinguals can be analyzed along the following over-lapping and interacting dimensions. The first is the ability. Some bilinguals actively speak and write in both languages (productive competence). Others are more passive bilinguals and may have receptive ability (understanding or reading). The second is the use of language.

The domains where each language is acquired and used are varied (home, school, street, phone, TV). The third is the balance of two languages. Bilinguals are rarely equal in their ability or use of two languages. The fourth is the age of a child. When a child learns two languages from birth, this is often called simultaneous or infant bilingualism. If a child learns a second language after about three years of age, it is termed consecutive or sequential bilingualism.

The fifth is development. Incipient bilinguals have one well developed language, and the other is in the early stage of development. When a second language is developing, this is Ascendant Bilingualism. Culture is another dimension of bilingualism. Bilinguals become more or less bicultural or multicultural. It is almost possible for someone (e.g. a foreign language graduate) to have high proficiency in two languages but be relatively monoculture. In comparison, some monolinguals move towards biculturalism.

Context is also another dimension of bilingualism. Some bilinguals live in bilingual and multilingual endogenous communities that use more than language in everyday basis. Other bilinguals live in more monolingual and monoculture regions and network with other bilinguals by vacations, phone, and email, for example where there is an absence of a second language community, the context is exogenous. The last dimension is elective bilingualism. Elective bilingualism is a characteristic of individuals who choose to learn a language, for example in the classroom.

Review on Types of Bilingualism

Bilingualism can be classified in to different types based on factors like age, sociocultural environment, competence and level of language command, origin, extension, effectiveness and nature of language acquisition, context of acquisition, sociocultural environment, social context and cultural identity. The study of bilingualism has tended to develop dichotomies. Among the more commonly used dichotomies are the distinctions between early and late

bilingualism, compound, co-ordinate and subordinate bilingualism, additive and subtractive bilingualism, elite and folk bilingualism and balanced and dominant bilingualism. These distinctions have had an important function in drawing attention to various aspects of bilingualism but at the same time they represent different approaches to the question of bilingualism. Hence, in this section I will present different types of bilingualism and the difference between each.

Early bilingualism

Early bilingualism there are two types' simultaneous early bilingualism and consecutive (or successive) early bilingualism. Simultaneous early bilingualism refers to a child who learns two languages at the same time, from birth. This generally produces a strong bilingualism, called additive bilingualism. This also implies that the child's language development is bilingual whereas successive early bilingualism refers to a child who has already partially acquired a first language and then learns a second language early in childhood (for example, when a child moves to an environment where the dominant language is not his native language).This generally produces a strong bilingualism (or additive bilingualism), but the child must be given time to learn the second language, because the second language is learned at the same time as the child learns to speak. This implies that the language development of the child is partly bilingual.

Late bilingualism

Late bilingualism refers to bilingualism when the second language is learned after the age of six or seven; especially when it is learned in adolescence or adulthood. Late bilingualism is a consecutive bilingualism which occurs after the acquisition of the first language (after the childhood language development period). This is what also distinguishes it from early bilingualism. With the first language already acquired, the late bilingual uses their experience to learn the second language.

Additive bilingualism and subtractive bilingualism

Additive bilingualism and subtractive bilingualism refer to the situation where a person has acquired the two languages in a balanced manner. It is a strong bilingualism. Subtractive bilingualism refers to the situation where a

person learns the second language to the detriment of the first language, especially if the first language is a minority language. In this case, mastery of the first language decreases, while mastery of the other language (usually the dominant language) increases.

Supporting this, Lambert (1974) depicts that depending on how one's L2 influences the retention of one's L1, bilinguals can be classified into additive bilinguals and subtractive bilinguals. Bilinguals who can improve their L2 without losing their L1 proficiency are called additive bilinguals, on the contrary, those whose L2 is acquired or learned at the cost of losing their L1can be called as subtractive bilinguals.

For being additive bilinguals, both of the languages learned by individuals should be valued in the society in which they live. In other words, when learning a L2 does not interfere with the L1 learning, both languages develop, which is considered as an additive bilingualism. While subtractive bilingualism occurs when learning a L2 interferes the L1 learning and consequently the L1 is replaced by L2. In other words, subtractive bilingualism occurs when an individual learns the L2 to the determinant of L1.

Balanced and Dominant Bilinguals

The distinction between balanced and dominant (or unbalanced) bilinguals (Peal and Lambert, 1962) is based on the relationship between the fluency and proficiencies of the respective languages which bilinguals master. Those who acquire similar degrees of proficiency and mastery in both languages are defined as balanced bilinguals, while on the contrary; dominant bilinguals are those individuals whom their proficiency in one language is higher than that in the other languages. In other words, in dominant bilingualism, the individual is more proficient and competent in one of the two languages, while a balance bilingual is more or less equally competent and proficient in both languages.

Compound, Coordinate and Subordinate Bilinguals

According to Weinreich (1953), compound, coordinate, and subordinate distinctions deal with the properties of how two or more linguistic codes are organized and stored by individuals. In compound bilinguals, two sets of linguistic codes (e.g. 'Dog' and 'Sag') are stored in one meaning unit; in other

words, have one system of meaning for words which is used for both L1 and L2, while on the contrary, in coordinate bilinguals, each linguistic code is stored and organized separately in two meaning units and the bilinguals have two systems of meanings for words; i.e. one system of meaning is for words that the individuals know in the L1 and the other is for words they know in L2.

Furthermore, in subordinate bilinguals, linguistic codes of Bilinguals' second language (L2) are assumed to be understood and interpreted through their first language (L1). Specifically, they are considered to possess two sets of linguistic codes, however, only one meaning unit, which is accessible merely through their L1.

Folk and Elite Bilinguals

There are still several other classifications of bilinguals which are dependent on variables such as cultural identity and language usage. Besides these types of individual variables, bilinguals can be classified depending on various social variables.

Concentrating on the social status of language, Fishman (1977) states that depending on the social status of language, bilinguals can be classified into 'folk' and 'elite' bilinguals where folk bilinguals are often language minority community whose own language does not have a high status in the predominant language society in which they dwell. In contrast to folk bilinguals, elite bilinguals are those who speak a dominant language in a given society and also those who can speak another language which provides them additional value and benefit within the society. Based on the dimensions similar to Fishman (1997), Valdes and Figueroa's (1994) differentiate between circumstantial and elective bilinguals.

The Summary on Types of Bilingualism are presented in table form as follows:

Factors	TYPES	Meanings
Age	1. Early 2. Late	Early bilingualism refers a child learns two languages at the same time (Simultaneous).

		Late bilingualism refers to the second language is learned after the age of six or seven
Competence	1. Balanced 2. Dominant	It suggests the level of proficiency in the different languages. Balanced bilingualism refers bilinguals who acquire similar degrees of proficiency in both languages. Dominant- those whom their proficiency in one language is higher than that in other language
Level of language command	1. Perfect 2. Partial	It always refers to age-appropriate language command.
Origin	1. Natural/ spontaneous 2. Artificial/ cultural	Natural bilinguals acquire the languages from speakers around them in childhood (e.g. one-parent-one-language method) while Artificial bilingualism can be achieved in a systematically structured way (e.g. at school).
Extension	1. Bilateral 2. Unilateral	In terms of societal bilingualism, it is important which language community has learnt the other's language. If acquisition is mutual, bilingualism is bilateral. If not, unilateral.

Effectiveness	1. Active/ productive 2. Passive/ receptive	It refers to productive (speaking & writing) and receptive (reading & listening) language skills.
Nature of Language Acquisition	1. Ethnic 2. Elite	Ethnic bilingualism is characteristic of co-habiting communities, while elite bilingualism is more voluntary and depends on individual choice.
Context of Acquisition	1. Coordinate 2. Subordinate	The linguistic concepts are learnt either in the same or in different settings. In coordinate bilingualism concepts are recognized in two languages, while in subordinate bilingualism one of the languages is dependent on or secondary to the other.
Socio-cultural environment	1. Additive 2. Subtractive	In the first case L2 is added to Ll While in the second case L2 displaces Ll.
Social context	1. Societal 2. Individual	The terms refer to the languages acquired in a community and languages that are learnt on a personal basis.
Cultural identity	1. Monoculture 2. Bicultural	It depends on how many cultures the individual identifies him-/ herself with.

Review on Cognitive Factors that Affect Bilingualism

English language has become a very dominant language. In this review, I will discuss some of the factors that affect bilingualism. The factors such as: age, the "quality" and "quantity" of the interaction, personality, the child's cognitive ability, and learners' knowledge of L1 could be affected in the process of acquiring the two languages.

Chin and Wigglesworth (2007) believe that "language is not neutral". In other words, they report that there are some styles which are affecting the child's attitude toward the two languages negatively and/or positively.

The most important factor that will absolutely affect the success of the process of bilingualism is the age factor. "Age is considered an important factor because there is a strong association between age of acquisition and ultimate attainment of proficiency" (Chin & Wigglesworth, 2007).

This factor in particular has always been a controversial issue among researchers and linguists such as Bialystok, E. (2001), cited in Chin and Wigglesworth (2007). Lennenberg's critical period hypothesis about age factor suggests that it is hard for adults to acquire a new language and therefore become bilinguals, because when people get older, learning a new language would not be as easy as it is to children.

In contrast, it has been discussed by Birdsong (1992) that age is not causing any problem in the process of acquiring the new language. Birdsong also went further and discussed that in fact one cannot tell the exact age in which a person can acquire the language and master it with native-like proficiency.

Early childhood bilingualism is a reality for millions of children throughout the world. Some children learn multiple languages from earliest childhood; others acquire additional languages when they go to school. The acquisition and maintenance of more than one language can open doors to many personal, social, and economic opportunities (Chin & Wigglesworth, 2007).

Secondly, the two most important factors which definitely affect bilingualism in children are "quality" and "quantity" of the "interaction" (Chin & Wigglesworth, 2007). These factors notice parents who mainly speak one language at home more than the other. Their children are often not quite

dealing with the less-used language at home. This may affect the children ability of using the second language. To mitigate the above problems parents must encourage their children to engage with the less commonly used language at home (Chin &Wigglesworth, 2007).

In contrast, Lambert (1987) disagrees with what other researchers believe and names this kind of "language-loss" "subtractive bilingualism". He explains the case of a child who is speaking one language at school, and a completely different language at home. He asserts that this may cause the child to forget the language that is spoken at home among the family members. When the child forgets the language, it affects them in a negative way. The child might even feel less-confident about himself.

Furthermore, through looking back again to previous definitions; it seems that most linguists define bilingualism according to language competence only, ignoring the socio-cultural, psychology, and cognitive ability factors which are as important and related when discussing the performance of bilinguals (Chin & Wigglesworth, 2007). Clearly, it is certain that linguists who understand bilingualism from only one perspective should undoubtedly bear in mind that it's not only about how competent a child is, but also understanding what factors might help him or her to reach this level of perfection in both two languages are very important.

Thirdly, so far, I have not found some evidence which shows that a child's personality might be affected if he is brought up in a bilingual environment. However, in second language learning, there is some valid evidence which affects the issue of a child's personality relating to second language learning, and believes that the child's personality might be an important factor that could affect the success of the learning process (Patkowski, M. S. 2004). For example, comparing two persons with completely different personalities one is the social person "extroverted" is more likely to acquire a new language easily. On the other hand, any person who is "introverted", in other words, a person who is shy around people and afraid of making mistakes while using the new acquired language might actually face some problems in acquiring the new language, or it could slow the learning process of a new language.

However, as far as my knowledge is concerned, in certain language learning situations, the quiet observant learner may have greater success. So, I draw my attention to the fact that the child's personality is the third factor that might affect excelling in the process of bilingualism.

Fourthly, bilingualism is affected by language learner ability. Two aspects of learner ability will be discussed in this category. The first aspect is learner ability to use an L2.The learner's ability to use a second language will be discussed in relation to aspects of the learner's cognitive structures. The second aspect is a biological ability. Age is consistently referred to as a biological factor having some influences in learning a second language.

Some researchers (Patkowski, M. S. 2004) for example, have found that learners of a second language who start learning while they are young learn better and faster than those who start when they are much older. The learner's linguistic competence in an L2 plays a central role in the learner's ability to use it in any performance, be it functionally or communicatively.

Learners' knowledge of L1 is the fifth factor which affects bilingualism. Second language learners have already acquired a linguistic system that is their first language (L I), the role L1 plays in the acquisition or learning of a second language no doubt contributes to achievement in L2 learning. According to the behaviorist learning theory, old habits get in the way of new habits. In cases where the structures of the learner's L1 and L2 are the same, the learning of L2 is facilitated because all the learner has to do is to transfer L1 habits. This is referred to as positive transfer. Whereas when the structures of learnersL1 and L2 are different, 'negative transfer' or interference takes place which means that L1 habits hinder or interfere with L2 learning thus resulting in learning difficulties and errors.

In behaviorist accounts of SLA, therefore, all errors are caused by L1 interference and the errors are taken to be signs of non-learning. And also, the errors are as considered undesirable and must be avoided at all costs. With regard to this, "Contrastive Analysis" has been employed as a means of attempting to predict areas of potential errors by comparing the learner's L1 with the target language so as to identify the differences between them.

Review on Bilingual Education in Ethiopia

The majority of Ethiopians speak more than one language, even if they are not fluent in every language they speak. Many Ethiopians need to use more than one language in order to pursue their livelihoods and to access economic opportunities and services in the State, since particularly occupations are tied to the use of certain languages. Languages in Ethiopia adopt a variety of roles and lead to different opportunities and these vary greatly according to individual Ethiopian's situations, including their areas of origin, economic and educational status.

The language that Ethiopians speak in the home may not be the language used in nearby markets or on transport routes. The language profiles of men are often broadly different from those of the women in the same community. In rural areas levels of bilingualism and multilingualism amongst boys and men are much higher than amongst girls and women, as males travel more widely and need to use languages of wider communication. This reflects the economic uses of languages that lead to opportunities, including trade, transport sector employment and migrant labor that are inherently linked to gender.

The language profile of the Ethiopian population has changed over time as bilingualism, with Amharic as a second language has become an accepted norm for many non- Amharic mother tongue speakers. Urban populations from all language backgrounds also demonstrate a marked tendency to shift to Amharic, often losing the language spoken by their parents. In order to access even the most basic primary education, prior to the period of the present Government, it was necessary to learn Amharic (and to learn in Amharic).

The Amharic language was the only vehicle for accessing wider economic and educational opportunities in the Ethiopian State. To some extent this is still true as the hegemonic societal position of Amharic remains unassailable, even though, since 1991, other Ethiopian languages have been employed for official purposes, including primary education. Recently developed languages are extending the range of their uses, in response to and as a result of the development of written forms, but the use of local languages remains restricted and is arguably somewhat artificial or imposed.

The diversity of languages in Ethiopia and their respective societal roles are now framed within a new context of State sponsored language development where several regional, zonal and local languages are employed for official purposes. The use of these newly introduced languages as media of

instruction in the primary education system has been the most visible manifestation of the changes in language use or use of more than one language.

The Education and Training Policy (1994) promotes the use of regional and local languages for two stated reasons. The first reason is the claim that learning in the mother tongue has clear pedagogical advantages for the child, who feels comfortable and reassured by their ability to understand and analyze information in their own language. The second reason is the claim that the use of local languages in education accords with the rights of nationalities to self-expression that are enshrined in the Constitution of Ethiopia. The Ministry of Education, therefore, presents both pedagogical and ideological justifications for promoting the use of more than one language.

Conclusion

This concept review has commenced to provide awareness on bilingualism, types of bilingualism, dimensions of bilingualism, cognitive factors that affect bilingualism and bilingual education in Ethiopia. As it was discussed in the review bilingualism is a person with a native-like control of two languages (narrow definition). Bilingualism is also defined broadly as a speaker of one language who can speak in another language. In line with the definition, the degree of bilingualism was also addressed in the review. Especially in children, bilingualism is a very varied reality, characterized by deep individual differentiation. Every child explores reality in different ways and has a different psychological and familiar background influencing his/her second language acquisition within his/her linguistic community. Language is always part of the child's lebensraum, and there are many different forms of living that produce various linguistic uses.

Bilingualism is expressed with dimensions like age, competence, level of language command, origin and nature of language acquisition, context of acquisition, social context and cultural identity. Based on the aforementioned dimensions bilingualism is classified as early, late, balanced, dominant, perfect, partial, natural, artificial, bilateral and unilateral etc. Cognitive factors like age, quality and quantity of interaction, child's personality, and language learner ability and learner's knowledge of L1 affect bilingualism and the last part provides bilingual education in Ethiopia.

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Assessment of the Impact of Urban Public Transport Terminals on Traffic Speed in Shashemene, Ethiopia

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This paper discusses the impact of urban public transport terminals up on traffic speed in Shashemene City. A study is conducted in Shashemene city, Ethiopia at two bus station locations namely Awasho bus station and Arada bus station to observe the variation of traffic speed for different existing traffic conditions. Shashemene is one of the major cities in Ethiopia. Both bus stations are located in the influential areas of Shashemene city. A taxi/Auto rickshaw stop exists on the kerb side beside each of the bus stations. The width of the road is getting affected due to the occupancy of taxi/auto rickshaw stand at the kerb side and is varying from time to time. Huge volume of pedestrians will be crossing the road continuously from one side to the other side to catch the bus at the bus stations. The location of bus stations is so complicated and are suffering the through traffic speed with the impacts of bus movements, taxi movements and pedestrian crossings.

Keywords: Traffic Speed, Traffic Volume and Bus Frequency.

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Traffic data is collected near both the bus stations through the method of manual data collection by enumerators to assess and evaluate the impact of urban public transport terminals on traffic speed. A multiple non-linear Regression Model is developed to analyze the variation of traffic speed for various bus frequencies, taxi frequencies, pedestrian crossings and effective road widths which will determine the individual effect of urban public transport terminals up on other traffic flows in Shashemene city. Many charts and cases under different traffic scenarios at both bus stations is developed. The results obtained from the model shows that under high impact of traffic condition over 15 km/hr is unexpected at Arada bus station even if traffic volume is restricted to 100 vehicles on 14m effective road width. Finally, three alternatives are proposed to improve the existing traffic condition.

Introduction

Transport terminals are an important infrastructure of public transportation where buses and taxis stop to pick up or drop passengers. It is center and intermediate location where freight and passengers either originates, terminates or is handled in the transportation process.

In developing countries particularly in Ethiopia, the number of taxis known as Auto rickshaws is extremely increasing in the town areas. This is because in urban areas, peoples are densely populated as compared to rural areas. Moreover, the need of transportation is also high as peoples living in the city accomplishes more of their work activities within the city. This was forced the other transportation in the city and get impacted by this taxi as they park on the road.

Shashemene city is one of the principal towns in Southern part of Ethiopia. The town lies on the Trans-African Highway 4 Cairo-Cape Town, about 250km from the capital, located on latitude of 70 12' north and longitude of 380 36' east. The total population in the town is 246,774(without including recently included kebeles from rural areas in case of new master plan), with almost all equal ratio of male and female. Shashemene has five major corridors to which its road connects to its neighbor towns/cities.

Traffic flows in Awasho, Abosto and Arada sub cities are the major traffic flows where high traffic problems occur in the city as compared to the other sub cities' traffic flows. Bus station and taxi/Auto rickshaw terminals abundantly exist in these sub cities. Among them, Awasho and Arada bus stations are the two major bus stations and numerous taxi stops are available

in the city. Awasho bus station is larger as compared to Arada bus station and exists at the intersection side of Addis Ababa to Kenya international roadway and Shashemene to Bale Robe roadway. This makes the city busier by transportation especially around market centers. That is why the urban roads are becoming more congested.

Urban taxis/Auto rickshaws which were pulling over and picking up passengers in the city causes traffic problem on traffic flows. It usually makes traffic congestion and delays on urban roadways with high traffic volume, especially in sections near bus stops where passenger transfers occur. A passenger would also step into traffic lanes to get or leaving a taxi often posing safety concerns.

Statement of the Problem

In urban areas the speed of vehicle is affected by various factors. Among many factors, effective width of road, existence of pedestrians on roadway, traffic density, any obstruction on roadway, presence of roadside bus stations and taxi stops, road side parking, roughness of road ways are major contributors.

Accordingly, in Shashemene town, the roadside bus station and taxi stops have significant influence on nearby traffic flows. As result of disturbance in vehicle travel speed, the road nearer to bus station and taxi stops are not delivering the required service in its design period of time and the roadway capacity become reduced as a result of taxis, pedestrians and buses stop on the road way which then reduces the effective road width.

Different vehicles in the town moves along urban street of road in transporting goods and people in the urban. Therefore, both freight vehicle and public vehicles are get congested, delayed and traffic flow speed of vehicle obstructed. In addition, the taxi stops, bus stations were located and constructed beside the intersection of two major roads of high traffic volumes in the cities so as the vehicles like minibus taxis and rickshaws park at the edge of these urban roads.

There are no strict actions by traffic policies to pedestrian crossing without Zebra crossing to get bus or taxis which is again able to affect the movements of vehicles. As a result, the capacity of roadway designed for a given vehicles nearer to bus and taxi stop stations got reduced. For this regard,

this thesis is devoted to study the impact of urban public transport terminals affecting nearby traffic flows in the city.

Objectives of the Study

- To evaluate the impacts of road side bus stations on traffic speed.
- To assess the effects of taxi stops and pedestrian crossing on other mode of vehicles.
- To analyse the extent of speed reduction suffered by different types of vehicles due to the location of bus stations.
- To develop multiple regression model that represents how much traffic speed is impacted due to the existence of urban public transport terminals on the side of the main road.

Significance of the Study

This study will be useful to search some possible alternatives at the bus station location to improve the traffic conditions. An evaluation on the impact of different bus stations and taxi stops on the operations of traffic speed can provide useful information to the city planners for the design of bus stops under different traffic and environmental conditions.

On the other hand, the expected benefit of this research is also to provide information and enable someone who are responsible to locate the stations of terminals to make better decision while planning to have less effects up on traffic flow so that traffic movement on the roads has not affected more. Furthermore, the research helps for the responsible authorities to see the effect of how severe the issue is, such that great attention and participations on any research based on urban terminal effects on nearby environment related problems will be supported efficiently. As it was stated earlier, road traffic congestion around urban public terminals have been increasing from time to time. However; no attention is given to identify the root cause of the problem and its solutions in Shashemene town. Hence, the findings of this study help:

The Practitioners (traffic police and road and transport officials) to be aware of the problems, because as a practitioner, they can contribute on their own part in reducing the impact of urban terminals on road traffic.

To give a brief back ground and detail of existing traffic characteristics in Shashemene town which is especially a clue in forecasting future Average Annual Daily Traffic (AADT) from existing condition. The study is believed to enrich the existing literature on Shashemene town public terminals impacts on traffic flow around it. To inform the existing situation so that practitioners able to think over the future scenarios. To give effective ways of recommendations based on analysis that will be input to strategy and policymakers, transport authorities, road engineers, and other concerned bodies, to take counter measures and monitor road traffic problems due to inappropriate locations of urban terminals.

Literature Review

Bus stops interfere with traffic flow, as the buses stop in the travel lane, resulting in a "bottleneck" which reduces in road width at the location of the stops. Bus bays interfere with passing vehicles primarily while buses maneuver to pull into and out of the stop. They will also interfere with vehicle movement if bus demand exceeds the bay's capacity, resulting in some buses waiting in the travel lane until the buses occupying the bay exit the bay (R. Z. Koshy and V. T. Arasan, 2005).

A study was conducted on the effect of capacity by means of lane width of roads in varied traffic conditions. It was concluded that the rate of decrease in speed with traffic volume is different for different types of vehicles. Further it is expressed that the effect is more for three wheelers and heavy vehicles than two wheelers (Chandra et.al, 2003).

Similarly, a study was conducted in Delhi to assess the effect of cycle rickshaws on traffic flow. The study was made in different lanes and observed that the impacts of cycle rickshaws are very significant on the speed of the traffic flow of the network as compared to the other factors (Rajat Bose et al., 2004).

Taxis pulling over and picking up passengers is one of the main causes of delay on urban roadways with high traffic volume, especially in sections near bus stops where passenger transfers occur. A passenger would also step into traffic lanes to get a taxi, often posing safety concerns. It is therefore necessary to prevent taxi pick-ups from happening outside of designated taxi stands on roads with busy traffic (B. Mao and H. Chen, 2001).

In Lagos city, a study was conducted and found that road width and passengers on the road creates a major influence resulting in traffic congestion (Olaogbebikan J. E. N.,et. al.,2013).

Methodology

Study Locations

The study was conducted in Shashemene town. Particularly, two major study locations were selected. These are Awasho and Arada bus stations. Awasho bus station is located at very busy place in Awasho sub city. It is situated at one side of four major legged road intersection. Shashemene to Bale Robe and Hawassa to Addis Ababa road cross each other at this side of bus station. Traffic problems like traffic delay, congestion, conflicts and parking of vehicle on roadway by obstructing traffic flows widely happen in the city.

Congested Traffic Flow at One Side of Awasho Bus Station

Arada bus station: It is older bus station located about 400m away from the main road in Arada sub city. This terminal serves for only small buses (minibus and related). However, since it is located at the side of road linking Taiwan market center as one of cities biggest center, it has high impact on traffic flows.

Fig 3.3 Traffic flows at one side of Arada Bus station

Data Collection

Two typical urban roadway segments of higher traffic volume in front of each terminal in Shashemene town were selected for data collection. Required traffic flow data was collected at selected 30m wide baselines on given road segments.

Collected parameters highly influence the respective traffic speed. These parameters are spot speed, bus frequency, taxi frequency, pedestrian crossing and effective road widths.

For this study manual method of data collection was adopted and was done in terms of manpower where vehicles are to be classified with a number of movements recorded separately. At selected sites, the traffic on each arm has counted and recorded separately for each movement.

The data collection task comprises six main activities. These are recording the number of bus frequency, taxi (auto rickshaw) frequency, traffic volume, spot speed, effective lane width, and pedestrian crossing for every 15

minute interval from morning 6:00 a.m. up to evening 8:00 p.m. (14 hours) for one day to predict average traffic speeds of flowing vehicles.

Multiple non linear regression equation was developed to know how much each independent variables influences the traffic speed of the vehicle. The coefficient of each independent variables considered is determined to visualize the degree of each parameter affecting the dependent variable. The relation between dependent variable (traffic speed) and independent variables (all factors considered that are affecting traffic speed) was finally developed and interpreted.

Observation

It is clearly understood from the collected data that over 80 percent of vehicles affecting the traffic flow are taxis/Auto rickshaws where as the number of other types of public terminals vehicles contributing traffic flow problems like buses are very less in percentage of composition.

Moreover, pedestrians crossing the road around the bus stations are also very high. Pedestrian major intention around bus station is to get on or away from taxis/Auto rickshaws and buses. It is observed at Awasho bus station that about 30% of pedestrians' crosses to take or leave taxis/Auto rickshaws whereas about 60% of them crosses for taking or leaving buses. Similarly, at Arada bus station of out of all pedestrian crossings about 10% of them are observed to cross for taking or leaving taxis/Auto rickshaws where as 80% of them are observed to cross for getting or leaving buses.

Analysis of Traffic Data

The data collected is first analyzed logically to give good inferences. Without doing more analysis the following relationship between a dependent variable (speed of vehicles) and parameters influencing speed (traffic volume, bus frequency, taxi/auto rickshaw frequency, pedestrian crossing the road and effective road width) has been analyzed. It was observed that Speed of the vehicles shall decrease as:

- Traffic volume increases
- Number of bus frequencies increase
- Number of taxi (auto rickshaw) increases
- Pedestrian crossing road increases
- Effective road width decreases and vice versa.

Development of Multiple Non Linear Regression Model

As stated earlier, multiple regression is a well-known statistical technique which fits a relationship between dependent and independent variables. The causes of speed reduction of traffic beside terminal can be analyzed with more focus by using the above technique. In this study, Average vehicular speed is taken as a dependent variable and all other influencing factors such as traffic volume (variable 1), bus frequency (variable 2), taxi frequency (variable 3), pedestrian crossing (variable 4) and effective road width (variable 5) are taken as independent variables. A Multiple non-linear regression equation was developed by using the above dependent and independent variables.

The following is the multiple non-linear regression equation for Awasho Bus station site:

Average Speed = 2.703453-0.320380*eVol. - 0.189948*eBF - 0.063848*eTF - 0.292953*ePC + 0.268960*eERW
R2 = 0.9254; R = 0.9620; F = 9.926; P= 0.02255
Table 4.1 Results of Multiple Non Linear Regression Model for Awasho Bus station

Parameter	t- ratio	P- level
Intercept 1	3.15903	0.034216
Variable 1	-0.92424	0.407670
Variable 2	-0.90770	0.415378
Variable 3	-0.32523	0.761311
Variable 4	-1.41571	0.229793
Variable 5	1.01868	0.365955

It is clearly visible from table 4.1 that p-level value of intercept 1 is less than p-level value of all other variables. This indicates that the nonlinear regression model is real.

Similarly, the following multiple non-linear regression equation was developed for Arada Bus station site

Average Speed = 2.382901-0.164449*eVol. - 0.120024*eBF - 0.138307*eTF - 0.278316*ePC + 0.184374*eERW

R2 = 0.8442; R = 0.9188; F = 4.3356; P= 0.09012

Table 4.2 Results of Multiple Non Linear Regression Model for Arada Bus station

Parameter	t- ratio	P- level
Intercept 1	2.460788	0.069632
Variable 1	-0.424852	0.692802
Variable 2	-0.361399	0.736082
Variable 3	-0.574529	0.596376
Variable 4	-0.867307	0.434706
Variable 5	0.490306	0.649596

It is again visible from table 4.2 that p-level value of intercept 1 is less than p-level value of all other variables. This indicates that the nonlinear regression model is real.

Results of the Analysis of Multiple Non Linear Regression Model

In order to understand the severity of each influencing parameters in the study locations, the collected data is considered for different cases and the various graphs are drawn for each case as shown in the figure below. For various conditions and combinations of different influences, about sixty graphs were developed and patterned in to 2 cases for both bus stations. These cases are:

Case 1: When TF = 20, BF = 10, PC = 50 up on changing Traffic Volume, Bus Frequency and Effective Road Width.

Fig 1. Graphs showing TV in number of vehicles per 15 minute (x-axis) vs. Predicted speed in km/hr. (y-axis) at very low traffic conditions

Fig 1 clearly indicates the influence of each parameter on the traffic speed. It is observed from the graph that at most favorable condition meaning (when BF=10, TF = 20, and PC =50) over 30km/hr, the average travel speed in urban area of road section beside Awasho bus station will be met if the traffic volume is restricted to only 100 vehicles per 15 minute and effective road width is not less than 5m. But it should be no interrupt at Arada bus station for the same scenarios.

Case 2: When BF = 30, TF = 100, PC = 200 up on changing Traffic Volume and Effective Road Width.

Fig 2. Graphs showing TV in number of vehicles per 15 minute (x-axis) vs. Predicted speed in km/hr. (y-axis) at very high (worst) traffic conditions Similarly, It is observed from figure 2 that the influence of traffic volume of each terminal on travel speed of vehicles up on different traffic scenarios at most worst condition (meaning when BF = 30, TF = 100 and PC = 200) over 20 km/hr, the average travel speed in urban area of road section beside Awasho bus station in Shashemene town is unexpected if traffic volume is restricted to only 100 vehicles per 15 minute even if the effective road width is as wide as 14m, whereas over 15km/hr speed, it is not met at Arada bus station even if effective road width is as wide as 12m.

Alternatives Proposed to Improve the Traffic Speed at each Bus Station

In order to reduce the impact of Shashemene urban public transport terminals on traffic flow, recommendations are made based on the analysis carried out. This impact reduction is described in terms of traffic speed improvement. Three alternatives for each bus station are proposed to implement.

Alternative 1: proposed to shift the bus station from the existing location to any arterial road. It is observed that out of all pedestrian crossing, about 60% to 80% of pedestrians at Awasho and Arada bus station respectively are going to bus station. Therefore by shifting the bus station, the impact of bus frequency will be reduced completely and 60% to 80% impact of the pedestrian crossing will be reduced at each bus station.

Alternative 2: proposed to shift the taxi/auto rickshaw from the location of bus station to any other road. This will reduce the impact of taxi frequency completely at each bus station location. About 30% of the pedestrians at Awasho and 10% of pedestrians at Arada bus station are observed to cross the road for taking and leaving the taxi that will also be reduced.

Alternative 3: Proposed to erect an over bridge at each bus station for the pedestrians to cross the road from one side to the other side assuming that

60% to 75% of the pedestrians use the over bridge at Awasho and Arada bus station respectively. This will reduce the respective impact of pedestrian crossing at both bus stations. For each alternatives made, predicted speed got improved. Thirty two cases were developed to observe the degree of speed improvement for each alternative at each bus station.

Fig 3. Graph showing the relationship between predicted speed of existing traffic condition and recommended alternatives for different cases at Awasho bus station.

Fig 4. Graph showing the relationship between predicted speed of existing traffic condition and recommended alternatives for different cases at Arada bus station. From the above two graphs, it is clearly understood that predicted speed for each alternatives vary in improving the existing traffic speed. Alternative 1 will improve the traffic flow by 4 times the current speed. Alternative 2 will double the existing traffic speed and Alternative 3 will similarly improves the existing speed.

Summary and Conclusions

The study is conducted to assess the impact of urban public transport terminals on traffic speed in Shashemene city of Ethiopia. A detailed survey is conducted to collect the traffic data manually. Travel speed and other five identified impacting parameters such as bus frequency, taxi frequency, pedestrian crossing, traffic volume and effective road width are collected for 14 hours(6:00 a.m to 8:00 p.m). The data collected is sorted out in different forms to understand the severity of the speed in different locations of the town. It is observed that over 80 percent of the vehicles in the traffic flow are getting affected by taxis/Auto rickshaws. More traffic flow is again observed to exist at Awasho bus stations as compared to Arada bus station.

A Multiple Non Linear Regression equation is developed to estimate the influence of each parameter on traffic speed. Traffic speed is taken as a dependent variable and all other influencing parameters are taken as independent variables. From the analysis, it is concluded that the influence of traffic volume at Awasho bus station and the influence of pedestrian crossings at Arada Bus station are more predominant factors affecting the traffic speed in Shashemene town followed by road defects. The influence of taxi frequency and bus frequency at Awasho and Arada bus stations respectively are found to be minimal.

From the survey analysis, it is concluded that the dominating factors for speed at Awasho and Arada bus stations are traffic volume (28.32%) and (18.18%), bus frequency (16.81%) and (13.64%), taxi frequency (5.31%) and (15.91%), pedestrian crossing (25.67%) and (31.82%), and effective road width (23.89%) and (20.45%) respectively.

Recommendations

From the analysis carried out, three alternatives are proposed to improve the traffic speed at Awasho and Arada bus stations. Among them, the Alternative-2 i.e. shifting the taxi/Auto rickshaw from the location of the existing bus station to any other road will double the existing traffic speed. Seeing at cost and simplicity of implementation, it is recommended to implement Alternative- 2 at each bus station.

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ICT in Education: The Indian Perspective

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Education is the most effective instrument which can instill people with the knowledge, skill and capability to observe and analyze the sense of purpose and confidence for building a dynamic energetic, just and unified nation able to take care of its entire people. Education does not have accumulation of information as its terminus. It should engender wisdom, which comprises tolerance, understanding, compassion and large-heartedness in outlook. Perhaps, this is what Plato meant when he said that the purpose of education is "not to fill an empty vessel but to turn the eye of the soul towards light".

Keywords: Education, Knowledge, Skill and Capability Education.

Information & Communication Technology

ICTs stand for information and communication technologies and are defined as a "diverse set of technological tools and resources used to communicate, create, disseminate, store, and manage information." These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. Information technology defines an industry that uses computers, networking, software programming, and other equipment and processes to store, process, retrieve, transmit, and protect information. China and the United States. Since independence the higher education in India

Growth of Higher Education in India

India's higher education system is the third largest in the world after has increased manifold in its institutional capacity as can be observed from the given table:

Table - 1
Institutional Capacity expansion in Higher Education

Institutional capacity indicator	1950	2008
Number of University Level Institutions (including 11 Private University)	25	431
Number of Colleges	700	20,677
Number of Teachers	15,000	5,05,000
Number of Students Enrolled	1,00,000	1,16,12,000

The Aim of Involvement of ICT in Education

For developing countries like India, ICTs have the potential for increasing access to and improving the relevance and quality of education. It thus represents a potentially equalizing strategy for developing countries. ICTs greatly facilitate the acquisition and absorption of knowledge, offering developing countries unprecedented opportunities to enhance educational systems, improve policy formulation and execution, and widen the range of opportunities for business and the poor.

One of the greatest hardships endured by the poor, and by many others, who live in the poorest countries, is their sense of isolation. The new communications technologies promise to reduce that sense of isolation, and to open access to knowledge in ways unimaginable not long ago. However, the reality of the Digital Divide—the gap between those who have access to and control of technology and those who do not—means that the introduction and integration of ICTs at different levels and in various types of education will be a most challenging undertaking. Failure to meet the challenge would mean a further widening of the knowledge gap and the deepening of existing economic and social inequalities. The multifaceted aim of involvement of ICTs in education may be given as follows:

ICTs for Expanding Access to Education

ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies—scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

Anytime Anywhere

One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners.

Access to Remote Learning Resources

Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at any time of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources. ICTs also facilitate access to resource persons— mentors, experts, researchers, professionals, business leaders, and peers—all over the world.

ICTs for better Grooming of Students for the modern workplace.

One of the most commonly cited reasons for using ICTs in the classroom has been to better prepare the current generation of students for a workplace where ICTs, particularly computers, the Internet and related technologies, are becoming more and more ubiquitous. Technological literacy, or the ability to use ICTs effectively and efficiently, is thus seen as representing a competitive edge in an increasingly globalizing job market. Technological literacy, however, are not the only skill well-paying jobs in the new global economy will require,

ICTs to improve the Quality of Education.

Improving the quality of education and training is a critical issue, particularly at a time of educational expansion. ICTs can enhance the quality of education in several ways as follows:

Motivating to Learn

ICTs such as videos, television and multimedia computer software that combine text, sound, and colorful, moving images can be used to provide challenging and authentic content that will engage the student in the learning process. Computers with Internet connectivity can increase learner motivation as it combines the media richness and interactivity of other ICTs with the opportunity to connect with real people and to participate in real world events.

Facilitating the Acquisition of Basic Skills

The transmission of basic skills and concepts that are the foundation of higher order thinking skills and creativity can be facilitated by ICTs through drill and practice. Most of the early uses of computers were for computer-based learning (also called computer-assisted instruction) that focused on mastery of skills and content through repetition and reinforcement.

Enhancing Teacher Training

ICTs have also been used to improve access to and the quality of teacher training. Institutions are taking advantage of the Internet to provide better teacher professional development opportunities to in-service teachers. At Indira Gandhi National Open University, satellite-based one-way video- and two-way audio-conferencing was held in 1996, supplemented by print-materials and recorded video, to train 910 primary school teachers and facilitators from 20 district training institutes in Karnataka State. The teachers interacted with remote lecturers by telephone and fax. In China, large-scale radio and television-based teacher education has for many years been conducted by the China Central Radio and TV University.

ICTs to transform the Learning Environment into one that is Learner-Centered

Research has shown that the appropriate use of ICTs can catalyze the paradigmatic shift at the heart of education reform in the 21st century. If designed and implemented properly, ICT-supported education can promote the acquisition of the knowledge and skills that will empower students for lifelong learning .When used appropriately, ICTs—especially computers and Internet technologies— enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. These new ways of teaching and learning are underpinned by constructivist theories of learning and constitute a shift from a teacher-centered pedagogy—in its worst form characterized by memorization and rote learning—to one that is learner-centered.

Forms of ICTs in Education

Radio and TV Broadcasting

Radio and television have been used widely as educational tools since the 1920s and the 1950s, respectively. There are three general approaches to the use of radio and TV broadcasting in education:

Direct Class Teaching

Where broadcast programming substitutes for teachers on a temporary

basis.

School Broadcasting

Where broadcast programming provides complementary teaching and learning resources not otherwise available.

General Educational Programming over Community

National and international stations, which provide general and informal educational opportunities.

Teleconferencing

Teleconferencing refers to "interactive electronic communication among people located at two or more different places." There are four types of teleconferencing based on the nature and extent of interactivity and the sophistication of the technology:

- Audio conferencing involves the live (real-time) exchange of voice messages over a telephone network.
- Audio-graphic conferencing: When low-bandwidth text and still images such as graphs, diagrams or pictures can also be exchanged along with voice messages, then this type of conferencing is called audio graphic. Non-moving visuals are added using a computer keyboard or by drawing/writing on a graphics tablet or whiteboard.
- Videoconferencing allows the exchange not just of voice and graphics but also of moving images. Videoconferencing technology does not use telephone lines but either a satellite link or television network (broadcast/cable).
- Web-based conferencing, as the name implies, involves the transmission of text, and graphic, audio and visual media via the Internet; it requires the use of a computer with a browser and communication can be both synchronous and asynchronous.

Teleconferencing is used in both formal and non-formal learning contexts to facilitate teacher-learner and learner-learner discussions, as well as to access experts and other resource persons remotely. In open and distance learning, teleconferencing is a useful tool for providing direct instruction and

learner support, minimizing learner isolation.

Computers and the Internet for Education

There are three general approaches to the instructional use of computers and the Internet, which are as follows:

Learning about computers and the Internet

Learning about computers and the Internet focuses on developing technological literacy. It typically includes:

- Fundamentals: basic terms, concepts and operations
- Use of the keyboard and mouse
- Use of productivity tools such as word processing, spreadsheets, and data base and graphics programs
- Use of research and collaboration tools such as search engines and email
- Basic skills in using programming and authoring applications such as Logo or Hyper Studio
- Developing an awareness of the social impact of technological change.

Learning with Computers and the Internet

Learning with the technology means focusing on how the technology can be the means to learning ends across the curriculum. It includes:

- Presentation, demonstration, and the manipulation of data using productivity tools.
- Use of curriculum-specific applications types such as educational games, drill and practice, simulations, tutorials, virtual laboratories, visualizations and graphical representations of abstract concepts, musical composition, and expert systems.
- Use of information and resources on CD-ROM or online such as encyclopedia, interactive maps and atlases, electronic journals and other references. Technological literacy is required for learning with technologies to be possible, implying a two-step process in which students learn about the technologies before they can actually use them to learn. However, there have been attempts to integrate the two approaches.

Learning through Computers and the Internet

Learning through computers and the Internet combines learning about them with learning with them. It involves learning the technological skills "just-in-time" or when the learner needs to learn them as he or she engages in a curriculum-related activity.

Role of Teachers in ICT Environment

Learning and Teaching has undergone a tremendous change due to the emerging technologies. Because of the advances in the technologies, the teaching profession is evolving from an emphasis on teacher-centered, lecture based instruction to student-centered, interactive learning environments. The responsibility of the teacher has changed from knowledge transmitter to that of learning facilitator, knowledge guide and co-learner with the students in ICT environment. The modern teacher in the ICT age acts as a guide rather than a knowledge transmitter. In fact, with the introduction of ICTs in the classroom, we can say that the teaching and learning process has been modified from blackboard to keyboard from pen to pen drives and from chalk to mouse.

Because of the rapid change and uncertainty, there is one thing of which we can be sure, that the teachers need to adapt to change if they are to survive and keep pace with new methods and technologies. The teachers should adapt current teaching skills and practice to accommodate the introduction of ICT in all their academic efforts. These efforts are in bringing changes in teaching methodology, assessment of learning, student tracking, communication and evaluation.

ICT in Education: The Indian Perspective

Though the potential and capability of open and distance learning was realized in early sixties across the globe however, it got national acceptance and recognition with the emergence of Indira Gandhi National Open University in 1985.

IGNOU and ISRO share a common vision of creating Educated India. And to achieve this, ISRO and IGNOU have been collaborating in the use of satellite communication to enrich learning processes and increase access to

education through distance mode. Under ISRO-IGNOU collaboration, IGNOU has developed capability for four TV-channels and two interactive networks dedicated for education. In order to fulfill the requirements of education for all, the Indian Parliament took a major decision in the year 2001 whereby education was made compulsory for every Indian in the age group of 6 to 14 years.

This task is to be accomplished by the year 2015 under the initiative Sarva Shiksha Abhiyan. The massive educational setup required to handle such large numbers requires development of effective satellite communication systems with extensive point-to-point reach covering the whole country. In this initiative, some successful joint interventions between ISRO and IGNOU and a few other educational institutions and organizations propelled the idea of designing and developing a dedicated satellite for education by ISRO.

Within a short period of less than 2 years, ISRO successfully designed, developed and launched a dedicated geo-stationary satellite on September 20, 2004, EduSat, dedicated exclusively for Education. India is unique in the world in this respect and it is expected that this capability will immensely support the mission to provide seamless education and to accomplish the target of education for all. Overall, India is graduating at a steady pace towards implementation of various ICTs at all levels of education which will soon be taken as a standard by other countries desirous of achieving this goal.

Conclusion

The one fact that emerges in the relatively brief history of ICT use in education is that "It is not the technology but how we use it". Technology should not drive education; rather, educational goals and needs, and careful economics, must drive technology use. Only in this way can educational institutions in developing countries effectively and equitably address the key needs of the population, to help the population as a whole respond to new challenges and opportunities created by an increasingly global economy. Indian Education System has a bright future in terms of Information & Communication Technology, as that it will enhance the speed of providing education even to remote areas of the country. Let's wait for the dawn when education will become a familiar term to all the Indians....

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An Economic Analysis of Choice of on Higher Educational Institutions by Students of Tamil Nadu

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Education which was a "Freed Good" then now becomes a commodity which tags with different price at different market condition. Hence there is a possibility to apply all the theories of economics related to a market can be tested with respect to this commodity of education. Hence, major objective of this research focuses to examine the measurement and economics of higher education in Tamil Nadu and to study the factors influence to choose higher education institutions among the students in Tamil Nadu. This study makes use of primary and secondary sources. The primary information was collected on the basis of structured questionnaire from the selected college students by the interview method. Data has been collected from 100 students, in these respondents 50 were male and 50 were female students. This study argues that choice of higher education in the view of reputation of course and college, bus service to the student's residence, regarding to fees policy, alumni had acquired jobs in their respected fields and possible to apply education loan and quality of education. This study contributes to the available body of knowledge on this topic and could be used by other researchers as a basis for future research.

Keywords: Quality of Education, Efficiency, Quality, Students and Fees.

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Introduction

In India, higher education is the lintel of the entire educational edifice of a country. This sector has grown much faster than all other sectors of education and is poised for a bigger leap with success in university education system. Secondary Education covers almost 15 years pre-primary to senior secondary stages-three years of pre-primary followed by 12 year of schooling. The 12 years of school education has been divided into four stages – primary, upper primary, secondary and higher secondary stages, comprising of five, three, two and two years of education respectively. Although India adopted common pattern of higher education system, internal structure of syllabus and courses varies to universities and institutes.

India has one of the largest university systems in the world which has expanded in a big way after independence when there were only 20 universities, 1.7 lakh students and less than 600 colleges. In 2013 the number of students enrolled rose up to 17 million in 687 universities. Most tellingly, percentage of students enrolled in higher education is only 10 per cent whereas developed countries are aiming at 50 per cent enrollment.

Higher Education in Tamil Nadu

The number of students enrolled in Arts and Sciences colleges over the years 2007-2012 has been on the increase in the all type of colleges. The positive trend in collegiate education is the enrolment of number of girl students in the last 3 years in the arts and science colleges in the state. The enrolment of students increased 3,64,222 in 2007-08 it has been increased to 4,05,435 in 2010-11 in arts and science and education colleges. Towards promoting technical education in the state six government engineering colleges, three governments aided engineering colleges, 16 constituent colleges of Anna University and 431 self-financing engineering colleges are functioning. Engineering education has become popular among the students passing out of higher secondary education with marks above 70 per cent. Even first-generation students are aiming for engineering courses. The three-year analysis of enrolment is an indicator of the trend for an engineering degree among students in Tamil Nadu 95,808 students are enrolled in 2007-08 it has been increased 1,62,231 in 2015-16

Scope of the Study

The present study attempts to examine the factors influence of choice of higher education among to the students after completion of their higher secondary education in Tamil Nadu. This work examines how far the students aware to knowledge of higher education in Kancheepuram and Tuticorin district. The study would provide a framework for drawing suitable guidelines for improving to higher education in Tamil Nadu.

Objectives of the Study

- To examine the measurement and economics of higher education in Tamil Nadu.
- To study the factors, influence to choose higher education institutions among the students in Tamil Nadu.

Methodology

Tamil Nadu state was selected on the research area which is geographically divided into two regions, namely south and north Tamil Nadu. This study focused on south region ten colleges comprising of five from rural and five from urban area were selected randomly from Tuticorin district and this same method followed on north region ten colleges in Kancheepuram district. The selected colleges from each district were again classified in to three categories – namely Government, Aided and Unaided colleges. In total 20 colleges were chosen as sample of the study, comprising of 10 rural colleges and 10 from urban colleges in the selected regions.

The primary information was collected on the basis of structured questionnaire from the selected college students by the interview method. Data has been collected from 100 students, in these respondents 50 were male and 50 were female students. Data included cost with its constituents-fixed and variable and course fee, family income, higher secondary school expenses, parental educational qualifications and factors influence to choosing the colleges.

In collected information was tabulated and analyzed with help of simple statistical tools such as averages and percentages. Secondary data collected from Government records and reports.

Measurement of Education

An ideal measure of an individual's education should capture several components, including the number of years spent in school, the quality of the schooling, the nature of the curriculum, and the student's effort. Creating a measure that accurately quantifies these components is difficult. Of these components, and individual's years of schooling is the only directly observable characteristic. We may indirectly measure aspects such as educational quality and individual ability and effort through standardized tests; however, there is disagreement regarding the reliability of such tests.[1]

In microeconomic analysis that studies the variation in wages as a function of education, individuals' year of schooling is frequently used as an independent variable. This method has advantages in that such data are readily available in developed countries, but it does not account for differences in the quality or type of education received. Alternatively, individuals may be classified by highest degree completed. This measure also has problems, for example, and individual nearly finished with college is counted as a high school.

In macro-economic analysis, economists often include a variable for human capital because human capital encompasses a range of characteristics such as education work experience, and health, it is extremely difficult to directly measure human capital. Any measure of a country's aggregate human capital must have the characteristics are it must be comparable across countries, it must address the broad range of criteria that comprise human capital and it must include elements of human capital for which data are available or estimable.

Choice of Higher Education, Efficiency and Quality

In the case of reforms of higher education, there can be one different type of policy intervention which seeks to simulate market like competition by fostering choice making of an educational qualification by parents. Advocates of a market will argue that creating a market-like situation in education to

foster competition is an effective way to produces which are often not measurable. Each institution is unique and has been created to serve a purpose which is well-articulated in its mission.

The raking will, therefore, inevitably involve identifying commonalities and focusing on basic purposes such as teaching and research. Research output can somehow be quantified in terms of publications and quality can also be assessed in terms of the 'citation index' and impact factor, but the problem lies with social sciences and humanities. In the presence of different paradigms in social sciences, it is difficult to measure research quality and compare it across borders. The dominance of English language tilts the balance in favor of English-speaking countries and after all English is the language of research.

Assessing the quality of teaching has been difficult though it is a major task of a university. Teaching and research cannot be seen separately as they feed each other. The quality of a university depends on the quality of its students and faculty. It has been observed in the Indian universities in order to rank higher in the ladder compromised with their student selection policies and preferred merit-based aid rather than need-based aid. One genuine way for a university will be to identify the gaps and flaws in its performance and take steps to improve it without much of compromise with its mission.

Economics of Higher Education

Access to higher education needs to be widened in the country, in the formal system through effective innovative measures such as a truly open system and networking of universities. It is now imperative on the part of Indian Universities to generate their own resources to a large extent. This could be done through several methods, like raising tuition fee and collecting capitation fee (both having severe limitations) and others like, launching courses for foreign students, obtaining donations from philanthropists, etc., which have a good potential.

In the globalized World, the State-protected educational system cannot with stand the pressure without making itself competitive. There seem to be four reasons to new policy initiative should be taken by the Government in this connection.

They are: (i) the economic returns of primary education far exceed the

returns of higher education;(ii) the private returns on higher education far exceed the social returns; (iii)that the State funding for higher education is in sufficient in countries like India; and (iv)since private sector benefits the most from higher education, it is only just that it should make a decisive contribution.

Whether one accepts the Government's rationale or not, new strategies need to be developed for the survival and well-being of the higher education systemin the present scenario. Taking the problem of resource crunch in higher education at face value, some alternative ways were considered at the present situation, such as: research grants from industries, donations for admissions etc. which were found to be in adequate. It was observed that an organized structure for higher-educational fund raising and creating a culture of giving are the only possible solutions.

Choice of Higher Education

Education which was a "Freed Good" then now becomes a commodity which tags with different price at different market condition. Hence there is a possibility to apply all the theories of economics related to a market can be tested with respect to this commodity of education. The supply and demand for various stages of education.

The purchasing power of different segment of the population and the role of governments in terms of capital investment of creating social infrastructure and providing subsidies to education. The public – private share in the educational sector and its impact on economic growth can be reviewed. Even though the literacy rate of India has gone up significantly, the percentage of students goes for higher education is only around 12 per cent which is not a good sign. Choice of higher education related to parental income, marks of the students and student's various perception to the higher education.

The table – 1 analyse to the choice of higher education in Tamil Nadu. This study compares to two districts in Tamil Nadu. Nearly 42 per cent of the respondents focused college had a good reputation in Kancheepuram district and 20 per cent students are agreed to the focused good reputation in college of Tuticorin district. This attitude reveals that Tuticorin district is having less ranking institution. In this area most of institution situated in rural area and enrollment of students from rural sector.

All the respondents are agreeing with their academic course are good reputation for academic excellence in Kancheepuram district and 37 per cent of the students are agree same statements in Tuticorin district. Students are aware to their academic courses in Tamil Nadu. But women students take decision with their parents for joining in their academic courses.

In the context of course fees about institution nearby 21 per cent of students are feel to fees were very low in their institution of Kancheepuram district and 43 per cent of the Tuticorin district students are agree to their course fees is very low. Because of Tuticorin district has a many government and government aided institutions.

College bus services are one of the main facilities to educational institutions. 45 per cent of the students agree to college provide bus service to their location in Kancheepuram district and 27 per cent of the respondents are avail bus service to their residence. College bus service is main factor of increase to the girls' enrollment in higher educational institutions.

All the colleges should be ensured transport facility to the student community. Almost 40 per cent of the respondents ensure their institution provide to quality of education in Kancheepuram district and 16 per cent of the students are agree to this same statement in Tuticorin district. Because of quality of education is an important factor to higher educational institutions. Government of Tamil Nadu should be taken a measure to increase quality of education in Tuticorin district.

Table – 6.0 - I: Choice of Higher Education in Tamil Nadu

Sl. No.	Statements	Kancheepuram District				Tuticorin District				Total
		Male		Female		Male		Female		
		Y	N	Y	N	Y	N	Y	N	
1	The college had a very good reputation	20	05	22	03	12	13	08	17	100
2	The course I have chosen has a good reputation	25	-	25	-	21	04	16	09	100
3	The fees were low in the institution	12	13	09	16	22	03	21	04	100
4	The college bus service is available in our area	21	04	24	01	08	17	19	06	100
5	The institution provides quality of education	22	03	18	07	10	15	06	19	100
6	The institution has a very good library	17	08	12	13	19	06	14	11	100
7	A large number of alumni had acquired jobs in their respected fields	18	07	14	11	13	12	17	08	100
8	There is possibility to apply for education loan in the institution	24	01	25	-	18	07	16	09	100

Source: Primary Data, 2017. Observation: Y – Yes; N – No.

Library is a back bone of educational institutions. 29 per cent of the students are agree to colleges provide very good library of their institutions in

Kancheepuram district and 33 per cent of the students are ensured to their institutions had a very good library in Tuticorin district.

This research reveals that many students are regularly use their college libraries in Tuticorin district. Nearly 32 per cent of the students are consider to alumni had acquired jobs in their respected fields in Kancheepuram district and 30 per cent of the respondents are agree with same statements in Tuticorin district.

Education Loan is a gift to poor students. In recent survey of Reserve Bank of India stated that Tamil Nadu ranked to first in getting education loan compare other states. All the higher education students are eligible to education loan scheme. But 49 per cent of the students are aware to the education loan in Kancheepuram district and 34 per cent of the students are known about the education loan in Tuticorin district.

Conclusion

The conclusion provides educational institutions with an indication of the importance of choice factors considered by students in selecting an institution. This will enable those institutions to use their limited funds more efficiently to attract the merit recruitment policies, to create a unique position, to segment the student market more appropriately and to gain a competitive advantage. Information obtained from this research also contributes to the available body of knowledge on this topic and could be used by other researchers as a basis for future research.

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Metacognition and Creative Thinking of High School Students

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The current study aimed to identify the Meta cognition and creative thinking among high school students. The sample of the study consisted of 300 high school students. Creativity scale (CS) was developed to collect data. Susan Barkman and Krisana Machtmes tool was modified suitably for the study of problem-solving skills. Data were analyses by using product moment correlation, t-test and ANOVA test. The results of the study revealed that creativity and problem-solving skills are not significantly correlated to each other. Significant difference was found between Male and Female students in their creativity and problem-solving skills.

Keywords: Metacognition, Creative Thinking, Learning and Development.

Introduction

"Metacognition" is one of the latest buzz words in educational psychology, but what exactly is metacognition? The length and abstract nature of the word makes it sound intimidating, yet it's not as daunting a concept as it might seem. We engage in metacognitive activities every day. Metacognition enables us to be successful learners, and has been associated with intelligence (e.g., Borkowski, Carr, & Pressley, 1987; Sternberg, 1984, 1986a, 1986b). Metacognition refers to higher order thinking which involves active control over the cognitive processes engaged in learning.

Activities such as planning how to approach a given learning task, monitoring comprehension, and evaluating progress toward the completion of a task are metacognitive in nature. Because metacognition plays a critical role in successful learning, it is important to study metacognitive activity and

development to determine how students can be taught to better apply their cognitive resources through metacognitive control. Most people associate creativity with the arts like writing a novel, painting a picture, or composing music. These are all creative endeavors, but not all creative thinkers are artists. Indeed, many jobs require a lot of creative thinking, despite having nothing to do with the arts. Creativity simply means being able to come up with something new. If you can do that, not only can you enrich your own personal life, but you'll have an advantage in whatever field you enter.

Statement of the Problem

Present investigation is designed to study how far metacognition and creativity of the high school students influence their orientation. Therefore, the study is entitled as "metacognition and creative thinking of high school students."

Need and significance of the study

Education upgrades one's knowledge which helps people to solve their problems. Metacognition helps to perform many cognitive tasks more effectively. According to the report of the Education Commission (1964), "The destiny of a nation is being shaped in the classroom." Those who are having metacognitive ability can realize their own strength and weakness. The present study stresses on the awareness of metacognition and how it helps in creativity. Creativity increase intelligence, thinking ability and various other skills. Research is needed to describe and explain spontaneous developmental acquisitions in this area and to identify creativity. Students are quite limited in their knowledge about Metacognition and creativity. This study reveals to identify heterogeneous group of student's creativity and metacognition.

Objective of the Study

- To find out the significant difference of metacognition of high school students with regard to gender.
- To find out the significant difference of creative thinking of high school students with regard to gender.
- To find out the significant difference of metacognition of high school students with regard locality.

- To find out the significant difference of creative thinking of high school students with regard to locality.

Hypotheses framed

The following are the major hypotheses framed for the present investigations.

- There is no significant difference in the metacognition with regard to high school student's gender.
- There is no significant difference in the creative thinking with regard to high school student's gender
- There is no significant difference in the metacognition with regard to high school student's locality.
- There is no significant difference in the creative thinking with regard to high school student's locality.

Tools Used in the Present Study

The present study aims at studying the metacognition and creativity of high school students in Kanyakumari District.For collecting data required for the study of the problem one may have to use various scientific devices for gathering facts related to the study. These devices are called tools. The selection of suitable tool is a necessary condition for any successful research. The investigator depending on the nature of the study used the following tools for data collection.

- Personal Data Sheet
- Metacognition Inventory (Constructed and validated by R. Sopha, 2015)
- Creative Thinking Test (Modified version of Wallach-Kogan creative thinking test).

Personal Data Sheet

The personal data sheet is prepared to collect data regarding variables such as Name of the student, Name of the School, Gender, Locality, Type of Management, Medium of instruction, and Type of family.

Metacognition Inventory

For measuring Metacognition of high school students, a metacognition inventory was used. (Constructed and validated was by R. Sopha, 2015).The questions of the test are simple and seeking responses in the form of 'Not at all', 'Some times' and 'Always'. A high score of the test indicates the high level of Metacognition of high school students and low scores of the test indicates low level of Metacognition of high school students. The test contains 24 items.

Creativity Test

The creativity test is given to the subject. The subject is asked to go through the instructions of different verbal and non-verbal tests like instances, alternate uses, similarities, pattern meaning and line meaning. The time limit is responding for verbal subtest is three minutes and the time limit for the two non-verbal tests is thirty seconds for each card. After the subject responds all the subtests the number of responses is determined. For each subtest there are separate instructions. The subjects are to go through these instructions and respond accordingly. For each meaningful response one mark is assigned. The mean scores for three verbal tests are determined by adding the scores of the three tests and dividing the total by 16. The mean scores for the non-verbal tests are determined by adding the scores of two sets and dividing it by 12.

Sample

The Sample for the present study consists of 300 high school students studying in different schools in Kanyakumari District during the academic year 2016-2017. The investigator has adopted stratified random sampling technique. While selecting the subject's due representations where given to factors such as Gender, Locality, Type of school, Type of family, age, religion, birth order, father qualification, mother qualification, income, mother occupation and father occupation.

Statistical Techniques Used

For the study the investigator used the following statistical techniques,

- Percentage
- Mean
- Standard Deviation
- t -test
- Person product moment method of correlation co-efficient
- ANOVA

Hypothesis –1

There is no significant difference in the mean scores of metacognitions with regard to high school students based on gender.

Table - 1
Metacognition of High School Students Based on Gender

Gender	No	Mean	SD	t-value	p-value	Remark
Boys	160	54.13	4.630	2.909	.089	NS
Girls	140	54.90	5.263			

The calculated 't' value (t-2.909) 'p' value (p-.089) is at 0.05 level of significant. Therefore, the null hypothesis is accepted. Hence there is no significant difference in the mean scores of metacognition of high school students based on gender.

Hypothesis –2

There is no significant association between creative thinking with record to students and their gender.

Table - 2

Creative Thinking of Students and Their Gender

Gender	N	df	Mean Square	t value	p value	Remark
Boys	160	.381	298	.034	-.662	S
Girls	140	.381	291.233			
Total						

The calculated 't' value (t-.034) 'p' value (p- -.662) is at 0.05 level of significant. Therefore, the null hypothesis is rejected. Hence there is significant difference in the mean scores of creative thinking of high school students based on their gender.

Hypothesis-3

There is no significant difference in the mean scores of metacognition with record to high school students based on locality.

Table - 3

Metacognition of High School Students Based on Locality

Locale	N	Mean	SD	t-value	p-value	Remark
Rural	204	54.26	5.063	.037	.848	NS
Urban	96	54.97	4.664			

Calculated 't' value (t-0.37) 'p' value (p-.848) is at 0.05 level of significant. Therefore, the null hypothesis is accepted. Hence there is no significant difference in the mean scores of metacognitions of high school students based on locality.

Hypothesis -4

There is no significant association between creative thinking with record to students and their locality.

Table - 4

Creative Thinking of Students and Their Locality

	Locality	N	Mean	Std. Deviation	t value	p value	Remark
V15	Rural	204	55.36	4.790	.979	.323	NS
	Urban	96	57.03	5.180			

The calculated 't' value (t-.979) 'p' value (p-.323) is at 0.05 level of significant. Therefore the null hypothesis is accepted. Hence there is no significant difference in the mean scores of metacognition of high school students based on locality.

Findings

The findings emerged from the analysis of data collected are summarized below:

- The calculated 't' value (t-.034) 'p' value (p- -.662) is at 0.05 level of significant. Therefore, the null hypothesis is rejected. Hence there is significant difference in the mean scores of creative thinking of high school students based on their gender
- The calculated 't' value (t-.034) 'p' value (p- -.662) is at 0.05 level of significant. Therefore, the null hypothesis is rejected. Hence there is significant difference in the mean scores of creative thinking of high school students based on their gender.
- There is significant difference in the mean scores of metacognitions of high school students based on locality. These findings is supported by the following results (p-.848, which is no significant at 0.05 level)
- There is significant difference in the mean scores of creative thinking of high school students based on locality. These findings is supported by the following results (p-0.323, which is no significant at 0.05 level).

Conclusions

Metacognition refers to an awareness of our cognitive process like thinking and learning. It is synonyms with knowing about what we know. It extends beyond the more awareness of cognitive process or activities to the deliberate and conscious control of these activities. Metacognition simply means an awareness of one's own thinking. It helps children to be conscious of what they know and can do. For attaining this they should be taught how to draw purposefully on what knowledge and to display it when working on problems. It means pupils should be encouraged to think actively about their thinking. Metacognition and creative thinking among high school students due to gender, locality, type of school, age, type of family, religion ,birth order, father's qualification, mother's qualification, income, father's occupation, and mother's occupation was determined by the collection of 300 samples of students by which the capability of high schools students was analyzed.

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Integrating Skill Development in Higher Education

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India has the largest number of young people and the highest global unemployment rate - these are pointers to the nature and efficiency of our education system. The entire skill set required to work in a company that competes at the global level has undergone a change, and education, particularly higher education, cannot afford to overlook the new realities of the 2nd decade of the 21st century. Surveys and studies are conducted at regular intervals and it is reiterated in the surveys and studies that the 80 percent workforce in rural and urban India does not possess any identifiable employability skills. The World Economic Forum's Global Talent Risk report (2011) cautions that developing countries like India and Brazil will face huge skill gaps due to low employability. India can reap the benefits of this situation only by effectively Skilling and up. Skilling, its vast manpower by mainstreaming vocational education, modules of finishing school and partnership of industry-academia in the curriculum of higher education.

Keywords: Unemployment, Employability and Vocational education.

Today, the world and India need a skilled workforce. If we have to promote the development of our country, then our mission has to be `skill development' and `Skilled India'. Millions and millions of Indian youth should acquire the skills which could contribute towards making India a modern country. I also want to create a pool of young people who are able to create jobs and the ones who are not capable of creating jobs and do not have the

Opportunities, they must be in a position to face their counterparts in any corner of the world while keeping their heads high by virtue of their hard work and their dexterity of hands and win the hearts of people around the world through their skills. We want to go for the capacity building of such young people. My brothers and sisters, having taken a resolution to enhance the skill development at a highly rapid pace, I want to accomplish this.

Honorable Prime Minister of India, Shri Narendra Modi

Introduction

The Government has initiated the process of formulating a New Education Policy to meet the changing dynamics of the population's requirement with regard to quality education, innovation and research, aiming to make India a knowledge super power by equipping its students with the necessary skills and knowledge and to eliminate the shortage of manpower in science, technology, academics and industry. The New Education Policy (2015) task force has identified twenty themes on higher education for consultation. Integrating skill development in higher education is one among them. Developing skills among the students is very important for the socioeconomic development of our country.

Today, India is one of the youngest nations in the world with more than 62% of its population in the working age group (15-59 years), and more than 54% of its total population under 25 years of age. Its population pyramid is expected to "bulge" across the 15-59 age group over the next decade. It is further estimated that the average age of the population in India by 2020 will be 29 years as against 40 years in the USA, 46 years in Europe and 47 years in Japan. In fact, during the next 20 years the labour force in the industrialized world is expected to decline by 4%, while in India it will increase by 32%. This poses a formidable challenge and a huge opportunity. To reap this demographic dividend which is expected to last for next 25 years, India needs to equip its workforce with employable skills and knowledge so that they can contribute substantively to the economic growth of the country. The World Economic Forum's Global Talent Risk report (2011) cautions that developing countries like India and Brazil will face huge skill gaps due to low employability. India can reap the benefits of this situation only by effectively skilling and up- skilling its vast manpower by mainstreaming vocational education, modules of finishing schools and partnership of industry-academia in the curriculum of higher education.

Need for Skill Development

The percentage of employers facing difficulty in finding skilled workforce is as high as 81 percent in Japan, 71 percent in Brazil, 49 percent in US, 48 percent in India and 42 percent in Germany. One wonders what it that we are turning out is from our universities and colleges.

Even for India- the youngest country in the world, if the percentage is 48 per cent, it is an alarming situation, to put it mildly, because it means that half of our companies and businesses are finding it difficult to run their daily operations due to the lack of skilled workforce. India has the largest number of young people (age group of 14-25) and the highest global unemployment rate - these are pointers to the nature and efficiency of our education system. Against this, the job market is increasingly being redefined by specific skills.

The entire skills set required to work in a company that competes at the global level has undergone change, and education, particularly Higher Education, cannot afford to overlook the new realities of the 2nd decade of the 21st century. Across the world, skills development has been addressed with considerable seriousness. According to figures of 2008, the percentage of workforce receiving skills training is 96 percent in Korea, 80 percent in Japan, 75 percent in Germany, 68 percent in England and 10 percent in India.

Moreover, it is estimated that 75 percent of the new job opportunities to be created in India will be skill-based. While the skill set has changed and employers look more and more for 21st century skills in the job seekers, it is required to take a close look at the academic nature of our curricula and their mode of transaction. It is not that we do not have enough degree holders in the country; we have a number of them, but the world of business and industry thinks that they are not employable.

Surveys and studies are conducted at regular intervals and it is reiterated in the surveys and studies that the 80 per cent workforce in rural and urban India does not possess any identifiable employability skills.

The NASSCOM-McKinsey report "Perspective 2020: Transform Business, Transform India" (2009) said that only 26 percent of India's engineering graduates were employable. An Associated Chambers of Commerce and Industry of India (ASSOCHAM) survey reported that only 10% of Master of Business Administration (MBA) graduates from Indian business schools get a job right after completing their course (2012). These reports and

many others indicate that the employability or non-employability of Indian graduates is a rising concern.

Leaders of business and industry in India have regularly voiced their concern over the lack of skilled manpower ready to be absorbed in various sectors. We have the government intervening by establishing a National Skills Development Council (NSDC) and several other skills development initiatives in the pipeline, but unless our higher education wakes up to this and responds proactively, the youths coming out of it would find it hard to claim a place in the world, and thus the growth of this country will also remain under threat because without the requisite human resource the magic growth is impossible.

In a large country like India, only government agencies and system cannot accomplish this task of up Skilling the youth. Private companies with requisite experience in skills training may also be roped in to expedite the process of enhancing the skills development of youth in colleges and universities.

In today's world, particularly in India, the future and relevance of higher education are inextricably linked with skills development; the earlier, higher education accepts this and acts accordingly, the better it is for the country and its growth. Skills Development is not an additional course that can be added to a university curriculum, but it requires to be integrated into the training and education of a youth who will have to be readily employable and competent enough to run the operations of a company or business in India. A youth seeking job in the market today is expected to have salient life and soft skills which he has no clue about till she/he faces an interview.

Higher education does little to address the skills requirement of a youth raring to go into the world and make a mark. To make it amply clear as to how higher education has got to address the issue of skills development and employability, no better evidence than what Planning Commission's Approach Paper to the Twelfth Five Year Plan says: "There is a need for a clear focus on improving the employability of graduates.

Indian higher education is organized into 'General' and 'Professional' streams. General education which is an excellent foundation for successful knowledge based careers, often fails to equip graduates with necessary work skills due to its poor quality. Graduates now require the skills beyond the basics of reading, writing and arithmetic. Skills such as critical thinking and creativity are now important in more and more jobs. Special emphasis on verbal and written communication skills, especially in English would go a long

way in improving the employability of the large and growing mass of disempowered youth."

Reasons for the Poor Employability of Indian Graduates

Experts have opined various reasons attributing to poor employability ranging from school education, selection procedure in our graduate colleges, curriculum and quality of teaching, student interest and lack of corporate involvement. Unfortunately, most of these reasons have some part to play in this huge challenge. Our approach has been to create an ecosystem to help identify employability gaps, provide quantitative and qualitative feedback at various levels, be it an individual, institutional, regional or national level to help bridge the employability gap in a constructive manner.

What are the main traits that employers look for when hiring graduates?

The employers look at a mix of aptitude, language, personality and domain skills in selecting the right candidates for various roles in their organization. The detailed fine-tuning happens based on the job role and the industry they are recruiting for. While core domain skill requirements vary from industry to industry, aptitude, language and personality skills requirements change from role to role.

Conclusion

Policy papers in India are beginning to show their commitment to skills development and employability through it but that is not enough either. The true reflection of their commitment would be when they make it mandatory to establish Skill Development Centers at university and college campuses and provide specific funds for the same. These Centers should be endowed with the task of training each and every student of the college and university in terms of soft skills and life skills and prepare them for the jobs they dream of.

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An Economic Impact of Innovation for Technologies in Educational Research in Tamil Nadu

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Education is a natural, harmonious and progressive development of man's innate powers. It is a medium through which the society transmits its heritage of past experiences and modifications, system of values and the modes or skill of acquiring it. It is a key ingredient in economic and social development. In the 21st century "Information Explosion" and "Population Explosion" are the major problems in the field of education. As per the world vision the experts from all fields, including education, business, and government agree that we have moved into the information age. As much as 97 per cent of the world's knowledge will be accumulated over one person's life time. Again, statistics like this, teaching students of a host of facts "just in case" they need them later on in life is a fruitless effort. The ability to find and use facts as they are needed becomes the skill that will enable students to become lifelong learners.

Keywords: Literacy, Library, Population and Educational Technology.

Introduction

Education is a natural, harmonious and progressive development of man's innate powers. It is a medium through which the society transmits its heritage of past experiences and modifications, system of values and the modes

or skill of acquiring it. It is a key ingredient in economic and social development. In the 21st century "Information Explosion" and "Population Explosion" are the major problems in the field of education. Realizing the danger of this disastrous situation, India has embarked upon a great adventure; the adventure of putting to use modern information and communication technologies for the delivery of education services.

To satisfy the needs of the 21st century education must be harnessed with technology and the teachers and learners are to be made familiar with the new trends. Teaching is generally considered as an activity which is designed and performed for multiple objectives in terms of 2 changes in pupil behavior. Pupils on the other hand have multidimensional personalities having different styles. The common implication of both these facts is that the teacher should use different strategies of teaching which match the objectives of teaching on one hand and pupils learning styles and personality dimensions on the others.

The emerging trends in education technology have revolutionized the whole teaching and learning process by adapting to individual learning needs. While thus going through the history of educational technology, it is also essential to note that the certain important events that helped for the development of educational technology. The Government of India had sent a proposal to establish a Centre for curriculum and media development under the United Nations Development and Programme Scheme (UNDP) and this proposal was approved in 1970 by Wilber Schramm. It was, therefore, felt by the Indian educationists to have a Centre for Educational Technology at Delhi and accordingly it was established at NCERT.

Then in 1973, another unit for educational technology in the Ministry of Education was also established. After this the Government of India wanted educational technology cells to be established in different states. Today, totally we have 43 technology cells in thirteen different states, among them being, Maharashtra, Gujarat, Orissa, Madhya Pradesh, Andhra Pradesh, Karnataka, Uttar Pradesh, Rajasthan and Tamil Nadu. Educational Technology cells have also been started at all the four Regional Colleges of Education, that is, at Bhopal, Ajmer, Mysore and Bhubaneswar.

Emerging Trends in Educational Technology

The two major trends that have developed in the process of educational technology are:

- Technology for mass instruction and
- Technology for individual instruction.

Included in the first type are instructional broadcasting, television filmed lectures, CCTV, motion pictures etc. Under technology for individual instruction, there are equipment's and materials designed for individual operation such as teaching machines, programmed instruction, auto-tutorial system, computer-assisted instruction, language laboratories, learning modules etc. Programmed Instruction in a fast-developing world, the teacher cannot and ought not to be left alone to depend upon his own resources and talents to disseminate the knowledge to the pupils. The classroom teacher should be supplied with reliable instructional material based upon the dependable findings of educational technology. This will help him to do his job with maximum perfection. Programmed learning is one such big step in this direction. In this the subject-matter or content of the course displays a few distinct characteristics such as:

- Juiueati Qnal Technology Its Nature and Scope
- A clear-cut statement of the objectives;
- The material to be learned is itemized and presented serially;
- Frequent and unambiguous responses from every student are required throughout the whole sequence. Unless the learner makes some responses, which are relevant to the learning task, no learning will occur;

Feedback of information about the correctness or otherwise of the responses is given to the pupil before the next frame or item is presented.

Modular Scheduling

A module is a short unit of instruction dealing with a single conceptual unit of subject matter. Each course is built in the " bank& quot; of a number of modules and each module is designed around a list of objectives and student projects. A variety of learning activities centered around the learner and incorporating a multi-media approach is provided. The components of modules include modular 44 lecture unit, laboratory unit, programmed instruction unit, workshop unit, individual study unit, film unit, audio-tape unit, video-tape unit etc.

Multi-media Approach For effective and efficient learning, it is now accepted that there should be a multi-media approach. Edgar Dale (1969)

through his & quot; Cone of Experience & quot; has demonstrated that in any learning situation, the more the senses are stimulated, the more the person learns and the longer he retains. Dale describes how the different types of aids, starting from verbal symbols up to direct purposeful experiences, are interrelated and effective in the learning process.

The different materials of the experiences presented in the cone may be classified into three:

- non-projected aids;
- projected aids; and
- activity aids.

The following are some specific applications of instructional technology in imparting formal education:

- Use films, television, slide-tape presentation and so forth as an alternative to a lecture for presentation of information.
- Buy, borrow or produce 2" x 2" colour slides, showing the steps in a process to be demonstrated.
- Use an opaque projection to show a printed diagram.
- Make a transparency from a cartoon or drawing in a few seconds on a thermo graphic copier and show it to the class using an overhead projector (OHP).
- Draw chalkboard diagrams once on transparency masters; then project the transparencies made from these masters on OHP, thus saving the time wasted in re-wording them each year Record questions, problems, exercises and background information on different subject or at different levels of difficulty on tape for use by individuals or small groups with cassette play back units. While some students are interacting with the recorded material, the teaching faculty will be free to work intensively with the others.

Conclusion

As per the world vision the experts from all fields, including education, business, and government agree that we have moved into the information age. As much as 97 per cent of the world's knowledge will be accumulated over one person's life time.

Again, statistics like this, teaching students of a host of facts "just in case" they need them later on in life is a fruitless effort. The ability to find and use facts as they are needed becomes the skill that will enable students to become lifelong learners. The role of education is no longer to provide educational opportunities through early adulthood, but to provide the scaffolding necessary to support individuals and families from all walks of life, throughout their entire lives.

In order to prevent a further widening between the upper and lower classes, it will become increasingly important for educational institutions to provide this support by providing weeknight and weekend adult classes focused on emerging technologies. It is important that educators have a sense of where the world is headed. Only then will they be able to adequately prepare current and future students to thrive in this ever- changing world.

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Innovative Teaching Practices for Modern Pedagogy

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The purpose of education is not just making a student literate but adds rationale thinking, knowledge, ability and self-sufficiency. When there is a willingness to change, there is hope for progress in any field. Creativity can be developed and innovation benefits both students and teachers. Education is a light that shows the mankind the right direction to surge. If education fails to inculcate self-discipline and commitment to achieve in the minds of student, it is not their fault. We have to convert education into a sport and learning process has to generate interest in the students and motivate them to stay back in the institution than to run away from it. The use of innovative methods in educational institutions has the potential not only to improve education, but also to empower people, strengthen governance and galvanize the effort to achieve the human development goal for the country. Teachers follow innumerable innovative techniques inside the classroom to make the teaching- learning process effective.

Keywords: Learning, Computational Thinking and Adaptive Teaching.

Introduction

Education is a powerful weapon to change the world. Teacher education is the stepping stone in building the future teachers. Innovation is to create something new from the existing one with the aim of novelty and newness in the mind. According to A.P.J. Abdul Kalam, "for participating in the nation building tasks, the capacities required to be built among the students in their formative years by the educational institutions arel: the capacity for

creating innovation, the capacity for mental leadership, the capacity to uses higher technology". A broad range of educational innovations—technological, pedagogical, structural, and financial—is playing an increasingly important role in supporting student persistence and degree completion in our national drive to increase postsecondary attainment. Innovative teaching is necessary for the present and future of education to help students to reach their full potential. The individuals responsible for educating young minds at the post-secondary level are rarely provided with formal education on teaching pedagogy and strategies (Hellmann, Paus & Jucks, 2014). Recently, innovative teaching has been viewed as a constructivist, social-constructivist, and student-centered process whereby students should be active learners in a supportive environment, engaging in authentic and relatable problem-solving activities to stimulate learning (Brandon, 2004).

Innovative Practices for Modern Pedagogy

Crossover learning

Learning in informal settings, such as museums and after school clubs, can link educational content with issues that matter to learners in their lives. Learning in schools and colleges can be enriched by experiences from everyday life. An effective method is for a teacher to propose and discuss a question in the classroom, then for learners to explore that question on a museum visit or field trip, collecting photos or notes as evidence, then share their findings back in the class to produce individual or group answers. These crossover learning experiences exploit the strengths of both environments and provide learners with authentic and engaging opportunities for learning. Since learning occurs over a lifetime, drawing on experiences across multiple settings, the wider opportunity is to support learners in recording, linking, recalling and sharing their diverse learning events.

Learning through Argumentation

Students can advance their understanding of science and mathematics by arguing in ways similar to professional scientists and mathematicians. Argumentation helps students attend to contrasting ideas, which can deepen their learning. It makes technical reasoning public, for all to learn. It also allows students to refine ideas with others, so they learn how scientists work together to establish or refute claims. Teachers can spark meaningful discussion in classrooms by encouraging students to ask open-ended questions,

re-state remarks in more scientific language, and develop and use models to construct explanations. Professional development can help teachers to learn these strategies and overcome challenges, such as how to share their intellectual expertise with students appropriately.

Incidental Learning

Incidental learning is unplanned or unintentional learning. It may occur while carrying out an activity that is seemingly unrelated to what is learned. Early research on this topic dealt with how people learn in their daily routines at their workplaces. For many people, mobile devices have been integrated into their daily lives, providing many opportunities for technology-supported incidental learning. Unlike formal education, incidental learning is not led by a teacher, nor does it follow a structured curriculum, or result in formal certification. However, it may trigger self-reflection and this could be used to encourage learners to reconceived

Context-Based Learning

Context enables us to learn from experience. By interpreting new information in the context of where and when it occurs and relating it to what we already know, we come to understand its relevance and meaning. In a classroom or lecture theater, the context is typically confined to a fixed space and limited time. Beyond the classroom, learning can come from an enriched context such as visiting a heritage site or museum or being immersed in a good book. It follows that to design effective sites for learning, at schools, museums and websites, requires a deep understanding of how context shapes and is shaped by the process of learning.

Computational Thinking

Computational thinking is a powerful approach to thinking and problem solving. It involves breaking large problems down into smaller ones (decomposition), recognizing how these relate to problems that have been solved in the past (pattern recognition), setting aside unimportant details (abstraction), identifying and developing the steps that will be necessary to reach a solution (algorithms) and refining these steps (debugging). Such computational thinking skills can be valuable in many aspects of life, ranging from writing a recipe to share a favorite dish with friends, through planning a holiday or expedition, to deploying a scientific team to tackle a difficult challenge like an outbreak of disease.

The aim is to teach children to structure problems so they can be solved. Computational thinking can be taught as part of mathematics, science and art or in other settings. The aim is not just to encourage children to be computer coders, but also to master an art of thinking that will enable them to tackle complex challenges in all aspects of their lives.

Learning by Doing Science (with remote labs)

Engaging with authentic scientific tools and practices such as controlling remote laboratory experiments or telescopes can build science inquiry skills, improve conceptual understanding, and increase motivation. Remote access to specialized equipment, first developed for scientists and university students, is now expanding to trainee teachers and school students. Remote lab systems can reduce barriers to participation by providing user-friendly Web interfaces, curriculum materials, and professional development for teachers.

With appropriate support, access to remote labs can deepen understanding for teachers and students by offering hands-on investigations and opportunities for direct observation that complement textbook learning. Access to remote labs can also bring such experiences into the school classroom. For example, students can use a high-quality, distant telescope to make observations of the night sky during daytime school science classes.

Embodied Learning

Embodied learning involves self-awareness of the body interacting with a real or simulated world to support the learning process. In embodied learning, the aim is that mind and body work together so that physical feedback and actions reinforce the learning process. Technology to aid this includes wearable sensors that gather personal physical and biological data, visual systems that track movement, and mobile devices that respond to actions such as tilting and motion. This approach can be applied to the exploration of aspects of physical sciences such as friction, acceleration, and force, or to investigate simulated situations such as the structure of molecules.

Adaptive Teaching

All learners are different. However, most educational presentations and materials are the same for all. This creates a learning problem, by putting a burden on the learner to figure out how to engage with the content. It means that some learners will be bored, others will be lost, and very few are likely to discover paths through the content that result in optimal learning.

Adaptive teaching offers a solution to this problem. It uses data about a learner's previous and current learning to create a personalized path through educational content. Adaptive teaching systems recommend the best places to start new content and when to review old content. They also provide various tools for monitoring one's progress. They build on longstanding learning practices, such as textbook reading, and add a layer of computer-guided support. Data such as time spent reading and self-assessment scores can form a basis for guiding each learner through educational materials. Adaptive teaching can either be applied to classroom activities or in online environments where learners control their own pace of study.

Analytics of Emotions

Automated methods of eye tracking and facial recognition can analyze how students learn, then respond differently to their emotional and cognitive states. Typical cognitive aspects of learning include whether students have answered a question and how they explain their knowledge. Non-cognitive aspects include whether a student is frustrated, confused, or distracted.

More generally, students have mindsets (such as seeing their brain as fixed or malleable), strategies (such as reflecting on learning, seeking help and planning how to learn), and qualities of engagement (such as tenacity) which deeply affect how they learn. For classroom teaching, a promising approach is to combine computer-based systems for cognitive tutoring with the expertise of human teachers in responding to students' emotions and dispositions, so that teaching can become more responsive to the whole learner.

Stealth Assessment

The automatic data collection that goes on in the background when students work with rich digital environments can be applied to unobtrusive, 'stealth', assessment of their learning processes. Stealth assessment borrows techniques from online role-playing games such as World of War craft, in

which the system continually collects data about players' actions, making inferences about their goals and strategies in order to present appropriate new challenges.

This idea of embedding assessment into a simulated learning environment is now being extended to schools, in topics such as science and history, as well as to adult education. The claim is that stealth assessment can test hard-to-measure aspects of learning such as perseverance, creativity, and strategic thinking. It can also collect information about students' learning states and processes without asking them to stop and take an examination. In principle, stealth assessment techniques could provide teachers with continual data on how each learner is progressing.

Conclusion

In conclusion, teaching innovatively does not require that you reinvent the wheel. By committing to listening to your students, providing opportunities for real-life learning, fostering creativity and making the material meaningful to them, you will achieve the implementation of innovative practices in your classrooms. Some *innovative* ideas that will help *teachers* reinvent their *teaching* methods and make their classes interesting.

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