

Correlation between IT and ELT

Srinivasa Rao Idapalapati

Institute of Languages, University of Tabuk, Saudi Arabia

Abstract: Advances in information technology (IT) have been supporting the advancement of English language teaching-learning models such as blended learning, hybrid learning, flipped classrooms, online learning, asynchronous and synchronous, and other e-learning models of teaching English for specific functional purposes. Given the ever-increasing integration of IT into ELT methods, this study aims to demonstrate the correlation between technological advancements and the shifting models of English-language teaching (ELT) at higher education institutes, and their influence on the changing demographics of English speakers. The study was carried out in consideration of the attributes of IT that can be adopted for improving the attributes of the existent ELT methods and explored the correlations between the attributes of IT and ELT as well as between the changing statistics of English learners worldwide. The findings of this research work can be used in drawing specific inferences about the outcomes of the integration, and in providing recommendations for present-day English language teachers about the ways they can advance their teaching methods with the integration. Teacher trainers can also extrapolate the outcomes in designing more effective teacher awareness and training programs.

Keywords: Information Technology, English Language Teaching, Correlation, English Language Teaching Models, Teacher-Centered, Student-Centered

Introduction

Teachers of English language that deal with courses of English language such as English as a Foreign Language (EFL), English as a Second Language (ESL), and English for Specific Purposes (ESP) have become used to integrate technology in one way or the other in their teaching methods. However, there isn't any study with a focus on the aspect of specific attributes of information technology (IT) that could impact specific attributes of English language teaching (ELT) methods that teachers of the English language usually follow. When teachers are completely aware of the way that attributes of IT could impact their teaching methods, teachers can effectively make use of the available IT and would be able to find the specific attributes of IT that can be most productive for integrating into their day-to-day lesson plans and teaching methods. To initiate discussion on the relationship between ELT methods and the relevant IT applications and tools that can be integrated into ELT methods, this study was taken up to explore various ways that IT can optimize ELT methods that would eventually be evident in improving student outcomes overtly.

Study Questions:

This study was driven by the questions that

- 1) In what way IT has influenced ELT methods?
- 2) How is IT correlated to ELT in the evolution of ELT methods?
- 3) Whether there is any correlation between IT and the ever-increasing number of English speakers?

Literature Review

At the outset, one can understand that the methods and practices of teaching and learning are largely based on the epistemological understanding of teachers and learners, and how they perceive a particular method or a technological innovation that can support them in either teaching or learning (Bates, 2022). The foundations laid by Bloom's taxonomy of learning, the perceived hierarchy of learning, and the consequent cognitivist learning theories do adopt technological innovations much more efficiently, and support in developing instructional methods needed for developing the skills required by learners in the present digital world, which is progressively being driven by knowledge economy and unfathomably huge seas of databases. As such the emerging knowledge-based work positions also could demand that educational courses and instructional materials be framed in tune with the objectivist approaches to learning. The objectivist approach demands teachers to be confined more to the set objectives that are framed by curriculum designers and get guided by the instructional materials provided. On the other hand, the statement made by Anderson (2008) talks a lot about the obsolescence of traditional scientific methods of testing, for developing theories, due to increasing dependency on the deluging data for decision-making, which clarifies the intensity of the influence of technology on educational models and teaching methods.

Information technology (IT) can be defined as the creation of communication networks, with the support of the internet and the devices that use the internet, which can be used in performing several tasks such as processing data, transforming the data into meaningful information, storing information as knowledge resource that can be used in future for several purposes (Gershon, 2022). Referring to the etymology of educational technology Mr. G (2022) provides the definition of education technology as the "digital technology used to facilitate learning through Instructional design and learning theory." The concept of multimedia in language teaching can support us well in understanding the crucial role of information and communication technology (ICT) and the Internet of Things (IoT) that keep playing in English language teaching as well. Cohen (2020) writes about the way IoT integration can provide virtual language acquisition environments that support in creation of language immersion programs. Tutorial Point (n.d.) defined multimedia as the way of presenting information and content interactively and impressively, with the support of the internet and information technology, for use in various fields such as marketing, education, healthcare, hospitality, etc.

Since the emergence of democratic ideals in the Sophistic times, to a great extent, the transformation of the education system, the evolution of teachers, and innovations in teaching methods can be attributed to the innovations in technology (delCampo, Negro & Núñez, 2012). In the view of Adcock (2008), technology infusion in the classroom would mean changing the roles of teachers and learners which in turn would revamp the teaching and learning practices eventually leading to the role of teachers being more and more confined to facilitators. It's a well-known fact that the transformation of technology is a continuous process and so is the transformation of the education system together with teachers and teaching methods. Despite the inevitability of transformation, the process of transformation can sometimes be time-consuming and sometimes drastic. Rehman et.al (2021) attribute the delay in the transformation process to the attitudes, beliefs, and opinions of employees who initially tend to be reluctant and resistant to the transformation process.

Evvie.Heh.Hike (n.d) depicted the evolution of educational technology from 500 B.C. to 2020 by listing out the relevant gadgets chronologically starting the Abacus in 500 B.C. to Apps like Kahoot, Google Classroom, Teams, Zoom, Twinkl and Buncee in 2020 with many other gadgets in between that include paper in 105 A.D, pencil in 1565, a first public school in 1635, horn-book in 1650, slide rule 1654, slate and chalk in 1801, magic lantern and slides in 1870, typewriter in 1873, stereoscope in 1905, videos in 1940, overhead projector in 1950, hand-held calculator in 1971, personal computer in 1981, CD ROM Drive in 1985, First online course in 1986, interactive board in 1999, first laptop with wifi also in 1999, Moodle in 2002, Tablets in 2010 and Google Classroom in 2014. Another version of the evolution of educational technology provided by debug8r (n.d.) brings forth the evolution of methods of instruction that started in 1900 B.C. with Cro-Magnon's ways of instruction of required skills through real-time demonstration of the skill as well as through paintings and carvings with primitive tools and continued to the present day digital classroom with the integration multimedia such as "cellphones, laptops, tablets, computers, apps, clouds, audiovisual internet, social media, and the list goes on."

In the evolutionary process of instructional methods of education, the most popular ones that lasted relatively for a long time include, freelancing instructional method by Sophists around 500 BC, the Socratic method in Circa 390 BC, Scholastic instructional method in the 12th and 13th centuries, Comenius' Educational theory that emerged in the 16th century and early 17th century and suggested the establishment of schools with textbooks-instructional materials and sympathetic teachers, Lancastrian instruction in the 1800s that provided schools with special classroom for developing reading and writing skills with the support of goose-quill pens and styluses that were used to create instructional media, Johann Pestalozzi's comprehensive instructional method in 1800s that highlighted group-teaching and reflection, Distance educational instruction also prevailed in 1800s with the support of newspapers-mail services- and radio, Francis Parker- Quick method in the mid 1800s to early 1900s that used object teaching with the support of objects and materials from everyday life, Herbartian teaching method that introduced lesson plans, Media based

instruction in beginning of the 20th century that used the tools such as “portable museums, stereographs, slides, films- motion picture projector, prints, charts, journals and institutes on visual instruction,” Radio broadcasting in education in 1920s, Audio-visual instruction after 1930s, Type-writers and AV device based military teaching during the World War II, Blooms taxonomy with TV in classroom and first computer in 1950s, Computer Assisted Instruction during 1960s, Robert M. Gagne instructional model of five domains in 1965, a boom of instructional designs and models in 1970s with the assistance of computers, Computers for learning in 1980s that used the computers developed by Apple-IBM-HP and Tandy, Educational gamification in 1990s with the support of digital technology and internet, Instructional constructivism in 1990s that highlighted learners’ autonomy, world-wide-web or web-2 technology and internet based instruction in 1991 that facilitated online education for the first time, and the later instructional models based on IT explosion-use of smart boards-learning management systems and artificial intelligence from 2000 to date (debg8r, n.d).

However, Fastiggi (2014) brings forth the concepts of transparent technology and non-transparent concerning the use of technology in education. Transparency of technology refers to the highest degree of assimilation of technology attributes such as the integration and assimilation of pencils, worksheets, whiteboards, colored texts, etc., that the users would not specifically consider as technology. On the other hand, the technological non-transparency refers to digital media such as online social networks, blogs, various ICT applications (Cakici, 2016), and many other affordances offered by IoT (Cohen, 2020) that can be integrated into teaching English but not so embedded and assimilated yet as the existent transparent-technology tools were. “Pedagogically speaking, the greater the transparency (and therefore appropriateness) of educational technology, the greater its effectiveness insofar as facilitating teaching and learning (Fastiggi, 2014).” It can be understood that in order to attain transparency of any technology the users of technology need to be well trained and completely familiarized with all the services and affordances of the technology. The necessity of familiarization needs continuous training sessions and discussions on the use of appropriate technology. In addition, Wang & Winstead (2016) mention the freedom of access to resources that support the emergence of crea-visionaries that develop their language and vision through D-language that looks considerably different from the common language.

As multimedia affordances are leveraged in many other fields, language teaching models are also being developed with teaching materials and contents that contain various digital media such as reading, video, and audio texts that could be interactive and embedded within the teaching materials, apart from the live social media applications that include YouTube, Ted Talk, etc. In the view of Anand & Gupta et al. (2020), the internet has facilitated the incorporation of various digital communication methods such as mobile phones, laptops, tablets, TVs, etc. that can be converged together and used for creating language teaching content that proves to be more authentic, interesting, motivating and more practical for language learners. Fastiggi (2014) identified that appropriate technology

and its familiarity with the users, usually teachers and students in the education field, can make the emerging teaching-learning models more effective. Appropriateness of technology implies and indicates an immense necessity to familiarize the importance of the correlation between IT and ELT among teachers and students in education. The concept of familiarizing teachers with appropriate technology also could imply the essentiality for teachers to be aware of the trends in technology that could keep continually impacting their ELT methods to the extent that they could keep facilitating their learners with the most advanced technological applications.

A review of literature related to the history of the increase in the number of speakers in the world reveals several facts about the development and spread of English right from the Anglo-Saxon and Jutes conquest of English in the 5th century to the present day of English gaining the dominant position as the language spoken by a maximum number of people in the world accounting to about 1.5 billion speakers out of a total population of 8.1 billion in the world (Rogers, 2023). Since the statistics related to the number of English speakers in the world are available only from the beginning of the 20th century, we can plot the rate of increase in the number of English speakers only from 1900 to 2023.

Research Methodology

The research is primarily based on online content analysis of textual data available online relevant to ELT and IT. Online content analysis is considered a powerful research technique in the era of 'big data' as researchers can make use of the data available online, in the form of authentic journal articles, published by several open source journals, together with the data available in blogs as well as those accessible from several social media that are available in the form of essays, video and audio recordings, and photographic messages (Stemler, 2015). By employing the online content analysis method, this study collects the required data from the available online resources such as Google Scholar and internet search engines for the articles relevant to IT and ELT integration and analyses the data for the attributes of IT that keep complementing ELT, and attempts to build a correlational model for predicting the attributes of IT that can be more likely be used in improving the learner outcomes in ELT. As such the primary attributes of ELT such as grammar, syntax, and vocabulary are considered for analyzing the reading and writing skills part of ELT, and the attributes of pronunciation such as phonemes and phonological variations are considered for analyzing the speaking and listening skills of the language. On the other hand, the attributes of IT such as the language learning websites, mobile and tablet notebook application features, and interactive language games that can support the ELT attributes, in several ways, are considered for analysis to find the correlation model between the advances in IT and ELT.

Attributes of English Language: In the evolutionary process of ELT methods, the teaching and learning models considered prominently seven attributes of the English language viz. vocabulary or lexis, grammar, function or pragmatics, and the receptive and productive skills (Rhalmi, 2022). The receptive skills comprise listening and reading, and the productive skills comprise speaking and writing. Linguistic analysis of the English language, as it has

been presented in several art forms such as novel, drama, poetry, and prose in the related literature, could provide us with several other attributes that can make a long list of them, which could include features like contrast, analogy, connotation, personification, allegorical, irony, simile, etc., just to list a few (Garbutt-Young, 2023). However, since ELT in general deals mainly with the language required for general, academic, and business purposes we are confined to these seven attributes to find correlation with the relevant IT attributes that can be considered for integration in ELT classes.

Attributes of IT: On the other hand, recently since the year 2010 onwards, IT has been evolving at unbelievably faster rates and in turn, IT is changing the ELT methods as well as other facets of life in the world. The progression of IT towards artificial intelligence (AI) and AI applications, which are advancing even faster currently, are providing a great range of applications that can be integrated into ELT methods. Bui (2020) mentions various educational technology trends in recent times such as collaborative teaching technology, blockchain technology, immersive learning with the support of VR and AR, gamification, video-assisted learning, and e-learning. Owing to the generation of unfathomable volumes of data that are being processed and used in shaping various AI applications relevant to the attributes of the English language, it depends on the creative genius of teachers and course designers to make use of the suitable IT and AI applications that can suit well to their students in consideration of the specializations in which the students will get graduated. The most advanced technological tools supported by AI, which include robot teachers or Avatar teachers, are viewed as viable alternatives to teachers in dealing with large classes and heterogeneity in EFL classes (Kwok, 2015).

Data Collection and Analysis

Considering the methods of ELT as a function of IT, the related data comprises the available and relevant research articles online, the relevant postings in popular blogs, and other content developers online that are developed based on reliable sources of information. The sources online were selected based on the content that was developed basically on the scholarly articles and books published in popular refereed journals and publications. For example, the content from a blog was selected if the blog was developed by an educational expert and the content has authentic and reliable sources. Sometimes when there aren't any reliable sources of information available online since there weren't any physical records of the sources of information, the information was cited "as per the available online content" and provided the existent source that can be delved further by other scholars. For example, the information related to the number of English speakers from the years about 500 AD to 1900 AD was not available as there were no records available on this data, an estimation of the number was provided based on the population sizes of the English-speaking countries. The English that is a little recognizable to present-day speakers is the English that was used by Geoffrey Chaucer in his story collection called Canterbury Tales in the 14th century. The invention of the printing press, the first kind of modern technology, by Johannes Gutenberg, also happened a little later and supported learning languages in the 15th century. The approximate number of English-speaking people in the world in the 15th century can be

estimated to be between 2 to 3 million as the number corresponds to the population of England at that time and English was not spoken in other parts of the world (Hall, 1965). Hence, we considered the development of English and its correlation with IT from the 15th century onwards. However, it was in the 20th century that several phenomenal technological developments came through and influenced teaching methods and learning styles to a considerable extent. Some of the 20th-century developments include “portable museums, stereographs, slides, films- motion picture projector, prints, charts, journals and institutes on visual instruction (debg8r, n.d.).”

The fundamental details required for the data are collected from all the available online sources, and listed down to post them into the graph. The following table simplified the data required for the graphical presentation of the data that is used for an in-depth analysis.

Table 1: Number of English Speakers by Decades Since 1900

Decade	Number of English Speakers (In Millions)	% Increase compared to the previous decade
1400 - 1800	3 - 26	
1900	292	
1900- 1910	339	16%
1910 - 1920	396	17%
1920 - 1930	474	19.6%
1930 - 1940	548	15.6%
1940 - 1950	624	13.8%
1950 - 1960	697	11.6%
1960 - 1970	769	10.32%
1970 - 1980	843	9.6%
1980 - 1990	914	8.4%
1990 - 2000	987	7.9%
2000 - 2010	1056	11%
2010 - 2020	1134	7.3%
2020 - 2023	1155	1.8%
2050	1356	17.4%

[Sources: Adcock (2008); debg8r (n.d.); Hayes (n.d.); Imperial Statistics (2021); MaGeo Stats (2021); Statistics and Data (n.d.)]

Table 1 above shows the number of English speakers and the percentage increase in the number of English speakers in the world when compared to the total number of speakers in the previous decade. irrespective of the population of the world. The sources of the number of English speakers in the 15th to 19th centuries are not available and so a tentative number of speakers of English is mentioned purely on the basis of the approximation of the then English-speaking countries that include mostly England and parts around England, and also in consideration of the writings by eminent authors like David Crystal (Crystal, 1985; Graham, 2019). It can be noted that the percentage of increase in the number of English speakers in the world continuously increased from 1900 to 1930 and it reached its highest in 1930. However, the percentage started decreasing from 1930 onwards in spite of an overall increase in the number of English speakers in the world irrespective of the total population size in the world.

Picture 1: Charts for the Data in Table 1

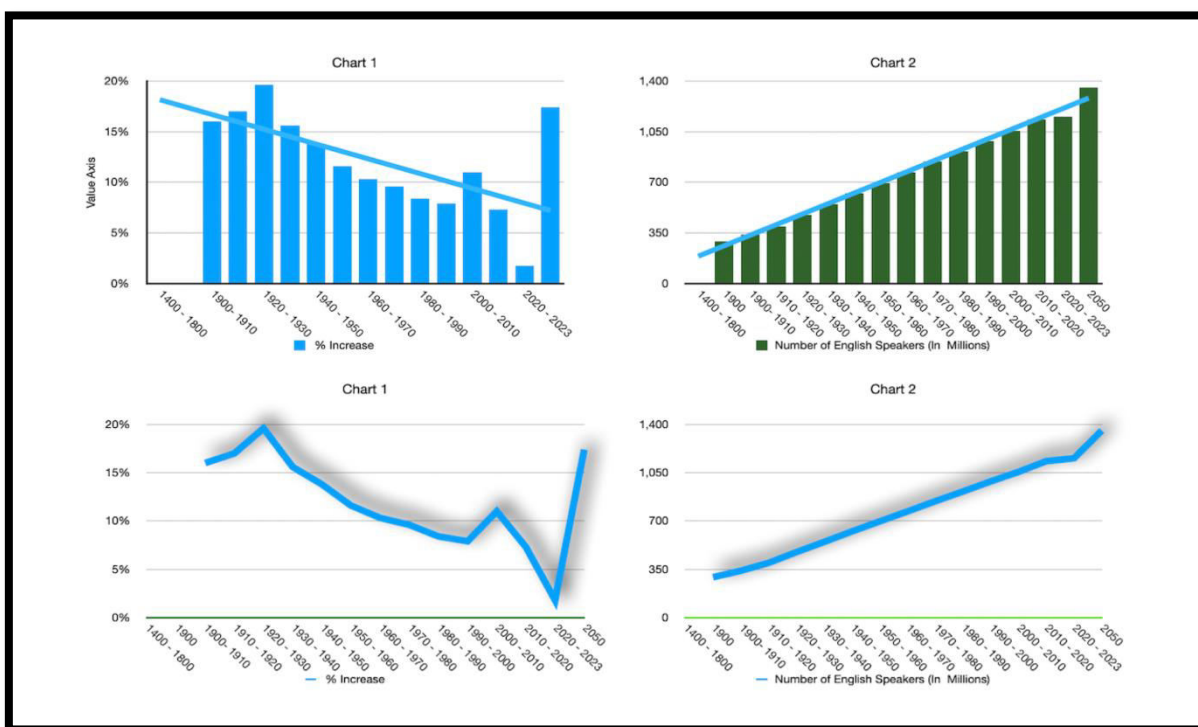


Chart 1 and Chart 2 in picture 1 reflect the bar graphs and line graphs of the data in Table 1 and the charts clearly demonstrate the continuity of increase in the total number of English speakers, and fluctuations in the percentage increase in the number of English speakers. Since there was no option available for including the technological advancements in the graphs, the impact of technology on the number and percentage of English speakers needs to be understood qualitatively in comparison with the data provided in Table 3 below. From Table 1 and Charts 1 and 2, it can be concluded that there is a clear positive correlation between the number of English speakers and the technological advancements in periods of time mentioned in decades from 1900 to date, there is no correlation noticed in the percentage increase in the number of English speakers, which can lead to inferences that the English in the number of English speakers may not be purely due to the advancements in

technology. This analysis led the study to explore the data related to the number of English speakers in the world and percentages of increase in the number of English speakers in comparison with the total population size in the world with technological advancements as a constant factor.

Table 2: Percentage of English Speakers Compared to % of World Population.

Year	% of English speakers worldwide	World population (in Billions)	% Population increase compared to previous decade
1400 - 1800	2.6%	1	
1900	19.4%	1.5	50%
1900- 1910	19.3%	1.75	16.6%
1910 - 1920	21%	1.87	6.8%
1920 - 1930	24%	2	6.95%
1930 - 1940	24%	2.3	15%
1940 - 1950	25%	2.5	8.69%
1950 - 1960	23%	3	20%
1960 - 1970	21%	3.7	23.3%
1970 - 1980	19%	4.5	21.6%
1980 - 1990	17.2%	5.3	17.7%
1990 - 2000	16.5%	6	13.2%
2000 - 2010	15.1%	7	16.6%
2010 - 2020	14.5%	7.8	11.4%
2020 - 2023	14.4%	8	2.5%
2050	14%	9.7	21.2%

[Sources: Adcock (2008); debg8r (n.d.); Gillan (2022); Hayes (n.d.); MaGeo Stats (2021); Statistics and Data (n.d.)]

Table 2 provides the details of percentages of English speakers in the world in each decade in comparison with the total population of the world along with the percentage of population increase, and the total population size of the world in billions. The percentage of English speakers in the world increased continuously from 1900 to 1950 when it reached its highest 25%, but it started declining from 1950 onwards. It can also be observed that while the population size in the world is continuously on the ascend, the percentages of increase

in the population show several fluctuations each decade. The percentage increase in the number of English speakers can be attributed to reasons such as the British colonial impact on the economies of the colonized countries rather than finding reasons for technologically advanced English teaching methods. It can also be observed that despite the fluctuations in the percent increase of population size worldwide, the percent increases in English speakers show some consistency in tandem with the percent increases in population sizes. For example, even though the percent increase in population size in 1920- 1930 is considerably low in comparison with many other decades, the percentage growth in English speakers worldwide for the same period reflects 21%, which looks quite a normal percentage growth. Overall the data shows that in spite of the unbelievable technological explosions that brought in admirable changes in ELT methods, the percentage changes in English speakers from decade to decade remained consistent all through the time from 1900.

Picture 2: Bar and Line Graphs of the Data in Table 2

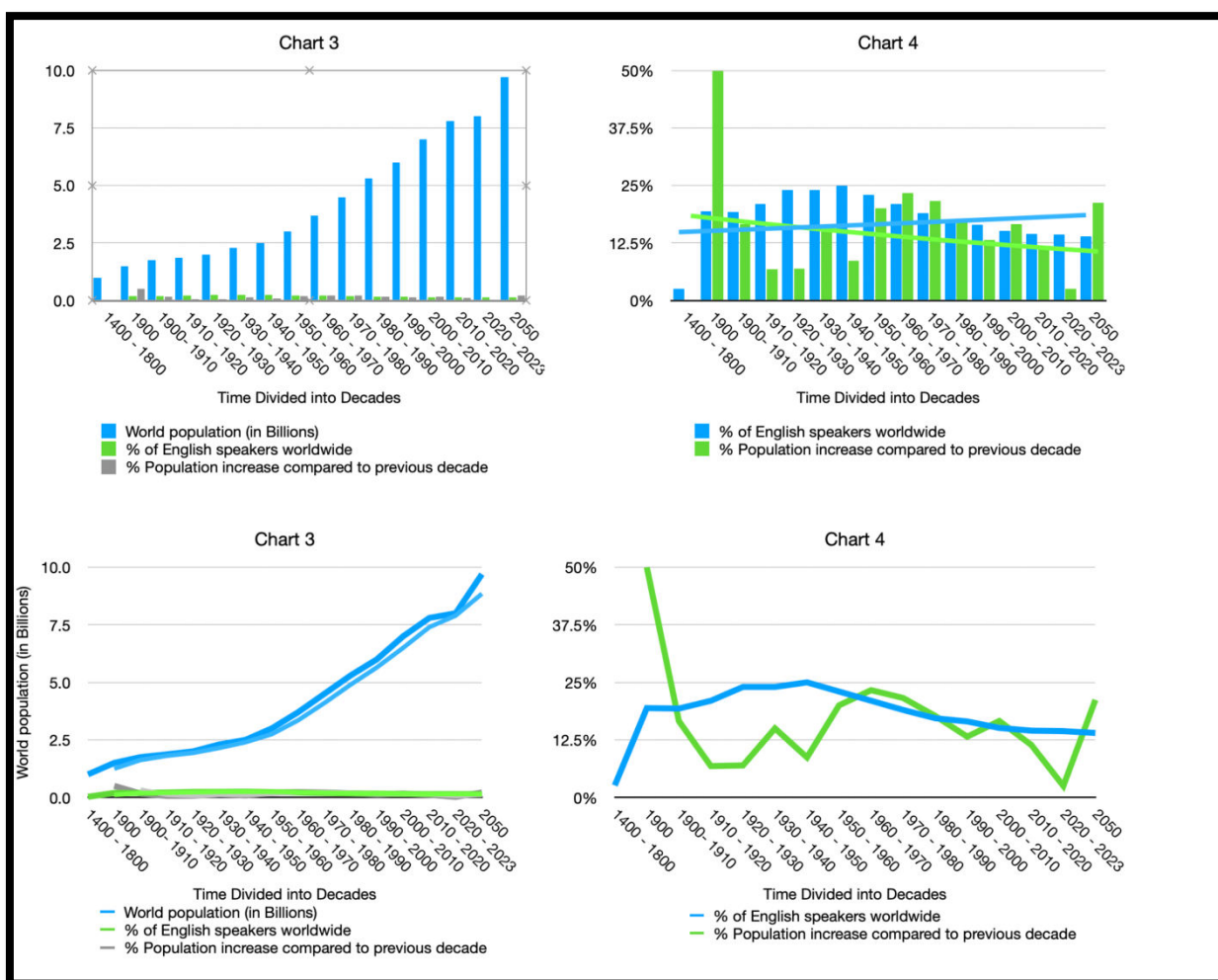


Chart 3 and chart 4 also show a clear correlation between the number of English speakers worldwide and the ELT methods as they are presented in Table 3 from 1900 to date with the time divided into decades. However, there is no such linear relationship in the percentage changes in either the percentage increase in the number of English speakers from decade to decade or the percentage changes in the size of the population from decade to decade. The blue line in the line chart 4 clearly shows the somewhat consistent percentage changes in

the number of English speakers and the lack of such consistency in the percentage changes in the population size worldwide.

Table 3: Technology Available and ELT Methods

Year	Technology in Trend	ELT method in use
1400 - 1800	Printing Press	Grammar-translation method
1900	Printing Press	Grammar-translation method
1900- 1910	Radio broadcasting	Grammar-translation method
1910 - 1920	Printing Press & Radio broadcasting	Grammar-translation method
1920 - 1930	Radio broadcasting, Sound Recording, Sound motion picture	Audio-Visual method
1930 - 1940	Type Writers	Public schools started using type writers
1940 - 1950	AV devices, overhead projectors, slide projectors and simulators	Military Teaching
1950 - 1960	TV in classroom, Computer Assisted Instruction (CAI), First computers IBM.	Communication process oriented instructional methods, influenced by blooms taxonomy.
1960 - 1970	Computers	CAI Instruction models being developed, The model of more students, few teachers and effective teaching.
1970 - 1980	Computers for Instructional purposes: Apple, IBM, HP, Tandy	CAI with more than 3 million computers in schools in US
1980 - 1990	Laptops, CD roms, internet, software, rapid gamification technology etc.	Cognitive learning models, constructivist instructional methods.
1990 - 2000	web.2 technology, explosion of computer application innovations, White boards (smart boards).	Online teaching, Language labs, Computer assisted language learning (a common, mandatory practice in all schools).

2000 - 2010	Mobile phone with camera, e-text or textbooks online, Artificial Intelligence (AI) and One laptop per child (OLPC), LMS (moodle, blackboard, etc.)	Online teaching, blended and flipped class models besides classroom teaching.
2010 - 2020	Tablets (iPads), LMS cloud,	100% online models, multi-media approach, interactive teaching-learning models.
2020 - 2023	Blockchain technology, live videos, animation, and teacher generated class room materials, social media	e-learning, collaborative learning models, STEAM programs, online discussion forums, etc.
2050		

[Sources: Adcock (2008); debg8r (n.d.); Hayes (n.d.); MaGeo Stats (2021)]

Table 3 provides technology trends during the decades starting from 1900 to date. The qualitative data in Table 3 is useful when it's related to the quantitative data in Table 1 and Table 2. In fact, in this study case, the data in Table 3 on its own has little significance in estimating the correlation of ELT and IT. However, the trends in technology show a clear impact of technology on ELT methods. When compared to the changing ELT methods and the increases in the percentage of English speakers, it can be understood, as many of us think about before the analysis of the data, that the advances in technology haven't automatically led to percentage increases in the number of English speakers in the world.

Discussion

The current English teaching models are concerned with developing listening, speaking, reading, and writing (LSRW) skills in English language learners. The available and developing technology tools can support improving the LSRW skills in multiple ways. A critical analysis of the data shows that the evolution of ELT methods is dependent on the evolution of technological tools. When the process of 'English learning' is seen from the functional point of view, which means using English only for communication and academic purposes in general, the success of language learning depends on several factors such as the motivation and economic status that students gain from their parents, the positive classroom and teaching-learning environment created by teachers, and students' cognitive capabilities and learning behaviors (Hanus, 2016). Achievement of success in language learning thus can be attributed to the collective efforts of students, their parents, and their teachers. Hanus (2016) further pointed out that the socioeconomic status of parents can influence not only students' motivation levels but also their confidence levels in learning as learners from rich socio-economic status are provided with various learning resources such

as great schooling opportunities, constructive parental guidance, etc. From these facts, it can be inferred that in spite of tremendous technological advances and the ever-increasing popularity of English as the most useful international language the percentage of English speakers worldwide is descending as many people in the world may not be in a position to afford the costs incurred in learning English. On the other hand, it can also be assumed that advancing technological tools such as language translators are compensating the language needs of people in many non-English speaking parts of the world.

Eminent English language history writers throughout relevant literature attributed the dominance and spread of English from the 18th century onwards to the British colonization of several countries in the world. The importance of a language, as is evident in the historical trends of languages, is not dependent on the internal advantages of a language but on the “political, economic, technological, and military events...that shape the balance of power among nations (Baugh & Cable, 1993).” From these facts, it can be inferred that the relative consistency in the percentage of English speakers worldwide can be attributed to the consistency of the percentage of people related to the events that impact the balance of power among all nations. It can also be inferred that even though the advances in IT may not support increasing the percentage of English speakers in the world, they can support easing the language learning process by providing various sources for learning the language. The correlation between IT and ELT can be confined to the refinement of the ELT method following the advances in IT applications.

The correlation between IT and ELT concerning the advantages of IT integration in ELT methods can be witnessed in easing the roles of teachers and learners in the present ELT models. While the online and e-learning models that are supported by IT and AI improve the autonomy of English language learners, the models confine the roles of teachers to be the facilitators of learning. For example, in the changing English teaching-learning scenarios, the blended learning approach and flipped classroom approach support learners in gaining learner autonomy, the teacher's role is confined to providing suitable sources of learning. This pattern is carried further by AI, which automatically customizes the learning resources and activities while sorting out the graded content-rich resources for teachers.

Conclusion

The findings of this study reveal several facts related to the influence of IT on ELT and the changing statistics of English learners and speakers. While it is obvious to assume that advances in IT support the increasing number of English speakers worldwide, the reality is that the factors that support learning English as an international language are independent of the advances in IT. At any point of time in the history of English, it seems that in spite of dramatic advances in technology, the ratio of English speakers to the population of the world fluctuates very little. One can see a little linear relationship between the percentages of English speakers in the world and the increasing population size in the due course, and fluctuations in their ratio seem inconsiderable. However, the changing ELT methods due to the advances in IT and AI support transforming the roles of teachers and learners. The

correlation between IT and ELT methods can be understood in qualitative terms as it is witnessed in the ways that IT is integrated and used in improving the ELT methods that make use of the IT and AI applications in providing authentic and easily accessible resources for both teachers and students. By and large, it can be said that advances in IT keep driving the ELT models to be more student-centric and less teacher-centric. It can also be understood that even though the advances in IT have no specific influence on the motivational factors of English language learners, they can support enhancing the learning opportunities for the ones who are motivated in different other ways.

References

1. Adcock, P. K. (2008). Evolution of teaching and learning through technology. *The Delta KappaGamma Bulletin*, 74(4), 37.
2. Anand, A., Gupta, R. K., Raj, R., Sinha, R., Kumar, P., & Raj, A. (2020). Information Technology in ELT (English Learning and Teaching). *International Journal of English Learning & Teaching Skills*, 2(4), 1569-1583
3. Anderson, C. (2008, June 23). The end of theory: The Data Deluge makes the scientific method obsolete. *Wired*.
4. Bates, A. W. (2022). *Teaching in a digital age: Guidelines for designing teaching and learning* (3rd ed.). Tony Bates Associates Ltd.
5. Bui, S. (2020, November 19). Top educational technology trends in 2020-2021. *eLearning Industry*.
6. Cakici, D. (2016). The use of ICT in teaching English as a foreign language. *Participatory educational research*, 4(2), 73-77.
7. Cohen, H. (2020, February 11). IOT applications in task-based and Foreign Language Learning. *IoT For All*.
8. Crystal, D. (1985). How many millions? The statistics of English today. *English Today*, 1(1), 7-9.
9. delCampo, J. M., Negro, V., & Núñez, M. (2012). The history of technology in education. A comparative study and forecast. *Procedia-Social and Behavioral Sciences*, 69, 1086-1092.
10. Evvie.Heh.Hike. (n.d.). History of educational technology timeline. *Timetoast timelines*.
11. Fastiggi, W. (2014, November 23). *Appropriate Technology in Education. Technology for Learners*.
12. Garbutt-Young, L. (2023, August 18). The Essential List of language features you should know for English. *Art of Smart Education*.
13. Gershon, L. (2022, August 11). What is information technology (IT)? *Southern New Hampshire University*.
14. Gillan, C. (2022, November 8). How many people speak English and where is it spoken? *Lingoda*.
15. Graham, B. (2019, January 27). Language expert says English global dominance could be threatened by technology. *news.com.au*.

16. Hall, R. E. (1965, January 12). Population of England in the 14th and 15 Centuries. web.stanford.edu
17. Hayes, A. (n.d.). Technological advances from 2000-2016 in the world of education. Sutori.
18. Hanus, K. (2016). Factors That Influence Learning by English Language Learners (ELLs). *BU Journal of Graduate Studies in Education*, 8(2), 19-22.
19. Imperial Statistics. (2021, January 25). Most spoken languages (top 25 languages by total number of speakers 1900-2100) [Video]. YouTube.
20. Kwok, V. H. (2015). Robot vs. Human Teacher: Instruction in the Digital Age for ESL Learners. *English Language Teaching*, 8(7), 157-163.
21. MaGeo Stats. (2021, March 29). Countries by English speaking population (1800-2300)-English official language countries [Video]. YouTube.
22. Rehman, N., Mahmood, A., Ibtasam, M., Murtaza, S. A., Iqbal, N., & Molnár, E. (2021). The psychology of resistance to change: The antidotal effect of organizational justice, support, and leader-member exchange. *Frontiers in Psychology*, 12, 678952.
23. Rhalmi, M. (2022, April 05). What are the 7 components of an English language course you should know? My English Pages.
24. Rogers, R. (2023, May 17). How many people speak English in 2023 (20+ data statistics)? MyClassTracks.
25. Stemler, S. E. (2015). Content analysis. Emerging trends in the social and behavioral sciences: An Interdisciplinary, Searchable, and Linkable Resource, 1-14.
26. Statistics and Data. (n.d.). The most spoken languages in the world - 1900/2020. The Most Spoken Languages in the World - 1900/2020 - .
27. Wang, C., & Winstead, L. (Eds.). (2016). Handbook of research on foreign language education in the digital age. IGI Global.