

# The impact of the use of ICT instructional techniques in a multicultural context on ESL learners in higher education

Qihui Song

University of Windsor, Windsor, Ontario (N9B 3P4), Canada

song82@uwindsor.ca

**Abstract.** This paper explores the beneficial and adverse effects of ICT teaching techniques on the learning of English as a second language learner through a survey of the use of ICT teaching techniques by higher teachers in the classroom. This paper also provides guidance and recommendations for higher education teachers to use ICT teaching technology in the classroom through a detailed analysis of the adverse effects of ICT on ESL students.

**Keywords:** ICT teaching technique, ESL student, second language, higher education.

## 1. Introduction

With the development of science and technology, ICT teaching has become an indispensable teaching method today. In today's society with the outbreak of the new crown epidemic, the online courses provided by ICT teaching have become an indispensable teaching method. However, ICT teaching has advantages and disadvantages for ESL learners, ICT teaching can help students better grasp the knowledge learned through multi-faceted teaching methods, ICT teaching can provide ESL students with more abundant learning resources, and ICT teaching can also provide a variety of online and offline teaching methods. However, ICT teaching also has corresponding drawbacks, rich ICT teaching methods will lead to students' learning distraction, a large number of learning resources on the Internet will make students confused about the knowledge they have learned, and ICT teaching will increase the teaching pressure of teachers. Therefore, future higher education providers should use ICT teaching technology dialectically, use more academic courseware in teaching, and provide students with a large number of learning resources. At the same time, the state should also carry out corresponding ICT teaching for higher teachers.

## 2. Beneficial impacts of ict teaching on esl learners

### 2.1 ICT teaching enhances the multimodal capacity of ESL students.

ICT teaching methods are the new driving force for the future development of education. Teachers can help students master what they have learned through various ICT teaching methods. The traditional teacher centered teaching method requires students to blindly absorb the knowledge taught by teachers. Boring rote memorization of book knowledge will lead to a lack of positive interaction with teachers, unable to express their views on the knowledge learned in the classroom, as well as positive interaction with teachers in the classroom, asking teachers about their lack of understanding of the knowledge learned. At the same time, information and communication technology is a new teaching method. Teachers can teach students knowledge through a variety of teaching methods, and students have enough time to interact and feedback with teachers in class. Teachers' use of ICT can improve their teaching innovation ability [1]. Teachers use video, audio, PowerPoint and other teaching methods in class to help students make boring learning content lively and interesting, and help students understand what they have learned. For example, through ICT, teachers can show students many phenomena that are difficult to restore in real life, such as various physical and chemical reactions, to help students combine theory with practice and truly feel the knowledge content that is difficult to understand through books. Compared with traditional teaching methods, ICT teaching can improve students' multimodal ability, and cultivate students' common learning

through various aspects such as vision, hearing, and sensory. Teachers can also use kahoot as a novel teaching method in class. The game is used to stimulate students' enthusiasm for learning, so that students can easily and happily accept the knowledge they have learned. Using ICT teaching strategies in ESL students' teaching can attract students' attention and promote their learning process [2]. It can be seen that teachers should use ICT teaching strategies in classroom teaching.

## **2.2 ICT teaching improves ESL students' self-learning ability and English expression ability**

ICT teaching methods have sufficient learning resources, and students can find a large number of resources on second language learning on the Internet, which is convenient for students to prepare for class and learn independently after class. The rapid development of science and technology has not only made digital teaching possible but also catalyzed many online platforms that can help students learn, such as YouTube, Facebook, Twitter, etc. YouTube has proven to be a rich source of oral learning for EFL students, providing students with the opportunity to truly interact, speak freely, and improve their pronunciation [4]. YouTube is filled with a wealth of resources and information, and students can search for information that will help them learn according to their needs. YouTube can help students understand the overall content and expression of the video by watching various videos and combining audio and subtitles. The YouTube web version comes with an automatic translation function for video subtitles, which is very helpful for beginners to learn, and ESL students can adjust the language and speed of subtitles to meet their own learning needs. In addition, the contextual cues and conversation features offered by Facebook make it an ideal language learning site. Meanwhile, the Facebook platform can help students share information and gain access to new knowledge [5]. ESL students can socialize globally on the Facebook platform, share their lives with netizens from all over the world and communicate daily through text or oral dialogue. ESL students can increase the frequency of using English in their daily lives and improve their English learning ability by communicating with native English speakers, increasing the reserve of English vocabulary and the accuracy of grammar use. Self-reflection in education is an essential skill for learners that has a positive impact on student outcomes. Twitter is a great platform to help students self-reflect and learn. ESL teachers can post relevant teaching activities on Twitter and require students to regularly post personal opinions on relevant views on the Twitter platform, which not only helps students to self-learn but also helps them to conduct regular self-reflection. Teachers can also check students' grammar accuracy and vocabulary usage based on posts made by students. This teaching style can also help students develop critical thinking, and students can increase their critical thinking by reading and commenting on different ways of thinking about the same thing by reading and commenting on peer posts.

## **2.3 ICT teaching provides ESL students with a variety of ways to attend classes**

ICT teaching has a variety of teaching methods, teachers and students can reasonably arrange the class time according to their schedules. During the COVID 19 crisis, the critical role of ICT in education is more evident than ever, playing a role in addressing the quality and access issues of education [6]. The outbreak of the new crown epidemic has led to the suspension of traditional offline teaching, and students have not been able to go to school to receive education, which has greatly affected the learning progress of students. ICT teaching has highlighted its importance in teaching during this period. Teachers can provide students with courses through the Internet and online teaching platforms to help students continue to receive education according to the normal teaching plan. ICT provides flexibility in time and place, with learners able to access online materials anytime, anywhere, from any location they prefer [7]. ICT teaching increases the flexibility of course time. ICT courses include live lessons and recorded lessons, teachers and students can choose their course methods according to their own needs, to better arrange the time reasonably. At the same time, teachers can also record the course content, students can review the course according to their different learning situations after class, and timely learn the knowledge that is not mastered in the classroom to accurately check and fill in the gaps. In addition, ICT teaching can also increase students' cognitive

participation. Teachers can regularly upload the learning content involved in the classroom to a fixed learning platform. Students can increase their familiarity with classroom knowledge by previewing the knowledge learned in the classroom before class, which can help students quickly capture the knowledge imparted by the teacher when receiving classroom education, thereby increasing learning efficiency. And ICT teaching also provides an online discussion platform where teachers and students can also express their different views on the same issue online to increase course participation.

### **3. Adverse effects of ict teaching on esl learners**

#### **3.1 ICT teaching will increase the difficulty of learning for students.**

New teaching methods put forward new requirements for students' learning and thinking habits. First of all, teachers' use of rich ICT teaching methods will excessively attract students' learning attention and make students unable to focus on book knowledge. If teachers overuse ICT in class, students will focus on beautiful PowerPoint and video, which will lead to students ignoring the teacher's teaching content, which requires students to have a strong ability to capture information. Secondly, off-site teaching will increase the learning difficulty of ESL students. Online teaching will lead to students' lack of social contact, and it is difficult for students to have real contact with teachers and classmates through the Internet, which will lead to students' inability to distinguish the appearance and names of teachers and classmates. Students lack a sense of classroom participation. After students make comments on the discussion board, it takes a long time to get comments from students, or even get no comments from students, which will make students lose the awareness of participating in offline teaching. It is easy for students to misunderstand the content of the course. Online teaching causes teachers and students to communicate only through digital means, and students cannot express their confused knowledge and content to teachers, which will hinder teachers from helping students solve academic problems better and faster. This requires each student to improve self-control ability in the learning process, and find the achievement motivation of learning by improving self-efficacy. At the same time, teachers are required to find the missing points of classroom teaching more accurately and increase the effect of interactive communication, so as to improve the effect of classroom teaching. Third, network teaching has high requirements for students' learning autonomy. In the absence of teachers' real-time supervision, if students lack learning autonomy, they will not be able to concentrate on learning and perfunctory homework, which will affect their academic performance. Generation Z "has a digital connection with the Internet, which can help them get rid of the emotional and psychological struggle they face offline" [8]. Due to the great attraction of social media, ESL students are easily addicted to social media, poor academic performance, and even plagiarize and forge homework. Fourth, the extensive use of electronic equipment will do harm to the health of teachers and students. Screen time on electronic devices increases the risk of late childhood overweight [9]. Furthermore, computers and mobile devices damage users' eye health. Computer vision syndrome is becoming more common in adolescents and adults, including eye fatigue, headache, and even blindness [10]. Therefore, teachers should pay more attention to the health of ESL students.

#### **3.2 ICT teaching increases students' learning anxiety.**

On the one hand, ICT teaching brings a lot of learning information and is also mixed with a lot of false information. Due to the lack of experience in students, it will be difficult to distinguish the authenticity of online learning materials. Speaking of the irrational use of digital technologies, there can be negative social consequences [11]. As the recent Tik Tok video is very popular among Chinese ESL learners. But many people create a lot of wrong expressions in English to gain fluency and use exaggerated ways to show the public the wrong knowledge they have created. This has led to many ESL students with insufficient English knowledge reserves being unable to distinguish the authenticity of the knowledge imparted by these online teachers and thus learn a lot of wrong knowledge that is not conducive to English learning. And the information on the Internet is changing

rapidly and is also filled with many insecure networks, and much false information and bad websites are not only not conducive to the English learning of ESL students, but also hurt their physical and mental health development. Many ESL students are very private and reluctant to make their own personal statements on public platforms. Therefore, the teaching method of ICT may bring some psychological pressure to some students, resulting in them being forced to share their views with the public and be compared and evaluated by others. And plagiarism is also common on social media, and many of the students' inspirations and expressions are easily copied and pasted, thus lacking privacy. Therefore, teachers should pay more attention to students' learning anxieties when using ICT teaching strategies.

### **3.3 ICT teaching will increase the teaching pressure on teachers.**

A lack of available resources is one of the most common sources of unease among participating teachers about using technology [12]. Although ICT teaching technology has become the most popular teaching method at present, due to the uneven economic development of various countries, this will lead to the lack of relevant equipment to support ICT teaching in many poor areas with slower development. This increases teachers' anxiety about available resources and thus creates a sense of teaching insecurity. There is a clear lack of participation of teachers in the digitalization of schools, as well as a clear lack of technical, cognitive, and emotional training and knowledge for the newly implemented changes [12]. Teachers face a variety of barriers when teaching with ICT. First, procedural barriers. Many teachers not only have not received relevant training on ICT teaching but also have not even heard of ICT teaching methods, so many teachers do not know how to use ICT teaching technology. Therefore, teachers need to spend a lot of free time learning how to operate and use ICT teaching technology, which will increase the workload of teachers and teaching pressure on teachers. Second, is the language barrier. ESL teachers will encounter many operational problems when using ICT teaching technology, but these problems will involve a large number of professional terms, which will lead to teachers who have not systematically learned computer knowledge to describe the problems they encounter in operation through simple language so that they cannot solve the problem quickly. Third, is the operational problem. Teachers who use ICT technology in the classroom encounter network problems or computer format mismatches. If these problems are not quickly resolved in the classroom, this will waste students' classroom learning time, thus affecting students' learning. Therefore, teachers will be affected by a variety of factors when using ICT teaching methods, and these obstacles will invisibly increase the teaching burden and pressure on teachers.

## **4. Guidance for future teachers in the use of ict teaching technology**

### **4.1 Teachers should pay more attention to students when using ICT teaching methods.**

Teachers should use more academic PowerPoint, audio, and video to show students what they have learned. Teachers should avoid pop-ups like the Internet to help students focus on classroom content and avoid ESL students. Learn to be distracted. And for off-site teaching, teachers should use the teaching aids provided by the online teaching platform to mobilize students' classroom participation, thereby increasing students' enthusiasm for learning. For example, teachers teaching on blackboard and teams platforms can use class voting and encourage students to raise their hands to answer in the course to encourage students to participate in classroom learning and increase students' learning participation. Teachers can also group students in class, allowing students to work in small groups. Students can increase their communication and exchange with their classmates through group discussions, thereby enhancing familiarity among students. Teachers can also publish time-limited tasks on the online teaching platform, and allowing students to complete certain tasks within a limited time can help students who lack the self-control to improve their learning enthusiasm. This can make students have a sense of learning urgency so that they will conduct efficient learning and upload the after-school tasks that need to be completed to a fixed location within a fixed time.

#### **4.2 Teachers should pay more attention to students' learning resources.**

Teachers should provide students with enough learning materials and teach students how to correctly distinguish between correct information and false information on the Internet. Teachers should upload all the materials needed for the class (articles, courseware, videos, and audio) before the class to facilitate the students' pre-class and post-class reviews. Teachers also need to provide students with a large number of extracurricular learning materials (articles, videos, and learning websites) to help students who want to conduct in-depth research on what they have learned to provide accurate and credible information. Teachers also need to teach students how to tell the truth from information on the Internet. For example, students can pin several key sources of information, such as publications, websites, blogs, and news sources. Search many official websites for relevant learning content. At the same time, many URLs with red exclamation marks or warning logos are generally fake websites, and students should avoid using this type of website information. Teachers can also help ESL students install information filters on their computers, which can effectively filter ESL students' computer search information and help block spam and game ads. Teachers can also teach students to consider the type of information they need in advance before looking for information. Students need to think ahead about the information they want to find to narrow their search. For example, when looking for information related to ICT teaching, use keywords such as "ICT" and "teaching" to search. Further a step further, teachers can also recommend that students use relevant apps to strengthen their learning autonomy. ESL students can use the calendar or memo function. Record important information on the calendar or memo that comes with the electronic software to prevent it from being left out. Alarm clocks and notes can also be used to help remind you during important times. Or use the Pendo App for scheduling, and make a plan for the things to be done every day to be completed on time.

#### **4.3 Countries should pay more attention to ICT teaching technologies.**

On the one hand, the state should equip all schools with the teaching equipment needed for ICT teaching. Many schools in remote areas have not been able to equip themselves with the various electronic devices needed for ICT teaching for many years due to financial problems, so students in remote areas cannot truly experience the ICT teaching methods. At the same time, the state can also reduce the imbalance in the country's education development by pulling sponsorship, allowing many businesses to subsidize students in remote areas. On the other hand, the State should conduct regular training for all teachers on ICT teaching methods. Regular training can help teachers to obtain the latest knowledge about ICT teaching, which can not only help teachers popularize the basic knowledge of ICT teaching, but also help teachers to innovate in teaching, to better impart what they have learned to students. At the same time, the state should also allocate a certain number of technical instructors to each school to help teachers better grasp the relevant knowledge of ICT teaching operations. Teachers can quickly seek help from technical instructors if they encounter problems with the operation of electronic devices in the classroom so that they can quickly solve the problem and avoid wasting students' classroom learning time. Teachers with certain ICT teaching technology can also stimulate students' interest in learning electronic devices, to exercise students' ability to use electronic devices, such as mastering the production and use of Word, Excel, and PowerPoint, which is also very helpful for students' future work and development.

### **5. Conclusion**

Through the research and analysis of previous literature reviews, this study specifically discusses the effectiveness, negative impact and recommendations for the future use of ICT teaching techniques by teachers in teaching for second language learners. Studies have found that ICT teaching technology has a two-sided nature for English learning for second language learners. ICT teaching as a novel teaching method allows teachers to help second language learners better grasp the knowledge they have learned through video, audio, PPT and other teaching methods; ICT teaching provides students

with access to a large number of learning qualities, thereby promoting students' self-learning, and ICT teaching has a variety of teaching methods, through live and recorded teaching methods, making free and flexible classroom learning a reality. However, ICT teaching also has corresponding drawbacks. ICT teaching increases the difficulty of students' learning, exquisite PPT is easy to distract students in the classroom, a large number of true and false mixed learning materials on the Internet will make students confused about the knowledge obtained, while ICT teaching will increase the teaching pressure of teachers, so future teachers should strengthen the performance of students in the classroom, provide students with sufficient extracurricular learning materials, and the state should also carry out regular ICT technology teaching for higher teachers. Help more teachers update teaching technology in a timely manner. In subsequent studies, researchers can choose a specific target group to conduct specific studies to carefully observe the beneficial and negative effects of ICT teaching on specific higher education teachers and students.

## References

- [1] Tang, Y. Does information and communication technology (ICT) empower teacher innovativeness: a multilevel, multisite analysis. *Educational Technology Research and Development*, 69(6), 3009-3028.
- [2] Yunus, M. Nordin, M. Salehi, N. Sun, H. Embi, C. H. Pros and Cons of Using IICT in Teaching ESL Reading and Writing. *International education studies*, 6(7), 119-130.
- [3] Binmahboob, T. YouTube as a Learning Tool to Improve Students' Speaking Skills as Perceived by EFL Teachers in Secondary School. *International Journal of Applied Linguistics and English Literature*, 9(6), 13.
- [4] Chen, P. Schmidtke, C. Humanistic elements in the educational practice at a The United States sub-baccalaureate technical college. *International Journal for Research in Vocational Education and Training (IJRVET)*, 4(2), 2017, pp. 117-145. DOI: 10.13152/IJRVET.4.2.2
- [5] Slim, H. Hafedh, M. Social media impact on language learning for specific purposes: A study in English for business administration. *Teaching english with technology*, 19(1),56-71.
- [6] Ferede, B. Elen,J. Van Petegem, W. Hunde, A. B. Goeman, K. Determinants of instructors' educational ICT use in Ethiopian higher education. *Education and Information Technologies*, 27(1), 917-936.
- [7] Adanır, G. A. Borkoev, B. Saliyeva, K. Muhametjanova, G. Kyrgyz learners' and teachers' experiences and perceptions related to ICT use in high school courses. *Education and Information Technologies*, 25(6), 4765-4780.
- [8] Aziz, N. Hashim,H. Yunus, M. M. Using social media to enhance ESL writing skill among Gen-Z learners. *Creative Education*, 10(12), 3020.
- [9] Ponti, M. Bélanger,S. Grimes, R. Heard, J. Johnson, M. Moreau, E. Williams, R. Screen time and young children: Promoting health and development in a digital world. *Paediatrics & Child Health*.
- [10] Chang, F. C. Chiu, C. H. Chen, P. H. Miao, N. F. Chiang, J. T. Chuang, H. Y. Computer/Mobile Device Screen Time of Children and Their Eye Care Behavior: The Roles of Risk Perception and Parenting. *Cyberpsychology, Behavior, and Social Networking*, 21(3), 179–186.
- [11] Shmakova, A. Ryzhova, Y. Suhorukhih, A. The impact of ICT education on humanistic innovative potential. *Education and Information Technologies*, 27(2), 2267-2282.
- [12] Alvarado, L. E. Aragón, R. R. Bretones, F. D. Teachers' attitudes towards the introduction of ICT in Ecuadorian public schools. *TechTrends*, 64(3), 498-505.