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Teaching interpreting in the Age of Artificial Intelligence: Integrating Information Technology into Interpreting Teaching

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Abstract

Under the guidance of big data, virtual reality, and artificial intelligence, the application of information technology in interpreting education has broken through external assistance and gradually developed into a much deeper degree. This article has divided the information technology that affects interpreting education into 7 subtypes from 3 aspects of general field, interpreting profession field, and educational field. In addition, the author has concluded 4 levels of integrating information technology and interpreting teaching, namely, external assistance, customized development, synthesized application and deep combination. On operational level, the author discussed the integrating mechanism from aspects of teaching environment, teaching resources, teaching process and teaching evaluation.

Keywords

Information technology, Interpreting teaching, Integration, Mechanism.

1. Introduction

Under the guidance of cutting-edge technologies of big data, virtual reality and artificial intelligence, interpreting education has undergone unprecedented far-reaching changes. Among these, the inducing factor of this phenomenon touches upon rapid development of technological tools, continuous evolution of interpreting profession and sustainable innovation of educational technological theory. The range of influence covers interpreting pedagogical concepts, teaching mode and strategies, etc. The pattern of manifestation could be reflected in interpreting teaching settings, contents, approaches, and assessment. Against such backdrop, application of information technology is not confined to a certain teaching link, but forms a close relationship with the teaching goals, curriculum setting, teaching environment, content and process. Nowadays, integrating information technology into interpreting education has become a hotspot in interpreting industry (Liu, 2016; Zhong, 2016). As for interpreting teaching in the new era of technological wave, we should actively explore routes for deeply integrating information technology into interpreting teaching, and figure out innovative mechanism for talents cultivation.

2. Relations and Integrating Levels Between Information Technology and Interpreting Education

2.1 Relations between information technology and interpreting education

First of all, information technology has brought about a variety of new forms of interpreting professions such as telephone interpreting, television interpreting, video conference interpreting, artificial intelligence interpreting etc. Secondly, a series of technological tools of smart pens, terminology database, and video conferencing operating system have been invented. Furthermore, the working mode and content of interpreting profession has undergone significant changes too. eg. Remote working mode, telecommuting, and machine-aided human translation based on automatic

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speech recognition have appeared thereafter. In the meanwhile, changes in interpreting profession we talked above will also affect interpreting education and bring about a series of changes in curriculum setting, teaching content and teaching mode. Secondly, information technology has direct effect on interpreting education by universal educational technology tools, language educational technology tools, and special educational tools for interpretation. In addition, technological changes in interpreting profession and education have counter effect on information technology. To be more specific, special interpreting technological tools and interpreting educational technological tools have enriched types and forms of information technology. Meanwhile, these two technological tools have also brought about direct or indirect influence on other fields.

There are a variety of factors that are correlated with information technologies, the interpreting profession, teaching factors etc. In light of this, the author has divided information technologies that are related to interpreting teaching into 3 sectors, with different technological embodiments, among which the informational technology in general sectors refers to computers, network, telecommunication, photoelectrons etc. Information technology could be further divided into human interpreting technique which provides basic support for human interpreting activities, machine-assisted interpreting technique which aims to reduce the burdens of human interpreters before, during and after the interpreting activities, and machine interpreting technique which finishes a certain interpreting task through comprehensive technological applications of voice recognition, machine translation, voice synthesis, etc. The three techniques mentioned above all brought about workplace pilot effect for the goals, approaches, contents, process of interpreting education. According to the closeness to other related disciplines, technologies in educational sectors could be divided into general educational technology, language educational technology, and interpreting educational technology, etc. Non-interpreting teaching technologies mainly provides external assistance to interpreting education, while interpreting educational technologies mainly provides specialized technological solutions for enriching interpreting teaching content, optimizing teaching process and improving teaching effect from aspects of interpreting techniques, interpreting cognition, interpreting accomplishment, and interpreting techniques.

2.2 Four levels of integrating information technology and interpreting education

Although there exists big difference in the application forms of technological tools, the integration of technological tools and interpreting teaching could be concluded into four levels.

The first level is external assistance. It takes general information technological tools as its main representation; with application range mainly touches upon partial links of interpreting education. Eg.the assistance effect of video tapes in technique trainings of public speaking, note-taking etc (Schweda-Nicholson, 1985). The second level is customized development, with specialized interpreting teaching system, software, resources as its typical features. The application range covers one or more aspects. Take the Black Box as an example, Sandrelli (2011) introduces its functions and features in assisting interpreting autogenic training and editing corpus material. Seeber(2006) takes online interpreting education corpus database in University of Geneva as an example. He illustrates how this database serves interpreting teaching resources from aspects of establishing concepts, systematic construction, resources build-up and functional features. The third level is composite applications which features the development and application of integrated interpretation teaching platform, with application range covers multiple aspects of interpreting education and in support of various forms of teaching and learning including classroom teaching, autogenic training, online learning and cooperate study etc. For instance, the platform of ORCIT (Online Resources of Conference Interpreters Training) which is founded and funded by European Commission has integrated the systemized teaching resources and programs of consecutive interpreting and simultaneous interpreting lessons, also combined theme illustration videos, situational exercises, and professional interactive study communities, and support various teaching forms of flapped classes, autogenic exploration and cooperative study. The forth level is deep integration. Under the combined

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effect of technological innovation and educational technological innovation, the integration is working towards intellectualization and precision.

For the past half century, the integration of informational technology and interpreting teaching has broken through external assistance and working towards customized development, composite application and deep combination. As for our country, there exists obvious discrepancy between the integration of information technology and interpreting teaching. In order to follow the changing trend of interpreting profession, adapt to requirements of informationization of interpreting education, improve levels of interpreting education, we should explore the integrating mechanisms from a more practical perspective.

3. Integrating Mechanism of Information Technology and Interpreting Education

3.1 Integrating Mechanism of information technology and interpreting educational settings

The Integration of information technology and interpreting teaching settings are reflected in establishing network study community and simulating interpreting communication. Under the support of computer and network, interpreting teaching environment has been extended in cyber space. In the meanwhile, network study community has become the teaching platform that is supplementary to face-to-face teaching. Take Virtual Institute in University of Geneva as an example, this cyber study community is an online study platform which combines non-instant communication (such as electronic bulletin board, agendas), instant communication (e.g. teamwork report before interpreting activity, instant online communication), interpreting training resources, tracking of learning progression, electronic portfolio etc. This platform has provided adequate support for assisting classroom lectures, recording learning progression, providing teaching feedback and strengthening effect of self learning. (Moser-Mercer, 2008:17-18) For another example,

Ko & Chen (2011) has established remote interpreting teaching mode based on “assisted network community study platform” which is similar to face-to-face teaching forms. This platform mainly features synchronizing network classroom settings. It supports three formats, namely, teaching mode, autogenic training and teamwork cooperation. Teachers could show lecture contents, demonstrate interpreting exercise, hold class discussion, watch and monitor learners’ activity. Also, learners could carry out cooperative training based on tasks and material assigned by teachers.

Interpreting communicative settings include onsite setting, auxiliary facilities, interpreting activity participants etc. To create an authentic interpreting communicative environment is of great significance to strengthen the challenge of the task, motivate the initiative of learners, and enhance interpreting training effect. In normal interpreting classroom teaching setting, all the equipment are relatively fixed including multimedia classroom, language lab, simultaneous interpreting lab. In order to meet the need of creating various interpreting communicative settings, to simulate authentic interpreting environment by ways of techniques has become a hot topic for now. Take virtual reality interpretation IVY as an example, this program was founded by three-dimensional multi-user virtual environment Second Life, put emphasis on commercial interpretation and community interpretation, development a variety of interpreting communicative scenes in conference room, classroom, medical center, courtroom, police station etc (Deng, 2016). In each of the scene, interpreting students could experience the physical layout, virtual characters, virtual clients and the interactions. This case has overcome the restrictions of conditions onsite, got students immersed into authentic training settings and provided them with real training experience.

3.2 Integrating Mechanism of Information Technology and Interpreting Teaching Resources.

The integration of information technology and interpreting teaching resources mainly lies in structured creation mechanism and refinement creation mechanism. The former means to classify, organize, process, store and manifest the information resources based on certain principle of material selection, aiming for creating high efficient interpreting class teaching and autogenic training. About

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20 years ago, Carabelli (1999) put forward the idea of establishing IRIS, namely, Interpreters' Resources of Information System. He advocated to store and manage the interpreting teaching material resources by use of relational database management system so that users could retrieve information according to specific teaching needs. Soon after that, digital interpreting teaching resources database featuring multi foreign languages, wide range of themes, various genres and differentiated functions have been established around the globe. For example, Marius, EUSR, SIMON, Speechpool, etc. In addition, some researchers discussed the role how interpreting material bank played in assisting interpreting teaching (Chen, Fu,2014;Zhang,2017).

Refinement creation mechanism is mainly reflected in diversification of resources and systemization of content organization. With the generalization and spread of new ideas and forms of learning such as online learning, mobile learning, deep learning, intelligent learning, virtual learning, extensive learning, the component pattern of interpreting teaching resources should be updated always. Interpreting teachers should attach importance to the learning habit and information receiving mode of students; make an overall utilization of corpus technology, audio and video recording technology, network sharing technology etc (Qin, Wang, 2017). To be more specific, related resources should cover interpreting corpus resources, micro-course online videos, MOOC, online quality courses, research resources based on different themes, workplace social resources, evaluation and verified resources etc. In the meantime, there are a variety of other features are reflected such as step target, multi types of medium, wide range of themes, diversity of application scenarios. In addition, the content organization should be in accordance with specific requirements of interpreting teaching educational goals and contents and systematically cover related knowledge and skills. For example, in the interpreting skills man in NNI, resource creators vividly show the skills and qualities that are needed during the whole interpreting process by ways of images, audios, videos and texts. These qualities include analysis, note taking, public speaking, communication strategies etc.

3.3 Integrating Mechanism of Information Technology and Interpreting Teaching Process

The integration of information technology and interpreting teaching process should be considered from interpreting teaching link and the arrangement of interpreting tasks. From the perspective of interpreting teaching links, the integration includes classroom teaching and extracurricular independent training. As for classroom teaching, Jiang tiehai(2016) has invented computer-aided interpretation teaching system to design software structures from teachers' terminals and students' terminals respectively.

From the perspective of development sequence of interpreting tasks, the integration of information technology and interpreting teaching process has covered three stages of before, during and after interpreting processes. Before interpreting process, Liu (2011) has introduced Web quest teaching platform into the preparatory links and elaborated on special investigation of teaching mode based on website from aspects of scenario design, target setting, task assignment, resource allocation, procession implementation, regulation coordination, and effect evaluation. As for the preparation, update, query and management of terms before interpreting activity, we could establish interpreting terms bank based on Sketch Engine. We may also acquire expertise in specific fields through using features of spectrum, structuralization and visualization. As for during the interpreting link, Li and Wang takes Iflytex app as an example to discuss simultaneous interpreting mode based on voice recognition app. The experiment shows that this kind of mode has certain advantages in building learners' confidence, assuring content integrity, and improving training efficiency.

3.4 Integrating Mechanism of Information Technology and Interpreting Teaching Evaluation

In a broad sense, interpreting teaching evaluation covers many factors like learning effects, teaching subject, teaching content, teaching methods, teaching environment, teaching management etc. Among these, interpreting learning efficiency evaluation is the core part that received the most attention. For instance, in the independent training of simultaneous interpreting, we could compare the time gap between analyzing the target language and source language by using Audacity dual track record.

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The integration of information technology and interpreting teaching assessment is not only confined to the teaching process, but also in the establishment of multiple mechanism of evaluation subject. In the assessment of interpreting teaching, besides regular learners' and teachers' elements, Smith (2015: 228-237) advocates that we should give full play to the roles that digital social environment like Google Hangout, Facebook, etc, played in the interpreting interactive assessment. In the meanwhile, interpreters should make professionalized evaluation about interpreter learners' performance from aspects of professional quality, standard and ethics. For example, in European interpreting corpus EUSR, interpreting learners could submit the exercise videos and audios and ask interpreters to make comprehensive assessment. Apart from this, how to integrate clients' role into interpreting simulating has become an emerging field that information technology is likely to integrate into interpreting teaching. In this regard, the IVY program, supported by virtual settings, invited learners with medical, law and commerce knowledge background to act as potential clients and to participate in interpreting training activities as observers or cooperators, and make multi-dimensional judgments on interpreter learners from aspects of target language expression, task collaboration, body language, cross-cultural communication.

3.5 Existing problems in current integration

From what we talked above, the integration of information technology and interpreting education presents a pattern of diversified development, which plays an essential role in optimizing interpreting educational pattern, enriching teaching content and approach, and enhancing interpreting teaching effect. At the same time, there still exist some problems. First of these is the difference gap among interpreting teaching elements. From the current situation, discussions concerning integration mechanism of information technology and interpreting teaching process is relatively rich. Another is teaching resources. However, research and practice around teaching environment and evaluation is quite in shortage. Such imbalance still exists within specific elements. For example, in interpreting preparation elements, the academic circle pays obviously higher attention to terms than thematic knowledge. Second is the difference gap between the interpreting subject and non-interpreting subject. Since the professionalized education of interpreting subject lasts for a shorter period of time, its integration with information technology lags far behind many other non interpreting subject. Take the application of virtual reality technology into medical field as an example, related research has be extended to multiple branches such as rehabilitation medicine, acupuncture, nursing, cardiology, neurosurgery, etc. however, globally the integration of virtual reality and interpreting education is still in the initial stage. The third one is the difference gap between domestic level and international level. Take teaching resources as an example, domestic discussion pays more attention to interpreting textbooks while western discussion cares more about interpreting teaching resources such as interpreting material corpus and interpreting teaching thematic resources. The forth one is the difference gap between practice and research. Comparatively speaking, explorations about integration of information technology and interpreting teaching is quite rich, however, related research is still lagged behind. Furthermore, current research is mainly focused on application values and methods of technological tools. However, deep discovery for application pattern and teaching effects should be explored more.

4. Conclusion

Modern interpreting profession has close relationship with information technology. CAIT, namely, Computer-aided Interpreting teaching, emerged in 1990s, ushered in a brand new field in interpreting study. At present, a new information technological revolution represented by artificial intelligence, virtual reality and big data is changing the status of interpreting profession with unprecedented rate. Meanwhile, new information technological revolution has also brought about huge revolution to teaching concepts, content and approaches. Interpreting teaching should not only follow closely with development rate of the profession, but also introduce the application achievement of cross disciplinary information technology so as to update interpreting education with the times. As for the

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operational level, we should grasp the dynamic variation relations among technology, profession and teaching, and continuously explore the integration mechanism from aspects of teaching environment, teaching resources, teaching process and teaching assessment. In the meantime, we should recognize the difference gap in research and practice between home and abroad, strengthen the establishment of facility and resources in informational interpreting education so as to improve consciousness and quality of interpreting teachers and students to better adapt to high efficient interpreting talent cultivation pattern.

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