Pedagogical Reasoning on the Integration of ICT and English Teaching

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Abstract. It has become a common trend that Educational policy makers required implementation of integration of Information and Communication Technology (ICT) across curriculum in order to enhance teaching efficiency. This paper aims to discuss ICT integration across curriculum from a pedagogical perspective in order to optimize the use of ICT in English teaching. It studies three main aspects that are of importance for ICT integration in English teaching: (1) positions of ICT reveals that use of ICT as a tool for teaching will eventually evolve into a ICT-specified language environment; (2) teachers' pedagogical knowledge is enriched with ICT during the transformative process and (3) ICT literacy will contribute constructively and efficiently to English teaching. These aspects are identified as important factors which will affect and justify ICT integration with English teaching. In the conclusion, the paper suggests that ICT use will lead English teaching to be more interactive, flexible and innovative when English teachers spontaneously develop the link between their pedagogical knowledge and ICT literacy.

Key words: ICT, integration, English teaching,   pedagogical reasoning

1. Introduction

ICT (Information and Communications Technology) as an indispensable tool in English teaching and learning has been included in CECR(College English Curriculum Requirements) issued by the Department of Higher Education of MEC (Ministry of Education of China)(2004). According to CECR, new teaching method shall be supported by ICT, especially the web technology, so as to direct English learning to become a more individualized process. In 2003 the Department of Higher Education launched a pilot project of College English Quality Course, a little less than 20 best universities in China first tentatively established College English Quality Course and improved teaching and learning efficiency, Since then more than 400 colleges and universities nationwide have joined the College English Quality Course Project. Great achievements have been attained through the Project though, much evidence still reveals significant inadequacy and potential improvement in the integration of ICT and English teaching.

2. Position of ICT

Generally, a definitive line has been drawn to define whether ICT is a separate subject to learn or an supportive pedagogical tool across curriculum. But when ICT is used in an integrated way across curriculum, a careful thought shall be given to reveal the subtlety in the roles of ICT. There are two main aspects where ICT is used in English teaching and learning: ICT is used as a tool for teaching English; English is taught via ICT.

In the former aspect, English teachers and learners are aware that they use ICT, particularly computers and network communication, to support teaching and learning. A wide range of ICT applications are used as a tool. For example, teachers and learners use a word processor to enable correcting and redrafting of an

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essay; they use PPT, Flash and other software to prepare lectures or presentations; teachers and learners use BBS, blog and computer conference to develop cross-cultural understanding. Under this condition, a proportion of attention is paid to ICT itself and the related knowledge. The ICT awareness becomes a psychological burden and, in turn, leads teachers and students to feel inadequate in ICT knowledge and causes anxiety.

In the latter aspect, ICT facilities become the environment in which English language materials and cross-cultural knowledge are presented. Teachers and learners don't necessarily consider what software or hardware they need to process the English language materials or how to present these materials using ICT. They only focus on English language and culture. Because the materials are presented in real contexts provided through ICT facilities, teachers and learners feel easier and more interested in teaching and learning them. For example, when learners write e-mails to native speakers, read English newspapers online or watch videos, these English materials become their only focus and ICT facilities become pedagogical and environmental agents. ICT as English teaching environment imposes little psychological burden on both teachers and learners.

As a matrix designed and produced by IFIP in 2000 for a purpose to help determine the stage of ICT development suggests: "To move to the next phase, the school chooses to implement an ICT-curriculum that increases the use of ICT in various subject areas with specific tools and software." (Unesco/IFIP, 2000:17)[1]. This has guided the schools to integrate ICT in various subjects at the completion of ICT-curriculum. When both English teachers and learners become adequately proficient in ICT in terms of skills and knowledge, and there is an easy access to computers and intra and inter networks on campus, their variable skills and attitudes as major factors limiting appropriate use of ICT in English teaching and learning will gradually diminish and finally be completely removed.

In most universities, ICT-integrated English teaching is at a point between ICT-as-a-tool phase and ICT-as-an-environment phase. English teachers and learners are more or less distracted by their ICT skills and knowledge. But it will become a general trend that ICT will evolve from a tool for teaching and learning into a pedagogical agent in itself through integration.

3. Teachers' Pedagogical Knowledge

During the integrating process, the nature and content of English language courses are reassessed and specified. These specifications guide teachers about what to teach and what pedagogical knowledge and ICT skills they may need to teach these courses. For example, CECR has explicitly instructed teachers to use the modern information technology to improve students' listening, speaking and communicative abilities. Shulman describes a framework of teachers' knowledge bases as the following categories (1987)[2]:

- content knowledge;
- general pedagogical knowledge;
- curriculum knowledge;
- pedagogical content knowledge;
- knowledge of learners and their characteristics;
- knowledge of educational contexts such as groups, classes, school and wider community;
- knowledge of educational ends, purpose and values and their philosophical and historical grounds.

In the list, content knowledge refers to the knowledge of teaching materials which is also what learners are taught; general pedagogical knowledge is related to general teaching issues, such as teaching approaches, classroom management; curriculum knowledge is the "tools of the trade", such as schemes of work and resources; pedagogical content knowledge is defined as a "special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding"(ibid:8). General pedagogical knowledge and pedagogical content knowledge together justify teachers' decisions on teaching methods and content. For example, a teacher who knows the ZPD (Zone of Proximal Development) of Vygotsky(1987)[3] is likely to decide to let students communicate with natives online about the topics and content previously discussed on Monday afternoon class. The process of transformation of content knowledge into actual instructions and class management can be demonstrated in Figure 1.
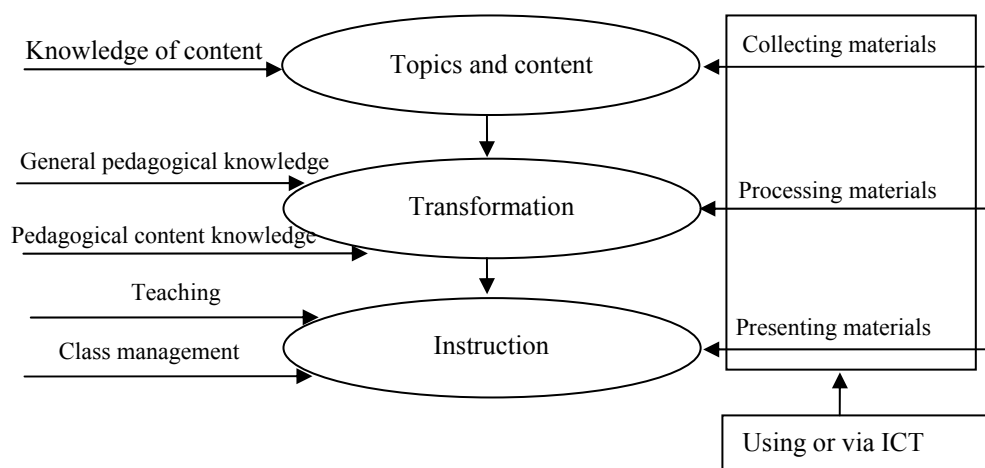
Fig. 1: ICT-integrated pedagogical model

Figure 1 shows that a teaching process starts from deciding on the topics to be taught and ends at particular class instructions. The categories of knowledge in the left of Figure 1 embody a teacher's proficiency in his trade. On the right of Figure 1 three main pedagogical practices are now commonly integrated with ICT. Once they have a clear idea of the topics and content to teach, teachers need to consider what specific materials to collect, how to add them into lesson plan and what model of class management to choose for a class. Instead of decontextualizing the materials, they now tackle ICT as a instrumental enrichment for the above mentioned pedagogical practices and use ICT to plan for classes and prepare lessons. They also mix ICT use into the assignments for learners. So among the main uses of ICT, increasing frequency in the use of word processor, educational software and other software and hardware for teaching and learning English materials becomes salient. Compared to ICT teachers and traditional English language teachers, teachers now are expected to teach content knowledge using pragmatic pedagogical methods in indissoluble conjunction with ICT skills and knowledge. The quality use of ICT and the use with a pedagogical incentive become urgency.

4. Teachers' ICT Literacy

Teachers' development of ICT literacy has been first revealed by educators and experts, such as Jung (2003)[4], Kirschner and Davis (2003)[5] and Downes(2001)[6] and in recent years emphasized by government initiatives involving increasing investments in ICT facilities and professional training projects. ICT literacy is "using digital technology, communication tools, and/or networks to access, manage, integrate, evaluate and create in order to function in a knowledge society'' (ETS, 2002:16)[7]. Most ICT training projects accent teachers' development in technical capabilities in isolation and fail to link teachers' technical capabilities to integrate ICT as a pedagogical tool across curriculum. Fewer training projects aim at developing their cognitive ICT-related capabilities of problem solving and information processing.

Constructivism believes that ICT literacy is built and developed when the use of concrete representations of ICT knowledge is made and best performance can be induced in a supportive environment. In order to balance teachers' confidence with ICT as a technological and that with ICT as a pedagogical tool for quality teaching and learning, teachers shall be placed in an ICT-demanding environment. When teachers as competent and confident ICT users and teachers as less competent and confident ICT users work out pedagogical content and method using ICT, they all can construct their individual ICT literacy upon their prior knowledge and knowledge structure and their everyday experience. In integration of ICT and English courses, teachers' professional and personal experience of use of ICT and knowledge of English content are two most important factors toward the construction of their pedagogical beliefs. These beliefs, in turn, will justify their decisions on the role of ICT in English teaching and learning and finally lead to changes of their instructional practices.

Teachers as less competent and confident ICT users are expected to improve their professional performance upon ICT-integrated problem-solving tasks and pedagogical reasoning on such tasks. Once their

ICT-related cognitive and technical capabilities increase, they need to blend their experience with the capabilities and apply appropriate ICT to their pedagogical approaches and hence are more likely to contribute constructively and efficiently to English Teaching.

5. Conclusion

Use of ICT across curriculum has constructed new beliefs that change the pedagogical reasoning in English teaching. English teachers need to not only possess such basic ICT skills as word processor, PowerPoint, video editor and access to the Internet, but also develop pedagogical knowledge to efficiently integrate ICT into English curriculum. The integration of ICT will lead to diversification not only in English content, contexts and pedagogical methods, but also in teaching environment. ICT will extend the boundary of English teaching and characterize it as interactive, flexible and innovative.

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