

# Translation Engineering Education as a New Engineering Education in the Age of Information Technology

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**Abstract:** *With the advent of the age of mobile internet, the world has changed at the never-found fast speed. Translation has to follow the changing pace, making itself as a large industry. It cannot be easily implemented with the past practice. It has to go beyond the traditional confinement of translation. On such an occasion, translation engineering comes into being as a new discipline. The education of preparing talents for translation engineering naturally comes into the very spot. Through the literature review and logical deduction as well logical induction, the conceptual framework of the construction of translation engineering education is proposed, and then the detailed teaching content and concrete route are explored as a trying ready for future further research, especially experimental research from academia.*

**Keywords:** *Translation Engineering Education, Information Technology Education, Translation, Engineering, Integration*

## 1. Introduction

In an era of mobile internet, with different types of new information technologies emerging day by day, translation has transformed from every aspect of its own [1]. It cannot be defined as done in the past, and even narrowly confined within translation studies. Due to overemphasis on theoretical considerations, the real role of translation cannot be extended beyond the scope of translation studies [2]. This leaves translation and translation studies with no further great development. This also leaves translation education unchanged in recent decades with too much confinement of theoretical education [3], not real education of professional competence. It is special true at the context of China. Though professional translation degree has been established in China for so long, students attending this type education still find it not easy for them to seek a job directly with their major. The very reason lies in that they have no real professional competence, only academic knowledge in such a type of education [4]. On the other hand, as a discipline of traditional liberal arts, translation pays very little attention to real comprehensive technicality ready for profession or industry. Technologies such as information technology, only plays the role of aided instrument, not the real element consisting of the technicality of translation or translation education. In fact, no matter whether the solutions of increasing emerging social problems or the education of talents for future, traditional liberal arts is out of date [5]. It is why in China the construction of new liberal arts is propagated in all colleges and universities. It is a reform and also an urgent need for present colleges and universities to educate talents empowered with real professional competence with the increasingly sophisticated information technology. In order to construct new liberal arts, the intersection and integration of different disciplines are essential means. The intersection of liberal arts can happen within traditional liberal arts, between traditional liberal arts and social science, between liberal arts and engineering, etc. New liberal art has to go beyond its past traditional confinement with a great vision for big liberal arts. The typical feature of new liberal arts lies in the intersection of liberal arts and engineering (Ibid). In fact, engineering as a new concept comes to be introduced into different liberal arts in recent years. The School of Journalism and Communication of Shandong University builds the "Media Science and Engineering" experimental innovation center, strategically speaking, it is thought as very creative and responsible [6]. Even for traditional medicine science, modern engineering is recommended to be introduced into traditional Chinese Medicine for diagnosis [7]. It shows that integration of modern engineering into the present

literal arts comes to be a necessity owing to the advantages of engineering. Modern engineering lay more emphasis on the thinking mode of product, coming from product and going to product. It is so easy to decide whether the product is feasible and what its product cycle is [8]. Thanks to its inborn trans-discipline nature [9], translation can borrow something from other disciplines, even integration with them when new information technologies exert great influence over it. Thus, translation engineering as a new discipline with the integration of many other disciplines, especially engineering and information technology comes into its own as the new-born liberal arts, even a new engineering. In this discipline, information technology as one of its core elements stands on the level of productive instrument for production and the development of civilization, not only narrowly confined to the very aided-technology used in translation. It makes translation engineering follow the pace of the times. Accordingly, engineering is introduced into translation, developing a brand-new one in the family of engineering. In this way, translation and information technology can be managed according to the rules as done in other engineering, ready to follow existing international practice. Gradually, translation, information technology, and engineering can be effectively integrated into one unity as translation engineering. This means a necessity and inevitability when translation develops into an increasing large industry, especially translation is endowed with the great role to facilitate the development of human civilization. Actually, in reality, translation has been considered as engineering. The "China-Central and Eastern European Countries Intertranslation and Publishing Project" sponsored by the Foreign Languages Publishing House affiliated to the China Foreign Languages Bureau was launched as a case in this way[10]. The size of translation can only use engineering to describe it. More importantly, it is an active action to push forwards the cultural communications among countries involved. Obviously, translation engineering is a new discipline, totally different from anyone of three disciplines mentioned above. It does not mean the emergence of a new discipline, and it also suggests that a new type of education come into being. This is translation engineering education. In this education, translation education is only one part of all elements. Translation education is forced to embrace other disciplines and professions, and has to be transformed into translation engineering education, a comprehensive, even all-round education. In 2020, an innovative platform of translation engineering and service was created to meet this aim [11]. It is a combination of translation program and local bureau of Science and Technology as well as a combination of translation and new technology, especially information technology. It is not only aimed for translation talents but for translation engineer such as terminologist, editor, subject matter expert, project manager, desktop expert, machine translation expert, translation-oriented artificial engineer, and so on. It is clear that the role of translation education in the past cannot cover the description above. Translation engineering education has to forge its own way when translation engineering comes into emergence as a new discipline. How to construct the education of this new discipline is a great challenge. It needs so many experts from education and profession involved to make long-time persistent efforts. In this paper, the following skeleton or draft framework is proposed as a trying.

## **2. The Conceptual Construction of Translation Engineering Education**

### ***2.1. The Separating Three Types of Education of Information Technology, Translation, and Engineering***

#### ***2.1.1. Before the Emergence of Information Technology***

It is a common sense that information technology, translation, engineering come to be born at different ages. Actually, three of them have different histories. For a long time, three of them cannot see each other. Even when translation and engineering appear in the world, they still have no connections with each other, just as it is shown in the following figure.



*Figure 1: The Relations of Engineering Education and Translation Education before the Emergence of Information Technology*

In the figure above, it is very clear that engineering and translation goes its own one-way development without any intersection with each other. This represents two typical developing modes. One is traditional natural arts; the other is traditional liberal arts. This is the very problem existing in education, especially in China. That is why new engineering and new liberal arts are promoted as new strategic methods to reform Chinese higher education.

#### **2.1.2. After the Emergence of Information Technology.**

When information technology steps onto its historic stage, it exerts great influence over all other industries. Naturally, it is introduced into as a very important element in all types of education in the world. However, from the beginning to now, its role still stays on the periphery of all other disciplines except computer engineering. Self-evidently, in these discipline, information technology only serves as a basic or aided instrument, visibly inferior to other elements directly with these disciplines respectively. The periphery orientation of information technology of these disciplines makes them impossible to develop them as real technology directly required by reality. All essential contents or elements cannot be stimulated by information technology and integrated as a unity with comprehensive technicality representing the modernity of these disciplines. Thus they all largely stay at the level of knowledge-oriented education, not competence-oriented one. Similarly, engineering comes to be introduced into information technology. Increasingly, all disciplines with information technology as core content seek to be attached with a name of engineering. In the same vein, in these disciplines, engineering still stays on the periphery place without any immersion or even integration with these disciplines respectively. Up to now, these disciplines are largely knowledge-oriented, not competence-oriented one. The relations of these three disciplines can be shown below.

In the figure above, the relations of the three disciplines is not purely one-way, to some extent, engineering and information technology have a certain intersection, so do information technology and translation education. It is a great pity that in this figure translation and engineering has no relation to each other. On the one hand, it lies that translation is long-time confined to the nature of its pure liberal arts; on the other hand, it is a fact that translation industry and translation academia have been refusing the immersion and integration with other disciplines, especially with engineering. It is a long-time belief that translation is only a service, a passive service. The belief overlooks a fact that translation still shares a positive role just like any other engineering [12]. This is why translation engineering is proposed, and translation engineering education is designed in the following section.

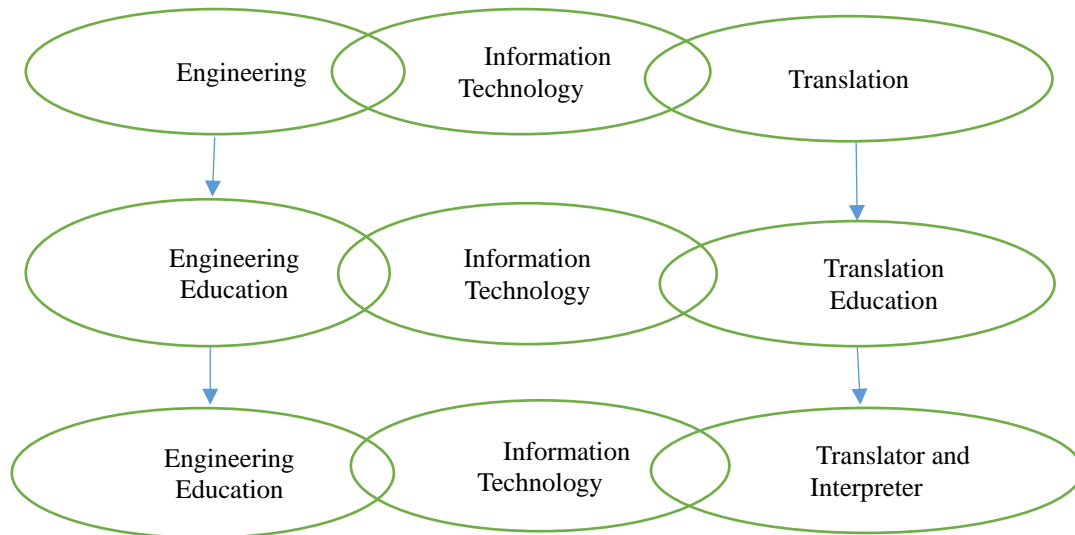


Figure 2: The Relation of Engineering Education, Information Technology Education, and Translation Education

### 2.2. The Conceptual Framework of Integrating Three Types of Education of Information Technology, Translation, and Engineering

It is very obvious that the long-time separation of these three disciplines cannot meet with the aim to educate different talents, not only translators and interpreters, required by translation industry or other industries. It is urgent to integrate all three disciplines as a new discipline and education new type of talents, namely, translation engineer. Based on this concept, the following framework is designed to make these three disciplines integrated with each other.

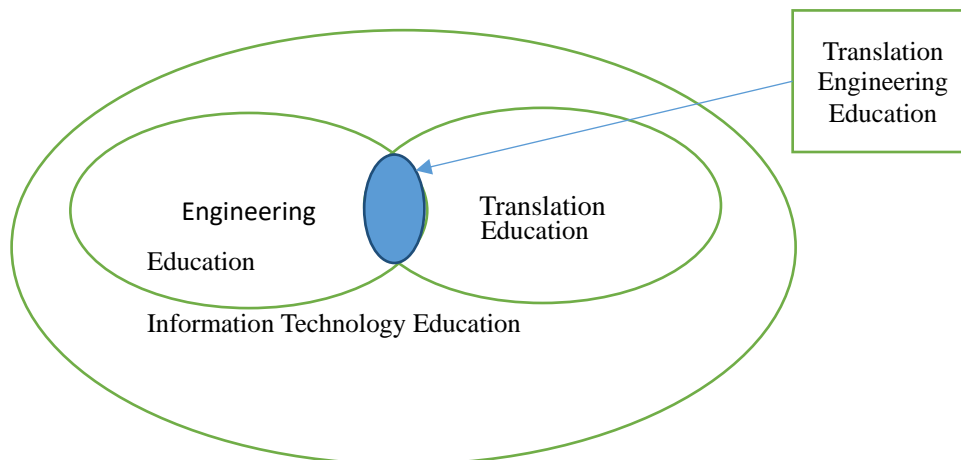


Figure 3: The Conceptual Framework of Integrating Three Types of Education of Information Technology, Translation, and Engineering

In this figure, translation education does not separate with engineering education, actually intersecting with it. The intersection is named as translation engineering. Very differently from the relations in the former figure, information technology education here is intentionally enlarged as a larger environment. It covers translation education and engineering education, not mention to translation engineering. This design aims to make the integration of translation education and engineering education immersed into information technology education, the representative of the most developed productive force. Translation engineering education here seems a little bit small. In fact, with the intersecting or integration of translation education and engineering, it will become larger and larger, and especially the two have greatly been involved with information technology education. To great extent, information technology education serves not only the education of information technology required by translation engineering, but as the catalyst to make translation education and engineering education react to each other chemically.

### 3. The Concrete Mode of Translation Engineering

Thanks to the proposition of translation engineering, especially under the guidance of the conceptual framework shown in the former section above, the very specific integrating route can be designed as the following table.

*Table 1: The Mode of the Education of Translation Engineering*

The Education of Translation Engineering				Mode	
Teaching Content Grade	Information Technology	Translation	Engineering	Integration	Educating Objects
Grade One in University or college	General Information Technology	Perception on Translation Industry	Perception on Engineering Industry	Aided by Information Technology Environment, with the perceptions of translation industry and engineering industry integrated	Pre-beginner of translation engineering
Grade Two in University or college	General Information Technology and Translation Information Technology	Basic Knowledge on Translation	Basic knowledge on Engineering	Aided by information technology with the two basic knowledge of translation and engineering integrated	Beginner of translation engineer
Grade Three in University or college	General Information Technology and Engineering Information Technology	Acquisition of Translation Skills	Acquisition of Engineering Skills	Aided by information technology with two types of skills of translation and engineering integrated	Translation engineering proficient
Grade Four in University or college	The Integration of General Information Technology, Translation Information Technology, and Engineering Information Technology	Translation Professional Internship	Engineering Professional Internship	Aided by information technology with three types of professional competence of translation, information technology, and engineering	Para-Translatio n engineering professional

In the table above, two lines, vertical and horizontal, are designed. From the line vertical, students are educated year by year from basic perception on the industry involved, to the basic knowledge on the discipline involved, to the very end of the integration of all elements at the former stages. Students are designed as apprentice to learn step by step, and gradually empowered with the integrating process. From the line horizontal, teaching contents consists of three aspects: information technology, translation, and engineering. At different stages, they are arranged and integrated with each other until they are immersed into each other as one unity with the very aim to empower students as translation engineer with professional competence of translation engineering. No matter what they are, vertical or horizontal, integration is crucial. Vertically, without integration, teaching cannot move onto next, because next stage needs a precondition of competence. If integration cannot happen at the former stage, next stage cannot work on. Horizontally, without integration, teaching contents involved with these three disciplines are still separating with each other as independent knowledge. Integration can make them immersed with each other and stimulate their mutual chemical reaction, resulting the power of translation engineering as a unity.

### 4. Conclusion

As the discussion above shown, with the explosive development of new technology, especially information technology, translation has been greatly accelerated by it and evolved from a traditional workshop to a larger and larger industry. The great industry cannot be implemented with the past so-called translation technology. It cannot also be only confined to passive translation service. The internal positive power of translation has to be released with the great stimulation or even catalyst of information technology. In this sense, translation has to be forced from passive translation service to translation engineering. It means that translation does not refer to a passive service at the request of clients. It also means that translation can actively look for the strategies to solve the increasing social problems, and even creating new civilizations. At this moment, translation really plays the role of

engineering, constructing what the world needs, not only the transference from one language to another.

Accordingly, with the concept of translation engineering proposed, when a new type engineering came into the world, how to construct the education of translation engineering as a discipline comes to rise. As the conceptual framework lineated in the figures above, the relations of information technology, translation, and engineering has evolved from the separating from each other to integrating with each other. Integration and involvement are two ways to promote the mutual immersion among these three discipline. The obvious part representing the integration is that between translation education and engineering education. Though this part is tiny at the beginning of integration, it will be enlarged gradually when they find their mutual alchemy. Information technology plays a double role, an environment ready for translation education and engineering education as well as an essential element of translation engineering. This element can serve as a chemical agent to stimulate and promote the chemical reaction in translation engineering. More importantly, with the establishment of the conceptual framework of the education of translation engineering, more specific teaching content and the rout to the construction of the education are provided from the two lines, vertical and horizontal. The vertical line introduces the very route as apprentice does from beginning stage with nothing to know as pre-beginners to the ending with anything to know about the profession involved as para-professionals. Horizontally, teaching contents in translation education are itemized as detailed parts of three disciplines at each stage. No matter whether vertical or horizontal, it is obvious that integration is the internal driving force to make translation engineering education move on from one stage to next, leaving the items involved with three disciplines integrated as competence not the accumulation of sparse knowledge. Visibly, as a new emerging engineering or a new type of discipline, translation engineering is very strange for the world. Its education must be a great challenge for the world. It needs more and more academicians and professionals to prove the existing value and make their further exploration on how to maximize the great role of translation engineering in the change of the world, not only in translation industry, and how to prepare translation engineering talents for the present and future at the context of education. At that time the line between new liberal arts and new engineering is blurred. Translation engineering is translation engineering itself more than liberal arts or engineering can tell.

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