

Education Paradigm: from Factory Models of Schools to the Future

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Abstract: Education paradigm is influenced by the development of the society. There is an education paradigm revolution from one-room schoolhouse to factory models of schools in order to adapt to the industrial society. Now, the factory models of schools are challenged by the network society and need to be changed. This paper begins by discussing the necessity for the education paradigm change, and then explores what a network age education paradigm should be like, and finally proposes principles about the new education paradigm which is based on the student-centered approach.

1. Introduction

Education has the apparent and wide used paradigm, which is a universal conviction or resolutions that accepted by people that need to be specified and fixed in the new education (Kuhn, Thomas. 1962). The education paradigm is the reflection of teaching ideas and principles which originated not only from the theory but also from practices. When we came into the industrial society, the factory model paradigm aimed at teaching people with the same texts, curriculum, exams and teaching model. With this kind of teaching model, students are like the raw materials in factories which will be processed into products according to the standards that posed by society. The task for students is to recite all the knowledge learnt from teachers and the task for teachers is to cram knowledge into students' brains and follow the curriculum that designed by schools in this kind of paradigm. Schools are subordinated to society by designing teaching aims, majors, and enrollment.

The tactics for students to get high grades is to cram everything that was mentioned by teachers into their brains, but most of the students will forget it after exam anyway. These "good students" who get high grades from exams are like machines without their own reasoning. The most serious problem that is caused by factory model education is the lack of creativity which is one of the most important qualities needed in the modern society. The paradigm developed from the industrial society encountered doubts from pedagogical research when we came into information age.

2. The Necessity to Change

Industrial Society VS Information Society: Current schools are established to fit the need of the industrial society. This kind factory model, industrial-age school has divided learning into many different subject areas, and students are expected to learn the same content in the same amount of time (Reigeluth, 1994). Students are forced to move on with the rest of the class no matter whether they have learned or not, finally many students accumulate as a machine without their own individual thought. With the development of the society, we transformed from the industrial age into network age. The essence of education is not factory-model which take the individuals as the learning machine anymore. Reigeluth posed a 'the draft for school system changes' in which the transformation of education idea that rooted among people is very important (Reigekuth,2008). People hold the attitude to label youngsters with the same standardization, but what need for the education is personalized.

Teacher-centered VS Student-centered: The most difference between education in industrial society and information society is the transformation of teachers' roles. Teachers take the authority absolutely in the industrial society that they are the representative of the knowledge. Teachers stand in front in the class with the textbook in the hand, students sit one by one to listen and make notes at the same time which is called as teacher-centered. Teachers decide what to learn and how to learn in this kind teaching model, and the evaluation for students is the final exam. Educational system tries to transform from teacher-centered to student-centered to meet individual learner's needs. The features for teacher-centered model and student-centered are different (see table 1).

Table 1

Teacher-centered	Student-centered
Sort based education paradigm	Learner based education paradigm
Time based	Personal based
Teacher based	Resource based
Grades evaluation based	Formative evaluation based
Autocratic leadership	Shared leadership

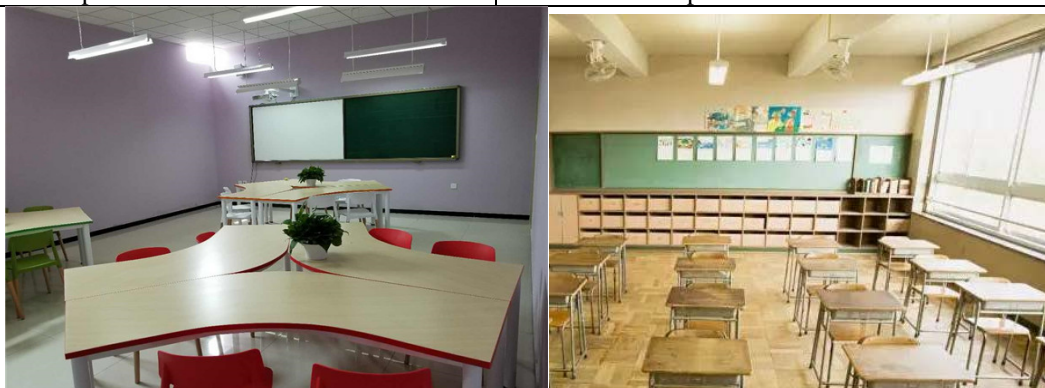


Fig.1

Autocratic leadership VS Shared leadership: Individual's competence and literacy are more important in the context of technological development and global competition. Competence and literacy reflect the tendency for education, learner-centered learning. In modern society, the pedagogy theory thinks highly on learner-centered learning (Dewey,2010). Learner-centered learning takes learners as the constructors and explorers of the knowledge rather than the passive receivers. The leadership in the classroom is also changed by the learning form, from teacher lead to students and teachers share with each other. Students are the subject of the learning rather than objects that only receive the information. Students can gain more and more information with the help of internet, from which they can share with each other in the class instead of a listener for teachers. There are already many transforms of the class, for example that many schools changed the desks layout in the classroom from the teacher-centered to learner-centered. We can see the transformation of the leadership from the classroom environment, in which from teacher control to teacher-student cooperate with each other. The teacher-desk in front of the classroom disappeared and students sit closer and closer, teacher becomes more closer to students in this kind classroom.

3. The Illusion of New Education Paradigm

The purpose of education: The changes in society as a whole reflect the need for education to focus on learning rather than sorting students (McCombs&Whisler,1997; Reigeluth,1997, Toffler,1987). A large number of researches have been conducted to advance our understanding of education purpose. From primary school to university or college, the learning purpose for students is to get a higher grade and the main purpose for education is to make students to get a high grade, which result in students

lack of learning motivation and autonomy. Life is the development, the sustainable growth is life (Dewey, J.1916). The real duty for education is to create a circumstance which children can develop themselves inside. Education is a sustainable process, which aims at reorganization, reconstruction and transformation in students mind rather than subordinate to some outside objects. In the industrial society, the education seems as prepare for students' future life instead of caring on their current development, which is without any meanings to emphasize the future on the current education. Students are taught to study for exams, for finding a good job, for utilizing knowledge for the lifelong. In many Asian high schools, students take the enrollment for a university or college as the final purpose for learning.

The misunderstood for education is not people take it as the preparation for future, it is that people only focus on it and ignore the essence of education. It cut off the link between present and future if the education only prepares for a distant future, and ignore the possibilities and opportunities of the present. If schools and out-campus environment can provide conditions that make full use of students' current abilities, then the future that develops from the present can be sustainable. The only most important factor affecting learning is what learners already know, teaching should accord to identify this (Ausubel,D.P. 1968). The starting point of teaching is students' experience and needs. One of the most important things for education purpose is to explore the possibilities that from students' current abilities. In other words, the education purpose is based on students' experience, through combining students' current and possible experience to make students improve and expand their experience from known to unknown knowledge. The world is changing every day, new inventions, new machines and new ways of communicating are profoundly changing the way we live. Youngers cannot adapt to the changing society if the education is based on a "outside purpose". The purpose of education exists in the education process which is sustainable and develop the awareness of lifelong study. The result of education process is lifelong learning---learn from the experience. In a word, the education will not conceal when one graduate from schools. The purpose of education is to teach individuals to learn how to study and keep the study sustainable rather than temporarily only in schools.

The form of education: Different from the traditional school, the modern school which is based on the development of media has more personalized teaching form---flipped classroom. Flipped classroom is an innovation of teaching that students watch the teaching video in advance, then discuss and finish tasks in groups. As a new teaching form, flipped classroom has essentially strengthened the student-centered status, embodied the in-depth learning idea, highlighted the advantages of blended learning, and promoted the practice of individual learning. The classroom is flipped by the "transformation" of education paradigms, the "reversing" of teaching process. In response, teachers should establish student-centered teaching philosophy, improve their quality to build composite knowledge. There is no doubt that the flipped classroom cannot be existed without the teaching video with the high quality, however, the essence of flipped classroom is individual learning no matter the learning is based on program, problem solving or inquiry (Bergmann, J. & Sams. 2014). The teaching process transferred from teacher-centered to student-centered which is one of the key factors to conduct flipped classroom. The role that teachers played in flipped classroom are the supporters of students instead of controller, and students change from passive receiver into positive learners. Teachers controlled the process of the class, students go to study with the same content at the same time, which result some students with higher or lower ability cannot be used to this kind of teaching form. Flipped classroom stressed the individual learning that students can decide their learning process, learning contents and learning time under the support of teachers. The learning based on teachers' instrument can help students gain the learning achievement and motivation (Marton, F. & Saljo, R. 1976). Flipped classroom respects learners' independence and curiosity, emphasize their differences and interests. Its breakthrough the limitation of classroom space and teaching time, so, students can learn in a larger "learning field" to develop their creativity. Flipped classroom mixed the face-to-face teaching with digital environment and mix individual learning with group learning with the help of technology.

Teachers authority is decreasing in the information age. With the development of society, the learning and teaching forms are becoming more and more various. Students can construct and understand their own knowledge system from their own experience based on the technology. The dynamic classroom will be built upon the interact with teachers, learning resources and environment, and the process of gaining knowledge becomes more flexible and convenient. Teachers and students will cooperate with each other to solve learning problems in the new education form, besides that, the cooperation between teachers will be enhanced to explore the teaching strategies. The elements to build a flipped classroom includes the internet resources, which should be suitable for students' learning level; the amount time for individual learning, one of the characteristic for new education form that learners should be provided with enough individual learning time so that they can learn according to their own learning spaces; the cooperation between students and teachers and the learning environment; and finally group discussion, in which students can share information and solve problems that they encountered during individual learning.

The evaluation of education: How to evaluate one is a good teacher or student. A comprehensive understanding of the nature of teaching and learning activities and an in-depth analysis of complex relationships underlying the process of teaching are the foundation for constructing an evaluation framework of classroom teaching. The evaluation of teachers not only depends on students' grades, which should evaluate from several aspects. One of the most important factors to evaluate a teacher in the network society is the quality of the teaching video that he or she recorded for students' individual learning, besides the interaction between teachers and students should be involved into the evaluation framework. The evaluation for the new education should be dynamic, for example, whether students are willing to join in the discussion or group work are elements to assess their learning motivation and spirit of teamwork. The evaluation for future education is not only to check how many students get high grades, it should be about students' whole development from the learning process to the results. Recently, with the development of technology, the flipped classroom becomes more and more popular. Students can learn knowledge through internet and discuss, cooperate with teachers or classmates to solve problems in the offline class. It is apparent that the information literacy be an index to evaluate teachers.

The evaluation of the education should be decided by students' grades. Students are accepted by different schools according to their grades and schools would be evaluated according to their students grades every year. Grades is an index but not the only one to evaluate a school. The learning should last for the lifelong. The evaluation for the education is not only the matter of some specified institutions, it needs opinions from everyone. Takes grades as an index, the evaluation should have a framework about the evaluation. (see the following table)

Table 2 the Evaluation Should Have a Framework about the Evaluation

	Information literacy: take the network as a teaching tool
	Classroom organization: the reconstruction of the classroom
Teachers	Role position: organizer, resource provider, participant...
	Life-long learning idea: renew the expertise knowledge
	Information literacy: take the network as a studying tool
Students	Individual learning: transform from knowledge receiver to be a learner
	Critical thinking: appropriate judgement about the knowledge that they attained
	Life-long learning idea: learning go through the whole life

4. The School under the New Paradigm

The feature of the future school. In the future the school of industrial society will turn into the learning center. Educate is not only the duty of schools, homes, communities and homes are all the institution for students to learn. There won't any stable classrooms and seats, because students move

from one to another according to their learning interests and chosen subjects. School is the product of industrial society and will be replaced by learning center which adapts to information society. The learning center can be divided into two types, offline and online. In the offline learning center students can learn English in class A and then transfer to class B for science subject, in which classroom has its own characteristic. Another specific characteristic of the offline learning center is the schedule which is different from the extant one. As we all know that weekend and summer and winter holiday are designed to adapt to the industrial society. Nevertheless, students are not limited by weekends in future learning center that they can enter as they want to attain the resource. For the students, the online learning center is international that students can join the European class in Asian countries, for example that a Chinese student can join the Cambridge class at his home. The universities in the world are connected through the internet. There are already some excellent examples of online learning center such as MOOC (massive online open courses), from which learners can participate in online classes of different universities.

5. The Teacher in the Future Learning Center

Who will be the teacher in the learning center? The roles of teachers are transferred from the knowledge importer to instructor and companion. Teachers not only exist in class; they can instruct learners through internet and create many learning platforms for students, in which teachers and learners learn from each other. In industrial society, teachers have the certain curriculums and need to follow up them, but there are not specify curriculums and teachers should help learners to design individualized learning plan. A student is not necessarily inferior to his teacher, nor does a teacher necessarily be more virtuous and talented than his student in the learning center.

6. Conclusion

The motif of the new education paradigm is lifelong studying and the utilization of the new media, which does not mean that the school would be eliminated in the future. The advent of new technology would be a challenge for teachers and parents. For one hand, teachers should re-set their roles and accept the influence that technology played on education, for the other hand, the development also change the form of education, the relation between teachers and students and so on. How to define family education in the future? The learning center is oriented to learners, where parents' suggestions play a deep influence on the individual development. On the way to future education paradigm, there are many new learner centers arose which are combined by parents according to children's interests. The new paradigm is must and rely on the cooperation among society, school and family.

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