



Negotiations on Subjective Interactions between Teaching and Learning in Remote Education

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Abstract: With the development of science and technology, the gradual development of self-media and various learning platforms provides people with a variety of learning methods and ways to contact other cultures and exchange ideas, which makes people's lives more convenient. On the one hand, online learning deprives learners of opportunities for offline interaction and real-time communication, thereby reducing self-motivation. Remote education has become increasingly common, especially after the COVID-19 pandemic. Distance education has become an important way for many learners to acquire knowledge. If technology and culture are regarded as two subjects in a complex system or as two interactive symbols, there are many conceivable research points for studies of teaching and learning in distance education.

Keywords: Remote education; technology; teaching; behavioral science; complex system

1. Literature review

In the former study, remote education was mainly explored in the significance dimension and its ethics across various areas, but the learning and studying interactions, knowledge, and cognitive aspects were only briefly examined. Behaviorism, cognitivism, and connectionism are the three main theories of distance education research in today's digital learning era. As an important representative of behaviorist learning theory, Skinner believes that knowledge is linked to skills, organized accumulation, and organized links between basic psychological units and various behavioral units. The learning process is a shaping process that strengthens this connection, enabling knowledge transfer. Cognitivism holds that learners store and organize information through cognitive processes. (Coleman, 1977) proposed that people primarily deal with biological processes, which may constitute natural kinds even as their functional roles vary across organisms that face rather different environmental challenges.

Connectionism was first proposed by Brownie and further developed by Simmons. Simmons' research considers learning trends, technology, and network usage for learning, and knowledge half-life. There have been many studies on distance education from a connectivity perspective. This paper will explore the interaction between culture and technology and put forward some ideas. As Matthew Flustered, a professor at the University of Winnipeg in Canada, said, on social platforms, each subject does not have or cultivate a sense of self-awareness as in some German idealist schools. Algorithmic Desire is an extraordinarily rich, erudite, and theoretically dazzling analysis of late capitalism as metaphorized by Twitter and its confederates (2021). Self-awareness and its boundary between the internet-conveyed digital world, also, on social platforms, the change of self can be seen when forming a knowledge structure, it also contributes to the study of social interaction in terms of theoretical performance. (LIU, 2023)

Subjective interactions, however, offer a new perspective on research on self-awareness and the learning process. The interaction process is hard to observe. On the contrary, on those social interfaces, people first turn themselves into a commodified "self", as Frisfelder said (Flisfeder, 2021) : "A model can be used as a metaphor to understand the many activities that people are now engaged in on social media. "Self" represents alienation. Frisfeld notes that once people enter the smart social media platform, they do not present themselves spiritually

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or consciously; rather, a materialized or alienated self-form emerges. Self-alienation can also be reflected in the interaction between teaching and learning in distance education. When students take classes online, their self-alienation also forms. Compared with offline interaction and online teacher-student communication, the mode of student-to-student communication differs. The lack of physical scenes in the online environment will affect students' initiative in learning. In addition, if a medium-sized language is used for teaching, the language's sphere of influence should be taken into account. In European and American countries, the diverse ethnic, linguistic, and cultural environments cause differences in learners' acceptance. From a pedagogical perspective, addressing this difference requires not only that teachers have relevant awareness but also that teachers and students work together to address or mitigate these problems. If society is regarded as a complex system, and the lecturer and the learner are the main bodies of the interaction, the interaction between them can be seen as the main body participating in the system's activities and seeking to establish an analytical network. Lan Jiang, a scholar at Nanjing University, proposed the concepts of the information body and intelligence connectionism in digital ecology (Fan et al., 2024). He believes that a new path can be formed in the interaction between artificial intelligence and human beings, integrating the existence of human beings, the digitization of things, and the behavior of artificial intelligence. Think about the relationship between entities on a new interface, that is, digital ecology. The proposal for digital ecology theory can serve as inspiration for distance education research. If distance education is regarded as a learning ecology, the actions of education and learning themselves can be seen as the main body of interaction.

Goffman's drama theory holds that people engage in performance elements in their life interactions, trying to create images in others' minds. This theory is developed from symbolic interaction theory (Manning, 1991). Although it has too formal limitations, its theory affirms the constraints of social structure on people. From another perspective, the foundation of educational research in the digital age is indeed established within a specific social-structural framework, and a further description of the framework theory will contribute to the research. In addition to behaviorism, cognitivism, and connectionism, other theories can be used to explain the author's educational views on the issues raised so far (Ertmer & Newby, 1993). This article does not propose a problem to be solved; it only presents theoretical assumptions. In the case of excluding external influences (such as a pandemic), from a behavioral perspective, choosing distance learning is not only a way to achieve learning goals at a low cost. Participating in distance teaching itself may tend to break away from the convenience of offline learning (Riaz et al., 2023). Propensity. In the case of the same resources, the most important characteristics of the media itself can be summarized as follows: according to the inherent formal characteristics of each technological media, find the most combined content with it.

2. The Interaction Between Culture and Technology

Culture itself is a projection of social consciousness and has a significant influence on society. Different cultural backgrounds have different values, which will produce different interactions. After the birth of distance education, a series of new social integration problems also emerged (Peters, 2002). On the distance-learning platform, the cultural symbols used in interactions between people will also undergo some transformation. If we focus on technology, technological improvement will produce a new effect: a change in subjectivity within the system. The concept of people's "self-identity" is fluid. As the social environment changes, the boundaries of the self will be affected. For example, before the widespread use of computers and smartphones, the "self" mainly existed in real life.

In interaction, telephone, and pen-and-paper communication, with the popularization of remote communication methods, people can freely express their opinions and learn knowledge online, leading to a new "identity" or "self". Although the self, in the sense of science and technology, has a virtual component, its parts are imagined or marked out, yet its influence cannot be ignored. The self at the level of science and technology is likely to be a new ethical issue in the academic world in the future. For example, artificial intelligence is highly developed, and related technologies are heavily involved in education (Pedro et al., 2019). Although it cannot replace teachers' role, it will weaken people's sense of self. From a cultural perspective, the use of technological means will affect the boundaries of the body, an inevitable effect. However, scholars can study this effect from many novel angles, which may lead to new theories. For example, in the discussion of the concept of knowledge "node" in connectivism, whether a knowledge point can be well acquired depends on its current connection status. It can be better learned if it has many potential connection nodes. Social science research aims to identify connections between things and to explore the methodology of practice. In this issue,



if teaching and learning are treated as two variables and the relationship between them is explored to address the problem of "alienation", various solutions may be derived. In the digital age, the possibilities of human creativity are constantly expanding. In distance learning, creativity is sometimes limited compared to other contexts because people's creative spirit is relatively out of step with objective cultural developments, leaving them doomed to walk in a world controlled by themselves. On the road, technological dependence, and the public's lack of understanding of the target culture. According to sociologist ([Shilling, 2004](#)) there is an inherent opposition between object culture and subject culture.

After the Industrial Revolution, although people maintained the ability to update objective culture, from a historical perspective, the suppression of objective culture on subject culture became increasingly evident, and a large gap emerged between people's mental progress and technological development. The development of objective culture will essentially interact with subjective culture, but this influence is very tearing. For example, with the continuous advancement of science and technology, people's lives are becoming increasingly convenient, yet their thinking remains at a level akin to that of ancient people. With changes in society, a culture of objects oppresses the subject's spiritual culture, and the phenomenon of materialization is becoming increasingly common, causing a sense of tearing. Overly specialized learning and sophisticated social division of labor will strengthen people's sense of alienation, which is also a kind of alienation. It is also for this reason that there are fewer and fewer intellectuals in the traditional sense. Therefore, in distance education, professional learning is indispensable, but learners need to realize the importance of cultivating their own macro-control ability, focusing on improving their comprehensive quality, and not being oppressed by object culture.

3. Research methods

From the data point of view, on March 1, 2021, the Ministry of Education released the 2021 national education statistics, which consist of five parts: preschool education, compulsory education, high school education, higher education, and special education. Among them, the total number of higher education students is 44.3 million. In 2021, 2.8392 million students will be enrolled in online undergraduate programs, bringing the total to 8.739 million. This paper primarily employs a qualitative research method, namely content analysis. The advantage of using the content analysis research method is that it allows the researcher to focus on the research topic and to continually reflect. Qualitative research can fully leverage the subjective advantages and address the shortcomings of quantitative research. The topic of my interview is the impact of teaching interaction in online higher education on students during the pandemic. My interview (10 interviewees as a sample, age around 20-29, college students and graduate students) is mainly composed of college students who have completed their studies at home and abroad through distance education during the pandemic. My interview questions include how I view distance education, whether I think it will weaken learning outcomes, etc., and they will vary depending on my personal situation.

The interview time is allocated to each interviewee for about half an hour. During the pandemic, universities at home and abroad mainly used remote platforms such as Zoom to teach, which tested students' learning abilities. Among the students I interviewed, eight said that distance teaching has reduced the pressure from classroom lectures and exams to some extent, but it has also weakened the learning effect. Almost every student's point of view is that the effect of offline teaching is better. The other two students think that, for them, distance education does not affect their learning, but it lacks the physical presence of offline classes and a positive social experience. Online higher education is a special experience, not only the online teaching method but also the experience of the teaching interaction effect of home learning. In terms of knowledge learning, 5 students think that if it is conceptual knowledge, the effect will not be greatly affected, but if it is knowledge with certain mobility, such as knowledge that needs to be acquired through a lot of reading, practice, and experiments, the effect of online teaching is low. But inevitably, online teaching does have such problems. Four of the respondents conducted distance learning while studying abroad. The content of each interviewee's answer was that remote teaching provided a virtual experience of studying abroad without going abroad, and the expected difference was relatively large compared with the actual experience. According to the classification of students' answers, distance education has the problems of a lack of social experience and low interaction efficiency in

some courses. In addition, a focus group discussion was conducted with 6 college students based on the idea of teaching interaction, and a structured interview outline was provided.

1. Do you think distance learning will weaken the teaching effect of theory courses?
2. Do you personally like the distance education mode, and do you tend to choose distance education to acquire knowledge?
3. Do your friends and family members like distance education?
4. Compared with offline education, what are the common problems of distance education?
5. Suppose you are a teacher in a distance education class, how would you improve the inherent problems of distance education? The results of the discussion can be summarized as follows: the team members believe that distance learning will affect the degree of acceptance to a certain extent, and it often stays at a shallow level of conceptualization, thus weakening the teaching effect. Half of the group members tend to choose distance education, and many of their family and friends do as well. Compared with offline education, distance education has problems such as limited teacher-student interaction, limited understanding of the people around, low interest and enthusiasm, and an unfair scoring system. From the group members' narratives, we can infer their attitudes towards the topic. Narratives themselves also play a very important role in social science research and can be used as a means of educational research. David Kaplan once said that people use narratives to shape technology itself, and the impact of narratives is subtle. Unknowingly, people's narratives can change the platform itself, thereby affecting its function. This is the interrelationship of narratives.

Affecting factors	Weaken the teaching effect	No support from family	Subjective non-realistic feelings	Language Interaction insufficient	Less communication
Number	5	4	8	3	6
Percentile	1/2	2/5	4/5	3/10	3/5

4. Technology, the construction of the relationship between teaching and learning

Just as in the discussion of the concept of "node" in connectionism, whether a piece of knowledge can be well consolidated depends on its current connection status. If it has many potential nodes, then it can be extended more widely. Trying to model these nodes is like trying to establish a connection, like a mind map or a knowledge outline. Although there is no fixed model, this attempt is very necessary. Research on nodes can also deepen educational research. From this perspective, based on the original theories, distance education research still has a long way to go. To sum up, the concept of nodes is somewhat imprecise, but it is of great research value.

The mediation of technology has played a large role in shaping the interaction between teaching and learning, including mediation and neutralization in other fields discussed by many philosophers today. Mediation, virtue, and responsibility (mediation, authenticity, and responsibility) are three dimensions to consider. The platform itself has a mediating effect on identity and interaction, shaping reality and the responsibilities of individuals and groups. The occurrence of major events in history shows that technology has changed people's cognitive understanding, including where we are and where we are going (Coeckelbergh, 2012; Greenfield, 2004). just as Simmel created the concept of "tool-making beings," is that people are the product of tools, and people's education and development must come into contact with tools. Therefore, in the construction of the relationships among science and technology, teaching, and learning, the three influence each other. Within the teaching interaction framework, there is still ample room for research on the interaction among the three.

5. Conclusion

In the field of distance education, the interaction between teaching and learning has been a widely discussed topic as a basic assumption. Social science research is an academic and practical endeavor to identify connections between things. If teaching and learning are regarded as two variables, discuss their relationship and promote learning progress. This is the meaning of humanistic care. Distance education will continue to play an important role in the current era and has great theoretical research value in the field of education. Its own shortcomings are difficult to completely change, but they can be reconciled through continuous improvement. There is no systematic management of online distance education, and students' learning



efficiency is uneven, which also tests students' independent learning to a certain extent. Distance education in online teaching is low in interactivity. Since the online education and teaching process does not require teachers and students to be strictly asynchronous in time and space, this results in poor interactivity in teaching. Online education requires higher levels of students' learning autonomy and self-learning ability. At the same time, educational resources have also been fully utilized and shared. Through remote transmission, the teaching ability of the same educational resources has been amplified in space and time. At different times, more students in different regions and locations can learn. Courses taught by the same teacher thus meet the educational needs of more students. Assumptions are a key part of theory development. On this basis, it is hoped that other scholars can establish more relevant assumptions, thereby creating more theories that can benefit society.

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