Revista Brasileira de Educação do Campo
Brazilian Journal of Rural Education
ARTIGO/ARTICLE/ARTÍCULO
DOI: http://dx.doi.org/10.20873/uft.rbec.e11853

How do students view online learning: an empirical study of online learning during the Covid-19 Pandemic

Tian-Zi Xu[1]
[1] Wenzhou University. Faculty of Education. South Campus of Wenzhou University, Chashan Higher Education Park, Ouhai District, Wenzhou, Zhejiang Province, China.

Author for correspondence: 20200200@wzu.edu.cn

ABSTRACT. During the Covid-19 prevention and control period, the online learning became the main learning pathway for students. Meanwhile, it brings some new questions worthy to considering, such as, how was the online learning for students? How were the effects? And how did students perceive it? In order to answer those questions and gain deep understanding for online learning, the research conducted an investigation among a number of high schools in Xuzhou, Jiangsu Province, China, with an anonymous questionnaire being distributed to the students. As the main group involved in online learning, it is critical in exploring the answers and promoting developments of online learning to investigate students' views and attitudes towards the effectiveness, instruction, communication, advantages and disadvantages of online learning. The results indicate that even students could rapidly adapt to the new learning style, there are still several notable limitations, such as the lack of supervision, collective atmosphere of study, and humanity communication.

Keywords: COVID-19, online learning, secondary school students, students' perceptions.

Como os estudantes veem o aprendizado on-line: um estudo empírico do aprendizado on-line durante a Pandemia da Covid-19

RESUMO. Durante o período de prevenção e controle da Covid-19, o aprendizado on-line tornou-se o principal caminho de aprendizado para os estudantes. Entretanto, traz algumas novas questões dignas de consideração, como, por exemplo, como foi o aprendizado on-line para os estudantes? Como foram os efeitos? E como os estudantes o perceberam? A fim de responder a essas perguntas e obter uma compreensão profunda para o aprendizado on-line, a pesquisa conduziu uma investigação entre várias escolas secundárias em Xuzhou, província de Jiangsu, China, com a distribuição de um questionário anônimo para os estudantes. Como principal grupo envolvido no aprendizado on-line, é fundamental explorar as respostas e promover o desenvolvimento do aprendizado on-line para investigar as opiniões e atitudes dos estudantes em relação à eficácia, instrução, comunicação, vantagens e desvantagens do aprendizado on-line. Os resultados indicam que mesmo os estudantes poderiam se adaptar rapidamente ao novo estilo de aprendizagem, ainda existem várias limitações notáveis, como a falta de supervisão, atmosfera coletiva de estudo e comunicação humana.

Palavras-chave: COVID-19, aprendizagem on-line, alunos do ensino médio, percepções dos alunos.

Cómo ven los estudiantes el aprendizaje en línea: un estudio empírico del aprendizaje en línea durante la pandemia de Covid-19

RESUMEN. Durante el periodo de prevención y control de Covid-19, el aprendizaje en línea se convirtió en la principal vía de aprendizaje para los estudiantes. Sin embargo, plantea algunas preguntas nuevas que merecen ser consideradas, como por ejemplo, ¿cómo fue el aprendizaje en línea para los estudiantes? ¿Cómo fueron los efectos? ¿Y cómo lo percibieron los estudiantes? Para responder a estas preguntas y obtener un conocimiento profundo del aprendizaje en línea, la investigación llevó a cabo una investigación entre varias escuelas secundarias de Xuzhou, provincia de Jiangsu, China, con la distribución de un cuestionario anónimo a los estudiantes. Como grupo principal involucrado en el aprendizaje en línea, es crucial explorar las respuestas y promover el desarrollo del aprendizaje en línea para investigar las opiniones y actitudes de los estudiantes hacia la eficacia, la instrucción, la comunicación, las ventajas y desventajas del aprendizaje en línea. Los resultados indican que, aunque los estudiantes pudieron adaptarse rápidamente al nuevo estilo de aprendizaje, siguen existiendo varias limitaciones notables, como la falta de supervisión, el ambiente de estudio colectivo y la comunicación humana.

Palabras clave: COVID-19, aprendizaje en línea, estudiantes de secundaria, percepciones de los estudiantes.

Introduction

Since the education informatization developed in China, online learning has become a new and indispensable way of education. It gradually becomes an important supplement to traditional school education in primary and secondary schools. However, the sudden outbreak of Covid-19 in China, near the 2020 lunar new year, had lead to people keeping social distance to prevent the spread of the pandemic , which disrupt the normal teaching and learning order for schools. Consequently, the Chinese government immediately asked universities, secondary schools, primary schools, and kindergartens to delay the start of the spring school semester and make full use of the online resources to keep order in teaching, which was called "suspend classes without stopping learning" activity. Subsequently, the provincial and municipal education departments issued guidelines and plans for online learning to ensure that students at all levels could get access to education. Hence, during the pandemic, the form of education in China rapidly transformed from onsite learning to online learning.

However, as the largest online teaching event than ever, it brought certain new questions worthy to pondering, especially how was it for students, and how did students treat it. As the main group involved in online learning, students' views and attitudes towards the effectiveness, instruction, communication, advantages, and disadvantages of online learning, are vital for exploring the answers and promoting its future development. Hence, this research targeted at regional secondary school students, utilizing the questionnaire to understand how did they view the online learning.

The main research questions are below, leading us to get an outline of the online learning from students' perspectives:

- Generally, how was the online learning for secondary school students?
- How was the effect of online learning during the pandemic?
- How did students perceive the online learning during the isolation at home?

To explore the questions above could help us (1) to understand how secondary school students think about the online learning, as they are the main participants, and have the most intuitive feelings, (2) to figure out the advantages and disadvantages of online learning by collecting and analyzing the empirical data, and to compare with the traditional onsite learning in various respects, and (3)

to summarize the areas of online learning that need urgent improvement, and provide some feasible suggestions for its development. The above are the main objectives of this research, which have a strong relevance both to the current situation for online learning in the context of the epidemic, and also to its future improvement and challenge in the post-epidemic era.

On the one hand, the study focuses on the development of online education in the midst of an epidemic. It brings more regional empirical research data and international experience, which could provide more support for education to deal with the crisis, and piece together the online education map under the global epidemic. On the other hand, e-learning, as an important complementary modality to traditional school education, has played a vital role in the epidemic. Yet, as an immature form of teaching and learning, the online education not only gained more opportunities for future development, but also encountered unprecedented challenges and revealed many problems during this epidemic. In such a situation, it is important to obtain direct, first-hand data from the reality of students' learning. As the main group involved in online learning, students' expectations, dissatisfaction, suggestions and perceptions will contribute to the future development for e-learning, especially providing valuable proposals in terms of the construction of online platform, teachers' online instruction development and application functional improvement. There is no doubt that online learning will become an important way of teaching and learning. In the context of this trend, the research can provide more examples and knowledge for its database.

Literature review

In the last year, online education with home isolation had attracted a lot of attention worldwide. In China, some researchers systematically reviewed many typical online instruction and cases, providing some valuable references and guidance for ongoing practice (Jiao Zhou & Chen, 2020; Xie et al., 2020). Song Xu and Li (2020) focused on the model establishment, with analyzing the factors affecting online teaching and learning, and proposing an online "teacher-parent-student" community framework model. Zou Li and Xie (2020) analyzed the development of e-learning in universities in a regional context, and proposed a regional online education model. Wang et al. (2020) paid attention to the views and attitudes of stakeholders, and conducted a nationwide online questionnaire survey, to investigate the government, school

administrators, teachers, students, and parents. Yang and Zhang (2020) targeted at primary and secondary school teachers around 23 provinces, collecting their attitudes, actions and expectations about online education by online questionnaire survey. Fu and Zhou (2020) analyzed the challenges posed by the epidemic to China online education among several dimensions, such as equipment, teachers, students and parents.

Internationally, the online education, during the pandemic, also attracted researchers' attentions. Mladenova Kalmukov and Valova (2020) present a study on the comparison between three types of e-learning and traditional onsite learning, through students' opinions before and after this pandemic. Their research found that even the young people had been called digital generation, their attitudes to e-learning were a little bit of being negative, which was quite different as what we thought about. Velichová Orbánová and Kúbeková (2020) investigated the secondary school students in Slovakia, to find out their views on online learning. The results indicated that secondary students preferred to regard online learning as the combination with traditional onsite learning. And they stated the time intensity of online learning was greater than the traditional form of learning, even though most of them spent much less time on learning. Besides, they showed a lot of the strength and the weakness of online learning. Baladrón Pazos Correyero Ruiz and Manchado Pérez (2020) investigated the students' views on the transformation, which was from in-person learning to online learning, carried out around the faculties of communication in Spain. The research found that even the transformation was successful integrally, there were still some essential limitations. For example, the teachers used the traditional instruction without adjusting to the features and advantages of online learning. A Japanese research team, Nenko Kybalna and Snisarenko (2020), focused on the situation of online learning around Ukrainian higher educational institutions, including the effectiveness, types, negative and positive aspects, perspectives, and approaches. Through questionnaires, the research figured out the most used distance learning tools, duration of learning, readiness of participants, factors that affect distance learning in Ukraine, which echoed the present results in other researches. There were also several research teams conducted investigations in a wide scope among schools and universities, with the targets like the students' knowledge, attitudes, and practice (Saefi et al., 2020), the students' intentions to utilize the e-learning system

(Al-Okaily et al., 2020), and the level of students' self-regulated learning during the pandemic (Sulisworo et al., 2020). These researches provided large amounts of data and information to promote the new learning style.

Based on these existing researches, our study is also about understanding students' views on e-learning. However, we have two distinguishing features in contrast with the researches above. On the one hand, we have chosen a specific period of time, when students just got rid of the two-months social isolation and went back to school. At that time, they still had clear perceptions and feelings about the home-based online learning experience, which could enhance the timeliness and accuracy of the data. On the other hand, the questionnaire was designed with two short-answer questions that aimed to fully explore the implicit knowledge of students' views and attitudes towards online learning. Thus, we provide both quantitative data and qualitative data to demonstrate our results, where the quantitative data shows the trends of development and distributions of problems, and the qualitative data gives an explicit description of students' views and attitudes.

Methodology

The study uses the questionnaire survey to obtain more about the objects' attitudes, behaviors, opinions and cognition in the special situation. The key purpose of the research is to understand students' perceptions of online learning. The survey results could indicate and generalize the trends and distributions of students' opinions from various dimensions.

The questionnaire is anonymous and contains two sections. The first part includes nineteen objective choice questions, consisting of one-choice and multiple-choice questions. In the multiple-choice questions, the sum of the percentages will be greater than 100 per cent. The second part includes two subjective short answer questions, in order to collect more details of the students' individual situation, opinions and suggestions of online learning. Meanwhile, to ensure the validity of the research, the questionnaire was tested by two experts, and necessary modifications were made to it on the basis of the experts' consultations. Besides, in order to ensure the accuracy and authenticity, the questionnaires were distributed by class at the beginning of the resumption of school spring semester. At that time, students still had a very clear feeling and opinions towards online learning. Also, with the help and support

from many head teachers, there were only 10 invalid questionnaires, maximizing the effectiveness of the investigation (99.2%).

The population of the research comprises 1270 secondary school students in Xuzhou City, Jiangsu Province, China. Those respondents were from different grades and different secondary schools. Among them, 24% of the students were from senior, 33% of the students were from sophomore, and the rest of the students (43%) were freshman. Meanwhile, 64.6% of the students were from public schools, and 35.4% of them were from private schools.

Results and discussion

Generally, the results of the research indicated that students were able to adapt quickly to the new mode of learning, and could maintain a high completion rate during this unprecedented, mega-scale, and unexpected online learning process. 94% of respondents were basically able to complete the daily learning tasks assigned by teachers, while 100% senior year students could better complete those learning tasks. Besides, as regards self-management, 55% of students were able to study effectively on their own, with 20% of them noting that they were able to make and complete their own study plans conscientiously. However, the rest 45% of students pointed out that there were many temptations to concentrate on study, of whom 38% indicated that there was limited time for study, 7% indicated that they seldom studied during pandemic. "Distracting", "playing with my mobile phone", and "being dazed when listening to online classes" were the dominate behaviors and main culprits, which echoed other research findings (Zeng, 2020; Song Xu & Li, 2020).

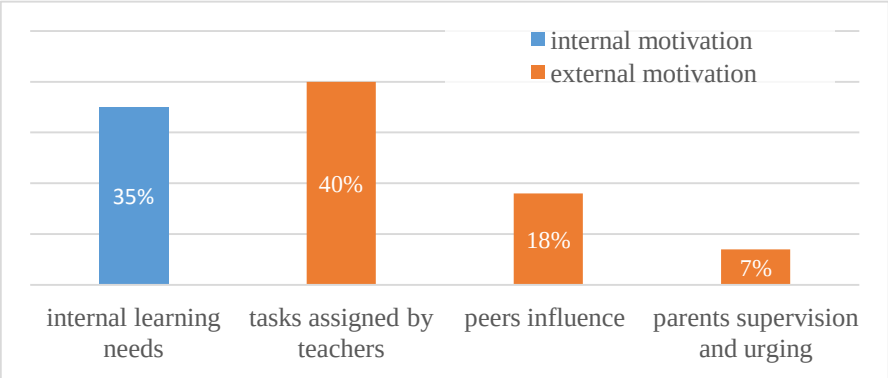
The results of the study demonstrated more characteristics of students' online learning situation. The following will be organized by various dimensions of students' opinions and behaviors during the home isolation, such as the study motivation, learning outcomes, advantages and disadvantages, supervision, collective atmosphere, adaptability, and attitudes. These elements and data may comprehensively show the regional outline for the secondary school students' online learning during the pandemic.

Study motivation

The results showed that only about 35% of students said they studied by "internal motivation", yet nearly 70% of students expressed they were motivated to study online by external sources, of whom, 40% were motivated by the tasks assigned by teachers online, 18% were motivated by

'peer influence', that was they believed that their classmates were taking online learning seriously and they could not afford to be left behind, and 7% relied on parental urging (see Figure 1).

Figure 1. Secondary students' learning motivation during home isolation in Xuzhou City.



Source: author's calculations based on the conducted survey.

Meanwhile, the final year students' reactions showed that in terms of time-management and learning motivation, they generally outperformed than the students in other grades, especially in the area of time management, with 32% of final-year students saying that they were able to make a study plan and completed it consciously, which was almost twice as many as non-final year students' rate.

Learning outcomes

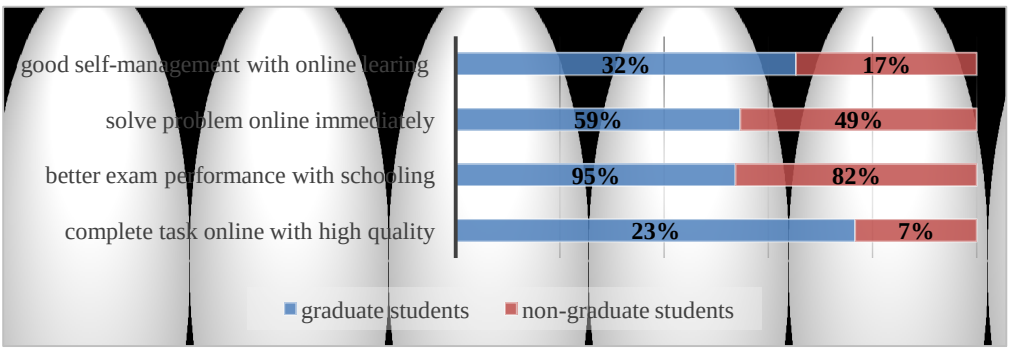
The online learning outcomes of secondary students in Xuzhou City during the Covid-19 pandemic could be described with several dimensions, including the quality of task completion, prediction of exam results, and addressing learning difficulties. The majority of respondents said they could not complete their learning tasks as well as they did at school, 16% of respondents stated that online learning was as effective as face-to-face learning at school, and only 7% of students believed they learnt better at home than school. To take the matter further by asking students to predict their exam performance, most respondents (82%) believed that they would do better in the classroom and only a small group of students (3%) thought they would do better online, while the rest either thought their test scores would be "not very different" or chose "not sure".

Although online learning, especially asynchronous online learning, overcomes the barriers of space and time, allowing for more flexibility and freedom, it seems less

convenient when students encounter difficulties, such as “hardly expressing questions, particularly the mathematical symbols or chemical equation”, “too little teacher-student interaction online”, “equipment problems”, or “unable to communicate at all times”. Therefore, according to “problems solving”, less than half of respondents said they would solve the problems in the moment, while 31% of respondents said they would write them down and solve them when they returned to school, and the rest (15%) said they "did not intend to solve them". Furthermore, among the students who chose to solve problems immediately, more of them would turn to search internet (45%) or ask peers (38%) rather than seeking help from teachers online (17%), which revealed teachers were no longer the first choice for students to turn to when it came to online learning. However, we all know teachers play a significant and irreplaceable role in education with their phronesis, hence it is worth pondering (Liu & Sun, 2020).

Comparing the data from graduating classes and non-graduating classes, we found there was corresponding tendency, while the former’s performance was more significantly than the latter’s. More details present in Figure 2.

Figure 2. Comparison between graduate and non-graduate students in several online learning performances.



Source: author’s calculations based on the conducted survey.

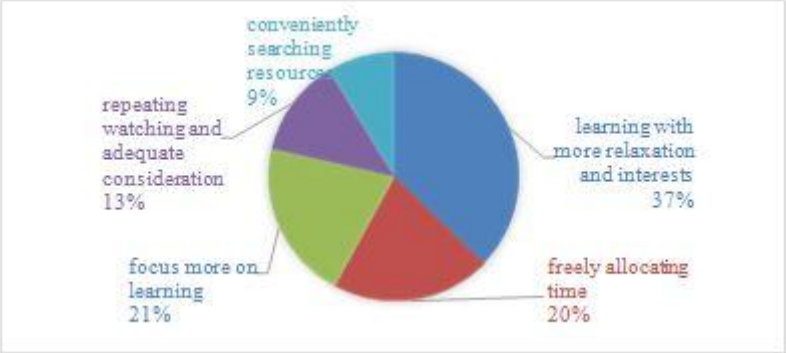
We suppose that the pressure from academic work push final year students overcome the difficulties and discomfort, and significantly perform better than non-final year students in terms of self-management, quality of academic completion, problem solving and motivation maintenance (Chen & Liu, 2021).

Advantages and disadvantages

With data analyzing, learning with more relaxation and interests, freely allocating time, convenient and fast

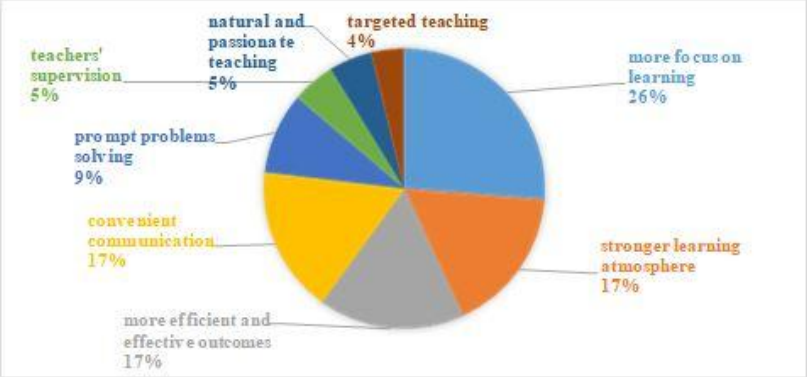
communication were the primary advantages of online learning. At the same time, the data also reflected students' perceptions of traditional onsite learning, with being able to focus more on learning, stronger learning atmosphere, more efficient and effective, and communicate at any time. More details are shown in the Figure 3 and Figure 4.

Figure 3. students' opinions about advantages of online learning.



Source: author's calculations based on the conducted survey.

Figure 4. students' opinions about advantages of offline learning.



Source: author's calculations based on the conducted survey.

Furthermore, the answers of subjective questions showed that the lack of effective teacher supervision, more humanity online communication environment and collective learning atmosphere were the main weakness of online learning.

Supervision

While online learning transcends the constraints of time and space, and meets the individual learners' needs, it also requires a high level of self-directed learning ability. However, with limited self-control and a lack of effective teacher

supervision, students inevitably suffered from low learning efficiency, poor concentration and mediocre learning outcomes. Studies have shown that a large part of the reason why online learning is "high in selection but low in completion" is because there is no effective monitoring and evaluation method, and many students' self-learning ability is not sufficient to support them to complete an online course (Ma et al., 2019). In our survey, 73% of respondents said that online learning had more 'temptations' than studying at school, which made it more spontaneous, such as "I study when I want to, but not when I don't" (35%), and "I have limited time to study" (38%).

From the perspectives of students, the level and quality of parents' involvement during the pandemic was also not high. For example, only 3% of students said their parents always monitored their study during home isolation, and 30% of students said their parents regularly monitored their learning, while 63% of students said their parents 'occasionally monitored' or 'hardly monitored' their study. This was a significant difference, reflecting the low level of parental involvement for their children's learning. In addition, 57% of students' parents supervised their children's learning by checking their homework, while only 9% of students' parents were able to help their children with research and problem solving. The pandemic led to the time and space separation for teaching and learning activities, so that parents became the first person, who should take a more important role than ever in supervising and guiding students in online learning, and interacting with teachers in home-school cooperation (Li Wang & Chai, 2021; Gao, 2020).

Collective atmosphere

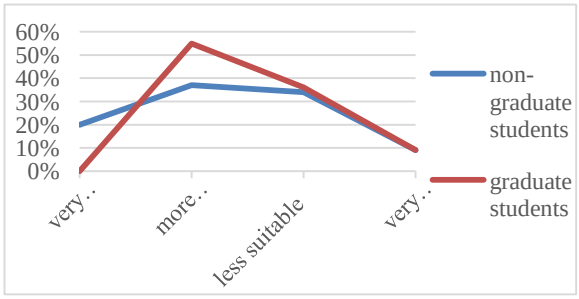
Many students clearly stated that the group learning atmosphere was one of the main advantages of studying at school, where they could whisper to each other, sharing ideas and raising hands to ask questions at any time. However, this is a need that cannot be met by online learning, as the distance learning technology is still unable to provide a more humanity online communication environment (Jiao Zhou & Chen, 2020). Online learning during the epidemic was often in a 'many-to-one' mode, where dozens of students could see their teachers, but not each other. Without working together, collaborative discussion, sense of rhythm and tension, and sense of social presence was weak (Teng, 2013). 63% of students said they had significantly less interaction with their teachers while studying online at home. Besides, the frequency of student-student

communication had also decreased. Nearly half of students said that they did not communicate with each other as often as they did at school, of whom, only 14% talked about their study as the main topics. The data of graduate students were better, with 27% of students talking about study online, yet, the tendency was similar.

Adaptability

In decades, distance education has been used as an adjunct to schooling, but in the pandemic, it had become the main instruction approach. This transformation led to a certain degree of non-adaptability for students. Almost half of respondents (35%) indicated that the online learning at home was not very suitable for study, 9% respondents indicated it was very unsuitable for learning. Figure 5 provides more comparison in adaptability between graduate students and non-graduate students.

Figure 5. The comparison between graduate and non-graduate students' adaptability about online learning.



Source: author's calculations based on the conducted survey.

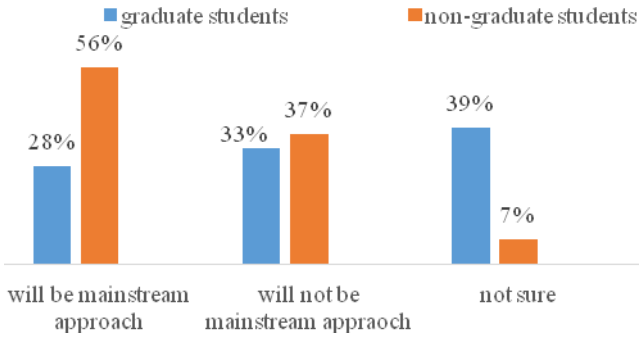
From it we could find the graduate students mainly chose the 'home environment was more suitable for studying' (55%) and 'home environment was less suitable for studying' (36%). None of them chose 'home environment was very suitable for studying', which was a significant difference from the non-graduate students' choice.

Attitude

It is foreseeable that online learning will become one of the key methods of education in the future. And with the Covid-19 pandemic having been gradually under control in China, the hybrid of online and offline teaching will be widely used in schools and universities for a long time to come. For the question about students' opinions to the future of online learning development, it is that many students held positive, confident and expectant attitude. 42% of respondents

believed that online learning would become a mainstream teaching method in the future, while some students had a wait-and-see attitude (23%), and the rest of them (35%) supposed the online learning would not be one of the main teaching approaches in the future. However, there was a more negative view among graduate students. 33% of respondents believed that online education 'would not' become a mainstream teaching method in the future, much more than the 'would' (28%). This percentage was in contrast to the other grades students'. And more details can be seen in Figure 6.

Figure 6. The comparison between graduate and non-graduate students' opinions to future development of online learning.



Source: author's calculations based on the conducted survey.

We analyzed that the anxiety of the imminent university entrance exams made it difficult for them to 'settle in' as well as other grades students. As a result, although final year students outperformed than other grades students in terms of quality of task completion, efficiency and self-learning ability, they were more eager to return to the familiarity and authenticity of the traditional onsite learning.

Conclusion

As the main learning pathway for students during the pandemic, online education not only caught up the opportunities for development, but also underwent the challenge. It is no doubt that the future of online learning is positive and worth anticipating. Through data analysis, the results of this research about the regional secondary school students' perception about online learning have brought several significant findings.

In the first research question, we examined the general overview of students' online learning. The results indicated that generally students were able to adapt quickly to the new mode of

learning, and could maintain a high completion rate to learning tasks, yet, in particular, there were several problems that were deserved careful thinking. Most students reflected that online learning decreased their learning motivation and abilities of self-management, and they could not complete the learning tasks as well as they did at schools. Besides, although students confirmed that online learning has many strengths, they also pointed out the shortcomings of online learning. It lacks effective teacher supervision, humanity online communication environment, and collective learning atmosphere.

In the second research question, we analyzed the effect of online learning on students. The results showed that most secondary school students preferred to study at school, rather than online, which was quite different from their characters as digital generation. The majority of respondents said they could not complete their learning tasks as well as they did at school. The data from the two short-answer questions showed that it seemed less convenient when students encountered difficulties during online learning, such as "hardly express the mathematical symbols or chemical equation" or "equipment problems". Furthermore, for the learning outcomes, they predicted that they could not perform better in the following exams. Hence, even the online learning during the pandemic in China went on well, there were still a lot of problems that influenced students' learning experience and achievements.

In the third research question, we explored students' attitude and opinions to online learning. The results indicated that it should be not optimistic about students' adaptability for online learning, as almost half of the respondents said the online learning at home was not very suitable for study. Contrarily, many students held a positive, confident, and expectant attitude towards the future development of the online learning, and believed it would become a mainstream teaching and learning method in the future. The entirely different attitudes precisely proved our assumption that the online learning both encountered a huge challenge during the pandemic and caught up an opportunity of boosting its status and impact in the education domain.

Information technology in education has been in development in China for more than a decade. With the policy, Education Informatization 2.0 Action Plan, issued by the Ministry of Education in 2018, China has entered the era of "Internet + Education". And intelligent and informative education has become an

important guarantee and strategic choice to lead the modernization of education. The epidemic was a severe test for the construction of e-learning. Hence, through the exploration for the three questions in this research, we found what students cared about most and what students needed most during online learning with the home isolation, which were the effective teacher supervision, collective learning atmosphere, and teachers' information literacy. It is no doubt that the answers expose the existing problems for online education, and have vital impacts on the quality of its implementation. It is that the research has a significant contribution to the field of knowledge for online learning, and provides a specific direction for development and breakthrough points of improvement for online learning.

Effective teacher supervision is an important means of enhancing the outcomes of online learning, and we believe that the establishment of online learning communities is an effective way to improve the situation. Online learning is primarily a form of self-learning, during which the self-discipline has a significant impact on learning outcomes. However, many researchers have found that students' attention is often disturbed by a variety of matters, resulting in lower efficiency and effectiveness. Assigning tasks is an outcome-based path of supervision, but there is a risk of copying and cheating (Mladenova Kalmukov & Valova, 2020). Teachers need to find some more effective methods to conduct process-based supervision. In a learning community, students naturally form bonds of mutual supervision and motivation, and this peer monitoring system can 'extends' the teacher's hands and eyes, helping them to monitor students learning effectively in exceptional circumstances.

The collective online learning atmosphere is the most complained part of e-learning by students, of which the main manifestation is a sharp reduction in social presence. On the one hand, there is less verbal communication between teachers and students than in a classroom, which seems traditional lecture-based teaching is now reintroduced in distance learning. On the other hand, the mental communication between teachers and students seems to be 'isolated' with social isolation. It is difficult to accurately communicate with eyes, expressions, body movements, emotions, feelings, and spirit. Briefly, to some extent, e-learning simplifies communication for teacher-student and student-student to words or text, without richer human face-to-face interaction. Hence, the humanity communication should be taken into consideration for the future development of

online learning, which both need technology support and more active involvement of teachers and students.

Teachers' information literacy is an essential part of online education, which has been uncovered many problems, such as boring lecturing, lack of interactions, and invalid supervision. According to the regional experience, we suppose that teachers should learn and utilize diverse distance education applications to enhance their information literacy. They should make full use of various online resources and multimedia technologies to execute rich interaction and communication. Most importantly, teachers should deeply think and explore online pedagogies, rebuild the e-learning patterns, style, and online class culture, so that they could always provide students with high-quality education, no matter what the form is (Mu & Wang, 2020).

It is foreseeable that blended online and offline teaching will be the main mode of teaching in schools and colleges for a long time to come. This pandemic has brought a huge challenge to online education around the world, and it is also a catalyst for the development. Therefore, it is necessary for the basic education school teachers, who already have more than two months of experience in online teaching, to widely and actively engage in the information era.

Acknowledgements

Many thanks to Mr. Xu, Mrs. Tian and several other teachers for their help and support in the process of data collection. The research is funded by the China National Education Scientific Planning Project (BHA190127).

References

Al-Okaily, M., Alqudah, H., Matar, A., Lutfi, A., & Taamneh, A. (2020). Dataset on the Acceptance of e-learning System among Universities Students' under the COVID-19 Pandemic Conditions. *Data in Brief*, 32, 106176. https://doi.org/10.1016/j.dib.2020.106176

Baladrón Pazos, A. J., Correyero Ruiz, B., & Manchado Pérez, B. (2020). Digital transformation of university teaching in communication during the COVID-19 emergency in Spain: an approach from students' perspective. *Revista Latina de Comunicación Social*, 78, 265-287. https://doi.org/10.4185/RLCS-2020-1477

Chen, H. W., & Liu, L. (2021). Survey and Analysis of the Current Situation of Online Teaching during the Prevention and Control of 2019-nCoV Epidemic in Inner Mongolia Autonomous Region. *Journal of Chifeng University (National Science Edition)*, (02), 89-94. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDAUTO&filename=CFXB202102019&v=Y9T2uUSM%25mmd2FqmX%25mmd2FapP0TCa9lLqc1nJIrNboYKt%25mmd2FnHzmbK1r%25mmd2FNItSySf8cOq8ZI1fV5

Fu, W. D., & Zhou, H. Y. (2020). Challenges Brought by 2019-nCoV Epidemic to Online Education in China and Coping Strategies. *Journal of Hebei Normal University (Educational Science),* (02), 14-18. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDLAST2020&filename=HSJY202002005&v=m6DiTDDPF7%25mmd2ByXtEn9Fg5yQHWe%25mmd2F6y%25mmd2B8tXRC4J1fA93XjnmFx%25mmd2BcfW2pyxAF1VJ%25mmd2B%25mmd2FH1

Gao, Sh. G. (2020). Exploring the Practice of Learning at Home and Ways to Transformation. *Educational Science Research,* (07), 5-11. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDLAST2020&filename=JYKY202007003&v=tuYLALU8kfV53WNMZeqK%25mmd2Bj49m%25mmd2FN%25mmd2FZBLxBmBuwWA69YSctn7093qleGjeLpNyIF%25mmd2BC

Jiao, J. L., Zhou X. Q., & Chen Z. X. (2020). Case Analysis of the Online Instruction in the Context of "Classes Suspended but Learning Continues" for Plague Prevention. *China Educational Technology,* (03), 106-113. http://kns.cnki.net/kcms/detail/11.3792.G4.20200228.1633.002.html

Li, Y. X., Wang, F. Q., & Chai, Y. W. (2021). The Impact of Children's Online Learning on Parents' Spatio-temporal Behavior during COVID-19 Pandemic: A Case Study of Shuangjing Subdistrict, Beijing. *Urban Development Studies,* (03), 35-42. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDAUTO&filename=CSFY202103006&v=M7ihUTRWHQr%25mmd2BmG6RFEd6yQixFoL3Zv06%25mmd2FRRQJ2E8bc2VgTaciUbLVuoddG67RU2L

Liu, L. P., & Sun, J. (2020). Teaching of Self-sufficiency: New Thinking of Online Teaching during Epidemic Prevention and Control. *Journal of Tianjin Normal University (Social Science),* (05), 14-18. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDLAST2020&filename=TJSS202005003&v=QSnhn5zMISS7Ja8AJMCEu2mtoYo79dectwnpFTaruDNSvR0XE2heH0h38SGj9ljT

Ma, X. L., Liang, J., Li, X. W., & Su, Y. Y. (2019). An Empirical Study on the Effect of Group Perception on Online Collaborative Learning. *e-Education Research,* (05), 81-89. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDLAST2019&filename=DHJY201905013&v=fBmNC0ZSpqbvTCe%25mmd2F40sbr7PznAtYOqlSiu9Mh0GG5XVvGFwpYWC7pbd%25mmd2BobZY9bQk

Mladenova, T., Kalmukov, Y., & Valova, I. (2020). Covid 19-A Major Cause of Digital Transformation in Education or Just an Evaluation Test. *TEM Journal, 9*(3), 1163-1170. https://doi.org/10.18421/TEM93-42

Mu, S., & Wang, Y. N. (2020). Turning "Crisis" into "Opportunities": How Emergency Online Teaching Moves Towards Systematic Online Teaching. *Modern Distance Education Research,* (03), 22-29. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDLAST2020&filename=XDYC202003003&v=zuIQi9r6V1FUK9T7OZFHCK%25mmd2BJFKA0JCpahnuSVv%25mmd2BvKjxf%25mmd2B5wxqtNvtFzSrpmvXTVV

Nenko, Y., Kybalna, N., & Snisarenko, Y. (2020). The COVID-19 Distance Learning: Insight from Ukrainian students. *Revista Brasileira de Educação do Campo,* 5, e8925. https://doi.org/10.20873/uft.rbec.e8925

Saefi, M., Fauzi, A., Kristiana, E., et al. (2020). Survey data of covid-19-related knowledge, attitude, and practices among indonesian undergraduate students. *Data in Brief*, 31, 105855. https://doi.org/10.1016/j.dib.2020.105855

Song, L. Q., Xu, L., & Li, Y. X. (2020). Precision 0nline Teaching + Home Study Model: A Feasible Way to Improve the Quality of Study for Students during Epidemic. *China Educational Technology*, (03), 114-122. http://kns.cnki.net/kcms/detail/11.3792.G4.20200310.1628.032.html

Sulisworo, D., Fitrianawati, M., Maryani, I., et al. (2020). Students' self-regulated learning (SRL) profile dataset measured during Covid-19 mitigation in Yogyakarta, Indonesia. *Data in Brief*, 33, 106422. https://doi.org/10.1016/j.dib.2020.106422

Teng, Y. Y. (2013). A Review of Social Presence Research. *Modern Educational Technology*, (03), 64-70. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFD2013&filename=XJJS201303014&v=EF4oFdSfhvqj5D20BstwXGsXbiPidpSHhsKG%25mmd2BjrYUk%25mmd2BQ2tt2dv2kvFP6%25mmd2BEelW5oz

Velichová, L., Orbánová, D., & Kúbeková, A. (2020). The COVID-19 Pandemic: Unique Opportunity to Develop Online Learning. *TEM Journal*, *9*(4), 1633-1639. https://doi.org/10.18421/TEM94-40

Wang, D. D., Wang, H. B., Zhang, W., Wang, H. R & Shen, X. P. (2020). Research on Online Teaching in the Period of "Suspending Classes without Stopping Learning" ——Based on 33,240 Online Surveys across the Country. *Modern Educational Technology*, (03), 12-18. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDLAST2020&filename=XJJS202003003&v=f2fXF6mard%25mmd2Fs0eiVq6LXptEhLcA082j86vHSD1IRU2UD0kUwX23uV%25mmd2BjVNIm2C3nP

Xie, Y. R., Qiu, Y., Huang, Y. L., &Wang, Q. L. (2020). Characteristics, Problems and Innovations of Online Teaching of "No Suspension of Classes" during the Period of Epidemic Prevention and Control. *e-Education Research*, (03), 20-28. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDLAST2020&filename=DHJY202003005&v=bBZ%25mmd2FuYnRcpxb4hqjNE%25mmd2BUFgf3XUYeTTkTlWqWh%25mmd2F5%25mmd2FTtZnvo7vGIfYH%25mmd2Fvdbys2Lrk4

Yang, X. Z., & Zhang, Y. J. (2020). Analysis on Online Teaching and Online Training of Primary and Middle School Teachers under Epidemic Prevention and Control. *Modern Educational Technology*, (03), 5-11. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDLAST2020&filename=XJJS202003002&v=f2fXF6mard8Fh7in4Bz%25mmd2F1IJeGngYYzlzoGG6qUCgjgZMSygbg8KUUG6qVfJxbPI3

Zeng, L. W. (2020). Analysis of the Effectiveness and Influencing Factors of Online Teaching in the Context of Epidemic Prevention and Control----Based on a Survey in Universities in Guangdong Province. *Higher Education Exploration*, (07), 85-91. https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDLAST2020&filename=GJTA202007013&v=eF6X06sI8vTPTGL3fG5rV85EnimAE0V9NMi72EmihzWw6Azf3ADskBUpouPdLRMf

Zou, Y. Y., Li, Ch. J., & Xie, Y. R. (2020). "Bay Area Pattern"of College Online Teaching During the Epidemic Period: Construction and Implementation. *China Educational Technology*, (04), 22-28. http://kns.cnki.net/kcms/detail/11.3792.G4.20200320.1423.002.html

Article Information

Received on March 28th, 2021
Accepted on April 06th, 2021
Published on April, 28th, 2021

Author Contributions: Tian-Zi Xu was responsible for the preparation, collecting, analysis and interpretation of the questionnaire; writing and reviewing the content of the manuscript. Tian-Zi Xu was also responsible for approving the final version to be published.

Conflict of Interest: None reported.

Article Peer Review

Double review.

Funding

The research is funded by the China National Education Scientific Planning Project (BHA190127).

How to cite this article

APA
Xu, T. Z. (2021). How do students view online learning: an empirical study of online learning during the Covid-19 Pandemic. *Rev. Bras. Educ. Camp.*, *6*, e11853. http://dx.doi.org/10.20873/uft.rbec.e11853

ABNT
XU, T. Z. How do students view online learning: an empirical study of online learning during the Covid-19 Pandemic. **Rev. Bras. Educ. Camp.**, Tocantinópolis, v. 6, e11853, 2021. http://dx.doi.org/10.20873/uft.rbec.e11853