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Article abstract

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Shifting Conversations on Online Distance Education in South Korean Society During the COVID-19 Pandemic: A Topic Modeling Analysis of News Articles

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Abstract

This study explored the dominant discourses on online distance education (ODE) that emerged in South Korean society before, during, and after the COVID-19 pandemic. The authors conducted a topic modeling analysis of 8,865 news articles published by 24 South Korean media outlets between 2019 and 2021. Using the Latent Dirichlet Allocation (LDA) algorithm and social network analysis software (NetMiner), the top five topics and the top ten words associated with each topic were identified from each period. The authors observed significant changes not only in the number of news articles but also in the depth of the conversations published each year. The results have revealed several key points. First, ODE, previously considered marginal and abnormal, gained in normality across all educational levels in Korean society. Second, ODE discourses have been shaped by the unique cultural, historical, and technological infrastructure in South Korea. Third, a clear division between social-justice-oriented and business-oriented ODE discourses reflect a persistent inequality in Korean society. Finally, ODE discourses matured in 2021, with more critical and realistic perspectives on both the positives and negatives of ODE. The useful implications of such insights for post-pandemic ODE research and practice are further discussed.

Keywords: distance education, online education, COVID-19, topic modeling, news Big Data, South Korea

Introduction

Online distance education (ODE) is a well-established educational phenomenon that originated decades ago alongside the advent of the Internet (Lee, 2017). Since then, there has been a significant increase in online courses and student enrolment worldwide (Palvia et al., 2018; Seaman et al., 2018). ODE proponents have highlighted its accessibility and flexibility, citing "anyone, anytime, anywhere" as a slogan; the potential of online communications for enhancing pedagogical relationships has been celebrated (Lee, 2021a). However, in the broader social context, where face-to-face instruction is believed to be the gold standard for education, ODE has been regarded as unconventional, abnormal, and inferior (Stapleford & Lee, in press). Online degrees have often been viewed less favourably than traditional degrees by various stakeholders (Fain, 2019; Wilkes et al., 2006). As well, high drop-out rates and low learner engagement have been noted in many poor-quality online courses, particularly those mass produced by for-profit institutions (Baum & McPherson, 2019).

Despite the increased academic discussion and practice-oriented efforts among scholars and practitioners to improve ODE quality and make it equal (or superior) to face-to-face education, the public was never particularly interested in nor substantially engaged with ODE. Thus, the deficit views on ODE remained unchallenged for decades until the recent COVID-19 pandemic brought ODE to the forefront of public debate. With social distancing measures in place, educational institutions turned to ODE (Bozkurt & Sharma, 2020; Lederman, 2020; Lee et al., 2021a; Rapanta et al., 2020). Many institutions benefited from adopting ODE, sustaining their business as usual; however, their experiences were not necessarily satisfactory or successful, as they were unprepared for the sudden online shift (Bozkurt et al., 2020). Such experiences rapidly evoked conversations on ODE in the public domain.

In the UK, for example, ODE was generally well-received by the public during the pandemic, mainly due to its flexibility and accessibility, as well as the necessity of its adoption (e.g., Brassington, 2022; Owen, 2022; Woolcock, 2021). However, one of the dominant discourses surrounding ODE for the same period was focused on its value for money, with university students expressing dissatisfaction with their online learning experiences (e.g., Coughlan, 2021; Cursino & Coughlan, 2021). This dissatisfaction brought about a nation-wide petition with over 270,000 signatures calling for the UK government to intervene and make universities refund student tuition fees (UK Government and Parliament, 2020). While almost half of UK students found ODE did not provide good value for their money, most universities reported that providing ODE was not any cheaper or easier than providing face-to-face education (e.g., Adams, 2021).

Concerned about the growing criticism, some scholars tried to differentiate ODE in normal circumstances from ODE during the pandemic by referring to the latter as emergency remote teaching (e.g., Bligh & Lee, 2022; Hodges et al., 2020). However, the public appeared unaware of these conceptual distinctions, resulting in an unprecedented level of public discussion about ODE as a unified subject, through which many previously disinterested in ODE changed, developed, and consolidated their opinions of ODE. In the post-pandemic context, most institutions have returned to face-to-face education; ODE has become more integrated into all educational practices. While ODE gained normality as a legitimate mode of educational provision, the heightened interest in ODE quickly waned and diffused in many societies. Unsure about the next opportunity for the public to re-engage with ODE, the current perceptions of ODE set during the pandemic may assumably remain unchanged until then.

Therefore, despite the unique contextual conditions of emergency remote teaching, it is worthwhile to revisit the public conversations on ODE and understand how and which aspects of ODE were discussed during the pandemic. Since the pandemic lasted long enough, tracing the changes in public perceptions throughout the period can also be beneficial. Such knowledge can effectively facilitate ongoing efforts in the ODE field to envision a more transformative and democratic educational future. We systematically collected 8,865 news articles published and circulated in South Korea between 2019 and 2021 and conducted a topic modeling analysis of the news Big Data. The article reports what has (not) been discussed in those media texts before, during, and after the COVID-19 outbreak, tracing the meaningful ruptures in dominant discourses about ODE.

Research Questions

Aiming to develop a clear understanding of the public perceptions of ODE, this study sought answers to the following research questions:

- What were the main topics of ODE discourses in Korean newspapers published in 2019, 2020, and 2021?

- What were the meaningful changes in ODE discourses in Korean newspapers between 2019, 2020, and 2021?

Literature Review

This section highlights historical changes in general perceptions towards ODE.

General Perspectives on ODE Before the Pandemic

ODE was positively perceived as an educational alternative for students with disadvantaged and marginalised backgrounds or conditions (Lee, 2017; Zawacki-Richter & Naidu, 2016). However, it had not gained legitimacy as mainstream education (Lee, 2021). Historically, distance learners in higher education were demeaned as "back-door learners" (Wedemeyer, 1981, p. 20), since university education was primarily for children of the elite (Bower & Hardy, 2004; Xiao, 2018). From the pre-Internet period, distance education (DE, the predecessor of ODE) struggled to validate its values and earn respect equivalent to the brick-and-mortar educational provision (Garrison & Anderson, 1999; Sewart et al., 1983). Comparative studies dominated early DE literature, resulting from scholarly efforts to prove the effectiveness (or ineffectiveness) of DE compared to on-campus education (Zawacki-Richter & Anderson, 2014).

In the 2000s, the advent of the Internet highlighted the great potential of ODE for providing education to diverse student groups at a large scale (Johnstone & Tilson, 1997). New technological possibilities for group communication and collaboration offered potential solutions to the pitfalls of DE—a sense of isolation and a lack of interaction. Advanced Internet-based communication tools and increased social connectedness gradually penetrated on-campus teaching and learning activities, suggesting transformative potential not only for DE but for face-to-face education, resulting in the popularity of ODE over the past two decades (Seaman et al., 2018).

Even so, many universities (and students and teachers) did not fully accept ODE as their primary pedagogical modality for different reasons (Bower & Hardy, 2004). While on-campus education had firmly established itself as the normal and gold standard (Lewis, 2002; Nichols, 2022), ODE had to crawl in and perch on the marginalised patch of so-called, or erroneously-called, conventional education (Xiao, 2018). ODE was seen as unconventional, abnormal, and, thus, inferior to face-to-face education despite research demonstrating no significant difference between the two modalities when adequate pedagogy was applied (Russell, 1999). Nevertheless, the deficit arguments persisted until the pandemic (e.g., Baum & McPherson, 2019).

General Perspectives on ODE During the Pandemic

The pandemic forced educational institutions worldwide to adopt ODE (Arnold & Bassett, 2021, as cited in Tilak & Kumar, 2022). However, new studies during the pandemic largely repeated pre-existing conclusions. Scarce examples acknowledged the long history of ODE and its scholarship; the exception includes Pregowska et al. (2021) who stated that "surprisingly, distance education is quite an old concept" (p. 1). In this new research climate, like deja vu, the pandemic literature increasingly included studies comparing the effectiveness of face-to-face and online instruction (e.g., Aristovnik et al., 2020; Müller et al., 2021).

Unsurprisingly, there were few new insights gained; the same conclusions previously drawn by the pre-pandemic literature were repeated. For example, it has been well-known in the field that student and educator readiness is a critical factor for the acceptance of ODE (e.g., Junus et al., 2021; Rashid & Yadav, 2020). Isolation, anxiety, and the digital divide have been cited as significant hindrances to successful ODE experiences. Students and teachers both found that student academic progress was impeded in unprepared and unsupported ODE contexts (Al-Mawee et al., 2021).

On the other hand, the pandemic noted the advantages of ODE, such as flexibility and convenience (Lee et al., 2021b; Stevanović et al., 2021). These positive perceptions have also been shared among teachers and students from the disciplines where ODE was never considered a legitimate option, as when face-to-face instruction was deemed necessary (e.g., Al-Balas et al., 2020). The aspiration to innovate and transform higher education through ODE has become more vital than ever (Bower & Hardy, 2004).

(New) ODE Terminologies

Efforts to distinguish terminologies in ODE have been ongoing. For example, Singh and Thurman (2019) traced 46 terms relevant to ODE. The pandemic introduced terms like emergency remote education (ERE) or emergency remote teaching (ERT) to distinguish it from normal ODE (see, Bozkurt et al., 2020; Hodges et al., 2020). Many have accepted ERT to signify the unprepared transition from face-to-face to online instructional modality without careful curriculum, instruction, and organisational planning (Hodges et al., 2020; Radovan & Makovec, 2022).

However, ERT and ODE share similarities in practice, leading some researchers to argue that ERT is a branch of ODE that emerged as a response to a crisis (Bligh & Lee, 2022; Smalley, 2021). ERT shares both positive (e.g., flexibility and accessibility) and negative (e.g., a sense of isolation and a lack of self-regulated learning skills) aspects of ODE. New terminologies are continuously and rapidly coined, reflecting the interest in the field. Following the upgraded status of ODE from abnormal to normal, a conversation about the convergence of face-to-face and online instructional modalities has given rise to terms like hybrid learning and HyFlex learning (e.g., Bozkurt et al., 2022). Both blended and flipped learning have distinctive design features regarding their instructional elements, sequences, and

approaches. Nevertheless, even before the pandemic, it was frequently observed that they were interchangeably used without clear distinction in ODE literature (Hew et al., 2019; Zawacki-Richter et al., 2019). Unsurprisingly, they are now all used as the same in the public domain.

Despite the increased conceptual confusion in ODE (Johnston, 2020), the integration of ODE into the mainstream educational sectors has been welcomed (Bhuwandeep & Das, 2020; Bond et al., 2021) as what Lewis (1997) envisioned a division between conventional and unconventional education has gradually blurred.

Research Methods

Data Collection

This study utilised BIGKinds to collect news articles from 24 media outlets in South Korea. Korea Press Foundation (KPF), a public organisation established as Korea Newpaper Center in 1962, has led rapid transformations in the news media environment in Korea. In 2016, KPF built BIGKinds, a news Big Data research solution drawing from the news to support the public in effectively collecting, storing, and analysing news content for different purposes. To date, BIGKinds has provided about 80 million items of news content published by all major media outlets in Korea (N = 54) since 1990. Following BIGKinds' user guidelines for news Big Data research, we further selected 24 media outlets to include in our study to make our analysis feasible. The inclusion criteria were devised to consider each outlet's domestic influence and number of publications. First, we selected nine regional newspapers with the most extensive readership in each of the nine regions in South Korea to reflect nation-wide public discourses. We further chose nine newspapers with nationwide readership, equal to the number of regional newspapers and based on the order of their publication and subscription numbers. We also included two newspapers specialising in business news, and four TV news outlets to cover different topical and media characteristics of those outlets.

Table 1

Media Outlets Chosen for Data Collection

Media type	No.	Selected media outlets
National newspaper	9	Kyunghyang Shinmun, Dong-A Ilbo, Munhwa Ilbo, Seoul Shinmun, Segye Ilbo, JoongAng Ilbo, Chosun Ilbo, Hankyoreh, Hankook Ilbo
Regional newspaper	9	Joongboo Ilbo, Kangwondomin Ilbo, Jungbu Maeil, Chungcheong Today, Maeil Shinmun, Busan Ilbo, Jeonbukdomin Ilbo, Jeonnam Ilbo, Jemin Ilbo
Business newspaper	2	Maeil Business, Korea Economic Daily
TV news outlet	4	KBS, MBC, SBS, YTN

To establish a comparative perspective, we collected news articles published before and after the COVID-19 outbreak and divided them into three separate annual periods—2019, 2020, and 2021. We

searched all news articles that included "online distance education" or equivalent search terms in their titles, as follows:

- distance education, distance learning, distance teaching, distance course, online education, online learning, online teaching, online course, cyber education, cyber learning, cyber teaching, cyber course, e-learning, remote education, remote learning, remote teaching, remote course, untact education, untact learning, untact teaching, and untact course[i].

The initial search resulted in a total of 10,157 news items. After removing duplicates, personal affairs, and event announcements, we first reviewed 9,600 news titles. An additional 735 articles that focused on foreign news or the following content were excluded:

- specific stock items, corporate products, advertisements, and promotions

- individual celebrities' and companies' announcements and events

- student recruitment and job advertisements

- representations of celebrities' posts on social networking sites

- issues and accidents unrelated to distance education (e.g., school lunch).

The selection process, following the above exclusion criteria, resulted in 8,865 news articles—239 for 2019, 6,504 for 2020, and 2,122 for 2021, with a noticeable increase in the number of articles published in 2020 compared to 2019. The first and second authors of this article (who speak Korean as their first language) were responsible for the initial search and selection process, and all results were cross-checked between the two.

Data Analysis

We performed a topic modeling analysis to identify key topics in the collection of news articles and their changes across the three periods. Based on the assumption that the composition of topics is a latent variable to be inferred, topic modeling analysis uses a set of observed variables to infer the desired latent variables. Using social network analysis software NetMiner, we first filtered out all the words in the selected news texts, not in the noun form, via the programme's morphological analysis function. We also removed single-word expressions whose meaning could not be reliably defined without further context.

A series of pre-processing measures made the analysis more reliable. For example, term frequency-inverse document frequency (TF-IDF) value for each word is calculated by retrieving the frequency of the term in each document and the scaled inverse fraction of the frequency of documents containing the term. A high TF-IDF value indicated a strong relationship between the term and the associated documents, whereas a low value denoted commonly used expressions (e.g., distance, education, COVID, spread) that were less useful in distinguishing one document from another. Thus, all the words with the TF-IDF value of 0.1 or less—stop words—were removed.

We first extracted all keywords frequently included in the collected news articles and reviewed them from the 1st keyword (i.e., class) mentioned 54,017 times across the 8,865 news articles, to the 500th keyword (i.e., group) mentioned 474 times. We created three keyword lists based on the review results

(i.e., synonyms, exclusions, definitions) to refine our topic modeling analysis method. We used the Latent Dirichlet Allocation (LDA) algorithm ($\alpha = 0.1$, $\beta = 0.01$), a statistical text processing method that identifies the proportion of topics in the collected texts and the probability of each word belonging to any given topic. In the process of identifying the latent topics, re-sampling frequencies were set as 1,000, resulting in five as the optimal number of topics to be discovered from each of the three periodic datasets.

To evaluate the clustering performance of the analysis, we calculated the silhouette coefficients, which were 0.910, 0.924, and 0.882 for the three periods, respectively. A silhouette coefficient close to 1.0 indicates effectiveness; the coefficients decreased gradually as we increased topic numbers. We repeated the topic modeling analysis and reviewed the results—five identified topics and fifty top keywords most probably associated with each topic—three times to further refine our analysis by updating the keyword lists. We identified and named the top five topics from each period and extracted the top ten words with the highest weights for each topic.

Results

In 2019: Discourses Before the COVID-19 Outbreak

Figure 1

Five Topics Extracted From 2019 News Articles (N = 239)
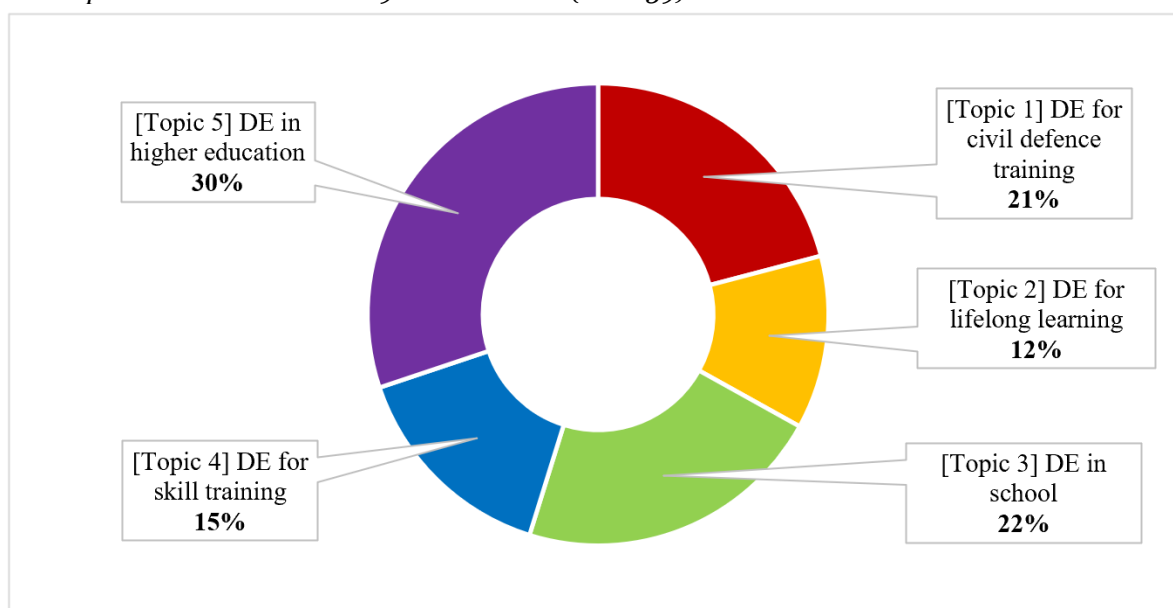
The adoption of DE for civil defence training was the first topic identified in 239 news articles concerning ODE published in 2019. In South Korea, historically and consistently exposed to the political tension and threat posed by the North Korean government, there has been an ongoing effort to increase national civil defence capabilities, with an annual budget of 43 trillion won ($40 billion) allocated in 2018. Some regional civil defence training programmes that had long been operated using physical facilities were moved online in 2019. The top 10 keywords associated with the topic (Table 2) suggested that it was aimed to increase the *cost-effectiveness* of such programmes and relieve the *burden* of both

training organisers and participants. Subsequently, the ID *authentication* of participants in the online *assemblies* appeared to be one of the major interests discussed in the related news. These results showed the importance of monitoring trainee attendance in those newly set online programmes. A total of 21% of the 239 news articles (*n* = 50) on DE published in 2019 dealt with this topic.

Table 2

Extracted Topics and Keywords in 2019

Category	Topic 1		Topic 2		Topic 3		Topic 4		Topic 5	
Topic	DE for civil defence training		DE for lifelong learning		DE in school		DE for skill training		DE in higher education	
1	Civil defence	0,066	Certificate	0,027	Student	0,047	Safety	0,026	University	0,033
2	Training	0,048	Free of charge	0,027	Class	0,035	Health	0,02	Agreement	0,015
2	Authentication	0,024	Psychology	0,022	School	0,032	Society	0,016	Cyber university	0,014
3	Emergency call	0,01	EdTech	0,02	Ministry of Education	0,014	Certificate	0,014	Foreign	0,011
4	Cost-effectiveness	0,009	Counsellor	0,019	Professional training	0,013	Welfare	0,012	Platform	0,01
5	Burden relief	0,009	Personal	0,016	Teacher	0,011	Drone	0,012	Start-up	0,008
6	Subject	0,008	Leakage	0,011	Office of Education	0,01	Medical	0,011	Business management	0,008
7	Safety	0,007	Member	0,011	English	0,009	Exam	0,01	Investment	0,008
8	Assembly	0,006	Employment	0,01	Subject	0,009	Hospital	0,007	Internationalisation	0,007
10	Place	0,006	International	0,007	Innovation	0,007	Risk	0,007	Collaboration	0,007

Topics 2 to 5 were concerned with ODE provisions at different levels of education—Topic 2, lifelong learning; Topic 3, school learning; Topic 4, advanced skill training; and Topic 5, higher education. The extracted keywords and associated news articles on each topic revealed the meaningful differences in the public discourses concerning ODE provisions in different educational contexts. For example, in lifelong learning contexts, participating in ODE often provided *internationally* recognised *certificates* (a *psychological counsellor* certificate being the most frequently mentioned in the news articles). Along with the increased number of open courses, there were conversations about some of the DE programmes being *free of charge* though those programmes experienced security problems, including *leakage* of the *personal* information of their *members*.

Regarding ODE in school settings, the *Ministry of Education* and the regional/local *Offices of Education* appeared to be leading parties in the adoption and implementation of ODE. *Students* and *teachers* also appeared as the main subjects in ODE, and the need for teachers' *professional training* was much discussed. In 2019, *English* was the main *subject* using ODE, which was perceived as an *innovative* and exceptional practice. In the context of ODE for advanced skill training in *safety*, *health*, *medical*, as well as *social welfare* subjects, more advanced technology such as small *drones* was mentioned. Managing and reducing associated *risk* to practical skill training at workplaces like *hospitals* appeared to be one of the core concerns.

There are 19 *cyber universities* specialising in (and competing for) ODE provisions across the Korean higher education sector. In 2019, most news articles concerning ODE featured the business-oriented achievements and promotional information of those for-profit universities. As keywords suggested, setting up an *international collaboration* or *agreement* with *foreign* organisations like universities was reported as top news. *Investments* in new online learning platforms (often *start-up* edtech companies) were considered important for *business management*. The largest number of new articles on ODE published in 2019 (*n* = 72, 30%) were categorised into this topic group, indicating that the for-profit nature of ODE was salient in the Korean higher education context before the pandemic. Such ODE business was exclusively the concern of and operated by those special universities, given the absence of conventional universities in the discourses.

In 2020: Discourses During the COVID-19 Outbreak

Figure 2

Five Topics Extracted From 2020 News Articles (N = 6,504)
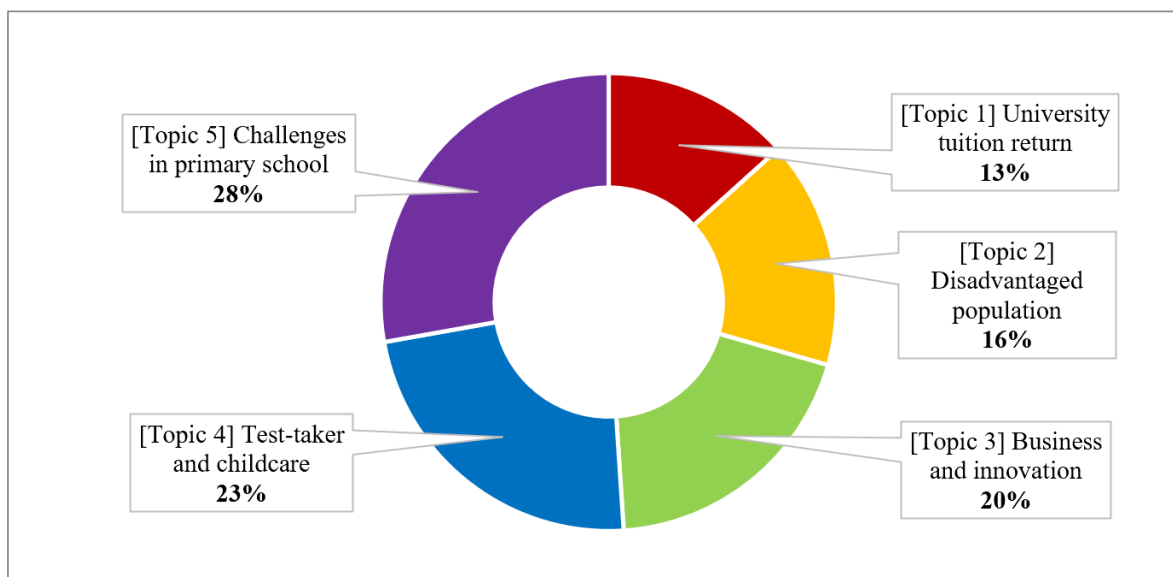
Unsurprisingly, with the outbreak of COVID-19 in January 2020, the number of news articles concerning ODE provisions increased dramatically (from 239 in 2019 to 6,504 in 2020). ODE quickly gained its normality, legitimacy, and necessity across all educational sectors in Korea. The five topics identified in the 2020 news articles can be found in Table 3—university tuition return (movement), disadvantaged population, business and innovation, test-taker and childcare, and challenges in primary school.

Table 3

Extracted Topics and Keywords in 2020

Category	Topic 1		Topic 2		Topic 3		Topic 4		Topic 5	
Topic	University tuition return		Disadvantaged population		Business and innovation		Test-taker and childcare		Challenges in primary school	
1	Professor	0,034	Child	0,013	Business	0,012	Private institute	0,025	Connection	0,012
2	Semester	0,019	Adolescent	0,012	Company	0,012	College entrance test	0,02	Two-way	0,009
2	Tuition fees	0,017	Disabled student	0,009	Future	0,01	Pre-school	0,02	Teacher	0,009
3	Term start	0,015	Multicultural family	0,008	Digital	0,008	Test	0,013	Professional training	0,009
4	Extension	0,011	Welfare	0,008	Era	0,007	(social distancing) Stage	0,013	Device	0,008
5	Practical training	0,011	Social class	0,006	Innovation	0,006	Superintendent	0,011	Primary school	0,008
6	University	0,01	Disadvantaged	0,005	EdTech	0,006	Emergency	0,009	Divide	0,008
7	Subject	0,008	Special education	0,005	Collaborative	0,006	Densely populated	0,007	Attendance	0,008
8	Return	0,006	Support	0,005	Market	0,005	Test site	0,007	Internet	0,007
10	Exam	0,006	Family	0,005	Solution	0,004	Test-taker	0,006	Concentration	0,004

The most salient issue was university students' dissatisfaction with the poor quality of ODE provided by their university during the pandemic, especially during the spring 2020 *semester*. Since most campus-based universities (unlike cyber universities) did not have previous experience as well as the required skills and infrastructures for ODE, students perceived the quality of ODE provision during the first semester immediately after the COVID-19 outbreak as particularly poor. In fact, most Korean universities postponed the *start of the term* from March to April, *extending* the winter break for a few

weeks hoping that the spread of the virus would soon cease (see Lee et al., 2021b). Subsequently, there was student protest and movement for *return* of *tuition fees*. Students in specific disciplines that required much *practical training* and hands-on learning were more vocal. Some complaints were directly towards particular *professors* and their practice. Although this topic, among the selected five, was least frequently featured in the 2020 news articles about ODE (n = 868, 13%), it was considered the most powerful. It resulted in actual changes in the Korea's higher education sector—many Korean universities refunded at least a small portion of the tuition fees in the first semester. Table 3 also shows that the clustered keywords of Topic 1 were clearly associated with the coherent idea of a university tuition return movement.

The second most frequently discussed topic in 2020 concerned the challenges experienced by disadvantaged populations while engaging with ODE. Diverse groups of *disadvantaged children* and struggling *adolescents* were featured in news articles, including students (a) from *multicultural families* (in Korean settings, this typically refers to families in which one or both parents are recent immigrants, often without financial, social, and cultural capital); (b) with *disabilities*; and (c) from low *social class*. Given that school lunches and dinners are free of charge in all public schools in Korea, moving classes online caused significant damage to these groups of students—not only academically and physically. Many news articles argued for effective *welfare* measures and *social support* for such families.

Ironically, the tone of news articles associated with Topic 3, Business and innovation, was rather positive and optimistic despite being published at the same time as Topics 1 and 2 above. Many articles discussed the opportunities the COVID-19 pandemic had provided in terms of the rapid development of the *edtech business* and *market*, and edtech-driven *innovation* in education. It was proclaimed that the new *digital era* (and the *future* of education) had opened. Specific *companies* (a) leading the *changes*, (b) *collaborating* with government organisations and educational institutions, and (c) providing new *solutions* were mentioned in those articles.

Topic 4 concerned the specific impacts of ODE on the experiences of college entrance test-takers and pre-school kids. The implications of the continuous shifts in *social distancing* measures and policies on these two learner groups were discussed and reported as frequently as (or as soon as) national emergency stages changed. The college entrance test is notoriously high-risk in Korean society, in which about 80% of high school graduates go to universities. Issues related to educational concerns created by the closure of *private institutes* and how to organise *test sites* that were usually *densely populated* were frequently discussed. In addition, the closure of pre-schools, which are common and affordable childcare providers in Korea, caused a range of social issues, especially for working parents and low-income families. Many news articles pointed out that infants (unlike other student groups) were unlikely to benefit from ODE provisions.

The largest number of news articles that discussed ODE during 2020 (n = 1,808, 28%) specifically focused on primary school contexts, reporting a range of challenges experienced by primary school students and teachers. The two most frequently mentioned challenges were related to *Internet connection* (or Internet disconnection) and the *digital divide*. Following the Ministry of Education's guidance, all primary schools in Korea adopted a *two-way* communication model for their ODE provisions, using telecommunication tools such as Zoom and Google Classroom during the pandemic. In this synchronous learning context, a lack of Internet connection (absence of *devices*) at home appeared to be a significant educational and social problem—subsequently, many primary schools faced low attendance rates among students from economically and socially disadvantaged families. A great

deal of news also reported a lack of teacher professional training and a decrease in student concentration levels. Thus, the pessimistic discourse of ODE was quickly circulated throughout Korean society during the pandemic.

In 2021: Discourses After the COVID-19 Outbreak

Figure 3

Five Topics Extracted From 2021 News Articles (N = 2,122)
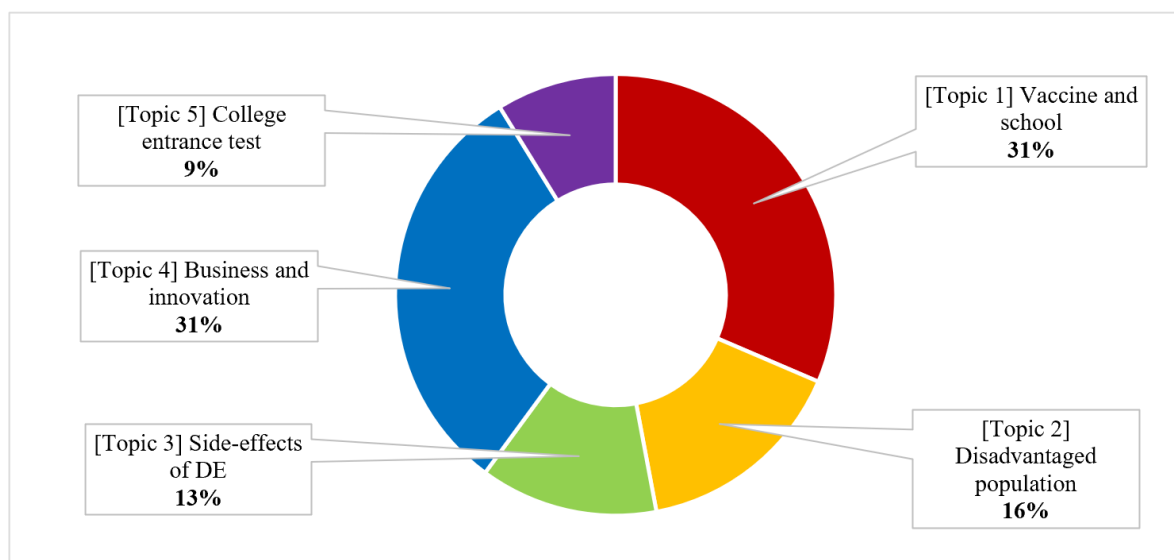
While the COVID-19 pandemic continued, most educational institutions maintained online elements at least partially in 2021. Subsequently, issues and concerns about ODE practices similar to 2020 were still discussed in the 2021 news articles, indicating that they were unresolved. Nevertheless, new topics emerged alongside serious attempts to re-open schools and businesses in Korea. As Table 4 demonstrates, *vaccine and school* was the most frequently discussed topic in 2021 (*n* = 667, 31%). The new availability of *vaccines* enabled different educational institutions, including *private institutes*, *middle schools* (i.e., high schools), and *pre-schools*, to resume in-person classes and childcare services in a more sustainable and consistent manner. Thus, the social distancing *measures* were continuously updated and reported in the news articles. The challenges experienced by disadvantaged populations while engaging with ODE remained the second most frequently discussed topic in 2021. However, one noticeable shift from the discourse of 2020 was the appearance of keywords such as *budget* and *Internet* in the 2021 discourse. This suggested that there had been some improvement in the welfare policies for these groups, evident in the specific budget conversations and the strategies to provide *devices* and *Internet*—in most cases, free of charge.

Table 4

Extracted Topics and Keywords in 2021

Category	Topic 1		Topic 2		Topic 3		Topic 4		Topic 5	
Topic	Vaccine and school		Disadvantaged population		Side-effects of DE		Business and innovation		College entrance test	
1	Private institute	0,014	Child	0,014	Cyber	0,023	Company	0,011	College entrance test	0,033
2	Pre-school	0,012	Adolescent	0,011	Safety	0,018	Digital	0,01	Test site	0,02
2	Vacation	0,011	Welfare	0,008	Invasion	0,016	Information	0,008	Test	0,018
3	Vaccination	0,011	Device	0,007	Teacher authority	0,012	Future	0,008	Test-taker	0,015
4	Middle school	0,01	Disabled student	0,007	Bullying	0,008	Innovation	0,007	Test identification	0,011
5	Infection	0,009	Social class	0,007	Information	0,007	Industry	0,006	Test taker	0,008
6	Vaccine	0,008	Internet	0,006	Protection	0,006	Smart	0,006	Test preparation	0,008
7	School starts	0,007	Support	0,005	Policy	0,006	Collaboration	0,005	Hospital	0,006
8	Measure	0,006	Difficulty	0,005	Personal	0,005	Market	0,005	Isolation	0,006
10	In-person class	0,006	Budget	0,005	Damage	0,005	BigData	0,005	COVID test	0,005

Another new topic emerged, that of the side effects of ODE. A large number of social and criminal incidents like *cyberbullying* among students in online platforms (including social networking sites) and *invasion* of *teacher authority*, including verbal and sexual insults towards teachers during online classes, were reported. *Personal information* leaks and subsequent adoption of information *protection policies* were also mentioned. Unlike 2020, in 2021, there were more long- and medium-term damages created by the prolonged period of ODE provision.

The topic of *business and innovation* remained relatively unchanged except for the appearance of new keywords *smart* and *big data*, which suggested the maturity of the discourses. While such business-oriented discussions in 2020 were still reacting to the COVID-19 outbreak, the same discussions in 2021 sounded more progressive and proactive—that is, more future-oriented. The topic of the college entrance test also remained one of the five topics in 2021. However, as both the COVID-19 vaccine and testing were made available in 2021, the conversations were more specifically concerned with the measures for COVID-19 patients who had to self-isolate on the test day. Subsequently, ways to organise test sites at hospitals and identify test-takers were discussed.

Discussion

Our analysis has led us to four key discussion points. First, our findings aligned with the existing literature, which suggested that ODE (and DE) had typically been viewed as an unconventional and abnormal educational delivery method, with in-person education seen as the norm and often considered more effective (Garrison & Anderson, 1999; Stapleford & Lee, in press; Xiao, 2018). Our analysis of news articles from 2019 supported this, as ODE was considered useful for specialised educational contexts, including civil defence training and lifelong learning, due to its accessibility and flexibility. ODE in schools and higher education was still considered uncommon—with emphasis on innovative or commercial aspects. In contrast, during the pandemic, DE became the primary (and only) educational delivery method, with the normality of ODE quickly established across all educational levels and contexts.

Second, the study demonstrated that ODE was context-specific, influenced by the unique cultural, historical, and educational characteristics of South Korea. Before the pandemic, there was a focus on using ODE for civil defence training, a major training provision in Korea not found in other countries. During the pandemic, there were ongoing discussions about the implications of ODE for the college

entrance test, which is of great importance in Korean society. Korea's advanced technological infrastructure and national-wide Internet connectivity facilitated the rapid adoption of ODE across all levels of education. The Ministry of Education's decision to guide all primary schools towards a fully synchronous modality on platforms like Zoom reflected the specific technological conditions in Korea. Therefore, while ODE as a new normal may have seemed like a global phenomenon during the pandemic, it is crucial to acknowledge that historically, its practices have been shaped and influenced by the social, educational, and technological contexts of each society (see Lee, 2018).

The third discussion point highlighted the bias present in ODE discourses during the pandemic. The division between disadvantaged learners and business-oriented actors was prominent in 2020 and 2021, with the discourse on each side distinctly different, emphasising the ongoing societal inequality. The negative impact of the pandemic-induced adoption of ODE was evident for some, while others seized the opportunity to generate profit. Previous studies have criticised the social inequality stemming from the digital divide in various countries (e.g., Azionya & Nhedzi, 2021; Azubuike et al., 2021) and the market-driven nature and consequences of ODE adoption during the pandemic (e.g., Teräs et al., 2020; Williamson et al., 2020). While this study's focus was limited to a national level, the literature has suggested that the partiality of ODE discourse is a global issue as long as social and educational inequality persists. Therefore, it is crucial to maintain a critical awareness of this division and make an effort to reduce the gap, primarily to address the negative impact on the disadvantaged, even after the pandemic ends.

By 2021, discussions on ODE had become more mature compared to the previous year. In 2019, conversations were superficial and only highlighted the positive aspects of ODE, such as its accessibility, innovation, and being free of charge. There was also an overemphasis on the for-profit and business-oriented nature of ODE provided by certain institutions such as cyber universities. There was a lack of critical analysis and consideration of the challenges associated with ODE practices. The immaturity of ODE discourses before the pandemic was likely due to a lack of public interest in ODE, with perspectives based on insufficient information rather than intentional propaganda. However, the 2021 discussions were more sophisticated and balanced, with more in-depth discussion of both merits and limitations of ODE. In particular, the challenges faced by disadvantaged student groups and the required welfare policies and support strategies were extensively reported. The negative consequences of prolonged ODE adoption were also discussed, such as the potential long- and medium-term damages caused by a lack of in-person teaching and socialisation in different educational settings.

Conclusion

The COVID-19 pandemic was an unprecedented and unique opportunity for ODE to attract public interest and engagement. The present study demonstrated that the genuine merits of ODE have been noted, and a long-existing blind suspicion and deficit discourse toward ODE, primarily rooted in ignorance and inexperience, have diminished during the pandemic. Enjoying the newly gained normality, more institutions than ever are offering ODE programmes to increase enrolment and revenue, nationally as well as globally. The integration of ODE into mainstream education is currently a global phenomenon, converging face-to-face and online modalities in everyday pedagogical practices. While the field celebrates its achievements, it is also important to remember that not everyone's ODE experiences have been positive, and subsequently, more sophisticated criticism towards ODE has

appeared. As in the post-pandemic situation, where ODE is no longer imperative, one rarely hears about ODE in the public domain; thus, the public perceptions of ODE, set through pandemic experiences, will likely stay unchanged, which was the departing point of this study.

The four discussion points above have valid implications for post-pandemic ODE practices. Most important, the field has learned that ODE practices are inherently biased and specifically bounded by participants' cultural and educational conditions—cultural and contextual sensitivity should be increased in both ODE research and practice. The results also revealed that the pandemic has left unresolved issues of the increased digital divide and misconduct, as well as hampered pedagogical relationships and outcomes. Similarly, the division between the social-justice-oriented and business-oriented discourses deserves more in-depth investigation and critical reflection to ensure that ODE is used ethically for a more democratic and inclusive educational future (rather than for-profit agendas). Given the maturity of the public understanding of ODE, it may be even harder to challenge and change them now, which requires more focused attention from ODE researchers and policymakers.

The study had some clear limitations that should be acknowledged. For example, the choice of dividing the time period into 2019, 2020, and 2021 (before, during, and somewhat after the COVID-19 pandemic) may be arbitrary. Additionally, the study only focused traditional media outlets in a single country, which limited its scope. Future studies could overcome these limitations by adopting a broader temporal lens, including more countries, and analysing non-traditional media outlets. The authors hope that the detailed methodology and discussion points presented in this paper can serve as a useful guide for future research in this area.

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[i] 'untact' was the popular term emerged in Korea, referring to the absence of physical contact during the pandemic.