

Some Reflections on Trends in Shadow Education in Korea

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Abstract

The purpose of this paper is to discuss some issues on shadow education in Korea. Korea education has shown a high performance in PISA and TIMSS. One of major elements for an excellent performance seems to be shadow education. Indeed, most primary and secondary school pupils engage in shadow education including private academies called ‘Hagwons’ and private tutoring after school education. The total cost and the ratio of participation in shadow education has sharply increased since 2015. Especially the totals costs of primary pupils at the school level and of mathematics and English at the subject level. Shadow education is an important educational issue in Korea, and excessive shadow education craze is becoming an obstacle to normalizing public education. Accordingly, the Ministry of Education is concentrating on devising education policies to reduce shadow education expenses and improve public education. This paper analyzes the trends of shadow education expenses and participation rate using the shadow data from the National Statistical Office of Korea from 2007 to 2019, and also explore some educational policies in order to reduce them at school level, where is the main factor of the increase in shadow education expenses.

Keywords: public education; education fever; equity; elementary school; private academies

1. Introduction

Since participating in the OECD's Program for International Student Assessment (PISA) in 2000, Korea has consistently maintained top grades in reading, mathematics, and science. In the recent PISA 2018, Korea ranked 2-7 out of 37 OECD countries in reading, 1-4 in mathematics, and 3-5 in science. And since 1995, Korea has maintained the top position in the Trends in International Mathematics and Science Study (TIMSS). In TIMSS 2019, the achievement of 4th grade elementary school students in Korea was ranked 3rd in mathematics and 2nd in science out of 58 countries, and the achievement of 8th grade middle school students was ranked 3rd in math and 4th in science out of 39 countries.

It is undoubtedly encouraging that Korea is showing high academic achievement in the world. However, there is room for debate as to whether that achievement means the excellence of Korean schooling. From a Korean insider's point of view, this is because students rely on shadow education more than public education, and in fact, most students are receiving shadow

education. Korean students study not only at school, but also after school, going to private institutes or receiving private tutoring. Therefore, Korean students study 50 hours per week, much more than the OECD average of 35 hours, and this is the longest in the world. Indeed, Korean students are living in fatigue. As a result, although students demonstrate high academic achievement, their life satisfaction and interest in academic subjects are relatively low.

Shadow education is a burning issue in Korea. Shadow education in Korea has some advantages: high achievement, customized teaching and learning, high satisfaction for customers. However, it raises some problems in education in general and school education in particular: the deterioration of public education, bigger gap between rich pupils and poor pupils, lack of high order competencies and autonomous learning due to exam-centered education, physical and mental health problems, and so on. Therefore, Korean government, Department of Education, has tried to reduce solve shadow education for a long time; however, the policy for shadow education seems to be not successful. Reflecting these social issues, Korea's National Statistical Office and the Ministry of Education have been conducting a 'Shadow Education Expense Survey' since 2007. In this survey, shadow education refers to the expenses that elementary, middle and high school students pay for supplementary education they receive outside of school for personal needs in addition to the regular school curriculum. Shadow education expenses include tuition and textbook fees, private and group tutoring, visiting worksheets, internet and telecommunication lectures (excluding EBS).

This study mainly consists of two parts. The first part examines the trends in shadow education in Korea, and the second part discusses the main characteristics and issues that appear in the trends in shadow education. This study examines the trend of shadow education in Korea through time series trend analysis of participation rate of shadow education, shadow education expenditure, and time spent in shadow education using statistical data from 2008 to 2019. Additionally, this study reveals some key characteristics that appear in the time series trend analysis of shadow education in Korea, and discusses numerous ways to solve them.

2. Trends and current situations of shadow education in Korea

2.1 Analysis data

The data of this study is drawn from "Shadow Education Expense Survey for Elementary, Middle and High Schools" organized and operated by Korean National Statistical Office and the Korean Ministry of Education. The data of 'Shadow Education Expense Survey' has been collected every year since 2007. Broadly speaking, the subjects of the survey are approximately 80,000 parents of approximately 3,000 elementary, middle and high schools (approximately 900 elementary schools, 800 middle schools, and 1,300 high schools). SKKU Private Tutoring Innovation Education and Research Center, a policy-focused research institute of the Ministry of Education, publishes a research report by receiving the necessary data from Korea's National

Statistical Office and the Ministry of Education, and the data used here is also based on this survey. According to the ‘Shadow Education Expense Survey for Elementary, Middle and High Schools’, statistical data on shadow education have been released up to year 2020, but the statistical data for 2020 has not been annualized. And due to the special circumstances caused by COVID-19, the data of 2020 cannot be seen as a general trend of shadow education in Korea, hence it was excluded in the analysis.

2.2 Trends in shadow education in Korea

2.2.1. Total amount of shadow education expenses

As shown in <Table 1>, the total amount of shadow education expenses increased from KRW 20,040.0 billion in 2007 to KRW 21,625.9 billion in 2009, then decreased to KRW 17,834.6 billion in 2015. It increased again, and in 2019, the total expense was KRW 20,997 billion, an increase of about 7.2% from the previous year. As shown in <Table 1>, the total nominal amount of shadow education expenses by students’ school level was in the descending order of KRW 9,559.7 billion for elementary school, KRW 6,181.9 billion for high school, and KRW 5,255.4 billion for middle school. In 2019, the percentage increase of shadow education expenses was approximately 10.5%, 4.0%, 4.9% for elementary school, middle school, and high school respectively, and the order of size of percentage increase was highest in elementary school, followed by middle school, then high school.

Table1: Total amount of shadow education expenses by school level (Nominal, 2008-2019)
(units : KRW 100million, %)

School level	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2018vs 2019
Total	209,095	216,259	208,718	201,266	190,395	185,960	182,297	178,346	180,606	186,703	194,852	209,970	7.2
Elementary	104,307	102,309	97,080	90,461	77,554	77,375	75,949	75,287	77,438	81,311	85,531	95,597	10.5
Middle	58,135	62,656	60,396	60,006	61,162	57,831	55,678	52,384	48,102	48,297	49,972	52,554	4.9
High	46,652	51,294	51,242	50,799	51,679	50,754	50,671	50,675	55,065	57,095	59,348	61,819	4.0
Regular High	42,973	47,853	47,512	47,640	49,083	49,045	48,756	48,713	52,632	54,810	57,181	59,384	3.7

* Values after 2017 include consulting fees

2.2.2 Total Amount of Shadow Education Expenses by Subject

As shown in <Table 2>, the total amount of shadow education expenses related to general subjects continued to decrease from KRW 17,562.7 billion in 2009 to KRW 13,505.6 billion in 2016, and then started increasing again in 2017. In 2019, it was found to be KRW 15,405 billion, an increase of 8.0% from the previous year. Regarding specific subjects related to general subjects, English and Mathematics showed the greatest amount of shadow education expenses in 2019 with KRW 6,138.1 billion and KRW 5,891.5 billion, respectively. Shadow education expenses in English, which had been steadily declining since 2009, increased again in 2018 for the first time in 9 years, and in 2019, it reached KRW 6,138.1 billion, an increase of 8.2% from the previous year. Shadow education expenses in Mathematics steadily decreased

since 2012, but started increasing again in 2017 and reached KRW 5,891.5 billion in 2019, an increase of 6.2% from the previous year. Shadow education expenses in Korean have been increasing since 2015, and in 2019, it showed an increase of 8.4% compared to the previous year, reaching KRW 1,501.3 billion. The amount of shadow education expenses in social sciences and natural sciences subjects was worth KRW 850.3 billion, an increase of 9.8% compared to the previous year.

The total amount of shadow education expenses related to arts, sports, hobbies, and liberal arts has been on the rise since 2012, where the value was KRW 3,396.9 billion. In 2019, the total amount of shadow education expenses related to arts, sports, hobbies, and liberal arts was KRW 5,427.4 billion, an increase of 7.0% from the previous year. By specific subjects related to arts and sports, hobbies, and liberal arts, the shadow education expenses for sports was the largest. The amount of shadow education expenses for sports was KRW 2,252.4 billion in 2019, an increase of 9.1% from the previous year.

Table 2: Total amount of shadow education expenses by subject
(units : 10million KRW, %)

Subject	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	'18 vs '19
General Subject	169,275	175,627	169,217	161,935	155,773	148,802	143,831	138,947	135,056	135,865	142,600	154,052	8.0
Korean	20,275	19,548	18,299	15,657	13,969	12,638	11,317	10,848	11,318	12,577	13,854	15,013	8.4
English	68,513	71,747	69,720	67,685	64,602	63,318	61,497	58,348	55,443	54,250	56,729	61,381	8.2
Mathematics	56,081	59,703	59,260	59,024	60,200	57,762	57,683	55,932	53,636	53,931	55,479	58,915	6.2
Social Sciences, Natural Sciences	13,720	14,519	12,508	10,834	8,991	7,148	6,799	6,703	7,025	7,420	7,744	8,503	9.8
Writing	5,838	5,426	5,447	5,545	5,311	5,734	4,785	4,988	5,390	5,274	6,030	6,525	8.2
IT	-	-	-	-	-	-	-	-	-	-	-	1,155	-
2nd Foreign Language,	4,848	4,681	3,985	3,190	2,700	2,203	1,750	2,128	2,244	2,414	2,764	3,715	34.4
Arts & Sports	39,172	40,044	38,925	38,675	33,969	36,741	37,949	38,730	44,733	49,160	50,706	54,274	7.0
Music	17,705	18,426	17,569	17,293	14,141	14,568	14,671	13,923	16,246	16,650	16,336	17,706	8.4
Art	7,329	6,732	6,577	6,149	5,763	6,850	6,604	6,586	7,352	7,889	8,718	9,119	4.6
Sports	11,241	11,989	12,005	12,526	10,957	12,089	13,534	14,886	17,163	19,548	20,652	22,524	9.1
Hobbies, Liberal Arts	2,897	2,896	2,776	2,708	3,106	3,234	3,141	3,334	3,972	5,072	5,001	4,924	-1.5

* Values after 2017 include consulting fees

2.2.3. Participation rate and time spent in shadow education

The participation rate in shadow education, which has been on a continuous decline since 2007, increased to 72.8% in 2018. In 2019, the participation rate again showed an increase to 74.8%, an increase of 1.9%p from the previous year. As shown in <Table 3>, by students' school level, the participation rate in shadow education of elementary school students decreased from 88.8% in 2007 to 80.0% in 2016, and increased to 82.7% in 2017, and in 2019, it increased again by 0.9%p from the previous year to 83.5%. Shadow education of middle school students showed an overall decrease from 74.6% in 2007 to 63.8% in 2016, but it has been on the rise since 2017. And in 2019, the participation rate was 71.4%, an increase of 1.7%p from the previous year. For high school students, the overall trend decreased from 55.0% in 2007 to 49% in 2013-2014, and then increased again after 2015 to 61.0% in 2019. Moreover, the time spent on shadow education was similar for elementary, middle, and high school students, with an average of approximately 6.5 hours.

*Table3: Shadow education participation rate by school level
(units : %, %p)*

School level	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2018vs 2019
Total	75.1	75.0	73.6	71.7	69.4	68.8	68.6	68.8	67.8	71.2	72.8	74.8	1.9
Elementary	87.9	87.4	86.8	84.7	80.9	81.8	81.1	80.7	80.0	82.7	82.5	83.5	0.9
Middle	72.5	74.3	72.3	71.1	70.6	69.5	69.1	69.4	63.8	67.4	69.6	71.4	1.7
High	53.4	53.8	52.8	51.6	50.7	49.2	49.5	50.2	52.4	55.9	58.5	61.0	2.4
Regular High	60.6	62.8	61.1	58.7	57.7	55.9	56.2	56.8	58.8	62.2	65.2	67.9	2.7

* Values after 2017 include consulting fees

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2.2.4. Average monthly shadow education expenditure by subject

The average monthly shadow education expenditure for general subjects showed a decreasing trend from KRW 197,000 in 2009 to KRW 190,000 in 2015. However, since 2016, it started increasing slightly to KRW 191,000 in 2016, followed by a 10.6% increase in 2019 compared to the previous year to KRW 235,000. The average monthly amounts of shadow education expenses per person for English and Mathematics were KRW 94,000 and KRW 90,000 respectively, accounting for 78.3% of the average monthly amount of shadow education expenses for general subjects. The average amount of monthly shadow education expenses for arts, sports, hobbies, and liberal arts was KRW 83,000 in 2019, an increase of 9.6% from the previous year. The shadow education expenses for sports courses increased by 11.7% from the previous year to KRW 34,000, accounting for 41.0% of the shadow education expenses for arts and sports.

2.2.5. Average monthly shadow education expenditure per participating student by subject

As shown in <Table 4>, the shadow education expenditure per participating student in general subjects has shown a continuous increase from KRW 297,000 in 2009 to KRW 415,000

in 2019. Regarding specific subjects, the average monthly shadow education expenses per participating student in the Korean language subject increased by 3.4% to KRW 108,000 in 2019, from the previous year. In the case of English subject, the average monthly shadow education expenses per participating student increased from 2008 but decreased slightly in 2017. It increased again in 2018, and in 2019, there was an increase by 2.8% to KRW 213,000. For Mathematics, the average monthly shadow education expenses per participating student has shown a continuous increase since 2008, increasing by 1.7% from the previous year to KRW 191,000. The average monthly shadow education expenditure per student in arts, sports, hobbies, and liberal arts has been increasing from KRW 124,000 in 2008 to KRW 189,000 in 2019, a 6.0% increase from the previous year. By specific subject, the shadow education expenditure per participating student in art decreased by 1.8% compared to the previous year to KRW 141,000, while hobby and liberal arts subjects increased by 2.7% to KRW 139,000.

*Table4: Average monthly shadow education expenditure per participating student by subject
(units : KRW 10,000, %)*

Subject	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2018vs 2019
General Subject	29.7	30.1	31.4	33.0	33.5	33.8	34.8	37.5	37.9	39.8	41.5	4.2
Korean	6.4	6.7	7.1	7.8	8.2	8.0	8.6	9.1	9.7	10.4	10.8	3.4
English	14.6	15.3	16.4	17.3	18.5	19.0	19.6	20.1	19.9	20.7	21.3	2.8
Mathematics	12.0	12.7	14.0	15.6	16.2	16.9	18.0	18.0	18.1	18.7	19.1	1.7
Social Sciences, Natural Sciences	7.0	7.0	7.6	8.0	8.0	8.4	9.5	9.6	9.6	10.3	10.8	5.5
Writing	7.7	8.0	9.1	9.6	10.1	9.8	10.1	10.1	10.1	10.8	10.9	0.8
IT	-	-	-	-	-	-	-	-	-	-	7.7	-
2nd Foreign Language,	4.2	4.3	4.9	5.4	5.9	5.4	5.8	6.2	6.7	7.1	8.0	12.5
Arts & Sports	12.9	13.5	13.9	13.6	14.7	15.5	15.3	16.8	17.4	17.8	18.9	6.0
Music	10.7	11.2	11.6	11.5	12.3	12.6	12.3	12.9	13.2	13.6	14.2	4.0
Art	10.5	10.9	11.3	12.7	13.4	13.2	14.0	13.6	13.8	14.4	14.1	-1.8
Sports	8.4	8.9	9.1	9.2	9.6	10.3	10.7	11.0	11.8	12.1	12.9	6.5
Hobbies, Liberal Arts	8.2	8.2	9.5	10.4	12.2	12.5	13.1	12.4	13.9	13.5	13.9	2.7

* Values after 2017 include consulting fees

2.2.6. Participation rate in shadow education by subject

As shown in <Table 5>, the participation rate in shadow education of general subjects decreased continuously from 2009 to 2016, but it has been increasing for three consecutive years since 2017. In 2019, it increased to 56.7 %, a 3.3%p increase from the previous year. By specific subject, Shadow education participation rate in Mathematics and English subjects increased by 3.1%p and 3.2%p respectively compared to the previous year, to 47.2% and 44.1% respectively. Furthermore, the participation rate in shadow education in Korean increased by 1.5%p to 21.3% compared to the previous year. In the case of arts, sports, hobbies, and liberal

arts subjects, the participation rate in shadow education was 44.0% in 2019, a 1.5%p increase from the previous year. By specific subject, participation rate in shadow education in sports increased by 1.2%p to 26.7%.

*Table 5: Participation rate in shadow education by subject
(units: %, %p)*

Subject	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2018vs2019
General Subject	66.2	64.8	61.6	58.6	57.2	56.4	54.7	51.0	52.2	53.4	56.7	3.3
Korean	34.4	31.4	26.2	22.3	19.8	18.8	17.3	17.7	18.9	19.9	21.3	1.5
English	55.0	52.5	49.2	46.3	44.0	42.9	40.8	39.2	39.8	40.9	44.1	3.2
Mathematics	55.8	53.6	50.2	47.8	45.8	45.3	42.5	42.3	43.3	44.2	47.2	3.1
Social Sciences, Natural Sciences	23.3	20.5	17.0	14.0	11.5	10.8	9.7	10.4	11.2	11.2	12.0	0.7
Writing	7.9	7.9	7.3	6.8	7.3	6.5	6.7	7.6	7.6	8.3	9.2	0.8
IT	-	-	-	-	-	-	-	-	-	-	2.3	-
2nd Foreign Language,	12.5	10.7	7.9	6.2	4.8	4.3	5.0	5.1	5.3	5.8	7.1	1.3
Arts & Sports	34.8	33.3	33.1	30.9	32.1	32.6	34.6	37.8	41.1	42.5	44.0	1.5
Music	19.2	18.0	17.8	15.3	15.3	15.4	15.5	17.9	18.3	17.9	19.1	1.2
Art	7.2	6.9	6.5	5.6	6.6	6.6	6.5	7.7	8.3	9.0	9.9	0.8
Sports	16.0	15.5	16.4	14.8	16.3	17.4	19.0	22.1	24.0	25.5	26.7	1.2
Hobbies, Liberal Arts	4.0	3.9	3.4	3.7	3.4	3.3	3.5	4.5	5.3	5.5	5.4	-0.1
* Values after 2017 include consulting fees												

2.2.7. Average monthly shadow education expenditure by participation type

As shown in <Table 6>, the average monthly shadow education expenditure per person for general subjects fluctuated between an increase and a decrease after KRW 197,000 in 2009, and showed an increasing trend from 2015, and in 2019, it was KRW 235,000, an increase of 10.6% from the previous year. Looking in detail of each participation type, the average monthly shadow education expenditure for private institutes was the highest among general subject types, which was KRW 163,000 in 2019, an increase of 14.4% from the previous year. The average monthly shadow education expenditure for internet and telecommunication lectures was KRW 7,000, which was 27.3% higher than the previous year, showing the highest rate of increase. The average monthly shadow education expenditure per person in arts, sports, hobbies and liberal arts has been on the rise since KRW 45,000 in 2009. By specific participation type, expense for attending private institutes was the highest at KRW 610,000, and group tutoring was KRW 6,000, an increase of 6.0% from the previous year.

*Table6: Average monthly shadow education expenditure by participation type
(units : KRW 10,000, %)*

Type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2018 vs 2019
General Subjects	19.7	19.5	19.3	19.3	19.1	19.1	19.0	19.1	19.8	21.3	23.5	10.6
Individual Tutoring	3.3	3.2	3.3	3.3	3.3	3.2	3.4	3.1	2.8	3.0	3.0	0.7
Group Tutoring	2.1	2.2	2.2	2.3	2.2	2.2	2.2	1.9	2.1	2.2	2.2	-0.9
Private Institutes	12.2	12.2	12.2	12.4	12.5	12.4	12.2	12.6	13.2	14.3	16.3	14.4
Visiting Worksheets	1.7	1.6	1.3	1.1	1.0	1.1	1.0	1.1	1.1	1.2	1.2	3.4
Internet, Telecommunication	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.4	0.5	0.6	0.7	27.3
Arts and Sports	4.5	4.5	4.6	4.2	4.7	5.0	5.3	6.3	7.2	7.6	8.3	9.6
Individual Tutoring	0.9	1.0	0.9	0.6	0.8	0.9	1.0	1.0	1.2	1.2	1.2	-0.3
Group Tutoring	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.5	0.6	0.6	6.0
Private Institutes	3.1	3.1	3.2	3.2	3.5	3.7	3.8	4.6	5.0	5.4	6.1	12.6
Visiting Lessons	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.3	0.4	0.4	0.4	3.6

* Values after 2017 include consulting fees

2.2.8. Average monthly shadow education expenditure per participating students by participation type

The average monthly shadow education expenditure per participating student in general subjects has been continuously increasing from KRW 297,000 in 2009, and in 2019 it amounted to KRW 415,000, an increase of 4.2% from the previous year. Looking in detail by each participation type, the average monthly shadow education expenses for attending private institutes was KRW 397,000 in 2019, an increase of 3.3% from the previous year, followed by KRW 342,000 for individual tutoring and KRW 235,000 for group tutoring. The average monthly shadow education expense for internet and telecommunications increased by 1.7% compared to the previous year to KRW 99,000. The average monthly shadow education expenditure per participating student in arts, sports, hobbies, and liberal arts has been on the rise since KRW 129,000 in 2009. By specific participation type, individual tutoring had the largest expenditure at KRW 216,000, an increase of 14.1% compared to the previous year. Expenditure in private institutes was the second highest spending for shadow education at KRW 175,000, an increase of 4.8% from the previous year. Average monthly expenditure on group tutoring was found to be KRW 127,000, an increase of 8.1% from the previous year, and expenditure on visiting lessons was KRW 65,000, an increase of 2.5% from the previous year, showing the smallest increase.

2.2.9. Participation rate by participation type

As shown in <Table 7>, the participation rate in shadow education in general subjects decreased continuously from 2009 to 2016, but increased again from 2017, and in 2019, it increased by 3.3%p from the previous year to 56.7%. Meanwhile, the participation rate in shadow education in arts and sports decreased from 2009 to 2012, but increased from 2013, and in 2019, it was 44.0%, an increase of 1.5%p compared to the previous year. Looking into detail

by participation type, in the case of general subjects, the participation rate for shadow education through private tutoring was the highest at 41.1% in 2019. Next, internet and telecommunication showed a slight increase of 1.5%p compared to the previous year to 7.5%. Individual tutoring decreased 0.3%p from the previous year to 8.9%, and group tutoring decreased 0.1%p from the previous year to 9.3%. In case of visiting worksheets, it continued to decrease from 21.3% in 2009 to 2013, but it fluctuated from 2014, then in 2019, it was 12.9%, an increase of 0.1%p from the previous year. By specific participation type of shadow education in arts and sports, the participation rate in private institutes was the highest as in general subjects, and the participation rate in 2019 was 34.8%, which was a 2.4%p increase from the previous year, the largest increase. Next was visiting lessons at 5.8%, individual tutoring at 5.6%, and group tutoring at 5.0%.

Table7: Participation rate by participation type
(units : %, %p)

Type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2018vs2019
General Subjects	66.2	64.8	61.6	58.6	57.1	56.4	54.7	51.0	52.2	53.4	56.7	3.3
Individual Tutoring	11.0	10.6	10.6	10.5	10.4	9.8	10.6	9.6	8.7	9.2	8.9	-0.3
Group Tutoring	11.7	11.7	11.1	10.7	10.7	10.2	10.2	8.8	9.3	9.4	9.3	-0.1
Private Institutes	46.9	45.5	43.4	41.6	40.3	39.1	36.3	35.8	36.4	37.1	41.1	4.0
Visiting Worksheets	21.3	19.5	16.6	13.4	12.5	12.7	11.6	11.9	12.3	12.8	12.9	0.1
Internet, Telecommunication	3.7	3.7	3.0	2.8	2.5	2.4	2.2	5.1	5.2	6.0	7.5	1.5
Arts and Sports	34.8	33.3	33.1	30.9	32.1	32.6	34.6	37.8	41.1	42.5	44.0	1.5
Individual Tutoring	5.1	5.1	5.0	3.8	4.8	4.9	6.0	5.7	5.8	6.4	5.6	-0.8
Group Tutoring	4.7	4.8	4.8	3.7	4.1	4.2	4.6	4.1	4.9	5.1	5.0	-0.1
Private Institutes	27.9	26.3	26.2	24.7	25.7	26.4	26.4	29.2	31.3	32.3	34.8	2.4
Visiting Lessons	1.4	1.4	1.3	1.7	0.8	0.6	0.9	5.3	6.0	5.7	5.8	0.1

* Values after 2017 include consulting fees

3. Major characteristics and issues in Korean shadow education

In Korea, the trend of expenditure and participation rate in shadow education began to gradually decrease from 2007 due to the continuous policies to suppress shadow education. However, it started to increase sharply from 2016 to a level similar to 2007. In order to reduce shadow education expenses, the Ministry of Education of Korea announced ‘Measures to Link the Korean SAT and EBS’ in 2011 and ‘Simplified Policy for University Admissions’ in 2013, taking into account the impact of university entrance exams on shadow education. In 2014, the so-called ‘Pre-Education Prohibition Act’ was enforced to strictly prohibit prior learning in schools. In contrast, private institutes, private tutoring schools, and private tutors were prohibited from promoting or advertising prior learning. From 2016, the free semester policy was implemented in middle school, where students designed their own career paths by identifying their aptitudes and talents, and took the initiative in activities for career exploration. Activities in the free semester are recorded in school documents, but the results are not reflected

in high school admissions. Although this series of policies had the effect of temporarily suspending shadow education, it clearly shows that there is a limit to quelling parents' enthusiasm for education and the desire to enter a good university.

Shadow education in Korea began to show an increasing trend from 2016, and in 2019, expenses and participation rates in shadow education increased significantly at all school levels. According to the results of the 2019 shadow education expenditure survey, the total amount of shadow education expenditure was approximately KRW 21 trillion, the participation rate was 74.8% (elementary school students 83.5%, middle school students 71.4%, high school students 61%), the average weekly time spent on shadow education was 6.5 hours, and the average monthly expenditure per student was KRW 321,000 (the average monthly expenditure per participating student is KRW 429,000). Some of the key findings of this survey are as follows.

First, the total amount of shadow education expenses for elementary school students was KRW 9.6 trillion, an increase of KRW 1.0 trillion (11.8%) from the previous year, and this showed the largest increase compared to that of middle school students which was KRW 5.3 trillion (↑ KRW 300 billion, 5.2%), and high school students which was KRW 6.2 trillion (↑ KRW 200 billion, 4.2%). As shown in [Figure 1] and [Figure 2], the participation rate of elementary school students in arts, sports, hobbies and liberal arts education was 67.4%, which is much higher than that of middle school students 26.2% and high school students 14.8%, which is much higher than that of high school students at KRW 5.5 million.

Figure 1: Participation rate of shadow education in arts and sports by school level (unit:%)

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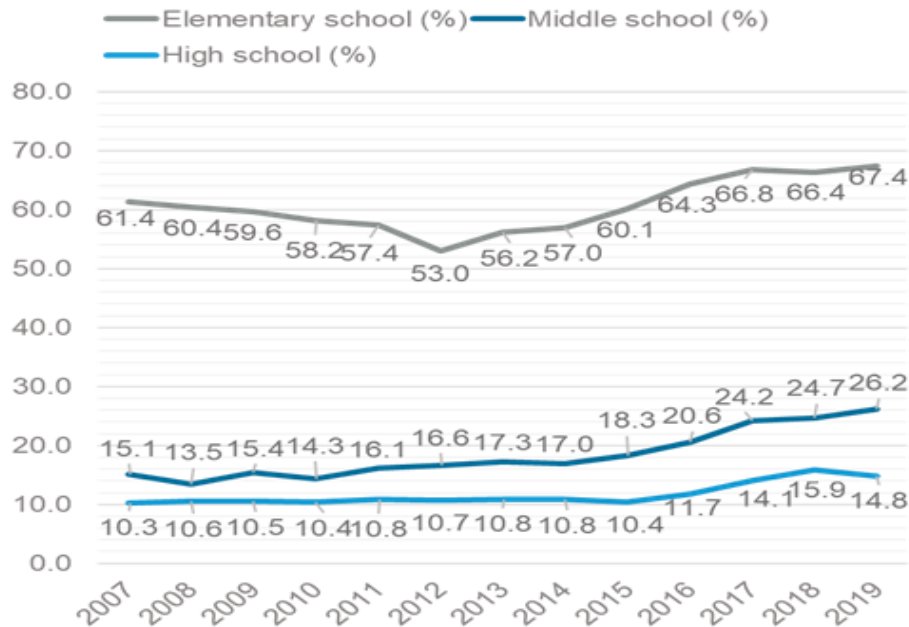
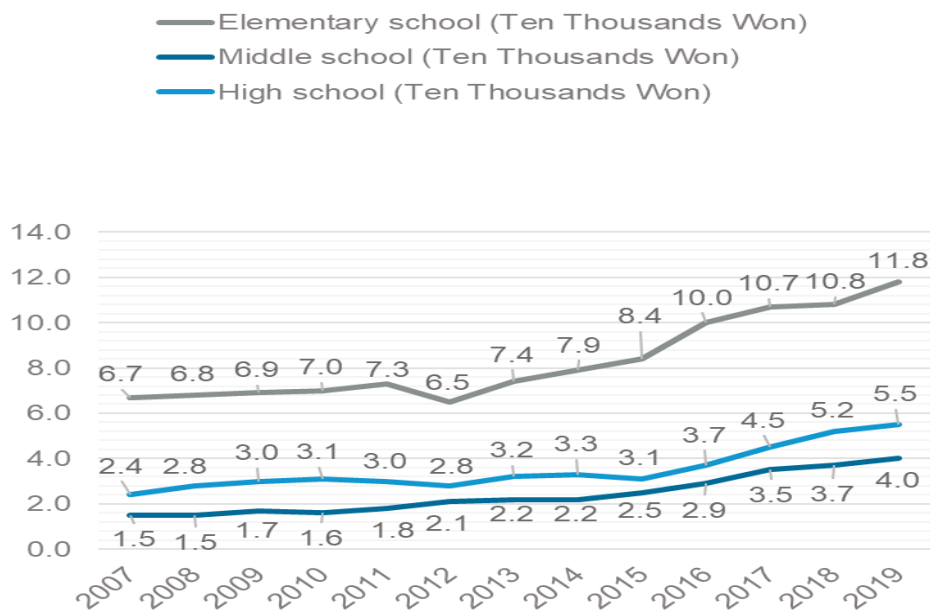


Figure 2: Average monthly shadow education expenditure per student by school level (unit: Ten Thousands Won)



Participation in the shadow education of arts and sports mainly consisted of sports and music subjects, and the most frequent participation was in the form of attending a private academy. In order to solve these problems, some concrete measures are presented as follows. These include a plan to increase the area of arts and physical activities in after-school programs, a plan to strengthen the arts and sports activities of elementary school students using various programs in the local community, a plan to cover various aspects of arts, or a plan to improve the level of arts

activities. Moreover, it is needed to supplement the educational functions of school education in elementary schools, after-school programs and care classes. If school education teaches various subjects and internalizes the value of each subject, after-school programs and caring classes should reflect the actual demands of parents and students of developing specific skills and successfully care the students (Yoo, 2020, A).

Second, as always, expenditure and participation rate in shadow education in major subjects such as English and mathematics were the largest. As shown in [Figure 3] and [Figure 4], the total amount of shadow education expenses for major subjects was KRW 6.1 trillion (↑ 8.2%) in English, KRW 5.9 trillion (↑ 6.2%) in mathematics, and KRW 1.5 trillion (↑ 8.4%) in Korean. The participation rate in English shadow education is the highest in the order of 53.8% for middle school students, 43.6% for elementary school students, and 36.3% for high school students. The participation rate for shadow education in mathematics is the highest in the order of 56.9% for middle school students, 45.6% for elementary school students, and 41.7% for high school students.

Figure 3: Average monthly shadow education expenditure in English per student by school level (Unit: Ten Thousands Won)

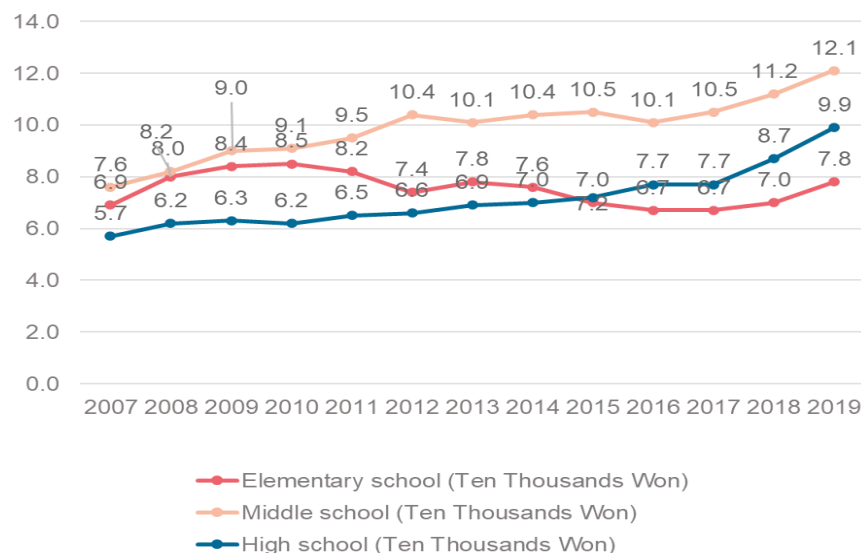
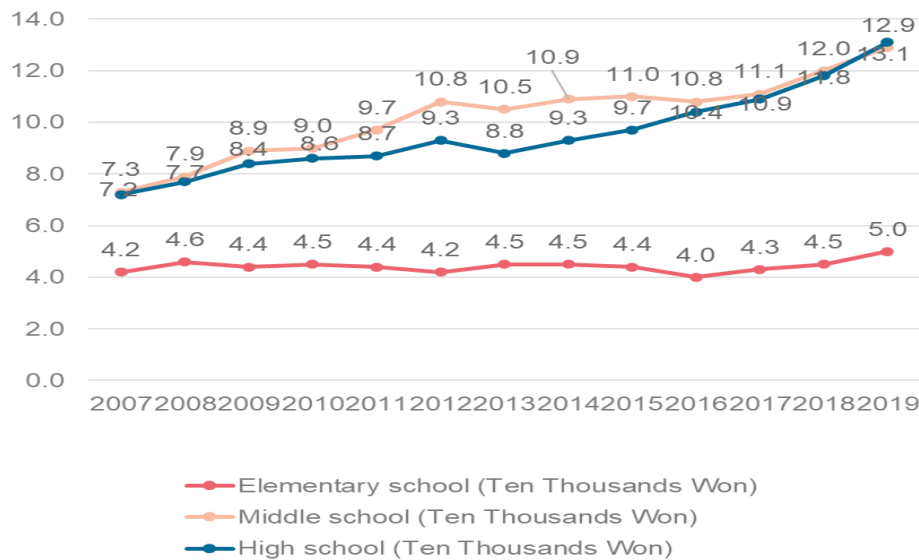


Figure 4: Average monthly shadow education expenditure in Math per student by school level (Unit: Ten Thousands Won)

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The subjects that account for the largest share of the increase in expenses and participation in shadow education in Korea are English and Mathematics. English and Mathematics are the most important subjects as well as occupying the largest proportion in the current Korean university admissions process. Therefore, parents are investing heavily in English and Mathematics shadow education strategically to get their children into better schools, especially prestigious universities. In order to solve this problem, it is necessary to strengthen the customized classes for each level of English and Mathematics subjects. Many parents in Korea respond that the reason their children receive shadow education is that, unlike schools where students of different levels take the same class, private education institutes provide customized classes according to student's level (Yoo, 2020, B). Furthermore, in order to reduce shadow education in English and Mathematics, it is necessary to optimize the level of educational content in schools and resolve the issues of university entrance.

Third, the higher the income group, the higher the expenditure and participation rate in shadow education. As of 2019, the average monthly shadow education expenditure per person for households with an average monthly income of KRW 8 million or more was KRW 539,000, an increase of 6.6% from the previous year, which was KRW 505,000. The participation rate of households with an average monthly income of KRW 8 million or more was 85.1% (an increase 1.1%p from the previous year), while for households with income of less than KRW 2 million, the participation rate was 47.0% (a reduction of 0.3%p from the previous year).

Income and shadow education expenses are closely related, and the per capita shadow education expenses of the high-income group tended to increase. However, the distribution of the sample of the survey by income is changing; the group with monthly household income of less than KRW 2 million dropped by one-third over the past 12 years, whereas the group with monthly household income of KRW 8 million or more quadrupled. This suggests that the total

amount of shadow education expenses would inevitably increase. Nevertheless, it is necessary to resolve the problem of the gap in educational opportunities between the low and high income groups. To this end, it is necessary to expand the payment of education expenses to the low-income class and expand opportunities for high-quality education such as EBS education broadcasting contents and the use of AI.

4. Summary and conclusion

Despite the high achievement level of Korean students in the world, behind the scenes, the craze of shadow education is causing physical and psychological pressure on students, economic and psychological difficulties for parents, and hindering the normalization of public education. The purpose of this study is to examine the trends and actual situations of shadow education in Korea, to reveal some characteristics and to explore ways to solve the issues.

Shadow education in Korea is ultimately related to university entrance exams, and in order to enter prestigious universities, students compete to enter excellent high schools (science high schools/gifted high schools, foreign language high schools/international high schools, private high schools). In order to enter excellent high schools, students start the competition at an early age. Rather than self-directed learning, students become dependent on private institutes that are advantageous to this competition. Thus, almost all Korean students participate in shadow education from elementary school to university admissions.

It is virtually impossible to drastically reduce shadow education in a short period of time because it is rooted in complex social issues such as a unique passion for education and a culture of driving for success. Nevertheless, efforts are required at the school level, educational policy level, and social level. First, at the school level, efforts are required to normalize and restore the quality of school education and simultaneously, build a comparative advantage to private educational institutes to restore the faith and satisfaction of students and parents. Second, at the level of education policy, stabilization and fairness of university admission policies, and active policies to improve the quality of public education - e.g., activation of after-school programs, responsible teaching for students with poor academic ability, promoting individual learning and customized education, development and dissemination of online educational contents, and etc. - need to be implemented. Third, at the social level, maturation of citizens' perceptions and changes in the social system are necessary. A mature citizenship that focuses on the well-being of children rather than excessive enthusiasm for education for their children's admission to higher schools, and supports the entire school of the neighborhood and the community rather than oneself, is required to provide high quality education. In addition, it will be difficult to fundamentally solve the problem of shadow education if people continue to focus more on the names of the universities than others' actual abilities, and the culture of supremacy in education remains.

Education in Korea has undergone many changes since COVID-19. Regardless of public or shadow education, for the first year, students had to take online classes and there were many limitations to educational activities. Therefore, expenses and participation rates in shadow education decreased significantly overall, especially for elementary and middle school students. However, a year has passed, there are signs of a slight increase in shadow education. The question of how COVID-19 has changed Korea's shadow education industry is an interesting topic, but it has not been addressed in this paper. The '2020-2021 elementary, middle and high school shadow education survey' is currently in progress, and the complete data will be released in March 2022, so the study on this is left as a future task.

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