School of Electrical Engineering, Computing and Mathematical Sciences

Socioeconomic Perspective of Shadow Education

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Declaration

To the best of my knowledge and belief, this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number HRE2020-0240

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Abstract

Private Tutoring, also known as Shadow Education (SE), refers to non-compulsory fee-paying tutoring outside of school hours, in which a pupil indulges with the intent of academic gain. The direct participants in SE are students and SE providers. The indirect participants are parents, schools and teachers. All participants play a part in the practice of SE. This study explains the practice of SE in Australia, with special reference to Western Australia.

Everywhere in the world SE is not only expanding but is also becoming more accepted by societies and integrated into the mindsets of adults. Irrespective of household socio-economic status, most families are still willing to invest in SE in the hope of giving bright futures for their children. Although governments worldwide are doing their best to curtail the size of SE by investment in public education, SE still continues to expand everywhere around the world, with Australia being no exception to it.

Threefold Research Methodology was used in this study. Firstly to understand the supply market of SE providers, websites of service providers active in Western Australia were scrutinized to extract information for 28 quantitative variables and qualitative statements on service philosophy and written testimonials. Quantitative data was analysed using SPSS, while concept maps were created for qualitative statements using Leximancer. Next, to quantify the impact of SE at the cohort level, we created a mathematical model to predict the student scores in the year 5 NAPLAN exam for various regimes of SE, using year 3 NAPLAN scores as input for various regimes of SE. Finally, the views of the four stakeholders in SE namely parents, teachers, students, and SE providers were gathered through an anonymous online focus group using the online platform FocusGroupIt. The views of all the stakeholders were triangulated to better understand the forces in play in SE industry.

High stake examinations leading to entry into specialist streams along with the parental expectations was generating a lot of demand for the SE, and this was successfully tapped in by the SE industry. This phenomenon was escalating the competition between the SE providers, ranging from global chains to individual tutors, with each offering something new to capture a market share of clients.

A simulation model was developed to study the impact of SE on NAPLAN results as students progress from year 3 to year 5. The simulation model for the optimistic scenario of SE services results in a higher percentage of students in the top NAPLAN band whilst 2% of the cohort remains below national minimum standard. Pragmatically the model can be used for comparing the quality of different SE providers and if need be to select from them in the best interest of the cohort. The discussion of various stakeholders in the focus group unearthed commonalities and disparities on the various aspect of the SE industry. All the stakeholders had reservations about online learning and were strongly in favour of face-to-face teaching. Most students reported not enjoying SE and were doing it mainly under parental pressure or for getting help with school tasks. Many SE providers were using state-of-the-art technology and were helping students gain confidence and improved scores. Although all the stakeholders found free educational resources useful, these resources were insufficient to meet all the learning needs of the pupil, hence SE will always exist.

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List of Abbreviations

ABS	Australian Bureau of Statistics
ATA	Australian Tutoring Association
ATAR	Australian Tertiary Admission Rank
CSAT	Customer Satisfaction
EBS	Educational Broadcasting System
FGD	Focus Group Discussion
GATE	Gifted and Talent Entrance
GDP	Gross Domestic Product
GTSE	Global Talent Search Examination
KEEP	Korean Education Employment Panel
KEIC	Karratha Cohort
NAPLAN	National Assessment Program for Literacy and Numeracy
NEE	National Entrance Exam
NHMRC	National Health and Medical Research Council
NMS	National Minimum Standard
NSW	New South Wales
OECD	Organisation for Economic Co-operation and Development
PC	Perth Cohort
PhD	Doctor of Philosophy
PISA	Programme for International Student Assessment
SAT	Scholastic Aptitude Test

SD	Standard Deviation
SE	Shadow Education
SEI	Shadow Education Industry
SEP	Shadow Education Provider
SPSS	Statistical Package for Social Sciences
TER	Tertiary Entrance Rank
TIMSS	Trends in International Mathematics and Science Study
UGC	University Grants Commission
UMAT	Undergraduate Medicine and Health Science Admission Test.
UN	United Nations
UNESCO	United Nations Educational Scientific and Cultural Organisation
USA	United States of America
USE	Unified State Entrance
USSR	Union of Soviet Socialist Republics
WA	Western Australia
WACE	Western Australian Certificate of Education
WLC	Waterford Literacy Clinic

1 Introduction

1.1 Introduction

United Nations Educational Scientific and Cultural Organisation (UNESCO) vision 2030 is to ensure an inclusive and equitable education for everyone. (United Nations Educational Scientific and Cultural Organization 2019). Fundamental to this vision is Right to Education which requires all member countries to provide free and compulsory education for children between the ages of 6-14 years. As per UNESCO, 60% of pupils fail to acquire basic literacy and numeracy skills even after attending school for numerous years. Hence those who can afford them tend to seek help outside the school system to gain an education in hope of leading a better life (Lee and Shouse 2011).

To supplement or complement school education private tutoring industry stimulated by the free-market system has entered into the commercialization phase. The current size of the tutoring industry worldwide is estimated to be US$173.4 billion and will cross US$273.9 billion by 2027. The size, nature, and growth rate of the tutoring industry has not been uniform even within any two countries of the same continent. For example in Eastern Europe, South East Asia, East Asia, and Sub-Saharan Africa more than 50% of pupils take tutoring whereas the numbers are low in Oceania countries (Guill and Lintorf 2019). The quality of the public school is inversely related to the size of Shadow Education Industry (SEI) (Silova and Bray 2006a, Lee, Park, and Lee 2012). However, the demand for Shadow Education (SE) is rising in west European countries and Australia with traditionally low tutoring rates (Dooley, Liu, and Yin 2018).

Shadow Education is another name for private tutoring coined by Mark Bray and has been used widely by researchers (Bray 1999, Zhang and Bray 2020). The term SE indicates that the private tutoring system is directly related to mainstream schooling. Even the changes in the syllabi and content in mainstream tutoring are tracked by SE providers (SEP). We define private tutoring or SE as fee-paying classes that pupils take in addition to regular school with the intent of academic gain. It does not include free classes that the school or any other agency might be conducting for the academic wellbeing of the students. There are three set-

ups in which SE is commonly offered. These are at the home of the tutor or tutee, or a centre managed by SEP or in online mode (Ho 2020).

The growth of SEI has been seen differently in the various studies that have been done so far (Guill and Lintorf 2019). Some welcome it as a good investment by families for enhancing the learning capacity of the children but also to prepare them for high stake exams (Dang and Rogers 2008). However few consider SE expansion as undermining the concept of free, compulsory, and quality education to all (Lewin, Jha, and Siddhu 2016). It demotivates teachers with half of the class have learned the lesson at private classes and it widens the gap between families and children that make use of SE and those who cannot make use of it (Byun, Chung, and Baker 2018).

SEI is now making small but rapid strides in every state of Australia changing the mindset of people who treat education as a commodity due to the influx of migrants from Asian countries where SE is strongly embedded in social life (Dooley, Liu, and Yin 2018). Culture of examination has also inflicted Australia (UNESCO 2018). In Australia, every child's basic literacy and numeracy skills are monitored under the National Assessment Program for Literacy and Numeracy (NAPLAN) through public examination held in years 3, 5, 7, and 9. The student found to be below the national minimum standard (NMS) set by the government are provided additional help with education. The pupil also may sit for other high stakes but non-compulsory exams in student life, such as the are Gifted and Talented Entrance (GATE) programs which decides entry into specialist streams at high school or attain scholarship of private schools. Like most countries, there is also a public exam in the final year of schooling that determines students' entry into the tertiary sector. Demand for SE is driven by these examinations (Dhall 2013, Ho 2020).

In the Australian context term, SE is not always a reflection of mainstream schooling, but it complements the schooling. Therefore, it would be more appropriate to call after-school paid classes as CATALYST rather than SE. Nevertheless, we continue to use the term SE in the thesis.

In the year 2020, the face of education changed amidst the COVID-19 pandemic. Many states had to resort to on-line classes, which results in many students left struggling with year-appropriate learning outcomes. The Victorian government is recruiting more than 4100 tutors to support 200 thousand students within the school system (Victorian Institute of Teaching

2020). This is a welcome move to imbed tutors into the mainstream school for the betterment of society.

1.2 Research Objectives

The area of SE is under researched in Australia, especially Western Australia. The main purpose of this study is to investigate the current practices of Shadow Education in Western Australia, its prevalence, ease of obtainability and usefulness. SE is a multi-faceted phenomenon involving school administration/teachers, parents, pupils, service providers and educational policymakers, with the central focus on students seeking education. Taking this into account, this project has explored the role of each facet on the practice of SE.

Research Question 1: How do schools induce practices of SE?

> This question was investigated by examining the degree to which schools endorse SE and actively participate in the same, encourage parents to engage in SE and challenges faced by schools in meeting students' educational needs.

Research Question 2: Why do parents engage in SE?

> This will be answered by exploring key reasons for parents seeking SE, what kind of SE services they prefer, what is their expectation and how this impacts their family budget.

Research Question 3: What kind of SE services are available?

> This will be unravelled by exploring the mode of operation of SE providers, their range of services, cost, quality of services and strategies for attracting clientele. SE provider's point of view will be examined by exploring support/training available to them and provision for accreditation.

Research Question 4: What are the students' perceptions and experience of SE?

> This will be scrutinized by exploring the perception of SE by students engaged/not engaged in it. For those engaged in services, we will investigate how useful, rewarding and enriching is the experience is.

Research Question 5: What is the role of educational policymakers in controlling SE?

This will be examined by exploring the strategies used by a government(State or Commonwealth) that can influence the uptake of the SE and its providers. This will include a detailed examination of strategies like examination culture, diagnostic checking, ban on school teachers on participation in SE, right to education and curfew on SE during school hours

1.3 Significance

Education is seen as a tool to build productive capacities. There is a general perception among parents that quality education helps students get lucrative jobs. Parents have become more aware and are willing to spend more on Education. With the increasing demand for education and acknowledgment of its benefits, there is a need to study the trends of shadow education as it is making education a commodity.

This study is expected to lead to a greater understanding of the complex nature of SE and key contributors to its proliferation in society. From the review of related literature, it is evident that so far, no research study has been conducted that incorporates the point of view of schools, service providers, and the primary stakeholders, the students.

This study will answer some very important questions as below.

Are students willing partner in SE? Do our schools endorse SE? In either case of a positive or negative outcome, what is best for students? What regulations are required to manage the quality of the emerging SE industry and protect its workers? What mode of SE is preferred and sustainable by students?

The present study is a modest attempt to fill the gap to some extent and provide a vision towards the booming SE industry. The study hopes to provide meaningful interpretations to the policymakers to enable the sustainable development of education as per the principles set by UNESCO.

1.4 Thesis Plan

This study is divided into six chapters: chapter one defines SE and its nature of growth in Australia. It also states the research objectives and significance of this work. In chapter two,

we provide a review of the available literature on SE with case studies of Russia, Bangladesh, Taiwan, Korea, and China. Chapter three provides a detailed description of the research methodology that includes how qualitative and quantitative data will be processed and will provide answers to the various research questions. In chapter four we provide an overview of the supply market of SE providers using fixed indicators, concepts map, and simulation model. In chapter 5, we present some common theme that has emerged in the focus group on the topic of the thesis. Lastly, we present the conclusions from this study and recommendations for future works.

2 Literature Review

2. 1 Introduction

Shadow Education (SE) or private tutoring is any kind of extra session for academic subjects that students engage in outside-school hours in exchange for the fees. It does not include any kind of unpaid extra session that child might receive from student mentors, teachers, volunteers or parents. Shadow Education is voluntarily opted by the parents at a cost for their children with the expectation of academic gains (Bray 1999, Stevenson and Baker 1992, Baker et al. 2001, Silova and Bray 2006a). Unlike mainstream schooling SE has never been compulsory by law in any of the countries. Hence SE is always the reflection of the mainstream schooling. In providing shadow education there are always four stakeholders involved, namely service providers, teachers, students and parents. In some cases, service provider and tutors can be same.

According to the Global Industry Analyst (ReportLinker 2020), the estimated global size of SE industry in 2020 shall be $173.4 billion and will increase to $279.3 billion by year 2027. The expansion of SE is now becoming a common feature in almost every country of the world. In some cases, SE start as early as at four years of age and continue till students turn eighteen years old and leave school. The SE incorporates session for Remedial, Maintenance or Extension work. The purpose of remedial shadow education is to cover up the learning gap of children reflected in school assessment. The goal of Maintenance SE is to help child keep up the pace with schoolwork. Extension SE is sought with the purpose of getting child into gifted and talented school or getting into specialised streams of elite university. The expansion of SE industry is not only leading to economic disparity between those who can access it and those who cannot access it but also undermines the concept of free and compulsory education for all children under 15 years of age.

In this chapter we present the overview of practice of SE. This chapter is organised into four sections. The first section presents studies that have attempted to quantify the effectiveness of SE worldwide with studies from Russia, Korea, Vietnam etc. The second section scrutinizes the key factors that are leading to the proliferation of SE industry world over. The third section deals with the overview of different government policies and approaches to manage the

unregulated sector of SE. The fourth section gives insight into the SE practices in Australia with special reference to WA, Perth. This is followed by conclusions.

2.2 Effectiveness of Shadow Education (SE)

Effectiveness is a relative term which carries different meanings for the various stakeholders involved. For instance in context of student effectiveness it could be getting any kind of assistance in completing school work, for parents a small achievement of child- increase of test scores at school by few marks or improved handwriting, better understanding of the content and increased self-confidence are all aspects of effectiveness. For the Teachers' effectiveness could include students completing all home task at acceptable standards and improved class results over the previous year. Effectiveness for SE providers is being able to Identify and successfully bridge the learning gap of students and subsequently seeking admission into prestigious school, specialised streams or colleges.

2.2.1 Country Specific Studies on Effectiveness

A limited number of large-scale studies have been conducted to evaluate effectiveness of SE. These studies are for countries, Russia, Korea, Vietnam, Taiwan and Bangladesh. These studies are summarized in Table 1.

Table 1: Overview of key studies on effectiveness of SE worldwide

Country	Year Level	No of Students	Results	Researcher
Korea	8	3000	No Long-Term Benefit	Su Jung (2013)
Russia	12	2938	Positive impact on High Achieving Student	Loyola & Sakharov (2016)
Taiwan	9	10322	Small gain in maths	Kuna (2011)
Bangladesh	Primary School	33229	Increased student learning	Nath (2008)
Vietnam	Upper Primary and High School		Higher gain as year level increases	Dang (2007)

Each of these studies has originated with different purposes and have varied methodology. Hence it may be inappropriate to compare these studies, but one can draw understanding of effectiveness for the intended purpose. In next section we present country specific studies, this is followed by discussion on limitations and global findings.

2.2.1.1 Russia

The 2012 Report on Education Russian Federation found that 80% of the high school Russian students enter into college. They compete for getting into prestigious elite colleges or tuition free places at public colleges. The entry into college is determined on the basis of student performance in national entrance exam or Unified State Entrance (USE) (Loyalka and Zakharov 2016). The students start preparing for USE at the start of grade 10 or earlier. The student score in Russian language and mathematics in USE determines student success into the entry into college or major.

The authors used large scale representative survey to find a link between student performance in USE and participation in SE. All the participating schools were required to have at least one 11th grade class. The survey was carried out in May 2010 in three regions of Russia. The details of the three study regions are presented below:

1. Yaroslavskaya Oblast (Moscow satellite) - Small region with poor natural resources.
2. Pskov kaya Oblast- Below average economic situation, located in north- west of Russia.
3. Krasnoyarsk Kari (Siberia) - Largest Russian territory with highest population and developed economy.

The details of the sample size from each region is presented in Table 2:

Table 2: Sample size of selected school

Region	Percent of school sampled	Student number	Classroom	School
Krasnoyarsk Krait	4.1	1147	69	46
Yaroslavskaya Oblast	8.9	986	60	42
Pskov Kaya	14.5	805	53	39

The selected 127 schools from the three regions were grouped according to region (administrative district), settlement type (rural, urban, regional centre). From each strata school survey was carried out with four types of recruits. These were grade 11 students, school principal, and Russian and Maths language teachers. Students were asked questions about their performance in school assessment, family educational and social status. Teachers were asked questions about their qualifications, in-service training and teaching methodology. School principal provided information on regulations and syllabus.

In the survey of May 2010, they tried to establish a link between student's achievement and participation in SE. The outcome variable, student's achievement was measured as the score of the student at Unified State Examination (USE) or National Entrance Exam (NEE) of 2010 in Russian language and Mathematics. Separate models were constructed for students with high and low grades in year 10 in both subjects Russian and Mathematics. Students with grade four (good) and five (excellent), in both subjects were considered as students with high grade 10 marks. Additionally, the following variables were measured.

1. Participated in Shadow Education: Students were also required to answer if they participated in either private tutoring, regular USE preparatory courses or college USE preparatory courses. Students who participated in any kind of SE were coded as "yes" otherwise "No".
2. Advanced subject study: Students were graded as advanced or basic at the start of year 11. Students in advanced level class were coded as "yes". These students would receive classroom instruction in Russian for 3/4.5 hours per week and in Maths for 6/8 hours per week. Students in basic group would receive classroom instruction for nearly half this time.
3. Teacher experience: It was evaluated using two indicators i.e. teacher experience and certification level. The teacher experience was measured on four scales 0-10 years, 11-20 years, 21-30 years and 31 years or more.
4. Teacher qualification: The teacher certification was also measured on four-point scale. These were no certification, lowest certification level, middle certification level and highest certification level.
5. Attended Additional Classes: students were coded as "yes" if they attended additional classes for their level of study.

The key findings of the study were:

1. SE participation: The survey reported the percentage of students participating in SE in Russian Language and Mathematics was 47.9% and 54.6% respectively. It was found that the students that engage in SE came from urban areas, high economic and social status, attended elite or large school, and had elder sibling and more books at home. It was reported that participation or non-participation in SE the onset of year 11 was equally likely.
2. SE Impact on End of School Exams:
3. SE impact on other activities: It was also found that engagement in SE did not reduce student's chances of engaging in out of school activities. The student's engagement in SE had no impact on completion of homework for both students on advanced and basic track.

Although year 10 assessment were reported on five-point scale, the author made use of three-point scale namely satisfied, good and excellent only for the study. So, the sample under represent low achieving students. Hence the findings of the survey might be biased. Furthermore, the low R-square<0.06 values of the model are indicative of poor quality of models.

2.2.1.2 Korea

Jung's study explored the relationship between the time spent by student on shadow education and its influence on student academic achievement for Korea (SU-JUNG 2013). The author analysed the data from the longitudinal study provided by Korea Youth Panel Survey for the period 2003-2005, wherein the students were in year 8 at the time of study. This study included six different type of SE systems, namely group tutoring, courses in private tutoring institutions, tutoring with study worksheet, internet tutoring, after school tutoring and overseas training. The details of the survey are further presented in Table 3 :

Table 3: Descriptive Statistics of Private Tutoring and Academic Achievement (SU-JUNG 2013)

Indicators	Grade8(2003)	Grade9(2004)	Grade(2005)
Sample size	3449	3188	3125
Academic Achievement	58.26 (27.15)	60.58 (26.58)	63.33 (24.93)
Monthly Average expanses on SE (k ₩)	260.7	266.5	271
Monthly Hours spent on SE Mean (SD)			
English	4.08 (2.35)	4.06 (2.32)	3.81 (2.12)
Maths	4.05 (2.37)	4.10 (2.19)	4.10 (2.40)
Korean	3.06 (1.67)	3.18 (1.56)	3.33 (1.86)

The above table reveals following important information for the sample selected

1. In case of Korean language students were on average spending more time on SE as year level progressed.
2. In case of English students were on an average spending less time on SE as year level progressed.
3. In case of maths the time spent on SE on an average increased for the first year and remain same in the second year. However, the standard deviation increased.
4. It can be concluded that average time spent on SE increases as year level goes up and so does the academic achievement.

The modelling on the data further indicated that the time spent on private tutoring increased by 0.002 hours yearly. The annual average increase in the value of academic achievement of the students for the period under study was found to be 1.929. To some extent the results indicate some relationship between time spent on SE and academic achievement. SE was useful to improve student academic performance for short term only and it was not much helpful in consolidating long term gains. In the longer run SE and academic achievement were inversely (Coef: -3.7) related to each other which meant more time spent on SE resulted in lower gain in academic achievement of the student.

Another study is based on Korean Educational Longitudinal Survey 2005 which measures level 7 student competency in Maths, Korean and English (Ryu and Kang 2013). The survey also

provided detailed information on the intensity of student engagement in SE as well as student and family specific details. The effectiveness of SE on student learning are modest. The average overall student score increases by 0.002 SD with 10% more expenditure on SE. In this country it is reported that the quality of public schools is as per international standards and norms. However, SE industry in this country is more dependent on untrained university students and housewives. The experienced teachers do not indulge in SE as they are well-paid and enjoy all government benefits.

2.2.1.3 Bangladesh

Though the net enrolment rate for primary school children in Bangladesh was 60% in 2005 only one third of them were able to acquire basic literacy and numeracy skills. As schools are unable to meet the learning needs of the children SE was increasingly becoming popular in this country (Nath 2008). Educational Watch was set up in 1998 by a civil society initiative in Bangladesh to monitor primary and basic education. The Educational Watch Committee carry out survey in all 64 districts of Bangladesh. It provides detailed information on socio-economic condition of surveyed students and wide range of information relating to SE. The details of survey conducted under this initiative is presented in Table 4:

Table 4: Overview of the sample (Adapted from Samir Raman Nat)

Year	Issues Covered	Data Source	Sample Size
1998	Participation in private tutoring	HH survey	33,239
	Socioeconomic information	HH survey	33, 229
	Assessment of basic education	Test of the student	3360
2000	Participation in private tutoring	HH Survey	6619
	Socioeconomic information	Survey	6619
	Cost of Private Tutoring	HH Survey	6619
	Assessment of Private competencies	Test of the student	2509
2003	Voices of stakeholders in private tutoring	FGD and in-depth interview	130
2005	Participation in private tutoring	HH Survey	16400
	Socio economic information	HH Survey	16400

The key features evident from these survey on SE practices of Bangladesh are summarized below:

1: Size - The rate of expansion of SE has not been uniform in rural and urban areas. This rate of expansion has been 7.4% in urban area and by 10.1% in rural area between the study periods of 1998-2005. However in absolute terms more students of urban area (1998:44.3%, 2005:51.7%) were tutored than their counterpart in villages (1998:18.1%, 2005: 28.2). For more details refer to Table5, Column 3.

2: Gender Gap - It was observed that in both urban and rural areas less females as compared to boys were engaging in SE. This difference was 6.3% in rural area and 2.9% in urban areas in 2005 in favour of boys. However, the rate of engagement of girls of urban area (43.6%, 50.3%) in SE was more than the boys (19.7%, 31.2%) of rural areas both in 1998 and 2005. In rural areas gender gap in SE was found to be 3% in years 1998, 2000 and 5.7% in 2005. The details of the figures are further presented in Table5 Row 1 and 2.

Table5: Percentage of students receiving private supplementary tutoring, by year, area and sex (Adapted from Samir Raman Nat)

Year and Area	Boys	Girls	Both
1998 Rural	19.7	16.5	18.1
1998 Urban	45.1	43.6	44.3
Both	22.9	19.9	21.4
Significance	P<.001	P<0.001	P<0.001
2000Rural	19.3	16.6	18.0
2000 Urban	43.8	39.3	41.5
2000 Both	22.4	19.7	21.0
Significance	P<0.OO1	P<0.001	P<0.001
2005 Rural	31.2	25.2	28.2
2005 Urban	53.2	50.3	51.7
Both	33.8	28.1	31.0
Significance	P<0.001	P<0.001	P<0.001

3: Year level- It was also noted that more students were making use of SE as year level progressed both in urban and rural area. It was also found that in all year level SE was more common in urban area than the rural area. This difference between urban and rural area stood between 20%-30% in 2005 for all year levels in 2005. All the figures are summarized in Table 6:

Table 6: Percentage of students having supplementary tutoring by area 2005(Modified from Table4 SRN)

Year Level	Rural	Urban	Significance
1	19.6	43.6	P<0.001
2	27.2	48.7	P<0.001
3	31.8	51.6	P<0.001
4	33.5	61.1	P<0.001
5	35.6	62.2	P<0.001

4: School type - It was also found that type of school also exercised limited influence on chances of students engaging in SE. Refer to Table 7. The size of SE was smallest in Non-Formal school where students had small class size. The size of shadow education was very large in secondary attached and kindergarten where nearly 60% students were found to be engaged in SE. Both in Madrasa and Non-Formal schools, almost equal percentages of students were making use of SE (less than 17% in 1998, Less than 30% in 2005). In government school the size of SE was of medium size between the study period where roughly less than 30% students were found to avail service of provider in-between the study period of 1998-2005.

Table 7: Percentage of students receiving private supplementary tutoring by school y, type and year (Adopted Table adapted from Table5 SRN)

School Type	1998	2000	2005
Government	22.8	23.1	32.1
Non -Government	16.7	15.8	28.5
Non Formal	5.4	9.1	12.3
Madrasa	16.9	15.4	20.2
Kindergarten	66.4	67.9	69.3
Secondary attached	61.5	64.7	63.2
Significance	P<0.001	P<0.001	P<0.001

5: Parental Education- It was also found that Parental education also influenced student's participation in SE. Refer to Table 8 for detailed results. Parental education was measured by year of schooling completed both by mother and father. The study reflected that children of more educated parents were more likely to engage in SE then less educated parents. However, the rate of expansion of SE was more for less educated parents. Changes were 6.1%, 8.5% and 5% for nil, primary and post-primary education of mother respectively.

Table 8: Percentage of students having private supplementary tutoring by socio economic backgrounds (Adapted from Annexture1 SRN)

Parental Education	1998	2000	2005
Mother Education			
Nil	15.0	13.7	21.1
Primary	26.4	27.1	34.9
Post Primary	43.9	40.4	48.9
Significance	P<0.001	P<0.001	P<0.001
Father Education			
Nil	13.7	13.2	22.3
Primary	22.5	21.4	31.9
Secondary	32.4	32.9	43.4
Post-Secondary	45.8	43.2	47.4
Significance	P<0.001	P<0.001	P<0.001

5: Economic Status: - Economic well-being of a family was evaluated on four-point scale; deficit, sometimes in deficit break even and surplus on the basis of food security status of the family. The size of SE expanded in all types of household between 1998 and 2005, though there was slight fall in 2000. The rate of expansion of SE between1998 and 2005 was most rapid in always deficit household (5.4%) in comparison to surplus household (4.3%) for the study period of 1998-2005. However, the size of SE was more than double in surplus household in comparison to always in deficit households both in 1998 and 2005. For exact figures refer to Table 9:

Table 9: Percentage of students having private supplementary tutoring by socio economic backgrounds2005 (Adapted from Annexture2 SRN)

Indicators	1998	2000	2005
Always in deficit	12.0	11.2	17.4
Sometimes in deficit	18.1	16.2	26.3
Breakeven	28.0	23.0	33.6
Surplus	40.4	30.2	44.7

Another study done on 228 tenth grade students, in the backward suburb of Bangladesh, Nadiranga (pseudonym) reported that any kind of SE was able to improve student score in English proficiency test and senior secondary certificate exam (Hamid, Sussex, and Khan 2009).

The quality of primary schooling in Bangladesh is much below the international standards. The annual expenditure on education in Bangladesh is merely 2.2% of GDP which is insufficient to provide quality primary schooling. The other reasons that below international standards of primary schooling are low teacher's salary, insufficient number of qualified teachers, improper training of teachers and large class sizes with sixty students in one class. The government is trying to improve rural girl's education by stipend programme. Parents on the other hand neglect their daughters' education and this is apparent in rural areas. Even though the size of SE industry is small in comparison to other countries, Tk. 4967.2 million is being spent each year on tutors' salary. This money can be used by government to upgrade educational standards of schooling and pay teachers as per the international norms and standards.

2.2.1.4 Vietnam

Author explores key features of SE in Vietnam using the Vietnam Living Standard Surveys for years 1997-98 and 1992-93. This survey is undertaken by Vietnam General Statistical Office with technical support from WHO. This survey covers 6000 households of different type and income. The special feature of survey is that it provides detailed information on various types of expenditure on education including expenses on SE for each child (Dang 2007). The students were also required to indicate their academic ranking on four-point scale – Excellent,

Good, Average and Poor. The answer to the survey questions give us specific information on school and community infrastructure, teacher's educational qualifications and school fees. The main demerit of the survey is that it does not tell us subjects and kind of SE provider availed by the child. Furthermore, in the expenditure on SE both academic and non-academic subjects have been included.

The key findings of survey were as follows:

1. The survey reported that in 1997-98, around 34% of Vietnamese household were making use of shadow education. Most of these household (90%) were found to be spending less than 5% of their total household expenditure on SE. For more details refer to Table 10 .

Table 10: Household expenditure on private tutoring classes in Vietnam, 1997-98 (Adapted from Table1 Dang)

Household Expenditure (%)	Percent Population
0%	65.7
1-5%	31.0
5-10%	2.9
10% or higher	0.4 (Less than 20 observation)
Total	100
Number of households	3769

Another important finding of the survey was that more students were making use of SE as year level progressed. It was also found that urban students engage more in SE as compared to rural students for all year level. It was also found that ethnic majority group like Kinch – Hoe were making more use of SE then ethnic minority group. Further details with regional variation are presented in the Table 11:

Table 11: Percentage of student attending private tutoring classes by school level (Adapted from Table2 (Dang 2007))

Level	All Vietnam	Urban	Rural	Ethnic Majority	Ethnic minority
Primary	31.1	54.7	27.4	37.0	7.1
Lower Secondary	55.9	76.1	50.6	60.7	19.0
Upper Secondary	76.7	82.3	73.7	78.0	55.9

Further study explored how student specific factors, socio-economic status of family and suburb has impact on learning achievements and market of SE industry. The results are consistent across four different models developed.

- The study reported 30-60% rising expenditure on SE towards the end of primary or high schooling.
- Age of the student was inversely related to household expenditure on SE and learning achievement. The younger siblings were more likely to engage in SE and perform well in school assessment. This might be due to older sibling having more family responsibility on their shoulder. They might have to earn bread for the family or take care of younger siblings or do household chores.
- Gender Parity was observed with regards to household expenditure on SE.
- The mother qualification has direct influence on student engagement in SE at primary level only. The expenditure on SE went up by 3% for primary school student with rising education qualification of mother. However, the mother qualification was indirectly related to student engagement in SE at secondary level.
- The expenditure on SE at lower secondary level went up by 5% as father educational qualifications goes up.
- If student belongs to ethnic minority group, the child chance of engaging in SE falls by 32%. However, there was equal chances of the secondary class students of ethnic minority group engaging in SE.
- It was also noted that poor quality of local schools also influenced parent choice of making use of SE. There was 14% fall in SE expenditure if the share of primary school qualified teacher went up by 25%.
- Geographical location of a place influenced expenditure on SE. The students of urban areas were likely to spend on SE at primary level of student schooling. However, at secondary level there were equal chances of both urban and rural area student engaging in SE.
- The chances of a child getting good and excellent grade was found to be directly related to expenditure on SE for all year level. The primary child chances of getting good or excellent grade went up by 0.05% while for lower secondary students it went up by 0.07% and 0.08% with spending on SE going up from 0 to 20,000VDN.

Another study done on eight-year-old children in Vietnam reported that student chances of reading correctly increases by two times if they were engaging in any kind of SE. However, use of SE did not make much difference on student writing and numeracy skills (Ha et al. 2005).

SE industry continue to deepen its roots in Vietnam even though it has undergone serious criticism at National Assembly, print and electronic media. In Vietnam household expenditure on SE rises as student enter into secondary classes irrespective of the fact that student belongs to ethnic minority, village or city. This also indicates that only wealthy household can afford the rising cost of education. The study reports SE enhances learning amongst all year levels, but gains are more substantial for secondary students.

2.2.1.5 Taiwan

In his study the author explores the effect of cram schooling (a kind of SE) on year 9 students in Taiwan on their maths performance in school assessment (Kuan 2011). This study is based on Taiwan Educational Panel Survey (TEPS) reports of 2001 and 2003 and other data set available in the public domain. The survey comprised of 20,004 seventh grade students (2001) and 18,903 ninth grade students (2003) from 333 junior school of Taiwan. The survey required each student to complete an assessment test, student questionnaire and a parent questionnaire. In addition to the main survey there was a separate questionnaire that was required to be completed by Home, Maths, and English and Chinese language teacher. The survey reported that 46% students attended maths cram school in year 9. Some other variable that author has taken into consideration from TEPS 2003 were students own initiative in opting for maths cramming and student attending high ability class in year 9. The author then listed the variables that were important and not important in affecting child participation to engage in maths cramming. Factors affecting student's participation in cram school are further presented in the Table 12.

Table 12: Factors influencing student engagement in SE

Significant variable	Insignificant variable
Maths ability in grade 7	Students gender
Live with biological parents	
Fewer siblings	
Parents do not have graduate degree	Students learning habits
Higher educational expectation of their children	

The author found that maths cram school had positive impact on those level 9 students that decide themselves to engage in cram school, have good learning habits, studious classmate and better learning environment at school. Maths cramming had small positive impact to enhance child maths score in level 9. The findings also indicated that cram schooling is going to benefit more to those who come from social and economically backward community. Though cram schooling does not enhance student score significantly, but parents are still going to make use of it in the hope of getting one or two point extra that will help their child to get into high ranking school, college or university.

2.2.1.6 Others

A study on Luxemburg city in Germany confirmed that SE is widely used by parents in Germany to enhance the student scores in school assessment. This study was carried out on 904 students of four secondary school. In this study 54% students conceived beneficial effects of SE whereas 4% didn't find SE of any help (Mischo and Haag 2002).

In another study on five registered SE providers of Brava, Germany the authors examined 244 students of level 5 and 11 in which 122 students participated in SE while equal number of students did not participate in SE (Mischo and Haag 2002). The students of both the group were of same age and ability and aptitude. Here most of the tutors of the SE were student or non-working teachers. The length of the lessons were 90 minutes, four days a week and delivered in small group settings of four or five student. The marks of each child in Maths, English, French and Latin were recorded for two assessment, the first in October and the other being in July. Other variable that were taken into consideration were exam fears, aptitude, enthusiasm for studies and homework completion. Adjusting for covariates, the findings

confirmed (P-value=0.001) that students with tuition got better marks then their counterparts.

High stake exams for level 12 students that determine entry into important courses like law, economics and medicine into Tokyo University largely explains the expansion of SE in Japan (Stevenson and Baker 1992). It was reported that 13,000 level 12 students competed against each other for 3077 seats at Tokyo University of lever 12. In 1986 the size of SE was estimated to be $7billion. There are two type SE popular in Japan. The secondary school students engage in activities like practice exam courses, correspondence courses, remedial or extension private after school classes at home or centre. Level 12 students who are unable to enter into the course or university of their choice are known as Ronin. Many of such students devote one or more years for preparing for the university entrance by attending specialized classes with SEP. Yokibo are special classes for students who have successfully completed year 12 exams. The average fee for Yobiko course is usually between $2000-$2800 per year but in few cases it might be as high as $20,000 especially if students aim for medicine courses. The findings are based on the longitudinal study on high school seniors for years 1980, 1982 by Youth Research Institute of Tokyo. Some of the key findings are presented in Table 13 below:

Table 13: Influence of Shadow Education on university entrance for students with college plans

Type of Shadow Education	University after High School	University two years after High School
Practice Examination	1.01(.22)	0.58 (.43)
Correspondence Courses	0.64 (.17)	-0.03(.22)
Private Tutor Classes	-0.30 (.25)	-0.79(.32)
After school classes	0.30(.17)	0.01(.24)
Ronin		3.22 (.57)
Entries in the table are the maximum likelihood parameters (standard error) from logistic model.		

1. The chances of students getting into course or university increased if at senior secondary they got the service of SE provider that provided students with exam test, correspondence course or after school lessons.

2. The student chances of getting into university was negatively correlated if they were making use of private tutor. It might be due to the purpose of seeking SE is remedial then extension.
3. The impact of SE providers that were running special classes for Ronin to get them into specialised streams and university of their choice was highest (see table 13, row Ronin).

2.2.1.7 Comparisons and Limitations

Expansion of SE is a global phenomenon because parents consider it now more as a necessity than need to enhance students' learning. However there has been no uniformity on the effectiveness of SE in various researches that had been done so far. Some studies show positive impact on high achiever only while others show modest effectiveness to no impact (Bray 2014). The conclusions from various studies are hard to combine as the nature and type or SE varies. For example, SE providers operate in many different modes with teacher student ratio varying from 1:1 to 1:30. Moreover the educational policies of the government and curriculum varies within the same country and between the different countries. The size and expansion of SE industry has not been uniform in all countries all over the world. So, it is incorrect to compare SE industry of one country with other. No research methodology can correctly measure quality of the tutors, teaching material and student motivation. Key issues arising in this context are described below:

Limitation 1: Interpretation of SE - The term SE has been differently interpreted in the studies. For instance (Stevenson and Baker 1992) have included in SE the institutions like Yokibo which provided exam support to adult students who have successfully completed 12 years . Some studies in their definition of SE have included fee free extra lessons while some have included non-academic subjects also (Hopper 2005). Unlike schooling there are no fixed hours that students are allowed to engage in SE. The duration may vary as per the need and motive of those seeking SE. So, it will be improper to correctly evaluate the effectiveness of SE without taking into consideration the purpose of seeking it.

Limitations 2: (Large National Surveys)- The study of Bangladesh (Nath 2008) on 3360 student to measure literacy and Numeracy skills for primary school student indicates that students with tutors received better scores. However (Nath 2008) is not effectively able to demonstrate that better score was just due to SE and by how many points student improved

their scores due to large number of confounding factors. The major shortcoming of longitudinal study of (Kuan 2011) to evaluate the maths ability of level 9 students in Taiwan is that all kind of SE Providers have been merged into a single category of cram school. The author does not take into consideration duration and quality of SE provider. Further all results are based on one single term of 9 years. So, his assertion that SE marginally benefits only motivated students may not always be true. The study of Korea reported positive effects of SE were mitigated if students engaged in SE for more hours. In yet another study based on the dataset created by Vietnam National Survey (Dang 2007), Han Dang reported direct relationship between the expenditure on SE and learning gains in students. The gain was more in secondary student in comparisons to the primary school students. The major limitation of this study is not taking into consideration type of SE service availed and teaching material of the classes. Moreover, students were required to self-report academic ranking in terms of four-point scale; excellent, good, average and poor. In case of Australia effectiveness of SE will be linked to getting Band 8 in NAPLAN or getting into gifted and talented school while there are no such equivalent exams being held in Vietnam or Bangladesh. So, all the studies based on large National Survey failed to come to one single conclusion whether SE enhances learning gain in student. This is due to no common consensus amongst researchers over evaluating the effectiveness of SE for students of different level, ability, school policies and socioeconomic backgrounds.

Limitation 3: (Small Scale Investigation) - Though smaller scale investigation provides researcher with valuable leads to assess the overall impact of SE yet some of its shortcomings need to be kept in mind. The study on Bangladesh reported any kind of shadow education used by the students increases the chances of getting outstanding grades by double in comparisons to the students that were not making use of SE (Hamid, Sussex, and Khan 2009). This study was based on 228 level 10 students from eight villages of Bangladesh and 14 student interviews. The two other variable that affected students learning gains were mothers' qualifications and gender. The student interviews study drew attention of researchers towards inferior standards of schooling in Bangladesh and corrupt practices of teachers tutoring their own students. Another study done on Germany by Mischa and Haag reflected upon the effectiveness of SE in enhancing the test scores of level 5-11. The study is based on quasi- experimental method with equal number of students who engaged and who

did not engage in SE. However, none of these studies quantify the extent of learning gain in student and for how long.

2.2.1.8 Summary

All the research studies done so far to evaluate the effectiveness of SE do not help us to make one single conclusion. The contrasting findings are due to differences in interpreting the meaning of SE, different type of SE provider has been taken into consideration by the researcher and different sampling methods adopted to analyse the data. Further it is not humanly possible to correctly measure the quality of different types of SE providers. It would be incorrect to say that one to one tuition is always more effective than group tuition.

2.3 Why Shadow Education Exist

In this section we will look at the factors that are leading to the expansion of SE industry worldwide.

First, we will look at the education system of the country and government expenditure on education to what extent and degree it propels the SE industry of that country. Next, we will look at how the social norms, cultural ethos, parents and students thinking generates the demand for certain type of SE for different levels and abilities of students.

We will also look at the perspective of teachers and school that feel the need of SE to fill in the learning gap in child learning. We will also look to what extent they are able to convince the students and parents to take the service of SE provider.

Finally, we will look at the marketing strategy employed by SE providers to attract the client and to keep them satisfied.

2.3.1 Quality of Education in a country - Political and Economic Factors

As more and more Asian (Vietnam, China, India), African (Nigeria, South Africa) and East European countries (Russia, Poland, Romania, East Germany) move from tight government control regime to open market economy, SE was found to be expanding at the pace of 15% worldwide which is worth $6.4 billion per year (Asian Development Bank). The rising unemployment in East European countries and break up of USSR due to the collapse of communist government is putting lot of pressure on parents to seek SE for their children

that will help them to excel in competitive exams (Silova and Bray 2006a, Ventura and Jang 2010).

Another study reported that countries with low expenditure on SE, low enrolment rate and late entry into school were other reasons that were exerting pressure on parents and students to indulge in SE (Baker et al. 2001).

SE continue to expand in South Korea in spite of all possible government efforts to control it by taking steps like college entrance policy reform or High School Equalization Policy. SE has come under criticism for disrupting teachers learning cycle at school, putting financial strain on families, giving advantage to well to do families to excel and thereby widening social and economic inequality (Lee and Shouse 2011).

The 1978 economic reforms in China allows investment by private companies in the field of education and jobs on the basis of agreement between employer and employee with little or no intervention from the government has created more competition between young graduates for key managerial position (Zhang 2014). This has led to stiff competition between the families and they are willing to seek help of SE providers which could help their children to get important scholarship, entry into reputable schools and specialized streams of universities. Even though the government has stopped giving extra funds to elite schools, but they still rank high on academic scale, teaching aid and teacher quality but it still the matter of prestige in the minds if the students and parents to get into elite schools. So, the households are willing to use SE and students are willing to work hard and scratch themselves to get into prestigious elite schools.

In 2005 the Korean Institute of Health and Social Affair reported that parents having two school aged children were spending 20%-30% of their income on SE. In 2009 more than 60% of students of all year level were engaging in SE. Its details are further presented in the Table 14.

Table 14: Percentage of students engaging in SE in2009 in Korea

School level	Percentage of students engaging in SE in2009
Primary School	87.4
Middle School	74.3
High School	62.8

In Cambodia parents have to resort to SE for their children due to the inferior standards of the school, large class sizes and intense syllabus. Students on the other hand in countries like Korea, Hong-Kong and Mainland China which have good quality of schools even then parents are extensively seeking SE for their children. So, they could get into gifted and talented school, private school scholarship and specialized courses and reputable schools or colleges. (Zhang 2014, Dang and Rogers 2008). It can be deduced from the various studies discussed that SE is increasingly becoming common amongst all year levels both in developing and developed countries.

2.3.2 Social norms and parents' psychology

The size of SE is largest in East Asian countries like China, Japan, Korea which have school exam and government policies aims to raise national standards of education. The size of SE is relatively small in North American / West European countries as they have less competitive education system and the overall thrust of society is more on the aptitude of the child than their academic ability. The students have more choices and can have successful career both in academic and non-academic field. The rapid growth rate of Chinese economy and strict one child policy of the government has provided families with surplus money that they could use to invest in child education and future.

A study by Lee and Shouse explains this expansion of SE in South Korea from a totally new perspective – "Prestige Orientation". It represents the amount of importance given by student and family for getting into specialised courses reputed schools or colleges. It could mean elevated social status with more chances of better job prospects which in turn ensures secured future for themselves and their families. So, prestige could mean for an individual

getting that pride and confidence that comes up with getting into white collar jobs and getting accepted into social fabric that might be beyond their reach earlier (Lee and Shouse 2011).

This study further explores the relationship between prestige orientation, parental income, social values and student academic calibre. The author then explores if SE gives parent of low achieving students that opportunity to take pride in social circles that their child is preparing for prestigious competitive exams. The study of Yun (1997) reported that 40-50% of school going students were availing SE services because of the fear that if they happen to get low scores it might be attributed to not making use of SE. This study is based on National Survey held by Korea Research Institute of Vocational Education and Training. Korean Education Employment Panel (KEEP) consisted of level 9-12 students and vocational students of first year. The first stage of sample was based on 100 academic high schools from 15 administrative districts. The details of the sample size are further presented in the Table 15.

Table 15: The details of sample size

Indicator	Sample size
Middle School Students	2000
High School Senior Students	2000
Vocational High School Students	2000
Family Members	6000
Home Room Teachers	1121

The data set of KEEP was analysed by modelling family expenditure on shadow education for each child as a function of four independent variables that are listed below:

1) Student traits and characteristics - It was measured on five parameters. These were gender, number of brothers and sister, average family income, father's education (9-point scale) and locality of the house (4-point scale).
2) Academic calibre of the student - It was evaluated against three parameters. These were student percentile rank, individual score in reading and English at College Scholastic Ability Test.

3) Institutional ranking and Reputation - Two parameters were used to measure it. These were student favoured institution and how much importance they attached to ranking of institution in selecting the college.
4) School Infrastructure - The feedback of teachers and school reports were used to rank school on 5 - point scale.

All these variables were used to explore shadow education from three perspectives. These were relation of expenditure on SE with student academic calibre, family income and parent's education. The key findings are described below:

1) Parent income was directly related to the expenditure on SE. Higher the parent income, higher was the expenditure on SE. [Coef (SE): 0.656 (0.004)]
2) Parent education was also indirectly related to expenditure on SE. Parent education was of not much importance in enhancing CSAT scores [Coef (SE): 0.179(0.002)]. Positive coefficient linked with CSAT score was indicative of importance attached to acquisition of English skills [Coef (SE): 0.004 (0.001)]. On the other hand, negative coefficient linked to CSAT score would mean parents desire to enhance reading ability of their child [Coef (SE): - 0.006(0.001)].
3) Parent expenditure on SE was indirectly related to student grades and private school [Coef (SE): -0.002(0.001)]. This meant parents of high performing children or coming from elite schools were likely to spend less on SE.
4) Prestige Orientation was vital to decide parent expenditure on SE [Coef : 0.80] but was of little importance to decide expenditure on SE for more educated [Coef :- 0.15] and high earning parents [Coef: -0.15].

The author concludes that expenditure on SE is more related to the degree family attaches importance to attending elite schools and universities. So creating public awareness on how SE is creating a gulf between those who can access it and those who cannot access it is more important than carrying out the educational reforms. The after-school classes and educational program on television or internet will help to change the mindset of Korean people and society in using SE to enhance their children performance in school or competitive exams.

2.3.3 Role of teachers in promoting SE

In Bangladesh, India, Vietnam, many other Asian and African countries teachers encourage their own students to take tuition classes from them to compensate their low income. (Dang 2007, Nath 2008). The logic is if people of other professions like doctors can do private practice so could teachers. In many countries like India, Bangladesh, Vietnam teachers are legally allowed to indulge in SE. The Chinese society that have deep faith in Confucius ideology feel all the request of teachers should be accepted by the students. So if teacher asks student to take private lessons for them, it is very much likely both student and parent will accept the teacher request (Zhang 2014). In Chongqing, a Chinese province, some experienced teachers (Kingship) could earn from SE income two to three times more than their salary at school, for which they do not have to pay tax also. The study also reported that 35% students were engaging in SE on the teachers' request while 22% families requested teachers to tutor their children. The same study also reported that around 90% Chinese students were tutored by the mainstream teachers. The new salary system of 2009 fails to benefit Rural and Junior school teachers in China and their wages are still low. These teachers might feel the need to engage in SE to supplement their low income. In some schools of China management were renting out classrooms to tutoring agency to get monetary benefit and they were also allowed to advertise on school websites. In Australia too school Principal has considerable powers to promote after school activities and rent spaces both for academic and non-academic purpose (Davis 2013).

2.3.4 Services offered by SE providers

SE or private tutoring which was considered as a way for educated students and housewives to supplement their income has now become a well-established industry with some tutoring centres having centres across many countries and continents (Silova and Bray 2006a, Lewin, Jha, and Siddhu 2016). The SE industry is continuously expanding. Inferior standards of schooling and parents desire to give children best quality of education is leading to proliferation of SE industry amongst students of all levels and families of different incomes, regions, caste and community.

In Hong Kong where teachers are not allowed to engage in any kind of SE , SE service providers used wide range of marketing strategy to attract the students (Choi 2013). In Australia which ranks low in SE in terms of international comparisons, SE industry is still

expanding at a very fast rate. A study reported that advertisement for coaching in Perth in Yellow pages rose by 161% between the year 1992-2012, though the population increase was by 42% for the same period (Davis 2013). A study of China reported that 25% families selected SE provider through advertisement on television, newspaper, leaflets while 4%families selected tutors through internet (Zhang 2014).

As people all over the globe are becoming technologically savvy. SE providers are increasingly advertising with new software tools such as electronic board, image processors, video cameras and broadband internet connections (Ventura 2008). They are also using social media sites like Facebook, twitter, LinkedIn to share the success stories of their clients and centers. These days low cost Educational programs are made available by both the government sector (like EBS (Korea), UGC (India) Mathletics (Australia)), and private sector (like mega study, eluent, Edu box, YBMsisa). These programs provide cheap resources to economically disadvantage groups and offer competition to big Centre based SE providers.

Some SE providers are attracting clients by offering them cheap internet lessons and providing study assistance 24*7 (Ventura and Jang 2010). In 2005 Bikram Roy founded Study Loft in Chicago with the purpose of helping secondary students to clarify doubts and concepts at the time convenient to them. The office of Study Loft is located in Bangalore and it provides cheap internet lessons to 5400 American students in subjects like Mathematics, Economy, Accounting, and Science.

Some SE providers are providing lessons on internet by hiring public libraries. For instance, Seattle Public library provide online tutoring to 4-12 grade students every day from 3-10pm. Tutor.com has contacts with 1600 American libraries and it provides homework help to students since 2007. This company has just 46 employees and 2200 private tutors and was ranked 31 amongst the fast-growing education company of USA.

The internet tutoring is becoming more popular in USA due to its low cost. The Scholastic Aptitude Test Preparation rates via face to face lesson vary from institution to institution. For instance, Princeton Review charges $300 per hour, Imperia charges $525 per hour, and Advance testing charges $685 per hour while internet lessons are for $15-$25 per hour.

In Hong Kong , God Tutors carry out the roadshows of celebrities in Lamborghini or Ferrari cars to attract the parents and the students (Ventura and Jang 2010). Modern Educators of

Honking recruits tutors on the basis of their sex appeal and physical appearance. The President of the company King said," their long legs are most important in private tutoring industries. "They have a dedicated website in which they highlight the qualities of the tutors and compare them with mythical characters such as "Godfather of Science" and "Queen of English".

The mainstream education is unable to meet all the parents' expectations, the needs of students of different learning ability and achieve 100% pass percentage for all year level. Therefore, the parents are increasingly seeking SE for their children for remedial, extension and maintenance purpose. At the same time the challenges faced by school with large class sizes, low wages of teachers, lack of qualified teachers, intense syllabus and exam-oriented learning system makes it difficult for the school to achieve the targets set by the regulatory authorities. To achieve the goal of 100% literacy rate the quality of schooling is getting compromised in most of the developing countries. SE undermines the logic of having free public education and it further escalates the gap between those who can access it and those who cannot access it in most societies. The government recognises that SE is creating social and economic disparity within the society. To some extent government is trying to overcome this problem by running free or low cost after school classes or special educational program series on electronic media in their own native language for the students. Banerjee and others (2017) found a tutoring program run by an Indian NGO Pratham targeting non-performing students in grade III to V was helpful in enhancing children learning achievement. The cost of SE was also very low $10-$15 a month in this case. Another program that made use of computers and was bit expensive, but it too enhanced children performance in maths. In Israel government financed Remedial Tutoring which catered for the five most non-performing students from each school (Lavy and Schlosser 2005). The teachers provided extra lessons to these children after school. This program increased the chances of student earning a baccalaureate by 12% points, an improvement of 22% over the base rate. However, this program was bit expensive as it entailed charges of $1100 per student. In Vietnam where 34% of households purchase SE, Dang found that SE enhanced child learning in all age groups. Using data from Vietnam Living Standard Survey of 1993 and 1998 he reported raising annual spending on SE 0-2000 dong has strong positive impact on children academic performance.

Korean government is also trying to mitigate the need of SE by running high quality lessons on Educational Broadcasting Station.

2.4 How government policies influence shadow Education?

The government's policies on funding education and examination can influence the uptake of the SE. Studies have indicated (Baker et al. 2001, Kim and Lee 2010, Silova and Bray 2006b) that lack of resources in public education system has led to the proliferation of SE in many countries. Some countries have attempted to regulate SE by imposing curfew on service providers, but little is known about the impact of such practices (Choi 2013). The practice of SE is not always negative, for instance, SE is used by the government in the form of remedial classes for low achievers and enrichment classes for gifted and talented students (Dang and Rogers 2008, Bray and Lykins 2012, Lavy and Schlosser 2005, Jacob and Lefgren 2004, Department of Education WA 2008). Such practices can reduce social inequality created by SE (Dang and Rogers 2008, Lewin, Jha, and Siddhu 2016).

Most countries lay emphasis on the culture of examinations to measure success of learners (UNESCO 2018, Bray and Lykins 2012, Lewin, Jha, and Siddhu 2016). The examination could be for benchmarking (Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS)), diagnostic purposes (NAPLAN) or selection into colleges (SAT, UMAT, WACE). Success in these exams is batched as leaners success. This culture is a major contributor for demand in SE. Anxious parents and students resort to highly unregulated sector of private education providers (Australian Tutoring Association 2017, Bray and Lykins 2012). These issues are elaborated further in the following sections.

2.4.1 Lack of public resources

Though SE is expanding both in developing and developed countries its size is largest in East Asian countries. In some countries expenditure on SE is equal to government's entire budget for education. In 1998, Korea government spent 3.4% Gross Domestic Product on education while household expenditure on SE was found to be 3.4%. Similarly for Turkey expenditure on SE was 1.4% of GDP, while government had spent 2.0% Gross Domestic Product on education (Dang and Rogers 2008). Some studies reported that size of SE industry was

inversely related to government expenditure on public education and enrolment rate at school (Baker et al. 2001). This meant that if government was spending more on public education and higher the enrolment rate for students at school lesser the size of SE industry in that country. The country with low budget on Public Education, large class sizes (1:60 – Bangladesh), lack of qualified teachers and low wages for teachers the size of SE industry was larger. So, the school were unable to meet all the learning outcomes set up by authorities, 100% pass percentage for all year levels or acquisition of basic literacy and numeracy competencies in students. This in turn put pressure on parents to use SE for their children to fill in the learning gap in children (Nath 2008).

2.4.2 Culture of Testing

The importance of exams has been recognised by authorities, school, teachers, students and parents. Exams provide an opportunity to the authorities to compare their country educational system against international standards. School and teachers see it as a way to review the teaching practices, find the new strategy to deal with the students' low performance and improve overall school ranking. Exams provide parents with the information where their children stand with reference to cohorts and what future path their child could follow. It also provides clear picture to the students about the career options they could choose as per their capability and aptitude.

In 2013, 70% of Asia Pacific region countries were conducting assessment at local, national and international level to find the shortcomings of their educational system and upgrade it to international standards. Most of these countries also showed inclination to participate in global assessment like TIMMS and PISA. In most of these countries the international ranking is important factor in deciding the future course of national educational policy. In pursuit of getting better global ranking in most countries education system motto has become "teaching for test" rather work for all round development of the child (UNESCO 2018). This in turn is generating more demand for SE worldwide. In PISA, 2015 report most students stated that assessment low or high stake were putting more stress on them rather than being a motivating factor to learn. The stress was more in girls in comparison to boys. PISA, 2015 reported that 67% female while 47% male students experience exam related stress even if they are well prepared for the test. In Australia open publication of school ranking on the basis of NAPLAN were putting lot of pressure on schools, teachers, students and parents to

prepare children for exams rather than focusing on developing soft skills like communication, problem solving or empathy (Davis 2013). The school ranking not only influenced teacher's promotion, bonus and retention but was also an important factor in deciding the amount of government fund that school gets. This in turn meant if child is not able to get the required band in NAPLAN the parents were more likely to take the service of SE provider on the request of teacher and school. In some cases, the parents might be eligible to get the voucher for shadow education from the relevant State Government of Australia (Watson 2008b).

In seven of eight countries students were spending 1-4 hours/week outside the classroom to prepare for the regular school assessment. In Bangladesh students were spending 7 hours/week outside the classroom to prepare for the school assessment. In most of the Asian societies parents saw the child academic achievement as their own and also a way to move up in the society (UNESCO 2018). To achieve the desired result some parents have been described as the "tiger parents" whereby they give no free time to children, closely supervise school work, not letting them socialize and use punishment and shame to put more pressure on children to perform well in exams or test. These parents were hiring tutors as early as pre-primary to fill in the learning gap and give strong foundation of concepts which will ease the process of child success in future competitive exams. In few cases parents were seeking the assistance of SE due to their loss of faith in mainstream schooling. Students also perceive exams differently, for some it is motivating while for others it is a constant source of stress. UNESCO 2016 Report on Happy School indicated that assessment whether low or high stake put a lot of pressure on students to perform well which was leading to their disengagement in classroom lessons, bullying, and violence and in some cases suicides. In 2015, PISA report for the Republic of Korea came at the bottom on the student wellbeing amongst 28 OECD countries where 60 % student of all levels were engaging in some kind of SE.

The culture of over reliance on assessments and examination is still prevalent in the world. The reliance of examinations for ranking purposes leads to an examination oriented education system deprived of innovation, creativity and real education (Mee 1998, Yu 2019, Kirkpatrick and Zang 2011).

2.4.3 Role of Government

The government policies on shadow education worldwide can broadly be divided into four categories (Dang and Rogers 2008).

Ban on SE - The government efforts to ban SE failed in Korea, Mauritius, Cambodia and Myanmar due to opposition by people or institutions weaknesses.

Totally Ignoring SE – The government of Canada and UK ignored it as its size was small and they wanted market forces to govern this sector. In Sri Lanka and Nigeria government ignored it as they did not have adequate mechanism to regulate the growth of SE.

Active role in controlling SE - In Hong-Kong, China, Mauritius and Vietnam government took various steps to regulate it for example, forbid teachers from tutoring their own students or no sessions during school hours.

Government encouragement to promote SE - In South Africa, Tanzania and Singapore government SE industry believed SE is an effective way to meet the learning needs of children. The governments of these countries supported SE industry by providing subsidy to them, arranging training courses for tutors and tax incentives.

In Australia there are three components that define the relationship between school and SE industry (Davis 2013). These are related to the policies on student welfare. Visitors to school that may have unsupervised contact with childern must have working with children checks and private employment of school staff by SE provider is not prohibited. There should be no conflict of interests between the school and commercial activity and use of school resources for commercial purposes i.e. school facilities can only be used for private purposes with the imposition of fee.

2.4.4 Summary

In order to align with Education 2030, Sustainable Development Goal 4 of UNESCO, most nations are making policies that focus on holistic learning, learner well-being, soft skills such as conflict resolution, critical thinking, team work, creativity and communication (UNESCO 2018).

The holistic evaluation done for both academic and non-academic subjects help children to cover their weak area by doing well on other fronts. This could mean moving away from

conventional paper-pen test to assessing child on the basis of their communication skills, empathy, and practical knowledge of academic and elective subjects. Though teachers are finding child centred learning approach is helping them to better engage children in classroom and develop a close bond between them. However, most of the parents are not able to fully appreciate the new approach towards child centred learning and still prefer returning to conventional method of assessing child on the basis of paper-pen test. With the new approach it is hard to quantify child success which are still important in getting scholarships or getting into elite schools, specialized streams at university. It is a hard reality. In any kind of selection mode there are going to be more contenders for the coveted seats in elite schools, universities and jobs then actually the seats available. No assessment can fully satisfy all stakeholders of education.

2.5 SE Practices in Australia

Australia is not free from the global proliferation of SE with increasing spending on SE (Watson 2008b). In the context of Western Australia, Davis (2013) reported 100% increase in the supply of SE providers between years 1992 and 2012. This study concluded that parents are seeking services tailored to their needs and as alternative to fulfil gaps in school education. Another Western Australian study (Foresee 2013) reported no direct benefit of SE in seeking university admission. Moving outside Western Australia, Doherty and Dooley (2018) reported increase in parents acceptability towards use of SE. Emerging SE providers offer assistance with school based work, run school type programs or relevant courses (Dooley, Liu, and Yin 2018). These studies have explored SE from different perspectives at different time point, highlighting different aspects of SE, namely expenditure, types of services and benefit to students. Each of these aspects are described in sections below.

2.5.1 Expenditure on Shadow Education

Every five years Australian Bureau of Statistics (ABS) collect data on expenditure and income from households from every state and territory of Australia, under household survey. This survey provides detailed information on household expenditure in over 600 categories of goods and services, including expenditure on education. The expenditure on education provides exact figures and numbers on household expenditure on children education and private tutoring. Expenditure on private tutoring is related to academics and does not include

fees for leisure activities like martial arts or swimming. Gathering information from ABS household survey (Watson 2008b) discovered increasing expenditure on SE in all parts of Australia for the period investigated. For more details refer to

Table 16. The expenditure on private tutoring went up by 30% while on school fees by 35% in all Australian households with dependent children. In 2003-2004, one-third Australian households had dependent children. Moreover, expenditure on children education as percentage of average household expenditure rose from 1.04% (1998-99) to 1.1% (2003-04). This trend is likely to continue in future too.

Table 16: Average household weekly Expenditure. Extract from Australian Bureau of Statistics-Household Expenditure Survey, Australia (Adapted from Watson Table1)

Average Household Weekly Expenditure (A$)	**1998-99**	**2003-04**
Average Expenditure on private tutoring	0.29	0.48
Average Expenditures on school fees	7	9.46
Total Average Expenditure on children's education (private tutoring + school fees)	7.29	0.94
Total Average Expenditures on Goods and services	698.97	892.83
Private Tutoring as a % of total average expenditure on children's education	3.98	4.88%

In a latest study done in Turkey it was found that average expenditure on SE is likely to increase as family income goes up (Bircan 2005). To confirm this for Australia this study looked at the expenditure on education for the top 20% wealthy households (Watson 2008a). The

Table 17 clearly shows that average weekly expenditure on private tutoring and school fees by the wealthy household has gone up for the period under study. One more interesting fact is expenditure on school fees is seventeen times more than the expenditure on private tutoring in both the years 1998 and 2004. It is also important to notice slight increase in the average weekly expenditure on private tutoring even amongst the wealthy household. Moreover, private tutoring as percentage of total average expenditure on children education has also gone up from 3.50% to 3.58% between the years 1998 -2004. So, it can be concluded that the expenditure on SE in Australia is likely to increase as the family income rises.

Table 17: Extract from Household Expenditure Survey, Australia Bureau of Statistics(Adapted from (Watson 2008b) Table2)

Average Weekly Expenditure (A$) for the wealthiest Households Australia (Top20%)	**1998-99**	**2003-04**
Average expenditure on private tutoring	0.63	0.97
Average expenditure on school fees	17.36	26.12
Total Average expenditure on children's education (private tutoring + school fees)	17.99	27.09
Total Average Expenditures on Goods and service	1171.40	1499.18
Private Tutoring as a % of total average expenditure on children's education	3.50%	3.58%

Each of the six Australian states and two territories has its own education system. (Watson 2008b) further examined the growth of SE in two largest Australian states by population– New South Wales (NSW) and Victoria. The Table 18 presents the comparison and clearly shows average weekly expenditure on private tutoring was more than double in NSW in comparison to Victoria for the same year. However, the case was just opposite with regards to school fees. Average Expenditure on school fees was higher by 44% in Victoria when compared with NSW for the same year. Another important observation is that average weekly expenditure on children education was 35% higher in Victoria when compared with NSW.

Table 18: Average household's weekly expenditure on private tutoring and school fees, in New South Wales and Victoria (adopted from (Watson 2008b))

Average household's weekly expenditure (A$) on private tutoring and school fees, 2003-04	**NSW**	**Victoria**
Average Expenditure on Private Tutoring	0.83	0.29
Average Expenditure on school fees	8.52	12.34
TAE on children's education (school fees + private tutoring)	9.35	12.63
Total Average Expenditure on goods and services	947.51	898.40
Private Tutoring as % on children's education	8.88%	2.30%

This disparity in the expenditure on SE in NSW and Victoria might be due to the different type of the education system in the two states. The number of selective high school are two in Victoria, while 27 in NSW. The entry into these selective schools is through a public exam conducted every year. Entry into the university is based on year 12 public examination that involves both school assessments and public examination. This explains higher average expenditure on private tutoring in NSW with regards to Victoria. The WA education system is also very much similar to Victorian system. Perth Modern School is the only selective school in WA where entry is determined through annual Academic Selective Entrance Test. Entry into most of the university is determined through ATAR score and WACE certificate. So, in WA there were two high stake decision points first at school and then at university level. This study (Watson 2008b) further reports that parents in Australia who are not satisfied with their children academic achievement at public school are likely to make one of the choice either go for private tutoring while the child continues to attend public school or opt for private school.

The results of the (Watson 2008b) findings cannot be generalised due to the limitations of ABS household survey. The household survey is conducted by ABS every five years. ABS only provides indirect information of SE. The size of SE has to be indirectly extracted from the expenditure on education. So, there might be under representation of SE in the data. Furthermore, participants are required to self-report their expenditure on education over past year. So, the participant might not have taken into account expenditure on private tuition taken for one term or they might not be able to accurately recall all expenditure made on SE in the last five years. The selected household also changes in every survey, so it impossible to predict if the expenditure has increased or decreased for the same household.

2.5.2 SE Providers

In this section, we will look at the services offered by the various SE providers in Australia with special reference to WA. This section will present in-depth study of five SE providers active in Perth and operate on a different philosophy but is able to get new clients each year (Davis 2013). All these SE providers are working on full capacity and client satisfaction is tremendous.

2.5.2.1 Western Australia

In context of WA, (Davis 2013)) reports case study of five shadow education providers active in Perth, Western Australia. This qualitative work highlights the impact of SE on the life of students, teachers and parents. The study is based on Bourdieu's theory of education (McAdam, Harrison, and Leitch 2019). Its three important elements were habitus, field and capital. Habitus means thinking of parents, child, tutor and administrator. Field refers to the relationship between various participants of SE and social framework in which they operate. By capital we mean the economic assets as well as social reputation and prestige of the SE providers. So, it includes three types of capital- economic, social and cultural. This theory is illustrated in Figure 1.

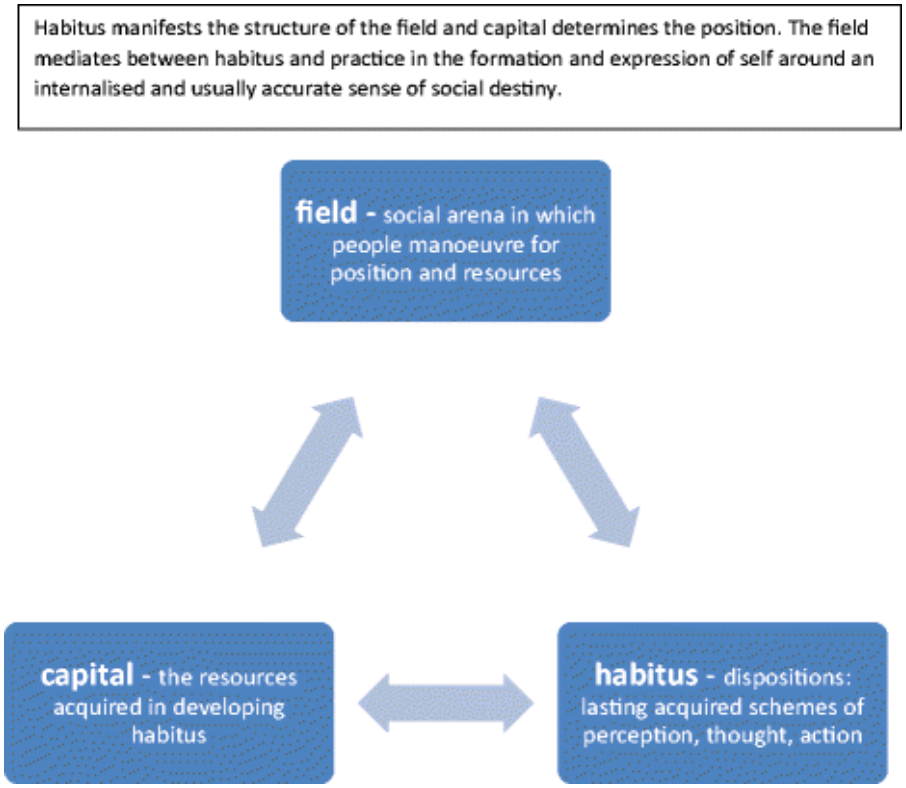


Figure 1: Bourdieu's Theory of Education (adopted from (McAdam, Harrison, and Leitch 2019))

Davis (Davis 2013) reported that the advertisement of private tutors appearing in Yellow pages explain rapid expansion of SE industry in Australia. The number of advertisement for private tutors rose by 100% while the population increased only by 42% for the period under study even though only established business advertise on Yellow Pages (See Table 19) .On the contrary with the easy option of cheap advertisement on social media websites, one would expect the number of advertisements for private tutors in yellow pages to go down. The rapid growing size of SE is also evident from the 2006 census where 26,050 people classified

themselves as private teachers or tutors while in 2011, 365,000 people were having tuition as their main employment.

Table 19 :Source –Perth Yellow Pages 1992 and 2012 editions(Adopted from (Davis 2013)Table2)

Year	Advertisements for SE providers	Advertisements for Educational Consultants	Total Advertisements
1992	36	44	80
2012	94	67	161
% increase	161%	52%	100%

Every Australian state has different policy with regards to SE, but by and large it covers three dimensions. These are student welfare, use of school resources and staff engagement in private employment. In WA, Department of Education accepts that school are unable to meets all the needs of the students. Therefore it authorise school principals to manage tutors even during the school hours (Lewis, Baudains, and Mansfield 2009).

A study done for Australia (Beavis 2004) found that enrolment in non-government schools went up by 22.3% between 1993-2003. For the same period enrolment in government school increased only by 1.2%. Another study reported, between 1970-2000 , the enrolment in government school increased by 4.1%, in catholic school by 29.9% and in independent school by 210% (Le and Miller 2003). This shift from public to private school are due to two reasons. The first being ongoing government policy of funding private schools (Angus 2003) and other being parent's dissatisfaction with government school education (Campbell, Proctor, and Sherington 2009).

This study has classified all SE providers in three categories. The first category is of Tuition as Therapy. Tutors in this category provided educational interventions much superior to the standard tuition. This is based on special medical and psychological technique. The second category is of Franchised Centres. They were based on extensive business model and may run interstate. The main centre provided study materials to franchise branches. The third category is of Moonlighting Tuition. It meant home tuition taken by school teachers or university students based on school curriculum.

The author reported five case studies of SE providers active in Perth, involving a total of 26 participants. The details of the participants are given in the Table 20. The sample comprised of five directors/tutors, three tutors, one teaching assistant/administration officer, seven parents, one grandparent, six children and three alternative therapists.

Table 20: Study participants in (Davis 2013)

	Tuition as therapy	**Tuition as therapy**	**Franchised centres**	**Franchised Centres**	**Teachers**
Title	Waterford Literacy clinic WLC	Premier Education Services	Lee Coulbourne Centre	Moreno Tutoring	Sandi Veneer
Director/ Tutor	1	1	1	1	1
Employees	1	0	2	0	0
Parents/ Guardians	3	0	4	0	1
Students	2	0	3	0	1
Associates	1	1	2	0	0
Totals	8	2	12	1	3

The findings of this study are based on interviews with participants, written documents of Shadow Education Providers (SEP) and service visit to the centres. The field notes included two types of documents. Some documents were provided by SEP, others were prepared on request. Later the data was analysed using technique of open coding, memo ring and clustering. The coding was done in two ways. Initially common themes were recognised and then labelled as habitus, field and capital.

Case study1 – Waterford Literacy Clinic (WLC)

It was the most expensive SEP in Western Australia whose clients came from affluent families. Kate and Halen were the directors of this clinic. Their clinic provided remedial lessons to primary and secondary school children. None of the session was for extension purpose. They used cheap methods to advertise their clinic. It included word of mouth, small advertisement

in local newspaper and school newsletter. Their clinic followed the model of Spring Side Clinic. The owners of Spring Side Clinic Dr Robert Groom and Dr Barbara Selwyn had personally trained Kate and Robert Groom described his model of SE as "An educational therapy based on scientific, neurotically based interventions". There were nine teachers working at the clinic. Each staff member was registered teacher and had at least nine years of teaching experience. All the staff was trained by Clinic Directors Kate and Helen. Every staff of the centre claimed providing fundamental education service rather just tutoring. WLC has no links with school and followed its own methodology of teaching. Each assessment task was based on 16 variables related to literacy acquisition skills. The initial assessment test was done for child at the cost of $350. Child has to take two sessions for literacy and 1 for numeracy on weekly basis. The cost of each session was $50. To identify the learning gap assessment of child was done again after six months at the cost of $350. Sessions were held before, after and during school hours. Child was expected to complete homework every day. There were no vacant seats at centre. Both Kate and Helen did not want to further expand the centre as it would require their moving apart from actual teaching.

Case Study 2 – Premier Education Service

It was founded by Carol and focussed on acquiring literacy skills in children. Her teaching theory was based on English Orthography. She conducted assessment of child in two stages. It included both standardised and diagnostic components. It was followed by an hour-long session in which she discussed test reports with the parents. Cost of all these three sessions was $395. Later parents were offered ten sessions of $80 each. In the last session, she discussed the progress made by the child. She had only one part time employee. She worked in partnership with optometrist Steven. To provide recognition to her business she was also the member of Learning Difficulties Australia. She had done Master of Education in Learning Difficulties. She held tuition classes once a week. She wanted every child she tutored to complete 15 minutes homework.

Case Study 3 - Franchised Tuition - Lee Coulbourne Centre

Jacqui was the Director of the centre. She worked close association with a child psychologist, natural path and kinesiology. They mostly followed the teaching programme provided by the franchise. However, they supplemented it as per the needs of the client. The centre operated

from a rented premise. It had 300 clients who took sessions both for remedial and extension purposes. The centre operated after school on weekdays. It was open on Saturday for whole day. Jacqui's centre had employed 20 people. It included 12 qualified teachers and 8 assistants. The centre offered initial testing at no cost to the parents. It was followed by a detailed program tailored at par with the individual needs of the children. Each weekly session was 80 minutes long. The cost of each session was $80. Each child was required to complete 15 minutes homework daily. The primary focus of centre was on Maths and English remedial lessons. They tutored children with learning difficulty as well as children with Autism and Attention Deficit Hyperactivity Disorder. The four children from the centre were interviewed.

Case Study 4 - Franchised Tuition – Moreno Tutoring

It was an interstate franchise run by the Director Elaine in Perth. She had the support of five qualified teachers. They worked part time at the centre. Most of the worksheet were prepared by her, even though the main centre were providing the teaching material. The centre was only established in 2006. However, the waiting list for parents could be seen from 2007. They provided lessons in numeracy, literacy and test taking skills. Initial testing to assess the child was free. The cost of each session was $45. However, the length of the session for early school year classes was one hour but for the primary school children it was seventy minutes. The student – teacher ratio was also different for both year levels. For primary school child: staff ratio was 8:3 while for early school year it was 2:1. The child was assessed after 15 sessions and worksheets were modified as per the requirement of the child. They also catered to the children of special needs like vision impairment, dyslexia etc. No homework was given to children to avoid unnecessary stress on parents and children. The centre helped children to overcome negative classroom experiences and have high self-esteem. The centre also provided support to parents as many of them were frustrated with not getting adequate support from the teachers and school.

Case study 5 - Moonlighting Tuition - Sandi Veneer

Sandi was a relief teacher and Eva Start was a tutor at a school. Sandi had 35 years experience of teaching at a primary school. She provided tuition in small group setting at a school to children who were unable to get required score at NAPLAN. She tutored only two children that too only on the request of the parents. These parents approached her after the end of

Eva Start programme at school. She did not conduct initial testing of child as she had access to school assessments and reports. She charged $35 for weekly session of 45 minutes. She did not assign any homework to children as she thought that the parents were very busy.

Above SE providers gained educational legitimacy in many ways. The first being inability of school to meet all the needs and overcome learning difficulty of children. It was largely due to increased class size, inadequate funding and lack of efforts from school. Moreover, the ability of these SEP to deliver sessions in small group settings and even one to one in few cases. Moreover, as SEP were not the government employees, they had more freedom to adopt the teaching methodology that suited their client. They also had the freedom to seek help from alternative therapist like naturalpath, kinesiologist (study of body movements) or behavioural optometrist.

The parents cited various reasons for seeking the services of SE providers for their children. One reason was parent's aspirations to help child get into professional and high school careers. As stated by Jeff (mother of 7-year-old student Jessica) "*But I can help her to get as far as I can*". Other parents seemed to help child do better at school. As stated by Layla (grandmother) - Ideally just want her to have a good start and to be confident and reach her potential. Parental anxiety, improving child performance at school and aspirations for good future of child were the main reasons behind parents seeking help of SEP even at high cost. Though most of the parents were not familiar with the teaching methodology used by SEP, they still strongly believe their children were going to benefit from it in many different ways. This could be increasing child confidence or refining his literacy or numeracy skills.

The six children interviewed perceived differently the impact of SE on their life. For some it was fun (Jacob 5years) others found it boring (Roy). Other two children Sean and Jay found tuition helping them to do well at school. Jay stated, "*I am actually above class now*". Some others could foresee the positive impact of SE on their future as Jessica said, "*Learning stuff that I might need at high school*". Most of the children weighed SE in terms of immediate gain or loss rather than assessing it in terms of long-term benefits or gains.

2.5.2.2 Outside Western Australia

In a recent study it was found SE was more used by certain migrants and culturally dominant group in Australia, Canada and USA (Watkins, Ho, and Butler 2017). The teacher's professional

organisation and consumer protection arm of government has opposed certain shadow education providers catering specifically to the families of east and south Asia (Schalley, Guillemin, and Eisenchlas 2015). In this context Dooley closely looked at the SE industry in an area of Asian settlement in Brisbane, Queensland. This study is based on 25 suburbs in which only 35%-68% people were born in Australia. In these suburbs only on average 58% people could speak English. The common overseas place of birth in these suburbs were Korea, Taiwan and Hong Kong. In these countries SE is an established industry.

The findings of the study are based on 46 SEP active in the area (Dooley, Liu, and Yin 2018). Some advertisement of Shadow Education Industry (SEI) was found through 11 free community newspapers while others through online newsletter of 36 primary schools. Eight of these eleven newspapers targeted Asian and Chinese readers. The remaining advertisements were found through online classified site and online tuition notice board. After the qualitative analysis of the data, 45 properties were coded for instance tutor credentials, fees, content, class size, delivery mode. Later these properties were described as the capital to understand the marketing behaviour.

It was found two types of SEP were active in the study area. The first type of SEP were personal tutors who sometimes worked independently and at times via tutoring agencies. The second type of SEP were well established organisations like language schools, local learning centres, national coaching colleges, national and transnational learning centre franchise. Both types of SEP offered parents/ carers three types of literacy products i.e. schoolwork help, school like programme and school relevant courses. Most of the personal tutors provided schoolwork help. To attract special co - ethnic group one of the Chinese tutor used the phrase –"*Memorisation is a Chinese thing*" (Dooley, Liu, and Yin 2018). These personal tutors sought recognition by being a successful teacher or as an outstanding student. Sometime these tutors also described reputed Australian / Chinese universities or elite school which they have attended. So, they used cultural capital in three ways, being a professional teacher, association with elite school/reputed university or as an outstanding student. The rates of teachers' tutors ($40-$50) were almost double the rate of student tutors ($20-$25). These personal tutors made use of academic capital as an outstanding student, cultural capital in form of qualifications and symbolic capital in form of reputation. Personal tutors had low

commercial capital and held classes at home or public library. They were making use of free community newspaper or social media platform to advertise their services.

Various language schools and coaching colleges offered school like programme to the interested parents. They conducted diagnostic assessment, created individualised learning lessons and gave regular feedback on child learning. Their fees varied between $30-$130 per hour. In this case the cultural capital could be derived from individual tutor, owner, manager or franchise. The reputation of the organisation was more important to the parent than the teaching calibre of the individual tutor. Some providers of school like programme used cheap advertisement while other had elaborate marketing campaign involving schools. Some of these large organisations had originated in other countries and were known to meet the needs of migrant families. At this point writer finds out how SE suppliers marshalled and mobilized resources in order to supply literacy products, highlighting bids for pedagogic legitimacy and authority.

Schoolwork help was offered by tutors working independently and for tutoring agencies. These tutors sought to draw their profits from cultural capital they had personally accumulated through careers as a teacher or outstanding student. They also listed teaching qualifications or association with elite schools and university, teaching experience at local school system or at prestigious Australian or Chinese university. They embodied cultural capital in the form of professional teachers along with symbolic capital of association with prestigious institution. These independent teacher tutors charged $40-$50/hour whereas independent tutors charged $20-$50/hour. The tutors named the school and universities they attended including private and selective school in Australia and China; listed the grades, certificates and degrees they earned; and highlighted the academic awards and prizes they had won. They made use of academic capital from their own study careers; cultural capitals from credentials and qualifications, symbolic capital with their association with prestigious school and university.

Personal tutors also sought recognition of resources they had accumulated in the field of private tuition itself. Some invoked experiences (e.g. 5 years of tutoring) while some listed trait and manner. (I understand Chinese / I can communicate in Chinese.) With respect to commercial capital, the resources of independent tutor were modest, and marketing was done at low cost. For example, cheap advertisement in community newspaper classifieds.

Delivery of lesson occurred via free or low-cost digital platform or at no cost location e.g. home or public library. The tutors were mostly flexible and punctual.

2.5.3 SE Effectiveness

The growth of SEI has not been uniform in all the states and territories of Australia (Forsey 2013). Between 1989-2002. the number of registered coaching colleges in Sydney went up from 60 to 222. This meant four- fold increase in the number of SE service providers. In contrast, community-based learning support programme were becoming more popular in Victoria. These programmes were increasingly popular amongst economically disadvantaged groups especially refugees. So to understand the type of SE providers active in different states of Australia, the study groups SEI in three broad categories (Table 21). These groupings were based on the target population that SE providers predominantly catered too.

Table 21: Types of SE Providers (based on their main centre of activity)

School	After school classes and structured courses
Community	Voluntary Organisation, Private Government partnership
Market	Cottage, Small business, Multinational Company

The school encourages certain SE providers with the intent of increasing the number of children going for professional course in reputed university. This immensely increases the reputation of the school in the area. The school also helps children to complete the schooling in the same town, so it arranges extra academic classes for the desired parents and children.

Community based SE is becoming increasingly popular amongst economically weaker sections. It is used by families that come from non - English speaking background or are recent migrants like refugees for their own children. In a study done in Melbourne , it was found that more children wanted to make use of it , then actually the seats available (Pate 2008). In a study done in high fee independent school of Sydney, it was found that academic coaching was not useful to improve the scores of children in English, Maths and Science. It was also found that untutored students performed better than the tutored cohort for the same year levels (Kenny and Faunce 2004).

Not much work has been done on the market-based SE. This type of tutoring business was mostly operated by a retired or current school teacher.

Ten students of UWA enrolled in first year in 2009 were interviewed by (Forsey 2013). The study recruited only 1st year students as they could recall their school and SE experiences accurately as they were at school few months back. The six of these recruits were his own students studying anthropology. These six recruits attended different school within Perth and were tutored by different individuals. They were labelled as Schooled in Perth Cohort (PC). The other four recruits were recommended by the high school principal who happened to be writer friend. These four recruits were involved in the study to assess the effectiveness of SE project in a small but economically viable mining town of Karratha. They were labelled as Karratha Cohort (KEIC). Except for one all other interviews were one to one of fifteen minutes. There were similarities and dissimilarities amongst the KEIC and PC. The study looks at how SE impact the life of ten young students in their journey to join specialised courses at the university aims the study share in detail the honest experiences of ten recruits with the SE especially during the two last years of schooling

Besides one recruits all other KEIC and PC students completed High School year 12 studies in 2008. Almost all the parents of PC were working in professional or white-collar occupations. Though parents of KEIC were in blue collar occupations, their earning was more than the parents of PC. The two groups from different socioeconomic background were chosen as it would enable to establish a link between academic achievement with household socio-economic rural and urban school experiences, other kind of study support accessible to the rural / urban areas students as well as formal and informal system of supplementary education. The first group KEIC represented the remote area of Australia. Karratha had advantage and disadvantage for being a flourishing mining town. Theweekly median household income was $1415 in Perth while in Karratha it was $2870 in 2011. (Chapman, Francis, and Birks 2014). However, schools were able to collaborate with the local mining industries to run SE programmes and scholarships for the local students. These students would serve these mining companies in different capacities. This study reports that SE failed to enhance students' scores in the annual exams, usually held at the end of the year but provided much needed psychological support to deal with the exam stress and anxiety.

From the sample of ten students, two students (Watkins, Ho, and Butler 2017) were selected to study in detail. The two selected students were Julie (female) from PC and John (male) from KEIC. Both John and Julie were studying at UWA. John was a medical student while Julie was

a law student. They were 18 years old at the time of interview. Julie came from highly educated family, with both parents being doctors. She completed primary schooling from the government school. However, she attended private school to complete high school. She was also brought up in the posh locality of Perth. She always knew that she was going to university. On contrast to that John came from the family of less educated parents. His father was a plumber while mother was a nursing aide. John completed primary schooling from the government school. Later, he completed high school from the local catholic secondary college. John dreamt of going to university from year 11 onwards only. To get into university, both John and Julie had to do very well in the state university entrance exam. They got both sat for this exam in 2008. To do well in exam, Julie received full support from her teachers, school and highly educated family members. However, John had access to TEE workshop run by catholic school with funds provided by KEIC. Julie accessed the service of SEP few times in her schooling. First, she used English tutor in year 5 for extension purposes. She also hired a maths tutor in year10. However, she did not benefit from it and discontinued the tutor. Later, she made use of another maths teacher/tutor to get into top stream maths section. Charges of this tutor were quiet high $60-$80/hour. She found it very useful and was able to get into top stream of maths in year 12. She got distinction in English literature due to the voluntary efforts of her aunt. Interestingly the two maths courses did not contribute in her TER. Her four best subjects were English literature, biology, history, political and legal studies. She also felt that her maths education was not helping either in the university studies. However, she felt tuition helped in coping with year 12 exam stress and anxiety.

On the other hand, John felt that he could get into medicine at UWA due to the concessions made to the rural students via the scheme UWAY. He also spoke of his friends who could not get into medicine in spite of having higher TER than him. He agreed that more education resources were available to the urban areas' students in comparison to the rural students. For instance, city students of Perth had access to state library with four floors of study materials while in Karratha they had a small library. Moreover, there were just two students for calculus class in Karratha catholic school. So, they had to do it through correspondence. On the contrary, maths class of Julie was split in two due to large number of students. Further KEIC enabled John to attend revision classes in Perth and cram classes on weekend at Karratha. John only attended science cram class. In John's opinion KECI enabled him and his

cohort focus on getting to the university. He also thought he could have got into medicine even without the support of KECI. He strongly felt that it was the hard work on his side that enabled him getting into medicine. However, the Catholic school principal pointed out the positive effects of KEIC on the student community. It not only helped to increase retention rates for year 12 but also enhanced the number of students qualifying for the TER. The other two members from KEIC, Lucy and Mark agreed with views of John, they too believed they would have still reached university without the support of KEIC. Lucy felt that KEIC help her in improving her grades. Most of these interviews raised questions about the effectiveness of SE even amongst the bright students. Pete from PC found the maths tutor in year 10 not beneficial. Some of the tutors Ella found helpful. However, she too was unhappy with her German tutor in year 12. In spite of taking maths tuition Karen and Geraldine failed to clear year 12 Maths exams. Amati employed two tutors in year 12. One tutor was ineffective while second tutor provided her the psychological support to deal with exam related anxiety and improving her grade.

The study drew attention on the usefulness of SE and its non-academic benefits to the student community. The study pointed out the need to provide more educational resources and tools to remote/rural students in different parts of Australia. The major limitation of the study is that its findings are based on ten bright students which were taught by the author himself. The study does not give insight into primary level, middle level, average or below average student experiences of SE. The study is not very helpful to understand the changing nature of SE industry in Australia and world over.

2.6 Summary

Most of the studies done in Australia or elsewhere point towards the shortcomings of mainstream schooling in achieving the educational goals set up by the relevant authorities. It reinforces the fact that public education system needs to become more accountable and government needs to devise firm strategy to help students acquire basic literacy and numeracy skills. There is also an urgent need to prevent students having negative classroom experiences which could impact their mental and physical growth and move them towards bullying or committing suicides. The more mainstream schooling and Shadow Education system work in partnership, it will be easy to achieve the desired learning outcomes.

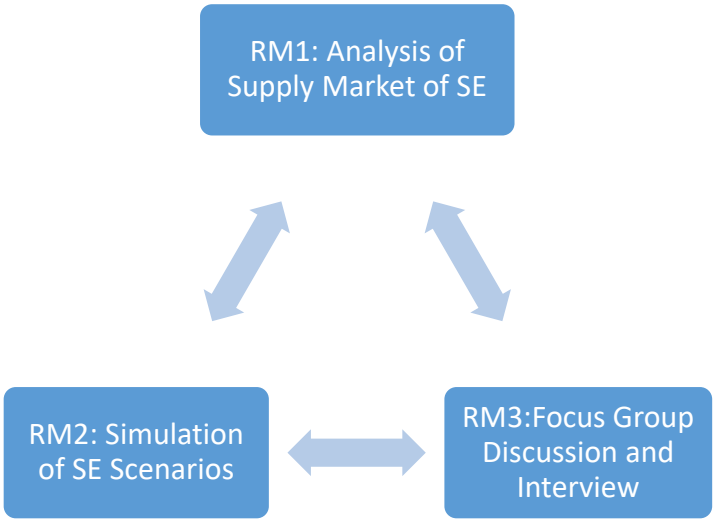
Moreover, this will in turn help to reduce stress on the students, parents, teachers and school. This will also help the students to acquire the required literacy and numeracy skills by studying during the school hours due to small class size and individualised learning plans delivered by qualified teachers.

3 Research Methods

3.1 Introduction

To understand the dynamics of SEI, mixed mode of research was adopted. In other words, the researcher adopted both qualitative and quantitative study. So, the researcher carried out the study by leveraging data of both type in order to get deeper, and ultimately more reliable, actionable and research insight from each of the stakeholder. For convenience we have divided the stakeholders into three categories. First being SE providers, which included home tutors with few students to global chain of educational franchises. This was investigated by studying the commercial markets of SE providers with the in-depth study of their websites as well as print and social media. Secondly, the researcher also included government policies on learning assessment and challenges faced by the school / teachers to achieve the designated goals by performing simulations of "what if" scenarios. Thirdly, the researcher looked into the mindset of families with reference to their socio-economic background, ambitions and aspirations in which the children grow and nurture. This was facilitated by conducting focus group discussions. Each of the above aspect is illustrated in Figure 2.

Figure 2: Three-dimensional approach used in research methodology



In this chapter we present detailed information on which how each research methods will answer our research questions. The section 3.2 presents the process of creating data set for analysis of supply market of SE providers active in Western Australia. The section 3.3 presents

a simulation model giving insight into the impact of SE on the NAPLAN score. Section 3.4 presents processes involved in conducting online focus group discussion (FGD). The section 3.5 provides details of the qualitative and quantitative methods used for analysing data of the previous three sections. The final section provides map of methods to the research questions.

3.2 Supply Market of Shadow Education

The analysis of supply traits of a commodity via critical analysis of advertisements is used in many fields (including education) as a guide to seek market forces that reach consumers (Dooley, Liu, and Yin 2018, Doherty and Dooley 2018, Harper 2012). The highlights of advertisements also reflect on the current need and/or expectations of the consumers. This aspect was described in detail in section 2.5.2.2 Outside Western Australia, in context of Brisbane region of Australia.

In this study we used the approach similar to that of Doherty and Dooley to explore the market availability of SE to parents (Doherty and Dooley 2018), however our approach involves both qualitative and quantitative data. A data base of SE providers was collated from advertisements appearing in local newspapers, school newsletters and websites in first half of 2019. To be included in the sample SEP must have to be offering services in Western Australia in either face-to-face model or via Online. Guided by research literature, the information on a range of variables was collected, and collated as quantitative data and qualitative statements, as described in Table 22 below.

Table 22: List of qualitative and quantitative variables to access supply of SE providers

Type	Names
Quantitative measures as yes or no	Mode of operation: Home, centre based, online, franchise, tutor credentials, Non-Academic subjects, homework help, Special needs, endorsement by school, affiliation with ATA, year levels, subjects, global, Australia, Perth based, face-2-face, online, group, structured teaching, homework support, exam practice, report students, testing of students, advertisement in print media, Facebook, web
Qualitative statements	Service philosophy, Service statements, Testimonials

For each quantitative variable, proportion of "yes" response for variable was recorded. Assuming 80% cases will result in a "yes" response a sample size of 44 is needed to have a confidence level of 90% that the real value is within ±10% of the measured/surveyed value (Calculator.net 2020). Conservatively, 50 SEP were investigated.

3.3 Simulation of SE scenarios

In Australia the National Assessment Program Literacy and Numeracy (NAPLAN) tests are conducted for the students of 3, 5, 7 and 9 school years in area of numeracy, reading, writing and language conventions. These national level examinations provide benchmarking for literacy and numeracy and may be used for improving educational practices. In NAPLAN students are categorised into bands at each point of examination, where students at or below the lowest band in the specified year group are considered as performing below national minimum standard (NMS) (Australian Curriculum Assesssment and Reporting Authority 2019). Students in second highest, band are considered performing at NMS. Students in third heights band or more are regarded as performing above national minimum standard. This is illustrated in Figure 3.

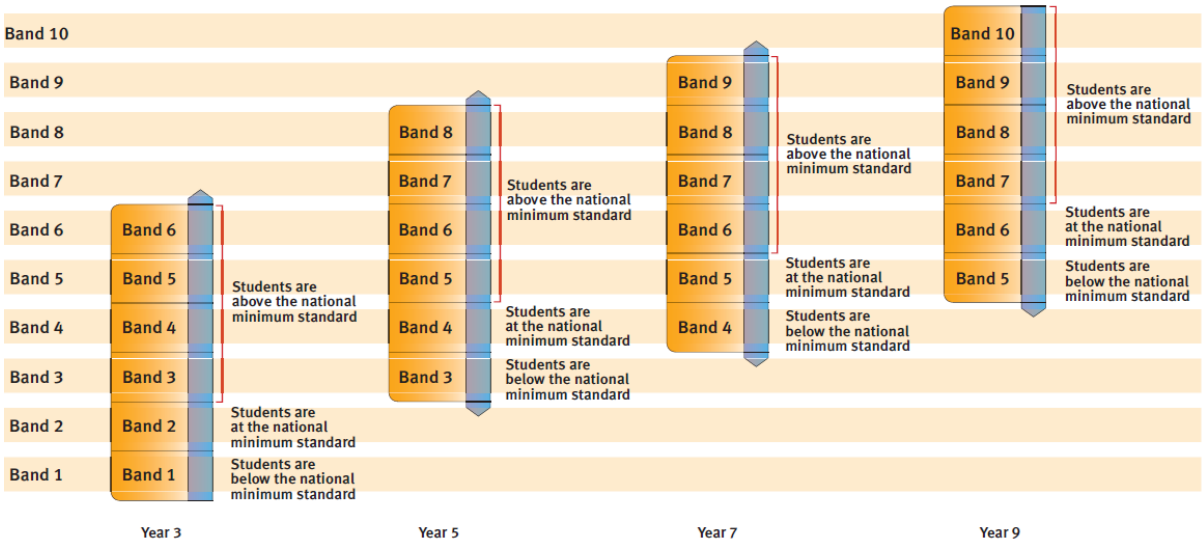


Figure 3: Illustration of relationship between bands and NMS (adopted from (Australian Curriculum Assesssment and Reporting Authority 2019))

The student's raw score in NAPLAN exam is converted into equivalent NAPLAN scale score as per the equivalence tables. These tables provide a cut-off NAPLAN scale score for each Band, ensuring comparability across cohorts (Australian Curriculum Assessment and Reporting Authority 2019). Figure 4 Illustrate the score equivalence table for year 3 in 2019.

Year	Domain	Raw Score	Delta-Centred Logit	Transformed Logit	Logit SE	NAPLAN Scale Score	Scale Score SE	Band
3	Numeracy	0	-5.308	-6.773	1.517	44.6	91.1	1
3	Numeracy	1	-4.098	-5.495	0.908	121.4	54.5	1
3	Numeracy	2	-3.480	-4.842	0.726	160.6	43.6	1
3	Numeracy	3	-3.042	-4.379	0.632	188.4	37.9	1
3	Numeracy	4	-2.693	-4.011	0.572	210.5	34.4	1
3	Numeracy	5	-2.398	-3.699	0.531	229.2	31.9	1
3	Numeracy	6	-2.139	-3.426	0.501	245.6	30.1	1
3	Numeracy	7	-1.906	-3.179	0.478	260.4	28.7	1
3	Numeracy	8	-1.691	-2.953	0.460	274.0	27.6	2
3	Numeracy	9	-1.491	-2.741	0.445	286.8	26.7	2
3	Numeracy	10	-1.301	-2.541	0.434	298.8	26.1	2
3	Numeracy	11	-1.120	-2.350	0.424	310.2	25.5	2
3	Numeracy	12	-0.946	-2.166	0.417	321.3	25.0	2
3	Numeracy	13	-0.778	-1.988	0.411	331.9	24.7	3
3	Numeracy	14	-0.614	-1.815	0.406	342.4	24.4	3
3	Numeracy	15	-0.453	-1.645	0.402	352.6	24.2	3

Figure 4: Year 3 numeracy score equivalence table 2019, Table 13 in the report (Australian Curriculum Assessment and Reporting Authority 2019)

Based on the NAPLAN results of 2019, the researcher simulated various scenarios of SE, between the school years of 3 and 5 for numeracy to quantify possible effect of perceived level of SE. The simulation model and its parameters are described below

3. 3. 1 Simulation model

Step 1: 3S - Simulate student score in year 3

Simulate a student score assuming normal distribution with mean and variance as per the reported values in NAPLAN National Report for 2019, section numeracy, year 3, Western Australia (Australian Curriculum Assesssment and Reporting Authority 2019).

Table 23: Summary of 2019 NAPLAN score, state WA, for numeracy for year 3 (extracted from (Australian Curriculum Assesssment and Reporting Authority 2019))

Examination	**NAPLAN**		
Subject	Numeracy		
Year Level	3		
Cohort	2019		
Distribution of NAPLAN Score	Normal	Mean	Standard Deviation
		403.7	74.4

From 3S, percent of students in each band can be calculated, using score equivalence table. For example referring to Figure 4, a score of 260.4 or below is considered as below NMS, as this is upper limit of score for Band 1.

Step 2: *5S - Simulate student score in year 5*

5S=3S+Δ

That is assume students score in year 5 (5S) is their score in year 3 plus an increment, where the increment is uniformly distributed with the parameter as defined below

Table 24: Assumed distribution of the increment in the NAPLAN score from year 3 to year 5

Group	Distribution	Change	
		Lower Limit	**Upper Limit**
Below NMS	Uniform	30	100
At NMS	Uniform	60	120
Good	Uniform	60	120
Extension	Uniform	60	120

Choice of these parameters was guided by the expert opinion. An important point to be noted is that the researcher observed that she cannot map observed values of year 5 score, as these include students with varied level of exposure to SE.

Step 3: 5SF=5S+δ *Simulate student score in year 5 post exposure to SE*

Assume students score in year 5 (5SF) post exposure to SE, will be their score year 3 plus an increment due to the natural progression through schooling and improvement due to exposure to SE. The model for improvement, δ, comprises of two components i.e. probability of taking SE (p) and perceived improvement. The

Table 25 describes one such set of assumptions

Table 25: Assumed distribution of the increment in the NAPLAN score attributed to SE.

Marks		Below NMS	At NMS	Good	Extension
Probability of taking SE		0.8	0.3	0.01	0.01
Change in Score: Uniform Distribution	**Lower Limit**	50	50	50	50
	Upper Limit	150	150	150	150

The improvement, δ, is uniformly distributed, with parameters guided by the effectiveness of the SE. So finally

5SF=3S+ Δ + δ

From, 5SF, percent of students in each band can be calculated, using NAPLAN score equivalence table for year 5.

The model was simulated in Excel using functions NORM.INV, RANDBETWEEN, BINOM.INV, COUNTIF and multiple if statements. The scenarios described in Table 26 of SE services are simulated and results are presented in next chapter.

Table 26: What if Scenarios of SE

Scenarios Description	Definition
Realistic	Realistic benefits SE can provide to students across all ability
Optimistic	Maximum possible benefits SE can provide to students across all ability
Pessimistic	Low level of benefits SE can provide to students across all ability
Targeted at NMS or below	Specialist remedial education strategy to bridge learning gap of students at risk

3.4 Focus Group Discussion

In Focus group discussion (FGD) people are invited to discuss a topic of interest, regulated by a moderator. FGD methodology is widely used in educational research due to convenience,

economic advantage, high face validity, and time efficiency (Krueger 1994, Babbie 2013). Through FGDs using a small sample, researchers can generate diverse qualitative data that may be difficult to obtain by quantitative surveys. More recently FGD are being conducted in online mode and are found to be comparable to face-to-face mode (Stewart and Shamdasani 2017) and may result in discovery of additional themes (Woodyatt, Finneran, and Stephenson 2016). Additionally, asynchronous online focus groups mode has been successfully used in the sensitive topics (sexual preferences, illegal activities) as people can respond openly without being identified (Reisner et al. 2018, Zwaanswijk and van Dulmen 2014). In this study we have used asynchronous online FGD to identify the view of all stake holders using the commercial software FocusGroupIt (Harrington 2016, FocusGroupIT 2018).

3.4.1 Questions for FGD

The researcher derived the key themes that emerged out of the literature review and accordingly the questions for various stakeholders of SEI were formulated. These set of questions were reviewed and evaluated by five experts in context of research objectives. The comments from reviewers and supervisors was used to fine tune the questions. Finally, a pilot trial was conducted, with peer students, to identify any potential issues. Rectifying all issues involved, final questions for FGD were ready.

3.4.2 FGD numbers and structure

The FGD was conducted in structure manner, with moderator navigating through questions one at a time. Three separate type of focus groups were set up as below.

- The first focus group was targeted at students. This group comprised of students studying in years 7 to 9 in local schools in WA. The students were organised into two focus groups with about 8 participants in each recruited in random order.
- The second focus group was targeted at parents. This group comprised of parents, with children studying in years 7 to 9 in local schools in WA. The parents were organised into two groups with about 8 participants in each group recruited at random order.
- The third focus group was targeted at teachers. This group comprised of teachers, with at least 5 years of teaching experience with Australian curriculum. A total of 6 teachers participated in the discussion.

The empirical study by Guest et.al. (Guest, Namey, and McKenna 2017) was used as a guide for estimating the number of focus groups needed. As per this study more than 80% of themes can be discovered by using two focus groups, with 6-8 participants in each, and following a semi-structured setup. (Guest, Namey, and McKenna 2017). The number of focus groups in this study are aligned with this recommendation. The teachers were particularly hard to recruit, hence the cumulative group size is towards the lower band of acceptable number. The schools were approached via email and followed by phone call till required focus group was formed.

For the fourth stake holder, the SEP were interviewed using FocusGroupIT software. Here the FGD format was not used, as questions were sensitive and directly related to SEP personal setup. It was deemed by expert panel that personal interviews will be better to extract such information. The list of SEP was prepared and emailed for participation.

3.4.3 Process of Ethics approval

An application for ethics approval was submitted at Curtin University Human Research Ethics Office. This required submission of the following items.

- Information sheets for parents, teachers, SE providers and students (in child friendly language).
- consent form for each participant type.
- Recruitment material.
- General information on the study, objective, aims, significance etc.

The application was reviewed and approved through the Curtin University Low Risk Review Process and approved (Approval number **HRE2020-0240)**. The proposal was found to meets the requirements described in the National Health and Medical Research Council's (NHMRC) *National Statement on Ethical Conduct in Human Research (2007). The approval is valid till* 19-May-2021.

3.4.4 FocusGroupit Software

The focus groups were conducted in online mode using the software FocusGroupit (FocusGroupIT 2018). This software was developed by Matt Foley, an experienced market

researcher. Focus groups were set for each group, as indicated in previous section, allowing for anonymous responses, see Figure 5.

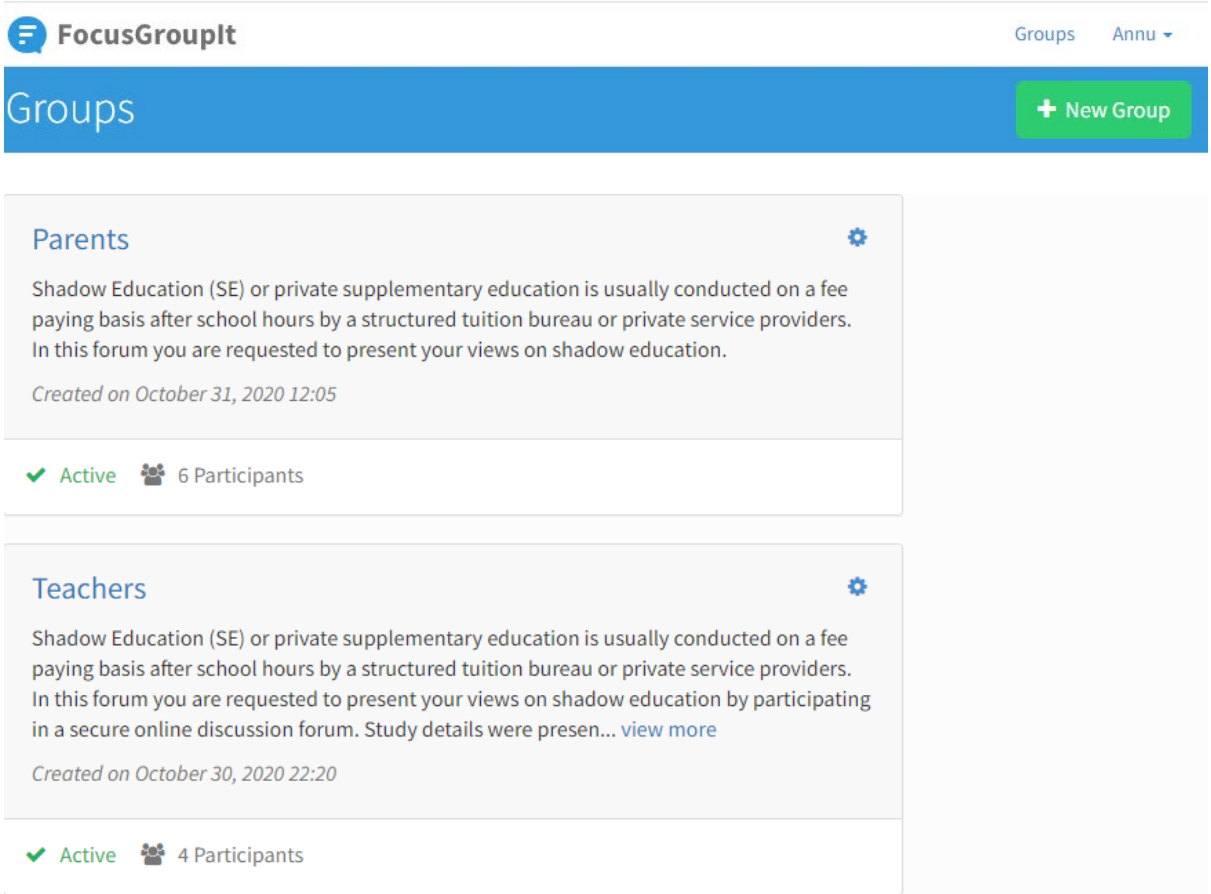


Figure 5: Dashboard showing focus groups

Once the consent was received from participant, a link to the group was emailed. Participants then registered into the system and entered their responses. Participants could type in the response using any mobile devices or computer. There was an option to enter audio messages also. A snapshot of the system is presented in Figure 6 . The supervisor of researcher was invited to be the observer in the discussions.

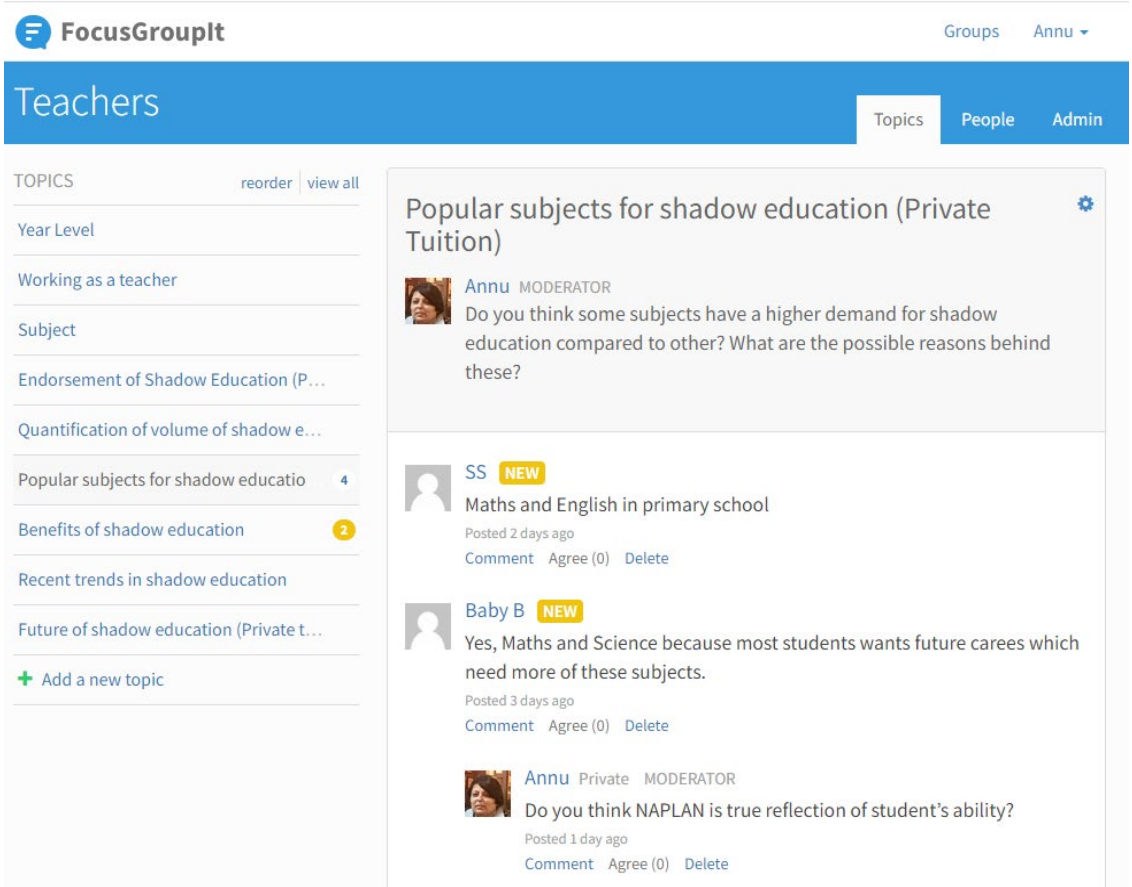


Figure 6: Dashboard of focus group for teachers. Participants name are fake names

While focus group was on, twice during the day, the researcher would view the response from the participants, and comment to continue discussion. Whenever participants responded to the comments by the researcher, the researcher would receive an email alert on her phone, as illustrated in Figure 7. The researcher would then respond at her earliest.

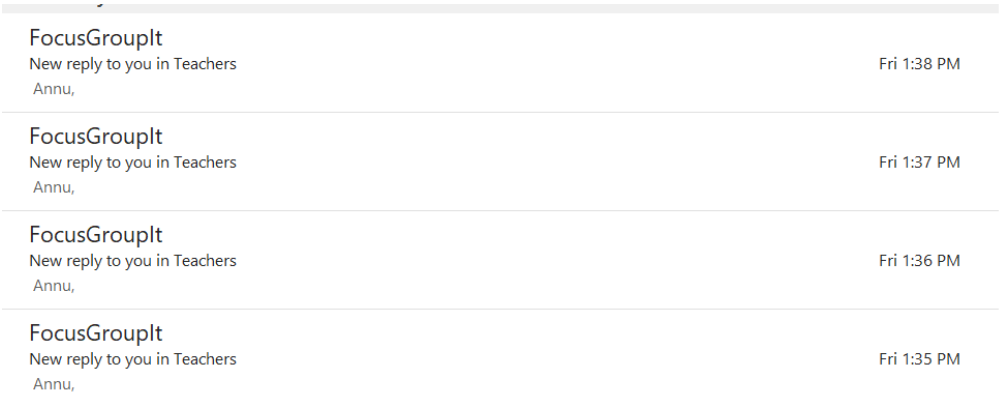


Figure 7: Email alert of activity in focus group for teachers.

On the completion of the FGD, I downloaded the entire transcript as an excel file. This file had full log of participants and their responses.

3.5 Qualitative and Quantitative Analysis Methods

3.5.1 Analysis of Quantitative Feature of Supply Market of Shadow Education Providers and FGD

The data base of feature sets of SE providers as described in section 3.2 was coded and exported to SPSS. Summary statistics were computed. All analysis was performed using SPPS version 25.

The response from FGD for each question was categorised as per the question statement. Percent response for each category was computed.

3.5.2 Analysis of Results of Simulation Models

The simulation was performed for the model's settings in Table 23 and Table 24 and scenarios described in Table 26. For each model the percent of students in each band was computed.

3.5.3 Analysis Methods for FGD and Qualitative Statements of Supply Market of SE

The response to the focus group is qualitative data that comprises of view, emotions and perceptions of various stakeholders. Similarly, statements on service philosophy, types of services and testimonials of SE providers are qualitative statements. From these qualitative statements key concepts are identified, quantified and correlated.

Herein the researcher have used the Leximancer (Leximancer 2011), a text data mining based software, that uses unsupervised machine learning approach for creating concept maps from qualitative statements (Haynes et al. 2019, Samuel, Conceição, and Martín 2018). Leximancer has been used extensively in qualitative research (Lemon and Hayes 2020, Previte and Robertson 2019, Tetzlaff et al. 2020, Finneran 2018, Finn, Phillipson, and Goff 2020). Leximancer generates the concept map by following a three-stage hierarchical model. First words in the text with high frequency are identified and their co-occurrence with other words is determined, taking into account synonyms from the thesaurus. Next the words that travel together and have semantic connection form a concept. Finally, interrelated concepts are merged to form themes.

A sample concept map from Leximancer is presented in Figure 8. This concept map was created from background text on SE submitted as part of the PhD proposal. Here three themes are identified, namely “culture of examinations”, “Why people take SE” and “Country Specific Practices”. The theme with more concepts is coded in hot colours (red) and themes with less concepts in cool colour (blue).

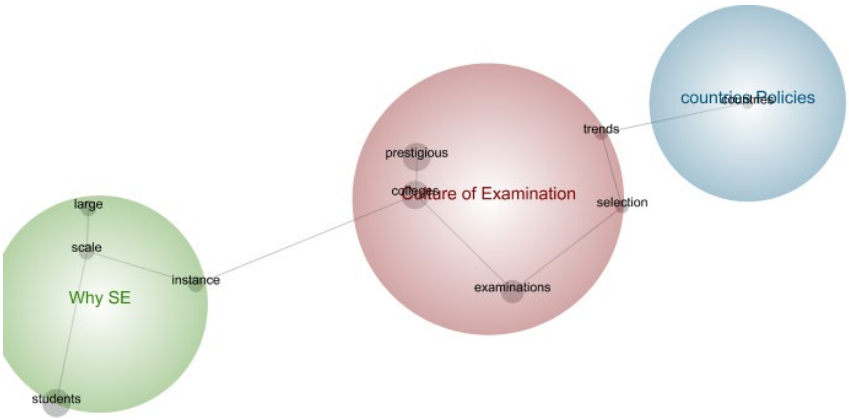


Figure 8: A concept map of background text from PhD proposal created from Leximancer

The name for themes in concept maps was assigned by me as default names were not very meaningful. Within Leximancer synopsis you can now examine each section of the text that lead to the specified themes, see Figure 9. This provides an easy interface for interpretation of the concept maps.

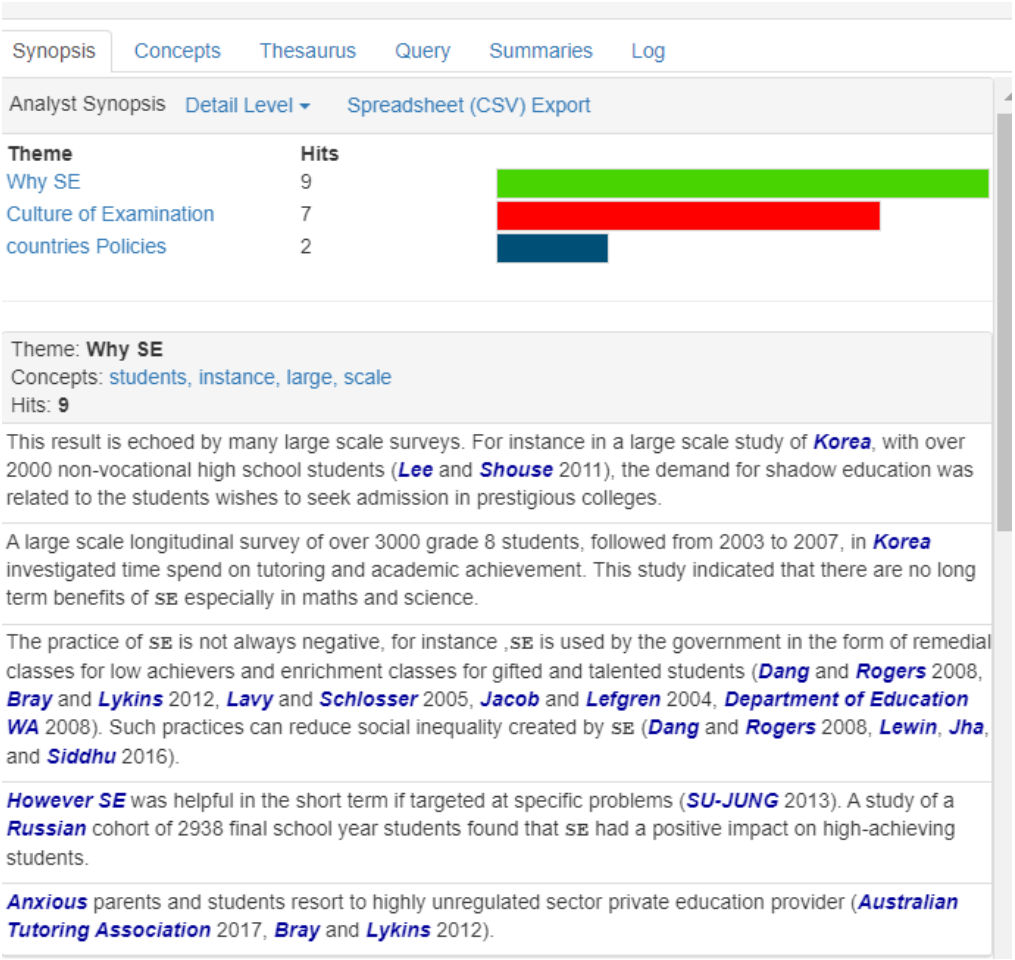


Figure 9: Synopsis of concept map in Leximancer

3.6 Mapping of Research Methods and Questions

All of the above research methods were investigated simultaneously and were used concurrently to answer the research questions. The mapping of the research methods and question is illustrated in Figure 10.

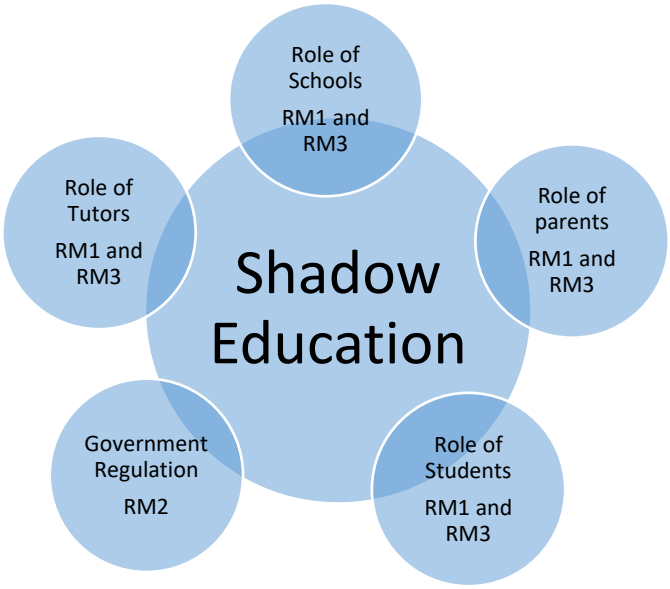


Figure 10: Graphical presentation of research objective and mapping with research methodology dimensions: RM1: Analysis of supply market of SE, RM2: Simulation of SE scenarios and RM3: Focus group discussion and interview

Results from all the stakeholders were triangulate to paint global picture (Finn, Phillipson, and Goff 2020)

3.7 Summary

This chapter presents the methods for studying the supply market of SE, simulation model to ascertain impact of SE on NAPLAN score and focus group discussion to collect opinion of stakeholders. Focus groups were conducted via commercial software FocusGroupit. Quantitative information was analysed using SPSS, models were simulated in Excel and concept maps are generated using Leximancer.

4. Supply Market of Shadow Education

4.1 Introduction

This chapter presents an overview of the services offered by the SE providers active in Western Australia and explain how they are in tune with the parents' expectations. The contents of the advertisements of SE providers are explored as they provide the reflection of the supply market of SE. Also included in the chapter are the simulation of NAPLAN results to quantify the impact of various SE scenarios.

This chapter is divided into five sections. In section 4.2 presents the brief outline of the research methodology that has been used to gather the information on SE providers from the perspective of all its stakeholders. Section 4.3 present exploratory analysis of services offered by the various SE providers on indicators defined in Chapter 3. Next section 4.4 presents concept maps created from the qualitative statements of service philosophy, service statements, success story of the SE providers. Section 4.5 presents the simulation model based on NAPLAN to evaluate the effectiveness of SE. This is followed by discussion and summary in the next two sections respectively.

4.2 Research Method

The methods used in this chapter were described in detail in sections 3.2 and 3.3. For completeness we briefly describe these again. A database of SE providers was collated from advertisements appearing in local newspapers and websites at the beginning of the academic year of 2019 with coded information on range of indicators specified in Table 27. Also collected were qualitative statements on service philosophy, services and testimonials. Quantitative indicators were analysed using SPSS and concept maps of qualitative statements were created using Leximancer. Simulation based on NAPLAN results was generated for varying levels of SE.

4.3 Exploratory Analysis of Features of SE Market

The exploratory analysis of the database indicates certain commonalities and difference between the various SE providers active in Australia. Some of the trends are in tune with the

international trends on SE Industry. Summary of all features of database (% percent) is summarized in Table 27.

Table 27 indicates that all SEP offer services to middle school (classes 7-9), whilst 94% and 84% provide services to primary and upper school classes. Rows 5-8 of Table 27 indicates 56% of SEP offers internet tuition, 87% offers centre based tutoring and 20% offers home tuition. A new trend of SE providers in Australia has been to move towards internet tutoring. Many of the centre-based SEP have also started internet tutoring and offers wide range of online resources to further enhance learning in children. The three global SEP that are active in Australia are *Kumon (Kumon 2019)*, *Kip McGrath (Kip McGrath 2020)* and *North Shore* (North Shore Coaching College 2020). They have been expanding at an annual rate of 6.5% in the last two decade, while we have seen the emergence of many new SE providers in WA in 21st century. These are for instance *1to1 Bunbury* (Bunbury 1To1 2018) , *Perth Academy of science* (Perth Academy of Science 2020) or *Cluey learning (Cluey Learning 2020)*. All these centres operate on a different service philosophy and attracts different kind of client.

Table 27: characteristics of SE providers of Australia

Indicator	Definition	% Yes
Year Level		
Primary	Class 1-5	93.8
Middle	Class 7-9	100
Secondary	Class 10-12	87.5
Mode	Set up for providing SE service	
Home	Lesson are delivered at student home	20
On-line	Lessons are delivered at student home on internet by the tutor	56.3
Centre Based	Both tutor and student come to the centre for lessons	86.66
Globally	SE provider has branches outside Australia	13.4
Franchise	Owner license its operation in exchange for a fee	21.4
Credentials	Teaching qualification are mandatory for the tutor to have	42.9

Indicator	Definition	% Yes
Non-Academic	Subjects other than English, maths and science offered	53.3
Academic	Main subjects that core in any school curriculum	
English	Literacy skill in English language	75
Maths	Numeracy skill	81.3
Science	It includes study of life science physics and chemistry	75.5
Homework Support	Tutor helps in the completion of school tasks	33.3
Exam Practice	Prepare student for examinations like NAPLAN, GTSE	42.9
Special Needs	Offers services to manage learning difficulty or physical disability	50
Student Recruitment		
Report	SE Provider sees student school reports	7.1
Test	Se provider conduct a written test for the student	50
Interview	SE Provider conducts verbal assessment of the child	0
None	Student is not assessed by the SE provider	14.3
Advertisement		
Print Media	SE advertisements in newspaper or magazines	33.3
E-Media	SE advertisement on Facebook, Twitter, linked In	78.95
Endorsement		
School	SE provider is recommended by school through newsletter or personal referrals	31.3
ATA	Member of Australian Tutor Academy	25

Referring to Table 27 again, with regards to the recruitment of tutors there is no uniformity even amongst the SEP. Only 43% of SEP explicitly require tutors to have a teaching qualification. For instance *Kip McGrath (Kip McGrath 2020)* recruits only qualified teachers while *Kumon* (Kumon 2019) and *North Shore (North Shore Coaching College 2020)* make no

explicit claims of this kind. Some very new SE providers give the client the freedom to choose their own tutor by looking at the video demo posted by tutors. For example, the *Live Tutor Online* (Live Tutor Online 2020) does not charge any commission for connecting student and the client on a common platform. In this setup the cost of each lessons is a personal agreement between the client and the SE provider. The hours of operation are different for the various SEP. Some operate only after school; others operate only on weekends while still some operates on both weekdays and weekends. Some centre based tutors own their own real estate space while others were operating from the rented public spaces. Most of the online SEP have no dedicated office space and they operate from home. They use their websites for the purpose of recruiting clients and the tutors.

Though 1 in 2 SEP provide lessons both in academic and non-academic subject but the most popular subjects of SE providers have been Maths, English and science, with over 75% SEP providing these services in these subjects. Very few SEP specialises in one particular subject like Science (*Easy Science tutoring (Easy Science Tutoring 2020)*) and English (*Cracking the ABC code (Cracking the ABC Code 2020)*). Another unique feature of SEI in Australia is that the share of global SEP is just around 15% so there is lot of scope for the local SE providers to attract more clients.

The most important element that is vital in the success of the centre is their teaching style and how it is suited to the clients. Unlike mainstream schooling there is no guidelines or rulebook for SE providers in Australia on the teaching pedagogy or the content of the lessons. This gives SE provider the freedom to choose the teaching style that will suit their client and plan as per the academic calibre of the child or as requested by the parent. So in this context the role of ATA (Australian Tutoring Association 2020) becomes important as it helps to protect the interest of SEP. However, it is noted that only 25% of SEP have been associated with ATA. ATA may also assists SEP in increasing their client base. This is reflected in the way student are selected for the class. It was found that 1 in 2 SE providers were conducting a written extensive test while 7% refer to school reports and few did not refer to either. For instance *Scholastic Excellence (Scholastic Excellence 2020)*, *Learning is Unique* (Learning is Unique 2020) and *Cracking the ABC code* (Cracking the ABC Code 2020) conducts extensive test for the student, this help them to identify gaps in learning and design individual tailored lessons.

The non-franchise-based SEP (79%) have more freedom to plan the individual tailored lessons as they do not have to follow the fixed lessons plans supplied by franchise. Around 50% of SEP were seeking the help of an alternative therapist and some even deliver the lessons at school for the special needs of the child e.g. *Cracking the ABC code (Cracking the ABC Code 2020)*. Around 43% of the SE providers were offering the exam support packages like, *Perth Academy of Science (Perth Academy of Science 2020)*. Three in ten SE providers were rendering the student in completion of school task that could include completion of investigation or preparing the child for oral presentation.

SEP (79%) were found to be active on various social media sites that include Facebook, twitter, LinkedIn, you tube which further highlights the achievements of the SE provider in great depth. Even the centre-based tutors were offering few free resources to enhance the learning in children like pronunciation or understanding 3D objects. Only 33% of SEP were presenting advertisement in print media.

Table 28: Qualitative Statements of SE providers

Indicator	Definition	% Yes
Success Stories		
Student	Students success story is presented, endorsing SE provider	71.4
Centre	Centres success story is presented, endorsing SE provider	73.3
Service Philosophy	Principles on which providers runs its operation	
Esteem	Enhancing the prestige of the child	81.3
Inclusive	Cater to the specific needs of the child	75
Self-Pace	Individual lessons designed as per the child ability	75

Table 28 indicated that more than 70% of SEP explicitly present statements on Service Philosophy and success stories. The service statement, philosophy on dedicated websites not only reflect on the mindset of the SEP but also give insight into the services they were offering

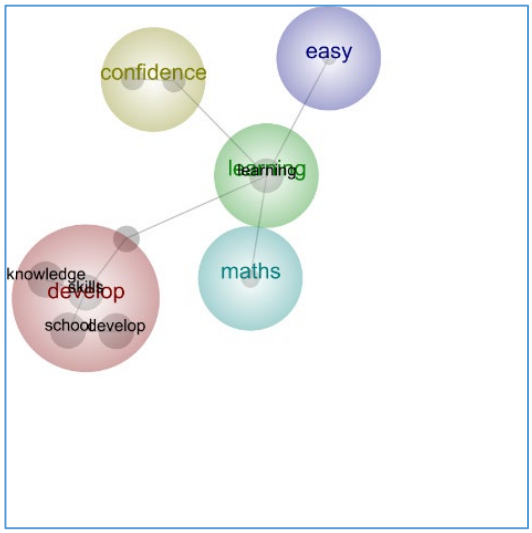
to the student. For instance, phrases like *"Learning is Unique , "All kids need a little help, a little hope and someone who believes in them"*, show that SEP will help child to build their self-esteem, gain self-confidence, fill the learning gaps, get better grades at school and feel accepted by the peer. This is further supported by the testimonials of client and the centre. These qualitative statements are discussed in next section.

4.4 Qualitative Analysis of Features of SE Market

4.4.1 Service Philosophy

The text analysis of service philosophy statements of SEP, leading to concept maps and summary of these hits is presented in Figure 11. The concept map potrays five themes. The most dominant theme is "LEARNING" with maximum hits and other four theme of slightly less importance are DEVELOP, CONFIDENCE , EASY and MATHS.

The theme "LEARNING" was directly linked to four other theme received 33.33% verbahits. See row 1 of table within Figure 11. This shows how crucial learning has been in creating the service philosophy of any SE provider active in Australia. Learning is more related to the enhancment of academic calibre of the child by giving them strong foundation in basic concept of maths, science and grammar. Learning is used by the SE providers to reflect its expertise in terms of services offered by them. It also reflects the mindset of the provider and the teaching pedegogy used by them to achieve the desired outcomes.



Theme	Concepts	Relative Proportion of Hits
learning	learning	33.33
develop	develop, knowledge, school, skills, study	27.78
confidence	confidence	16.67
math	math	11.11
easy	easy	11.11

Figure 11: Leximencer Concept map of Australian SE PROVIDERS service philosophy

It also give insight into types of client that SEprovider would be looking forward to have and at the same time it also tells us which service statements are given more importance by the students and parents who might be coming from the different socioeconomic background. For example one of the SE provider philosophy statement is

> "*Provide High quality professional assistance to those who are struggling within the standard curriculm*".

This statement shows this SE provider have a special strategy to deal with the learning difficulty of the students and this centre offers more of remedial SE than Extension. The other SE provider statement is

> "*Extension lessons for students capable of extending their learning to a higher level* "

The statement like above shows SE providers render assistance in succesfully competing in GATE or specialist course of the high ranking university.

The next important theme of paramount importance in the service philosophy is DEVELOP which has five concepts i.e. knowledge, school, skill, develop and study. This theme gets 27.78% verbahits and is of paramount importance in the holistic development of the child, especially assisting those with the special needs in terms of physical or learning disability. This theme is more evident in the newly established SE provider that are seeking the help of alternative therapist, use sensory equipments or innovative strategy to make children perform at the full capacity. The statement by SEP like

> "*Give your student the opportunity to develop the knowledge and skills necessary to meet the challenges of daily school life*"

point us towards the challenges of mainstrem schooling in meeting all the learning needs of the children . This could be attributed to large class sizes or lack of the resources. It also indicates that SEP wil not only help the child in completion of school task but also to regain confidence in themselves. This in turn will help child to get more positive experiences at school and build raport with teacher and the peers.

CONFIDENCE is the next important theme with 16.6% verbahits and is linked to the theme LEARNING. Building confidence is an appealing attribute to present to parents, as confidence leads to development in all fronts. One SEP states:

> "*Every Australian student deserves access to the best teaching giving them better chances to success in any educational setting*".

Self coding of qualitiative statement in Table 28, indicated that over 75% of SEP, emphasised on building Self Esteem, providing inclusive environment and selfpaced learning environment. This is being reflected in above themes.

Maths is the third most important theme in the service philosophy and is closely attached to the dominant theme learning . The word maths directly appears in the service statement of some of the providers like

> "*The right place to learn maths and science . As easy as pie*."

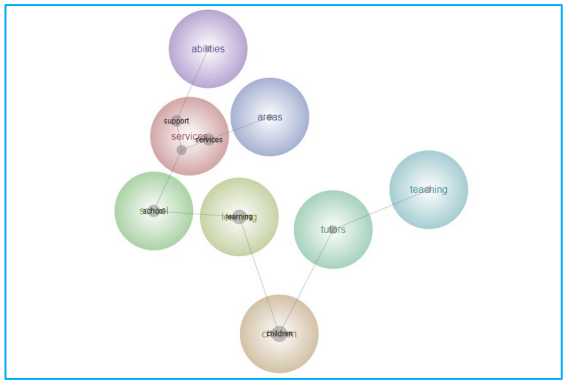
Though it gets only 11.11% verbahits but it is the only subject that appears in the themes of concept map . It indicates the importance attached to maths by the SE providers to attract clientage.

The last theme identified is EASY and is linked with the theme of LEARNING. The SEP use this facet to again emphasise on holistic learning. One statement is

> "*Make learning a fun and enjoyable experience for the student*"

4.4.2 Service Statement

Leximancer software has grouped the service statement of SE providers into eight themes. The most dominant theme is CHILDREN which gets 36% verbahit and least important being AREAS with 4% verbahit. The next two important themes are LEARNING and SCHOOL, each with 13% hits. For better understanding these themes have been arranged into table as per their relative importance, see Figure 12.



Theme	Concepts	Relative Proportion of Hits
children	children	35.53
learning	learning	13.16
school	school	13.16
tutors	tutors	10.53
teaching	teaching	9.21
services	services, support, clients	9.21
abilities	abilities	5.26
areas	areas	3.95

Figure 12: Leximencer Concept map of Australian SE PROVIDERS service statement

The child centred is the most important theme which constantly appears in the statement of most of the SE providers. This theme is strongly connected with other two theme TUTORS and LEARNING. SEP emotional appealing soft tone voices deeply touches the mind and heart of the child as well as parents. This personal touch of SEP which many clients found missing in the school, attracts the client towards the centre in increasing numbers. Some SE providers help children by assisting them in the school task while others help them to cope up with the exam stress. There are still some others who help children to build confidence, develop high self-esteem and come out of negative school experiences. These negative experiences could be remarks by the teacher or personal comments on their appearance or physique by cohort or bullying. These are reported in FGD in next chapter and by Jenny et.al (Davis 2013). A service statement of a SEP includes

> "*We do not take one size fits all approach to our teaching programmes. Every program is customised for the children and everything we do can be measured*".

The statement like these indicates that tutors will provide child with the best possible help, provide regular feedback to help them learn from their mistakes and improve upon their performances.

Some SE providers tend to work in partnership with school to attract more clients. Few of the SE providers recruits only qualified teachers and make exception only if a person has a high qualification. They not only offer homework help but also assist them in completing school investigations or prepare them for oral speech and provide exam support to help their client have an edge over the peers in getting better grades at school. Some of SE providers are recommended by the teachers while some appears on school websites and still some operates from school premises. For instance, one of the SE providers website stated

"We *work in partnership with school to support the wonderful work they do*"

or

"*All programs and session are designed in line with National Curriculum standards and many years of experience and expertise in teaching, learning difficulties and disabilities*."

In recent time a new trend has started whereby some SEP provide clients the flexibility to select the tutor by watching their video on websites and they even let them negotiate fees, types and duration of the lessons. Some SE providers allows clients to write on their dedicated page of websites the type of service they are looking for their children. Some attract clients by their links to the main franchise with international branches of repute while some gain legitimacy from their new and innovative teaching methodology based on many years of R & D to accelerate learning in children by offering them exactly what they want and help them to achieve the learning outcomes in short span of time which might be beyond the comprehension of the common person. They ally with alternative therapist, conduct regular diagnostic test,and have a holistic approach to make content simple, easy, interesting and enjoyable for the children. They are more than willing to accommodate the personal request or favour of the child or parent which could be holding teddy bear or use chalk rather pencil to write or listen to music while studying or dip the legs in the pools. Some service statements include

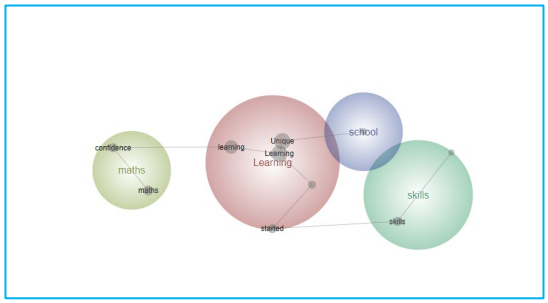
"*We don't just work on the 'problems of the week but negotiate with the children and work together to create a solid direction and study schedule. Our holistic approach is unique in that we look at why children are underachieving and design a strategy to change that. Our tutors will emphasise how to achieve this through creative and fun strategies.*"

Collectively all statements on service of SEP gauge attention of parents and raise their hopes of success for all needs.

4.4.3 Testimonial

A concept map, in

Figure 13, was created using the testimonials of students experiences shared by SE providers. The two main theme that has emerged after conducting an in-depth study of success stories of all types of SE providers ranging from one person to global franchises, home tutors to internet tutors or old and new SE providers of WA has been MATH and LEARNING with 35 and 32% verbahits.



Theme	Concepts	Relative Proportion of Hits
maths	maths, confidence	35.48
Learning	Unique, learning	32.26
skills	skills	19.35
school	school	12.90

Figure 13: Concept map of testimonials for shadow education providers

Maths emerged as an important theme in both service philosophy and testimonials. Furthermore, Table 27 indicates that over 80% of SEP offer service in mathematics, reflecting on its high demand. Few success stories highlight the remedial aspect of SE how they help children to get strong foundation in numeracy lessons at the same time help them to get back the confidence and cope up with the exam stress and frustrations as the year level progresses. They help children to have positive school experiences at school by helping them in the completion of school tasks or hearing few words of appreciation from the teachers or getting better grades in assessments. As one of the parents stated

> *"Has changed the way my daughter views herself. When we begin to see my daughter had no faith in her own abilities and loathed maths. Miss 8 was not particularly "bad" at maths, just lacked confidence and didn't understand some concepts."*

Another testimonial states

> *"with guidance and encouragement, we have seen improvement. She has more confidence in maths she has also picked up new tricks for other subjects along the way. Thanks, let the joy of leaning continue!"*

Most of the SE providers are glorifying their successes by sharing achievements of the students on print and electronic media that includes blogs, websites and social media like

Facebook, LinkedIn, twitter etc. These success stories have not only intensified the competition between the various SE providers but also provide the clients (parents) with valuable information and draw their attention towards the shortcomings of mainstream schooling and enforce good quality projection.

Some success stories of the centres pivot around the concept of LEARNING leading to the high academic achievement of the children which could be clearing GATE exams, achieving the required band in NAPLAN or winning scholarship of private schools and making through the specialist streams of university. For instance, one student stated

> *"Gave me educational support from my first day, to the gate preparation classes in year 6 and finally to WACE exams in year 12".*

Another student said that

> "*Encouraged me with certificates and trophies so that I can to do my best at all the scholarship tests*".

Still one of them stated that

> *"The mock test helps me to keep calm, focus and execute as the exams always felt familiar due to the training at the centre. Now I am sure that all the Saturday and Sunday afternoon that I gave up chatting with friends is worth it"*

Some success stories revolve around the conducive learning environment provided by tutors in sharp contrast to the school where students are required to sit for hours in the same classroom. This could include providing children an opportunity to learn in small groups with children of same capabilities or child friendly engaging worksheets. The colourful illustrations in the worksheet, sensory equipment or immense experience of retired and experienced teachers make complex theorems and concepts easy, interesting and fun for the learners. They provide children an opportunity to learn at their own pace in the setting of their choice plus soft tone of the tutors creates a total transformation in children. Students may be willing to spent hours on studies without getting stressed out whilst in the normal settings they will not be willing to do so. Some statements from SE providers are

> *" I love seeing how children learn and I truly believe that one to one and small group of tuition benefits children in numerous ways."*

"Rachel is in centre daily and would be happy to discuss any tuition needs that you may have"

"we use face to face teaching methodology encourage creativity engagement and lateral thinking."

Few other success stories exemplify how SE providers are better able to help children of special needs and have a definite strategy to deal with the learning difficulties or physical disabilities. They have the freedom to seek support from any kind of therapist in the better interest of children and proceed with their own lessons plans as they are not answerable to any of the regulatory authorities. Some of them even run workshops for parents to cope with the non-performance of the children where other children around them might be excelling. Some teachers also spoke of how the workshops ran by them equip students with valuable information that help them to enjoy classroom teaching. It is evident from some of the statements mentioned below:

"*One of the clients stated I enrolled in some of the workshop not only to assist his academic learning (both literacy and numeracy), but to address his poor confidence with his academic ability*"

All of the above concept maps indicate that SEP are focusing on students learning experience, providing then with conducive learning environment, that may be difficult to bestow in regular school and home environment. Of course, it comes at a cost, but those who can afford will continue to use it.

4.5 Simulation Study of relationship between SE on NAPLAN Score

In this section, the results of the simulation of various scenarios of SE practices have been present as specified in

Table 29.

Table 29: Simulation Scenarios for SE intensity

Scenarios Description	Definition
Realistic	Realistic benefits SE can provide to students across all ability
Optimistic	Maximum possible benefits SE can provide to students across all ability
Pessimistic	Low level of benefits SE can provide to students across all ability
Targeted at NMS or below	Specialist remedial education strategy to bridge learning gap of students at risk

Scenario1: Realistic

In this scenario the researcher assumed that one in four students are seeking SE irrespective of their scores in NAPLAN2019 at level 3. Students engage in SE for entire year 4, leading to NAPLAN exam in level 5. As a result of SE, they may have an increase in score ranging from 0 to 100 over and above the natural progression in school year. This is equivalent to an approximate shift of 1 band. The details of this simulation setting are presented in Table 30

Table 30: Simulation setting for current practice

Marks		Below NMS	At NMS	Good	Extension
Percent of students taking SE		25	25	25	25
Increment in Score Uniform Distribution	Lower Limit	0	0	0	0
	Upper Limit	100	100	100	100

Simulation results in Figure 14 shows that the SE will increase the heterogeneity in the class by 6%, as students move at level 5. SE is accessed by economically well-off household as it involves a heavy cost varying from $30 - $100 per hour, with at least one hour per week. The percentage of students below NMS changes from 5.05% to 4.35%, whilst those in the top bands increases from 33.32% to 39.25%.

As the overall academic standard as measured by NAPLAN score will rise with the intake of SE as per assumptions in Table 30 the gulf between those seeking SE and not seeking will sharpen. If we assume that 25% across each level is seeking SE within two years, the heterogeneity will increase in the class by 4%. This in turn will affect the emotional wellbeing of many student as they would feel lagging behind the peers who are able to access SE. Their peers have better chances of increasing their score which will ease their journey of getting into specialist courses. This was also be reflected in the PISA and UN report on Happy School pointed out that the country where size of SE was found to be large were found to be low on student wellbeing and happiness. If the SE industry continues to expand at the predicted annual rate of 5% the scale of heterogeneity will increase. It is likely that in future there might be no student falling in below NMS, but social disparity will still increase between families seeking SE and those not seeking SE. The competition between the upper edges of students will intensify as majority of the students will be falling into Extension group and declining number in each group.

If the same trend continues economic disparity will enhance social disparity which will in turn mitigate government aim of providing free high-quality education to all. The need of the hour is to redefine the goals of education system especially in the light of influx of free internet resources. The goal should be getting best out of our children and make them a better human. We need to redefine our learning keeping in the minds of the holistic development of the children without compromising on the academic standard and keeping at par with the international standards.

Figure 14 : Realistic Case: NAPLAN score distribution at level 5, with and without exposure to SE. Band 5 and 6 are good and Band 7 and 8 are Extension.

Scenario 2: Optimistic

In this scenario we assume that one in four students are seeking SE irrespective of their scores in NAPLAN 2019 at level 3. Students engage in SE for entire year 4, leading to NAPLAN examination in level 5. As a result of SE students have a higher increase in score ranging from 50 to 100 over and above the natural progression in school in class 5 NAPLAN examination. This is equivalent to a shift of 1 to 2 band of NAPLAN scores. The details of this simulation setting are presented in Table 31.

Table 31: Simulation settings for optimistic scenario

Marks		Below NMS	At NMS	Good	Extension
Percentage of students taking SE		25	25	25	25
Change in Score: Uniform Distribution	Lower Limit	50	50	50	50
	Upper Limit	100	100	100	100

The simulation results are presented in Figure 15. In this simulation model we will speculate maximum possible improvement in student score if they have access to the best quality of SE considering equal number of students are seeking SE in each group. In two years time, we notice fall in the number of students getting score below NMS, at NMS or level good. Figure 15 shows 6% increase in student getting Extension. This may come at a heavy financial cost incurred by the parents and students taking their time away from non-academic activities and all-round development of child. Though it will be a welcoming situation for school and

teachers to boost of their success, and uplift quality of teaching in class, but may impose more challenges for the main stream schooling as well as society.

Figure 15: Optimistic Case: NAPLAN score distribution at level 5, with and without exposure to SE. Band 5 and 6 are good and Band 7 and 8 are Extension

With more than 40% students falling into extension category, there may be a shift in parents seeking SE to seek spots in GATE and win private school scholarships at year 7, even at high financial cost. The scholarship exams are conducted in middle of year 6. As a matter of fact, many schools request for year 5 NAPLAN examination results during interview for entry into specialized school programs. In turn this phenomenon will generate demand for extension type SE starting as early as year 6. In interviews of SE provider, one group reported 10 fold increase in the number of students seeking SE at year 5 and 6. Here the parents, students and SE providers all fall into a vicious circle whereby SE provider will charge more for their services, capitalising on the dreams, aspirations and anxiety of students and parents thereby widening the gap between those who can seek SE and those who cannot.

As the year level progresses, as per the results reported for NAPLAN in 2019, we have noticed that from year 3 to year 9 the number of students falling below NMS reduced by 50% (4% to 2%). Now we will have more students falling into top bracket at year 9 and will compete against each other for scholarships and specialised streams. As subject content are going to become more difficult at senior secondary level, more and more parents will seek SE for their children to help them perform better at school assessments (getting 12 “A”) and prepare them for future competitive exams.

This will create two type of disparity in the society, widening as school level increases. First between those seeking SE and those not seeking SE, secondly between those who can access better quality of SE and those who can access only low quality or no SE. This economic and educational disparity will soon translate into social disparity creating more tension between

different communities and groups. SE providers, parents and student will be more concerned with individual benefit rather create a way where all sections of society have equal opportunity to succeed at school.

Scenario 3: Pessimistic

This model will explain that in spite of accessing SE the increase in student score in NAPLAN year 5 is not uniform amongst the students getting the same band in year 5. In scenario 2 we presented a wishful picture where everyone will be able to get the score they would have aspired for and how it will impact socioeconomic disparity. Here we will present the more pessimistic picture why students keep on falling under NMS and many still fail to achieve band 8 in year 9 NAPLAN assessment in spite of the possible efforts of children, school, teachers and parents.

In this scenario we assume that one in four students are seeking SE irrespective of their scores in NAPLAN 2019 at level 3. Students engage in SE for entire year 4, leading to NAPLAN examination in level 5. As a result of SE students have an increase in score ranging from 0 to 50 over and above the natural progression in school year in year 5 NAPLAN examination. This is equivalent to a shift of 1 to 2 band of NAPLAN scores. The details of this simulation setting are presented in Table 32.

Table 32: Simulation settings for pessimistic scenario

Marks		**Below NMS**	**At NMS**	**Good**	**Extension**
Percent of students taking SE		25	25	25	25
Change in Score: Uniform Distribution	Lower Limit	0	0	0	0
	Upper Limit	50	50	50	50

With the uptake of SE, the Figure 16 indicates that total number of students falling into the extension category rises by 3% while in other three groups change has been under 1%. This is evident from the fact that though one-fourth of students are able to access SE only 2% of them are able to get a better score. Compared to optimistic case, we have 1% more cases in at or below NMS group and 2% more in Good group. Subsequently, 3% less students are in the Extension group.

Figure 16: Pessimistic Case: NAPLAN score distribution at level 5, with and without exposure to SE. Band 5 and 6 are good and Band 7 and 8 are Extension

It is not necessary that SE will necessarily improve students' scores. As a matter of fact parents, school, teachers and SE providers will be able to help only those children that are motivated enough to learn, complete school task at acceptable level and have conducive living environment. Just exposing students to SE is counter productive. There is need to make student self-learner and provide them with the necessary tools to move up from their present scores. The main thrust of educational policy should not be bringing all students above NMS rather giving all students opportunities to advance and excel. Such policies will mitigate the negative effects of exam culture and take away pressure from the students and the teachers. There may be no need of after school SE system, and time saved will be used in developing life skills and innovations.

Scenario 4: Targeted at NMS or below

NAPLAN is an assessment tools which provides school and educational authorities the information if the young Australians would be able to effectively participate in nation building and compete with other developed economies in every sphere. So government has provided schools resources to build literacy and numeracy competency of their students. Every child is required to demonstrate its competency in numeracy in year 3, 5, 7 and 9. The recent statistics indicate that in spite of the natural progression with age more than 2-5% of student in year 3, 5, 7 and 9 were found to be below NMS.

In this scenario we assume that 90% students at NMS level or below in NAPLAN 2019 at level 3 are seeking SE. Students engage in SE for entire year 4, leading to NAPLAN examination in level 5. As a result of SE students have an increase in score ranging from 25 to 100 over and

above the natural progression in school year in year 5 NAPLAN examination. This is equivalent to a shift of about 1.5 to 2 band of NAPLAN scores. The details of this simulation setting are presented Table 33 .

Table 33: Simulation settings for targeted at NMS or below

Marks		Below NMS	At NMS	Good	Extension
Percent of students taking SE		90	90	1	1
Change in Score: Uniform Distribution	Lower Limit	25	25	25	25
	Upper Limit	100	50	50	50

With the uptake of SE as per above model Table 33 shows the total number of students below NMS or at NMS will decrease by 3%. Students at or below NMS are struggling with one-size fit all approach of mainstream schooling. SE providers can better help students then mainstream schooling to achieve NMS level. Most SE providers work in small groups and the bond between the tutor and student become more intense where students feel more comfortable to ask questions and clear their doubts. Some of the SE providers can accommodate individual needs of the children like they are studying outdoor, or with dog sitting next to them. The school will not be able to work out such arrangements and students are reluctant to ask question in year owing to the better learning capability of their peers.

Moreover SE providers are more free to seek the help of alternative therapist like natural path, kinesiologist or others. These resources are limited in schools. If SE providers unique approach helps at risk students to acquire NMS, then we shall move very close to accomplishing the goal of making all students between the age of 6-14 years acquire basic literacy and numeracy skills. Australian education system will also become a showcase for other countries with large percentage of struggling students. This would create a society where no student is left behind, and basic literacy and numeracy has been achieved by all its citizens irrespective of cultural, linguistic or economic disparities.

Table 34: Targeted at NMS or Below: NAPLAN score distribution at level 5, with and without exposure to SE. Band 5 and 6 are good and Band 7 and 8 are Extension

4.6 Discussions

The NAPLAN is a mandatory examination for all students studying in schools of Australia in year 3, 5, 7 and 9. Student need to obtain band 8, by year 9, to meet the WACE competency requirements (NAPLAN). The student performance in NAPLAN is used by the school to boost their reputation in the minds of the general public (Hale School 2020) Government maintains "My School" websites, where general public can get an insight into school performance in NAPLAN. Good school guide (Good School Guide 2020) compares the NAPLAN scores of various schools. In many cases the promotion of the teacher is dependent upon the student performance in NAPLAN. This means school and teachers will be working hard with students so that they can get the top bands and the school rank goes up. This indirectly puts pressure on students and parents that are not able to get the top bands or attain NMS. This pushes parents towards seeking SE for their children so that they can improve their performances of the previous year, especially if school resources are limited. This in turn creates demand for SE.

SE providers are able to get insight into the minds of the parents whose children are not able to achieve the band they would aspire for. For instance some parents will be looking for remedial SE while others would be more interested in extension. Some would still like their child to maintain the same pace of learning. Hence SE providers comes out with the tailored learning packages targeting students of all abilities and ages.

The analysis in Table 27 indicates that not even one of the SE provider was found that was not providing lesson either in English or Maths, the two main subjects on which NAPLAN assessment is based. For first half of the year the focus of the SE provider is towards NAPLAN

which is conducted in the month of May. For year 6 students, focus is on GATE, conducted End of March. Note that we observed that 50% of SE providers offer only exam preparation. From July school holidays, market is flooded with specialise courses for ATAR as students sit in these examinations in November. Hence SE providers are able to read the mood of the people and services they would be looking forward for that point time of the year.

Many students and families have benefitted from such courses as this is evident from the concept map of testimonials of parents (See Figure 13). Parents invest in such courses as per the needs of the child. Hence it will be correct to say examinations, parents /student anxiety and tailored SE sessions are interlinked with each other, and SE providers are good at capturing the pulse of the market. We notice in Table 27, 30% of the schools endorse SE especially for the examinaitions support. At the same time most parents have high expectation from the children, and they want them to get top band to ease the journey of their child getting into specialist courses of high school. From the parents testimonials (see Figure 13) it is evident that parents understand the limitation of schooling and are willing to seek outside help which might come at heavy cost to give children an edge over the cohort. So school, parents and examinations all play a key role in generating the demand for the SE.

Furthermore the simulation model reminds us of the reality of future if this hoard of getting better scores in NAPLAN continues. The maximum possible improvement in children below NMS with best possible SE can be up to 2 band as child move from year 3 to year 5 which means we will still have two percent of children under NMS.

Parents' and school expectations on one side and student emotional wellbeing on other side will clash even more in future. This will not only create more tensions in households and in society as some children are able to meet parents' expectations while other failed to do so.

4.7 Summary

In this chapter we analysed the qualitative and quantitative information on advertisement of services offered by SE providers, and conducted simulation of SE scenarios targeted for NAPLAN score.

The analysis indicates that the practice of examination culture, compulsory schooling with regular assessments coupled with high parent expectations is going to increase the demand for SE in future for all year levels irrespective of child academic calibre. To tap this rising demand SE providers are coming out with special schemes targeting students of all ages and abilities as evident from the concept maps of service statements and philosophy. The success stories of the centres and the written testimonials further deepen parents and student faith on such services.

Parents will make use of such services which will provide momentum to the expansion of SE. Next chapter presents the outcome of the focus group discussion of all stakeholders.

5 Views of All Stakeholders

5.1 Introduction

This chapter presents the current views of various stakeholders of SEI residing in Western Australia on various aspects of SE. These views will help us to better understand the factors that work for or against the growth of SEI in the Australian context. The participants were invited to enter the responses in an anonymous focus groups and included both groups' i.e. that indulged in SE and that did not indulge in SE. The views of all four groups' teachers, parents, students and SE providers have been triangulated to see the commonalities and disparities in their thought on the various aspect of SEI.

This chapter is divided into five sections. In section 5.1 a brief outline of this chapter has been given. In section 5.2 the research methodology that is used to gather the views of various stakeholders of SEI has been discussed. In section 5.3 the summary of responses of the parents along with the common theme for each of the questions and key statements have been presented. In section 5.4 the summary of the teacher responses on the various questions along with the common theme and some key statements made by them has been given. In section 5.5 the summary of the response of SEP along with the common theme for each question and few key statements are presented. In section 5.6 the summary of students' responses to various questions along with the common theme and a few key statements are presented. In section 5.7 presents the triangulation of views of the four stakeholders. This is followed by a summary in the last section.

5.2 Research Method

The methods used in this chapter were described in detail in Sections 3.2 and 3.3. For completeness these have been briefly described these again. All the discussions were held in an online anonymous forum setup in FocusGroupIT for each group, namely parents, teachers, students, and SEP.

The ethics approval for the study was granted by Curtin University (Approval number HRE2020-0240) following the NHMRC guidelines. As per the Ethics requirement, we first provided potential recruits the information sheet on the project and requested consent. Once consent was obtained a link was sent to participants to join the discussion form. For

participation of children, a consent and ascent form were to be signed by parent and child respectively. The response from all participants was downloaded as an excel file and coded for themes. Finally, a concept map was created for the participant responses using Leximancer.

5.3 Summary for parents Response in FGD

Parents normally opt for their children's SE during weekdays or depending upon the availability of a particular tutor as they are often busy.

Year level of Study and Subjects

Table 35: Educational year level of child

Education Year Level	Parents opted SE (%)
Primary School	0
High School	50
Primary and High School	33
Unanswered	17

Table 35 shows that the majority of parents had their children attending high school, that is from year 7 or above. The main subjects in which the SE is sought is English, Maths, and Sciences. SE is opted for by a parents for several reasons. SE has opted when their children need some extra help. One of the parents wanted SE so that their son didn't fall behind as he didn't understand one of the topics. Another parent opted for later years of education as he/she was confident of teaching by her/himself in the early years of education. The comment was

> *"I would use it for extension only in the event that my child is excelling at a subject and finds it too easy, and would like to be further challenged. I would likely use it from Year 9 or 10 onwards; I feel confident to assist my children myself up to that point."*

Theme: Need-based, higher classes

Mode of SE – F2F vs Online mode

Table 36: Parents preference on mode of SE

Mode of Shadow Education	Parents preference (%)
Face to Face	84
Online	0
Both (F2F and Online)	16

Table 36 indicated that over 84% of parents prefer face-to-face mode, whilst 16% may consider both modes. Parents had no preference for online mode only. Most of the parent's view is that Face to Face (F2F) education is better than the Online mode of SE as students do not get much-personalized attention from the tutor in online mode. Parents have opted online mode of SE during Covid-19 and have experienced that online tuition is not as effective as F2F.

One of the parents have provided a balanced view and stated that

> "*Online or group tuition is definitely more cost effective as online doesn't need traveling time as well as a hired place for SE. While group tuition have more students per teacher, hence the cost is lower. Face to face tuition is not necessarily more effective. It all depends on what the kids prefer and find more interesting, hence learn better. Small group SE can encourage healthy comparison and can increase competitiveness in kids, hence may be more effectively learning. However for kids who are shy and/or get distracted easily may benefit from face to face.*"

The majority of the parents' view is that home tuition or F2F tuition provides for better success however it comes at a higher cost and if we do a cost-benefit analysis, F2F is always better than remote/virtual SE.

Theme: Face-2-Face

Role of School and Teachers in recommending SE

Table 37: Role of school/teachers in recommending SE

Recommendation by School/Teacher	Parents Response (%)
Yes	33
No	66

Table 37 shows that the parents are not usually asked to opt for SE by Schools/Teachers (66%). Most of the parents opt for SE because of their initiative and parents have not seen any advertisement of SE providers in school communication. Even when it is recommended by teachers, it is on an individual basis accordingly to particular needs.

Theme: No Recommendation by School

Selection of SE Provider

Table 38: How parents select SE providers?

Selection Criteria of SE Provider	Parents Selection (%)
Google Review	16
Referral from Other Parents/Family	52
Referral and Interview with Tutor	16
Recommendation and Cost	16

Most of the parents select a SE provider based upon the referral and recommendation from other families, students, and teachers (52%, See Table 38). Qualification of SE providers also plays a major part in the selection of tutors. Cost also is a factor in the selection of SE providers, but the main criteria are Recommendation and qualification. One of the parents' stated that

> *"I would engage a successful university student to tutor a high school student, as they have more recently been through the high school experience and will be able to relate well to my child. Also I imagine that this route would be more economic for myself as a parent, and it's nice to provide employment to a university student."*

Another parent commented that

> *"I will google it and then read reviews. Referrals from other parents are highly desirable but unfortunately, you don't always get that. I think some parents aren't open about this."*

Parents select tutors for their children based upon reliability and quality. Referral plays a major part in the selection of tutors.

Theme: Referral

Effectiveness of SE

Table 39: Parents view on the effectiveness of SE

Effectiveness of Shadow Education	Parents Opinion SE (%)
Yes	84
No	0
Neutral	16

Most of the parent's view is that Shadow Education has helped their children in improvement in their results (84%, see Table 39). Shadow Education provides a better understanding of topics and fills in gaps that a classroom teacher is not able to attend. It helps students who are too shy to ask when they have a question during class at school. Aussie "tall poppy" culture contributes to this problem. One of the parents has provided a view that it can help in certain subjects only if you are lucky to get a good SE provider. One of the parents was involved in a school and stated that

> "I should mention that I have helped high school students who went to a school that has a bit of a reputation for not being very academically strong. The students I worked with were not getting adequate help or attention from their teacher, and with some focused attention, they improved greatly."

Almost all of the parents' view is that Shadow Education benefit is more having one to one tuition and had helped to complete ATAR exams and understand subjects better.

Theme: SE is Effective

5.4 Summary for teachers' response in FGD

Every teacher has experienced students taking tuitions and they think that shadow education can benefit students.

Year Level and Subjects

Teachers who participated in FGD teachers were teaching years 3 to 12 as shown in Table 40 and range of subjects as shown in Table 41.

Table 40: Distribution of year levels taught by teachers

Year Level	(%)
Pre-Primary to Year 2	0
Year 3 to Year 6	33
Year 7 to Year 10	50
Year 11 to Year 12	33

Table 41: Distribution of subjects taught by teachers

Subjects taught	(%)
Mathematics	50
Science	50
English	50
Others	0

Primary school teachers mainly teach all learning areas except specialist such as music, art, sport and dance

Working as a Teacher

All teachers pointed out in the FGD that they enjoy teaching but sometimes they are not allowed to be creative. One of the comments was

> *"Sometimes one is not allowed to teach in their preferred way, everyone is required to teach the same way, which squashes the creativity in a teacher."*

Teachers enjoy being around kids and feel positive in a way that they contribute to the career development and future of their students. Almost all teachers give some homework to students. They enjoy teaching young students as they can help students become educated citizens. One of the teachers commented

> *"I really enjoy teaching as it is one of the most rewarding professions where you can see your students growing their knowledge each day."*

Theme: Enjoyment and working with Children

Endorsement of Shadow Education

Teachers normally do not endorse shadow education but if students are struggling in any area, they are recommended to take help from their buddies who are of the same age and can help each other. They encourage students to attend revision seminars. Teachers do not directly endorse any shadow education but if asked they encourage them to take some form of help from their teachers in School after class or get some form of help. One of the teachers commented

> *"we normally don't encourage students however if they are struggling in any area then getting some help outside school is a good idea*."

> Another comment was

> *"No, as long as the school is providing all the support to a student, shadow education is not needed. It adds to stress and takes away from enjoying their childhood. I have seen children come back from school and then go for tuition. This is detrimental for both their physical and mental wellbeing."*

Theme: Not endorsed by Teachers

Popular subjects of Shadow Education

Teachers have experienced that normally students engage in shadow education mainly in Maths, English, and Sciences. In Primary school, students take tuitions in Maths and English whereas in high school, students generally take tuitions in maths and Sciences. One of the comments was

"Maths and Science because most students want future careers which need more of these subjects."

Theme: Mathematics

Recent Trends in Shadow Education

Teachers are of the opinion that student numbers taking Shadow Education have gone up. This may be mainly because of the pressure of getting good marks and getting in a good course in universities. Shadow Education does help if students are willing to learn. One of the comment was

"*Depends on their willingness to learn and the environment in which they are learning. The conducive environment provided both at home and at school makes all the difference."*

Another comment was

"I think as both the parents are working usually, the numbers have gone up due to lack of time for working parents"

Theme: Increased

Future of Shadow Education

Teachers have commented that as the online tuitions are more readily available, it may be more affordable for many families and convenient also and it will be a great step towards future education. One-to-one attention is still required and one of the teachers commented when asked if an intelligent child can learn more from online resources than private tutors?

The answer was

"Yes. For intelligent students online resources can be useful as they only need a certain direction to proceed and the correct resources."

Theme: Online but One to One is important

5.5 Summary of shadow education providers response in FGD

Mode of Service

Table 42: Mode of services of SE providers

Mode of Service	(%)
Independent	75
Working for a Service Provider	25

Although Service Providers vary in sizes but most of the service providers work independently (75%, Table 42)

Type of Service

Table 43: Services offered by SE providers

Type of Service	(%)
Remedial	25
Standard School Work	75
Accelerated	25
Preparation for Specialized Exam	25

Most of the SE providers provide standard schoolwork help (75%, Table 43) along with tailored need-based services.

Working Hrs

SE Providers work during different hours. Some work on weekends, others work on weekdays and some run program on weekends and in School holidays. In School terms, they teach 1 hr each day and in holidays, they are teaching 4-5 hrs per day

Theme: Varies

Fee Charged

Fees vary based upon the child's age/grade in school - charge more for year 12 students, compared to year 10. One of the comments was

> "I do not charge any fee for my services"

Another comment was

"The service provider I work with has standard fees...there is no variation... students get early bird discount."

Size of Service

Most of the Service Providers teach on one-to-one basis working privately but where the standardized program is run in group settings, the size varies. One of the comments was

"There are students from pp-year12. There are 2-3 classes for each year. I am not sure about the number of staff. Some teachers teach only Primary school students and some only high school students. I normally get a group of 20-24 students."

5.6 Summary of students' response in FGD

Students normally take tuitions on weekdays, but some students prefer taking tuitions on weekends as weekdays are busy for them. Students prefer taking tuitions during school terms as they want to enjoy their break during school holidays. Some students want to take tuitions during examination period only and most of the students are of the opinion that tuition is required during the critical year of 11 and 12.

Theme: Year 11-12

Students' participation in FGD (on year level basis)

The schooling year of students who participated in Focus Group Discussions is presented in Table 44 .

Table 44: School year of students participating in FGD

Year Level	Students Participation (%)
Years 3-6	0
Years 7-10	56
Years 11-12	44

Enjoyment in taking tuitions

Following responses were received when asked about if they enjoy taking tuitions.

Table 45: Students response to enjoyment in tuitions

Enjoyment	Students Response (%)
Yes	12
No	38
Sometimes	31
Do not take tuitions	19

Table 45 indicated that 19 % of the students who participated in FGD do not take tuitions. Tuitions is an enjoyable experience only if the tutor is good. Most students do not enjoy taking tuitions as it puts extra pressure on them. Some of the students are attending because of pressure exerted by their parents to take SE. One of the students responded

> *"I used to attend tuition because my parents thought I needed extra help for school but all I really needed was to focus more in class. Tuition can also get a bit expensive"*

Another student responded

> *"I have 2 tutoring places. The first is an independent tutor that I enjoy more because I can be taught from what I understand. The second type is XXXX. In XXXX the focus is not on purely myself but other kids too. It may help but it's not exactly what you need to learn."*
>
> *Note: XXXX was name of a SEP that has been removed.*

Theme: SE is Enjoyable sometime

Main Subjects studied by students in SE

Main subjects studied by the students are tabulated as below in

Table 46. Mathematics is the most popular subject with 40% students opting for it.

Table 46: Distribution of subjects for SE by students

Subjects	(%)
Maths	40
English	27

Sciences	23
Others	10

Theme: Math

Benefit of SE

All of the students (100%) responded that SE benefits in one way or the other. It enables students to get ahead in classes and provides opportunities to ask specific questions and can fill gaps in the learning area. One of the students responded:

> *"when there are less students in a class it feels more one on one with the teacher and you get the concept a lot better but not all kids can benefit some maybe need a whole class"*

Another student responded:

> *"Tuition can benefit me. Tuition helps to understand intricate concepts better than schools. Also, tuition lessons move along according to the pace of schools. Each week they would provide lessons on the same topic as schools, allowing students to gain a head start than others."*

Yet another student responded

> "Tutoring can benefit you by getting good grades and marks and which can lead you to a good course for higher education, hence a better job in the future."

Their perception is that tutoring can benefit by getting good grades and marks and this can lead to getting admission in a good course for higher education, hence a better job in future.

Theme: Beneficial

Future Participation in SE

Following responses were received when asked if they will participate in SE in the future.

Table 47: Students response to the participation in SE in future

Participation in Future SE	Students Response (%)
Yes	82
No	18

Most of the students (82% Table 47) have responded in the affirmative for taking tuitions in the future as it helps them understand topics. One of the students commented

> *"I would. Since some teachers at my school are not really good at explaining concepts, tuition is definitely required to get into ATAR courses."*

While another student responded

> *"Yeah I feel like I would. I kind of am planning to engage in tuition next year anyways to improve my education. based on my end of year exam score, if I am not satisfied with what I get, I plan to change that through tuition"*

Students are sometimes not sure if they will be engaging themselves in SE as they are not sure and have not planned as yet. One of the students responded

> *"No, I wouldn't like to engage in tutoring because if I do tutoring, I won't be able to do stuff that I enjoy."*

Theme: Will take in Future

Duration of SE in a week

Students generally take tuitions ranging from 1 hr to 4 hrs. Following is the spread.

Table 48: Students response to the duration of SE engagement in a week

Duration in a week	(%)
1 hr	25
2 hr	37
3 hr	32
4 hr	6

Most of the students would like tuition for 2-3 hrs only as they need help for some subjects only and students feel that more than 2-3 times will not be beneficial. One of the comments received

> *"You don't want to do lots of hours of tuition as you may become tired throughout which is a risk, because you won't be focusing"*

Some students need help with certain topics only and feel that 1 hr of tuition in a week is enough for them.

Theme: 2-3 hrs

Type of SE

Table 49: Students response to the type of SE in attendance

Type of SE	(%)
One to One	68
Online	6
Group	20
Any type	6

Most of the students prefer one to one form of SE as they can get personal attention and feel there is less distraction and they feel they will not be judged by other students if they ask dumb questions, where are some students feel group classes are better as they learn from tutor and other students. One of the students responded

> "*One to one and from a student who has recently graduated from year 12 with a decent ATAR. One to one allows all the time allocated just for you and this helps a lot, I have been to group class tuitions and the teacher barely gets around 10 minutes per student, one to one also allows the teacher to check up on whether you understand or not rather than a student understanding on behalf of everyone in group tuitions. What's the point of doing group tuitions, that would be like going to school. A student who has recently graduated from year 12 with a decent ATAR result would be a good tutor as they can give you tips, help you with the style of questions and just give you a run down on how they achieved their score*"

Another student preferred partnering with another student and responded

> *"Ideally my choice would be partner tuition with another person doing the same subjects as me but from another school. I go to a public school so finding a friend from a private school who wouldn't mind doing partner tuition would be a great way to close the education gap of private and public schools. You can also get a feel at the*

level and type of work they do when you are competing for a WACE score you know what to expect."

Theme: One to One

5.7 Discussion

The common theme that emerged from the discussion in the parent forum was that SE can only be effective if it is face-to-face tuition rather than online. Most of them believed that online tuition can be more cost-effective, but the pupil will always feel the need for someone in person to clarify their doubts. Parents would avail of the services of SE providers for extension purposes when their children are at the senior secondary level for maths, science and English. More than 70% of the parents replied negatively when asked if school or teacher recommend any SE providers and said they would prefer to select the tutor through family or friends' referrals.

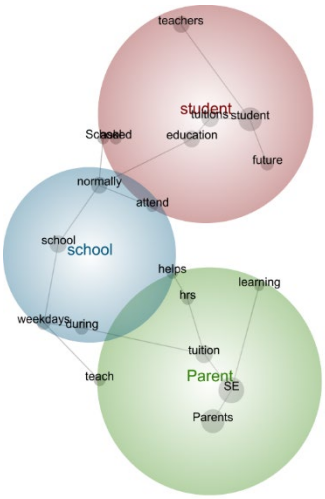
Most of the teachers confirmed that they did not refer any SE providers to parents until and unless the child had serious learning difficulties. They welcome the availability of cheap and free online resources helping children to learn at their pace and will also help them to make more interactive lesson plans. However, they believed that there will always be a need for SE for Maths and English for upper high school students as they need to get high scores to get into the specialist stream at the tertiary level. Interestingly most of them did not find teaching jobs stressful and love being with the children all the time.

One interesting piece of information that emerged from the students' discussion was that they do not enjoy attending tuition classes and were doing it only under parental pressure. The common reason for not taking SE or not enjoying it was that it takes time away from stuff they enjoy doing. Most of the students were clear that will take one-to-one SE for ATAR subjects to get good scores. However, some of the students preferred small group SE as it motivates them when they see other children are working around them.

Three in four SE providers were working independently and were providing lessons on weekdays or weekends. They were very specific about the support they were providing to the students. More than 75% of them were helping pupils in school tasks while others offered

examination support, remedial and extension lessons. Some of them operated only on weekdays while others operated on weekends or both on weekdays and weekends.

Figure 17; Concept map of response of all stakeholders



Theme	Concept	Relative Proportion of hits
Student	student, tuitions, education, teachers, future, asked, School	38.46
Parent	SE, Parents, tuition, hrs, teach, learning	38.46
School	school, normally, during, weekdays, helps, attend	23.08

A concept map, in Figure 17 was created on responses gathered from all stakeholders. The concept map shows two main themes of STUDENT AND PARENT, each with 38.46% relative proportion of verbahits. The next theme is SCHOOL with 23.07% of the relative proportion of verbahits. The theme STUDENT is linked to the theme of PARENT AND SCHOOL.

The theme STUDENT is based on the concepts: student, tuitions, education, teachers, future, asked, School. This theme indicates non-endorsement of SE by teachers, students are encouraged to be self-learner and use of learning resources. The theme PARENT is based on the concept: SE, Parents, tuition, hours, teach, learning. This reflects on parent's preference for face to face teaching and selecting SE through referral. Finally, the theme SCHOOL is based on the concept of school, normally, during, weekdays, helps, attend. This theme reflects on the parent's preference for face-to-face SE and parents reach out to the SEP due to students' non-engagement in school and hesitation in seeking help in class.

After the triangulation of information from the all groups certain common theme emerged that could explain the growing popularity of SEI in Australia. Both parents and pupils agreed that neither school nor teachers has recommended the SE providers to them. It was then confirmed by the teachers that they did not recommend SE providers to families or student. SE providers also reported that they had no links with the school, nor do they advertise on school websites or newsletter.

The practice of examination culture was also found to be correct as parents and students wanted SE for ATAR subjects that decide entry into specialist stream at university. This was in conformity with the teachers view also that pupil might feel the need of SE to get high ATAR scores. It was also confirmed by SE providers with fifty percent of them offered services on preparation of specialist exams and accelerated courses. Both parents and pupil were of the opinion that SE can only be effective if it is one-to-one and provided by a tutor with high credentials, that indicates high demand for ATAR subject tutors. As teacher availability is limited, SEP may recruit unqualified tutors.

There was only two aspect on which all the stakeholders had different views. Most students reported that they did not enjoy going to SE classes and were doing so only under the parental pressure. Most of the teacher had no opinion on it while SE providers (with few exception) reported that teaching the children was fun and enjoyable.

When asked how the free availability of the online resources will affect the SEI, the teachers said it will help student to learn at their own pace and were not sure how it will affect SEI. Both parents and students were of the same view that it will not affect the SEI at all as there will still be need of someone personally helping the child. SE providers reported that they were already using online resources to develop interactive learning resources for the students.

5.8 Summary

In this chapter the researcher has presented the view of parents, teacher, students and SEP. This is based on information collected on various facets of SE collected via focus group discussion/interview.

From the discussion in this chapter, it is quite evident that the parents prefer one-to-one tuitions and generally for higher classes. Student on other hand are attending SE under parental pressure but they also do realise that it helps in higher classes. Teachers do not recommend SE in general but consider it useful for higher classes.

All the stakeholders were agreeing conformity that SE can help student to get high ATAR scores and prepare them for Specialist Exams. However their opinion was divided on the usefulness of online resources on student learning.

6. Conclusion, Contributions, and Future Works

6.1 Summary of the work

Private tutoring or shadow education (SE) are after school paid classes that pupil may indulge in for academic gains. The current size of the tutoring industry worldwide is estimated to be US$173.4 Billion in 2020. SEI is not only expanding at a rapid pace but is becoming more deeply embedded in student life & societies in most countries. To better understand the expansion and consequences of ever-expanding SEI this study has been carried out with a new perspective that incorporates the views of all its stakeholders and brings into limelight student perception and experiences on SE. This approach will explain how communication between all stakeholders can lead to better outcomes for all students. This outcome is aligned with the sustainable development goal 4 as enshrined in UNESCO Education Agenda 2030 that requires all member states to provide free, quality, and inclusive education to all.

The survey of the literature revealed commonalities across the world leading to a rapid expansion of SEI. The most important contributing factor for the growth of SEI all across the globe has been the "Culture of Exams" that includes both high and low stake exams. These exams can be regular assessments or specialist exams that decide entry into elite schools or getting into the specialist stream of the university. The reliance of examinations for ranking purposes leads to an examination oriented education system deprived of holistic development of students. The next major factor for the growth of SEI has been "parents' expectations". All parents want their children should get top grades and get into specialist streams at the tertiary level. This is to secure a future for their children, which in turn will elevate them on the social ladder and improve their financial status. The next factor for growth is an aggressive advertisement by SEP. These days both print and social media are flooded with the advertisements of SE providers ranging from small operators to or large-scale multinational operators. All of them lure clients by pitching the credentials and qualifications of the tutors, extensive success stories of the centre, and a list of innovative teaching strategies. A relatively new factor that is emerging is the changing dynamics of the society, this includes the entry of women into the workforce with full-time jobs, the hectic

work schedule of both working parents, and the rising number of single parents. As parents are not able to help children in studies it is outsourced to SEP. The government can also influence the practice of SE. For instance, it is noticed that in general countries with higher spending on public education have a smaller size of SEI. The government initiative of remedial coaching to the disadvantaged communities, making available free educational resources, regulated operating hours for SEI can all contribute to putting brakes on SEI. In the Australian context, the study of the Brisbane region in Queensland reported that the influx of migrants from Asian countries where SE is strongly embedded into social fabric was leading to the gradual expansion of SEI in many parts of Australia.

The research methodology used for this study can be broadly divided into three sections. First, a dataset was created by critically studying the websites of 50 SE providers active in Western Australia and coded for the presence of 28 variables of interest. Also collected was qualitative information on the service philosophy, service statements and written testimonials of SE providers. Quantitative data were analysed using SPSS, while concept maps were created for qualitative data using Leximancer software. To ascertain the effectiveness of SE a simulation model was created that predicted the impact of SE on student's NAPLAN score in year 5, using the raw score of the student in year 3 NAPLAN 2019 as input. Four distinct scenarios of SE intensity were presented. Finally, the views of all stakeholders of SE providers were gathered through an online focus group and the response was interpreted.

The analysis of supply market of SE provider, via analysis of advertisements, indicate that the SEP was able to tap parents and student anxiety and were delivering study packages of various types to suit the clients ranging from examinations to special needs. The important trigger factors that were providing impetus to the SE market were regular assessment and high-stake exams alongside the parent's aspirations for their children to perform well in these exams. To increase their clientele SE providers were extensively advertising in print and electronic media by presenting the credentials of the tutors, flashy introductory videos and success stories of the students. It was also noticed that most of the SE providers were working independently and there was no association between them and the school. Most of the SE providers were not open about their fees and net enrolment rate. The simulation model for predicting year 5 NAPLAN results draws

a realistic picture, indicating that even with the moderate SE services, we will still have 2% people below National Minimum Standard (NMS).

The qualitative statement of the various stakeholders of SE in FGD was coded for various themes. Students reported attending SE to meet parents' expectations and overcome the limitations of school teaching. Students had mixed feeling about attending SE, however, indicated a preference for being taught by senior school students and help with high stake examination preparation. Most parents prefer face-to-face tutoring, would select a tutor via reference and are recommended by the school to engage in SE. Parents do find SE effective for their child. SE providers are equally likely to help with the school homework, exam preparation and remedial work. The views of the three key stakeholders were found to be different on the effect of free online resources on SEI. Teachers welcomed this move while SE providers said they were already in forefront of using such resources. Parents and students had reservations about the online learning environment and said they would prefer face-to-face SE as online resources will not be able to meet all their learning needs.

6.2 Contributions

The main focus of this study was to explore the complex phenomenon of SE from point of view of all stakeholders. Through our investigation, we make several contributions to the topic of study and research in education in general. Contributions are listed below

- The key finding of the research was the student's wellbeing should be the key to any future reforms in the education sector. It was also noticed that most students want to learn but are not able to give out their best due to various reasons. Many times their voice went unheard or ignored. There is a serious lack of communication between students and adults that includes parents, teachers, or SE providers. Students find themselves lost between the dreams and aspirations of all three adults. This is further complicated by the inability or willingness of adults to drop at a child's level and understand what they want. This is not to say that children are always correct, but we still need to listen to them. There is a need to recognize a thin narrow line between what a child wants and what is in their best interests.

- We developed and presented a framework for predicting Year 5 NAPLAN scores based on their year 3 scores and various exposure of SE. This framework has the potential of being applied in a wide variety of applications including a selection of optimal SE for individuals or groups. The model can be easily extended to include complex SE systems and forward projections beyond year 5.
- In this study, we presented a methodology for successfully running FGD in asynchronous mode using an online platform for Educational research involving young children. The system used here was FocusGroupIT, however experiences here are transferable across other online platforms. The flexibility to participants to respond at their convenience using phone, preservation of anonymity, alerts send to moderators, and ability to respond privately to sensitive questions are all positive features that give it an extra edge over face-to-face focus group discussion.
- Advanced data mining methods are gaining popularity in many disciplines but have very limited usage in qualitative education studies. In this study, we have demonstrated a successful application of the generation of concept maps based on text data mining. Our results show that such methodology allows users to extract themes from large volumes of qualitative data removing human bias.
- Guided by the results of this study we would like to put forward the following recommendations to educational governing bodies.
    - The simulation model shows that some of the students getting NAPLAN band 2 in year 3 might also fall below NMS by year 5. Attention should be paid to this group of students also, ensuring that resources are available to ensure continual improvement of this group.
    - It was noticed that many schools use NAPLAN scores to boost the image of the school in the mind of the general public. This creates a disparity between the families and children attending high and low-ranking schools. Moreover, it also creates a hoard for SE as all parents want their pupils to get the highest possible band and SE providers are good at capturing the need. This needs the urgent attention of the authority to maintain equity. One possible solution would be to report student performance as pass or fail rather than giving individual bands.

- All students must have good oral communication skills. which is key for their future success. Like academic subjects, diagnostic testing of oral communications skills should also be conducted.
- At the moment Australia is ranked 21 in PISA rating. If we want Australia to play a lead role in any innovations and discoveries, we must incorporate some of the educational practices of countries that are fall in top bands and are innovators.
- There is also a need to duly acknowledge the contribution of SEP in assisting children of all abilities all year around. SE industry is treated like an illegitimate offspring of mainstream schooling. Quality control of SEP and integration of good practices in mainstream schooling will be useful.
- There is a need to have forums where students and teachers can share their problems and challenges, they face in classrooms. This information will help teachers to better under the mindset of children as they grow and comes under influence of the peers. At the same time, if the teachers can share the information about the challenges they face in classrooms, this will not only make teachers feel good but also help society to appreciate the hard work they had been doing. This will ensure effective learning takes place in the classroom where both students and teachers will understand each other better and will also cooperate.

6.3 Future Work

Whilst this research provides a realistic picture of the SE industry using innovative, methods it raised a number of issues relating to the practice of SE. Further studies are required to explore the issues highlighted and develop pragmatic solutions. Future studies could include the following.

- Large scale survey/discussion are required to understand the view of all Stakeholders and across Australia to develop regulatory guidelines. FGD can be conducted using the online framework presented in this study and using our study as a pilot.
- Extend the basic model presented in this study to predict year 5 NAPLAN score post-exposure of SE, to predict scores for year 7 and year 9. Also, create score improvement

tables for various types of SE services. This model can form the basis for modelling educational reforms.

- The size of the SEI is practically unknown, as it is a highly unregulated sector. Using techniques like randomized response methods, sensitive information on the cost of services must be estimated. This will allow regulation of service charges within the industry, safeguarding the interest of all stakeholders.
- This study showed that there are a number of global SE chains active in WA. There is an urgent need to correctly measure the impact of a global chain of SE providers on the Australian economy. It is not only detrimental to the interest of local SE providers but is also leading to the drain of Australian wealth to other countries.
- To have more effective learning in the Australian classroom a study must be carried out on the day to day challenges faced by the teachers in meeting the learning goals set up by ACARA. There is also a need to do more case studies of students that are fall below NMS level so that we know the exact reasons behind it, and it can be resolved in the better interests of children.

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