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**UBS Evidence Lab**

## China Education Sector

### UBS Evidence Lab inside: demystifying lower-tier cities; identifying winners

#### Equities

China  
Consumer Services

#### UBS Evidence Lab survey brings positive takeaways for online AST and TAL

UBS Evidence Lab concluded its third annual afterschool tutoring (AST) survey, this time with increased sample size for lower-tier cities. Overall, Chinese parents' preference for online AST improved for the second year in a row, echoing our bullishness. The survey brings positive takeaways for online AST in lower-tier cities, home to 85% of K12 students in China. Parents there remain most open to online, with robust spending power. TAL Education Group is the survey's standout outperformer, with the highest parent satisfaction and brand awareness in lower-tier cities, suggesting its heavy marketing investment in 2019 has paid off. Supported by years of operational know-how in education, TAL is in a strong position to capture the significant online AST market potential, in our view.

#### Unmet demand for good teachers opens up substantial demand for online AST

Surveyed parents across city tiers unanimously named teacher quality as the most important factor in their AST decision-making. However, the demand for good teachers from the huge student population in lower-tier cities has been difficult to meet given the uneven distribution of talent in China (more concentrated in tier 1/2 cities). We think online is a good way to bridge the location mismatch in AST supply and demand and could create substantial market potential (UBS-S estimate: around US\$100bn by 2025) for the frontrunners.

#### Trio for success in lower-tier cities; TAL a standout outperformer

We list three key elements that we think could be the recipe for online AST success in lower-tier cities: 1) high product quality (highly correlated to retention—the key to sustainable [unit economic in AST](#)); 2) strong brand awareness; and 3) strong operational know-how in education (to sustainably supply high-quality teaching staff—parents' primary focus). [Data from the latest survey](#) reveals TAL as a standout performer in all three metrics; EDU's Koolearn, though behind TAL, is competitive against major competition despite being a second-mover to online AST.

#### Reiterate Buy on TAL, EDU, Koolearn; initiate coverage of GSX with Buy

We reiterate Buy ratings on TAL, EDU and Koolearn and [initiate coverage of GSX with Buy](#). As online AST is in the early stages and considering the significant potential we see ahead (13x combined FY19 revenue of major AST listcos by 2025E), we believe their strong positions remain undervalued by the market.

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**Figure 1: Valuation table of covered companies**

Company name	Ticker	UBS-S Rating	Price target (LC)	Price (LC)	Mkt cap (USD m)	30-d ADV (USD m)	PS			Sales CAGR (FY0-FY3E)	PSG	PE			EPS CAGR (FY0-FY3E)	PEG
							FY1E	FY2E	FY3E			FY1E	FY2E	FY3E		
TAL	TAL.N	Buy	58.00	55.67	32,942	33.0	9.3x	6.4x	4.3x	44.4%	0.14x	71.2x	46.3x	27.1x	49.4%	0.94x
New Oriental	EDU.N	Buy	147.00	136.84	21,600	28.9	5.4x	4.2x	3.4x	27.6%	0.15x	36.6x	25.9x	19.1x	43.4%	0.60x
GSX	GSX.N	Buy	40.00	28.66	6,755	12.9	22.6x	8.1x	4.1x	205.0%	0.04x	153.3x	55.8x	22.9x	259.9%	0.21x
Koolearn	1797.HK	Buy	25.00	23.65	2,848	12.7	14.3x	8.6x	5.6x	56.0%	0.15x	NA	284.6x	49.9x	NA	NA

Note: Above data as at 14 January 2020.

Source: Thomson Reuters, UBS-S estimates

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UBS Research THESIS MAP MOST FAVOURED

LEAST FAVOURED

TAL, EDU, GSX, Koolearn

PIVOTAL QUESTIONS

**Q: How will online education transform afterschool tutoring (AST) by 2025?**

We expect increasing adoption of online AST to be a formidable trend in education in the next few years, reaching revenues of Rmb684bn (c.US\$100bn) by 2025, up from Rmb46bn in 2018. Lower-tier cities, home to the majority of K12 students in China, will be a key growth driver for online AST.

[more](#) →

**Q: Who is well positioned to capture the substantial opportunities in lower-tier cities?**

We list three key elements of success: 1) high product quality (highly correlated to retention, the key to sustainable [unit economic in AST](#)); 2) strong brand awareness; 3) strong operational know-how in education (to sustainably supply high-quality teaching staff—parents' primary focus. Data from UBS Evidence Lab's latest survey reinforce our confidence in TAL and EDU's Koolearn to successfully capture the structural opportunities in lower-tier cities.

[more](#) →

**Q: What is the best business model to take advantage of the online AST opportunity?**

Of the major online AST business models (big classes, small classes, and 1-on-1), we think the big-class format is likely the optimal business model to capture the vast online AST market, due to its better economics, scalability, and less regulation risk.

[What business model is best positioned to capture the potential US\\$100bn online AST market? 08/15/2019](#) →

UBS VIEW

We see significant potential upside in online AST, underpinned by a combination of rising consumer acceptance and improving technology/products. We estimate online AST revenue could reach Rmb684bn (c.US\$100bn) by 2025, up from Rmb46bn in 2018, with particularly strong momentum in lower-tier cities—a large incremental addressable market for leading AST providers. We think the online big-class format could potentially generate 20% OPM when mature, implying significant sector earnings potential. TAL, GSX and EDU's Koolearn are well-positioned, in our view.

EVIDENCE

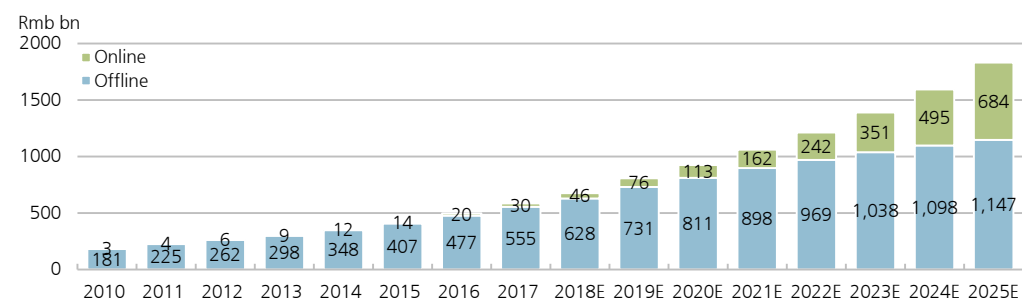
Tier 3-and-below cities represent 85% or 162m of China's total K12 student population, but are underserved by good teaching resources as these tend to be concentrated in top-tier cities. UBS Evidence Lab survey reveals the highest levels of consumer acceptance of online AST to be in lower-tier cities, suggesting strong incremental growth opportunities there.

WHAT'S PRICED IN?

Adjusted for their rapid growth, online AST names in general are trading at a discounted PSG vs offline. Based on our discussions with investors, we believe the market has not fully priced in the significant revenue and earnings potential that online could bring for the frontrunners.

[more](#) →

**China K12 afterschool tutoring sector revenue estimates**

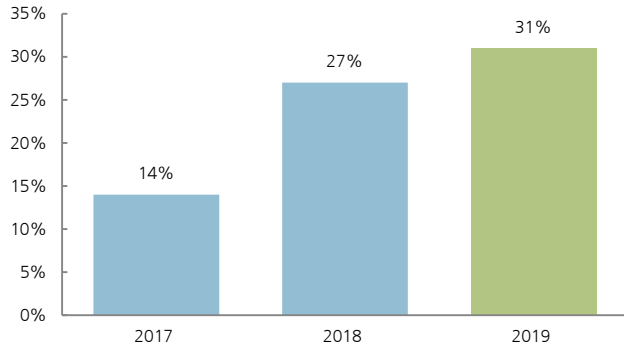


Source: Wind, UBS-S estimates

OUR THESIS IN PICTURES

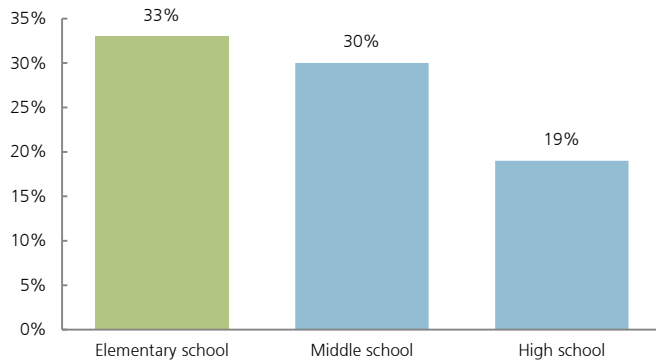
[return](#) ↑

% of parents that prefer online AST over offline



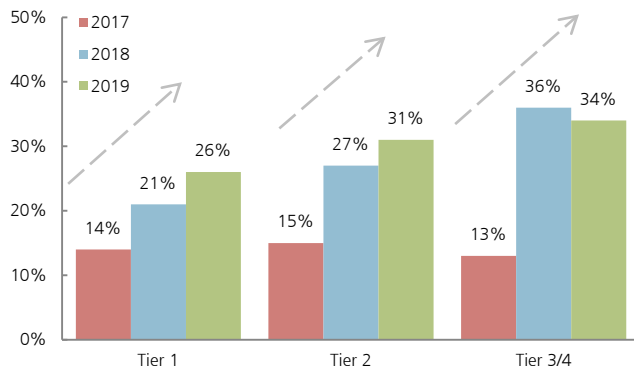
Chinese parents' preference for online AST continues to increase

% of parents that prefer online AST over offline – by grade of children



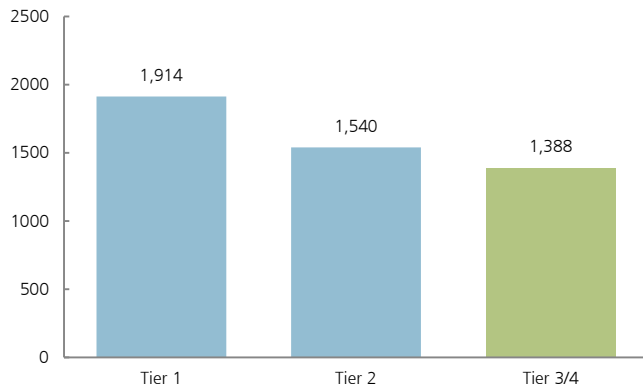
Elementary school parents prefer online AST the most, suggesting high visibility for rising online adoption as generations shift

% of parents that prefer online AST over offline – by city tier



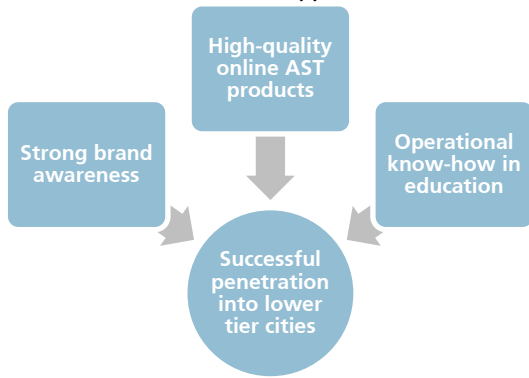
Lower-tier cities remain most open to online, while receptiveness in higher-tier cities is catching up

Average monthly spending on AST (Rmb)



Robust purchasing power across city tiers suggests significant sector revenue potential in online AST, particularly in lower-tier cities given the student population there

Our view of what it takes to successfully penetrate lower-tier cities



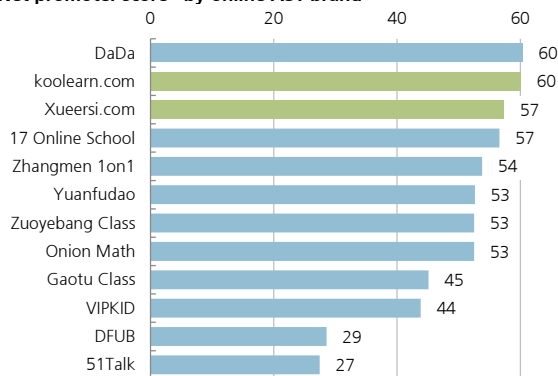
We believe successful penetration into lower-tier cities would require high-quality product, strong brand awareness and strong operational capacity

Parent satisfaction with major online AST brands

Brand	Satisfaction	Format
Xueersi.com	4.5	Big class
VIPKID	4.5	1-on-1
Zhangmen 1on1	4.4	1-on-1
17 Online School	4.4	Big class
koolearn.com	4.4	Big class
DaDa	4.4	1-on-1
Zuoyebang Class	4.4	Big class
Yuanfudao	4.3	Big class
Gaotu Class	4.3	Big class
Onion Math	4.2	Others
DFUB	4.2	Small-class
51Talk	4.1	1-on-1

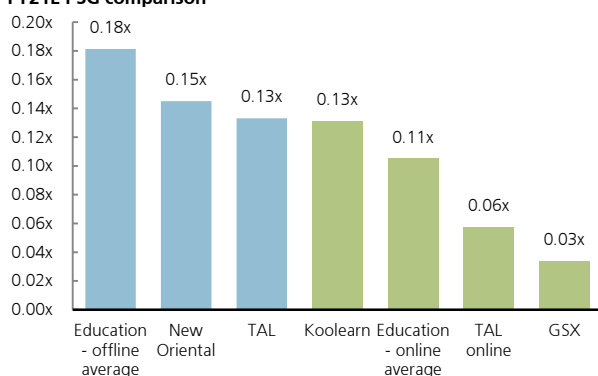
TAL's Xueersi.com is a standout performer...

Net promoter score\* by online AST brand



...while EDU's Koolearn is also competitive

FY21E PSG comparison



We view the substantial online AST opportunities and TAL, Koolearn and GSX's strong positions as undervalued

Note: \*Net promoter score is a measure of consumer loyalty and reflects the net percentage of consumers willing to recommend an AST brand to others.

Sources for exhibits above: Thomson Reuters, Company data, UBS Evidence Lab, UBS-S estimates

## Historical timeline of online AST development

Timeline	Development
2009 to 2013 ● <b>Slow start with pre-recorded video courses</b>	<p>Online AST started out in the form of pre-recorded video courses, to our knowledge. TAL and EDU's Koolearn launched early attempts at the format.</p> <p>The results were mixed due to weak student-teacher interaction, which resulted in low class completion rates and low retention (measured as a percentage of current students that enrol in the next session).</p> <p>During this period, TAL's online revenue contribution remained in the low single digits, and offline growth was faster than online, in general.</p>
2013 to 2017 ● <b>Live streaming emerged as the go-to format</b>  ● <b>Online 1-on-1 delivered strong momentum</b>	<p>With better internet infrastructure, the AST providers were able to adopt the live streaming format. During this period, there were individual teachers leveraging third-party live streaming websites, such as YY as well as institutionalised products from TAL and Koolearn.</p> <p>The online 1-on-1 format, particularly in English tutoring, grew quickly during this stage. Notable providers included VIPKID, DaDa, 51Talk, and VIPJr. We think the head-start in 1-on-1 can be attributed to the more intimate study environment of the format.</p> <p>Online big/small classes recorded relatively slower growth than the 1-on-1 format during this stage, according to UBS Evidence Lab app usage data. We think it could be due to relatively less mature products and weaker consumer acceptance.</p>
2018 to H119 ● <b>The rise of the online big-class format</b>	<p>2018 saw the rise of the online big-class format led by TAL, Zuoyebang, Yuanfudao, <a href="#">according to UBS Evidence Lab app usage data</a>. We think this can be attributed to: 1) improving technology and course design; 2) better consumer education/acceptance due to leading providers' aggressive marketing; and 3) wider adoption of teaching assistants, which improves service quality.</p> <p>Throughout the relatively short history of online AST, most businesses have tended to be loss making, likely due to: 1) high upfront, fixed costs in running an internet business; 2) aggressive investments in marketing and R&amp;D; and 3) weaker operating metrics, such as low retention rates.</p>
H219 ● <b>Continued fast growth of online big classes</b>	<p>Online big-class format continued its strong growth. Average total WAUs of major online big class companies grew 233% YoY in H219, according to UBS Evidence Lab app usage data.</p> <p>Parent preference for online AST further increases. Parents from lower-tier cities remain most open to online, while receptiveness in higher-tier cities is catching up. Purchasing power for AST is robust across city tiers.</p> <p>Parent satisfaction with online brands is catching up with offline brands. Xueersi.com scored the highest parent satisfaction among major online AST companies.</p>

Source: UBS Evidence Lab, UBS-S

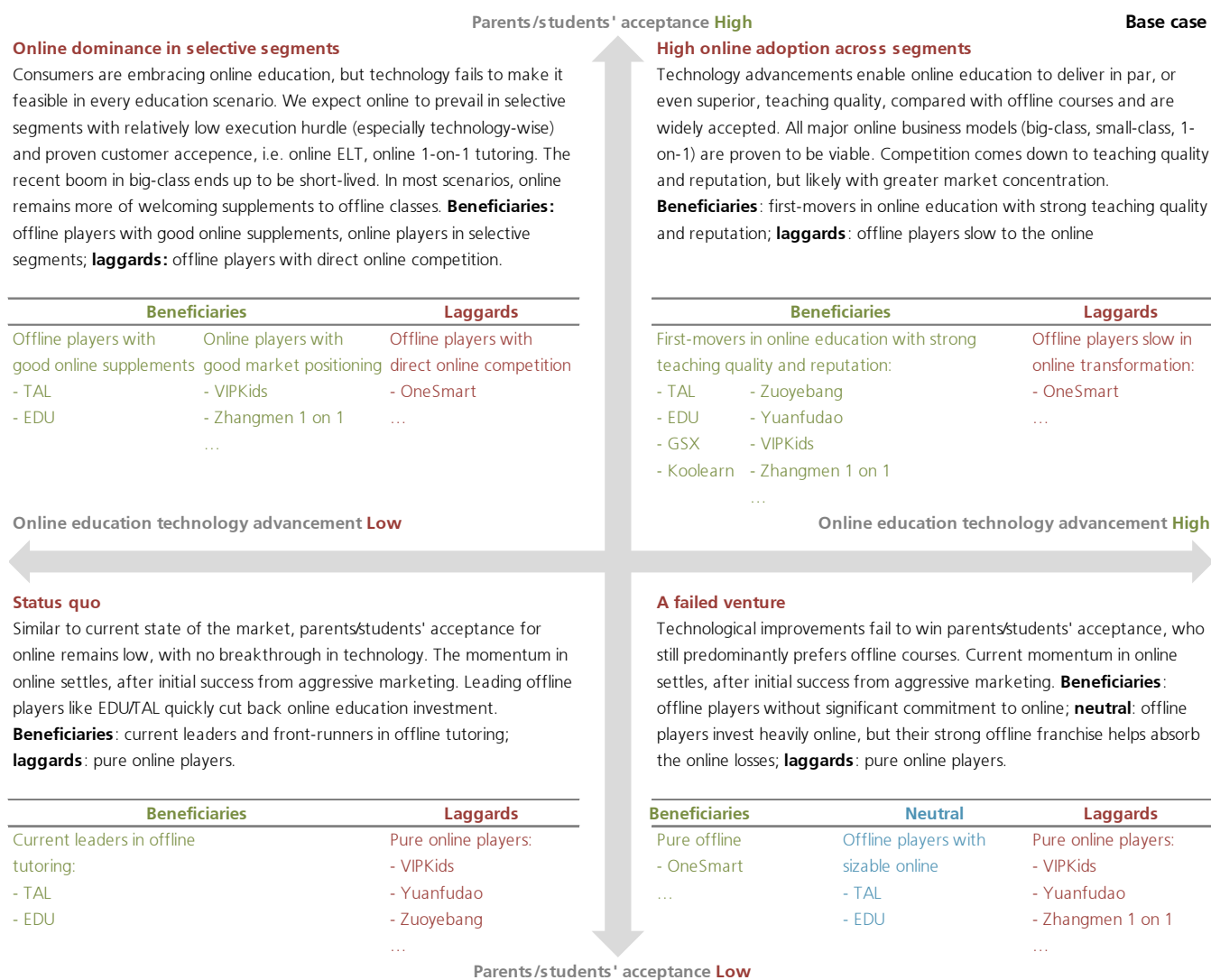
## SIGNPOSTS

### The potential path to our 2025 base-case scenario and the data points to track

Timeline	What we expect
2020 to 2021E	<ul style="list-style-type: none"><li>● <b>Continued strong growth</b></li></ul>
	<p>We expect continued strong growth in the online big-class format. We expect TAL's Xueersi Online and Koolearn's K12 to close to double their revenue YoY again in FY21, as they continue to explore the substantial addressable market of online AST.</p>
	<ul style="list-style-type: none"><li>● <b>Better technology and operating leverage could improve profitability</b></li></ul>
	<p>We expect new technologies like artificial intelligence (AI) to be more widely applied in online AST, helping improve user experience and efficiency of teaching staff.</p> <p>With the improved efficiency and better operating leverage on selling, marketing and R&amp;D expenses, we expect TAL's online and Koolearn to largely breakeven at FY21.</p>
2022 to 2025E	<ul style="list-style-type: none"><li>● <b>Online AST could start to deliver high-speed profitable growth, powered by technology and greater consumer acceptance</b></li></ul>
	<p>We believe online education could be mature enough to deliver teaching quality on par with, or even superior to, offline courses, due to better technology and course design. Online education may be equally well-received as offline as suggested in UBS Evidence Lab's China Afterschool Education surveys.</p> <p>Meanwhile, due to efficiency gains with technology and stronger pricing power from better teaching quality, we expect online AST to deliver margins comparable or even superior to offline.</p> <p>Our FY25E online K12 revenues for TAL and Koolearn are 22x/56x the starting point in FY19, with over 16% OPM.</p>

Source: Company data, UBS-S estimates

# Potential deviations from our base-case scenario



Source: Company data, UBS-S estimates

## PIVOTAL QUESTIONS

[return](#) ↑**Q: How will online education transform afterschool tutoring (AST) by 2025?**

## UBS-S VIEW

[We previously highlighted](#) our view that the rising adoption of online AST would likely be a formidable trend in education over the next few years, underpinned by: 1) improving online education products; and 2) better consumer acceptance of the online format.

Encouragingly, the latest data from UBS Evidence Lab's annual education survey suggests both drivers are evolving in the direction we anticipated.

We estimate online AST could be a Rmb684bn (c.US\$100bn) market by 2025E, up from Rmb46bn in 2018. We particularly see strong upside potential in lower-tier cities as we think online AST could help connect the vast student population there with education resources previously only available in higher-tier cities.

## EVIDENCE

1. 31% of parents surveyed in 2019 said they prefer online AST over offline, up from 27% in 2018 and 14% in 2017. Younger parents (of elementary school students) are more open to online AST than older parents, suggesting visible upside to online acceptance in the near future.
2. Tier 3/4 cities remained the regions most receptive to online, with 34% of parents preferring online as they valued the high quality teachers that online makes available to their regions.
3. In tier 1/2 cities 26%/31% of surveyed parents preferred online, lower than tier 3/4 cities but higher YoY. Parents in tier 1/2 cities liked online due to the flexibility in scheduling.
4. Online AST brands are now delivering parent satisfaction levels similar to those of offline, suggesting improving and competitive product quality.
5. Spending power in tier 3/4 cities turns out to be very robust. Surveyed parents there on average spent Rmb1,388 per month on AST, only 10% below tier 2 cities and 27% below tier 1. This suggests substantial potential addressable market there, considering lower-tier cities are home to 85% or 162m of China's K12 student population.



# Mega shift to online AST well on track

We believe the transition to online will be the megatrend in AST in China over the next five years, creating significant growth and profitability potential for leading AST companies like TAL and EDU to tap into markets they were previously unable to fully capture through offline networks.

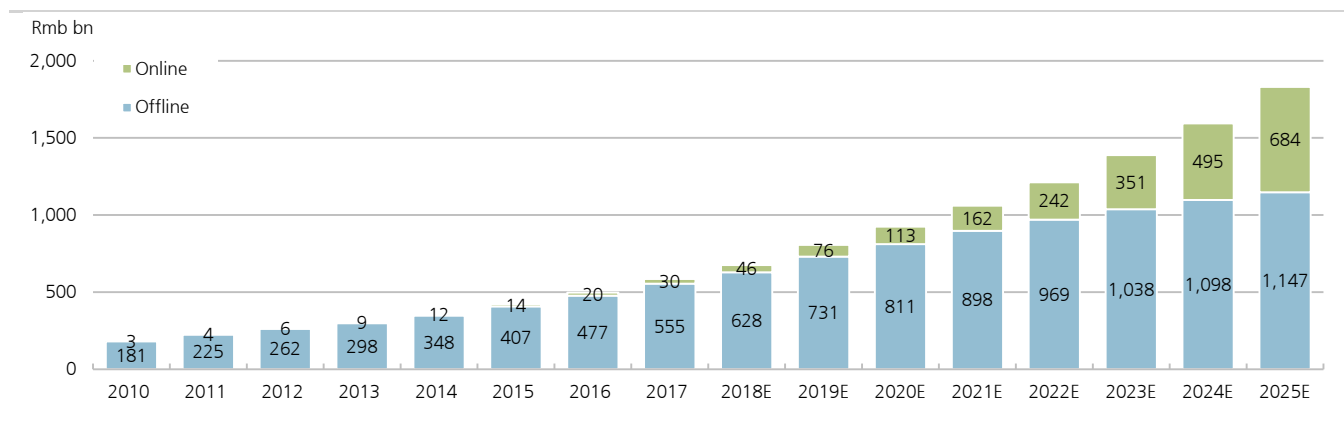
**We expect online AST in China to be a US\$100bn market by 2025**

We believe the shift to online will be underpinned by 1) parents' improving acceptance of the online format and 2) improving online education products.

**So far, this seems to be on track**

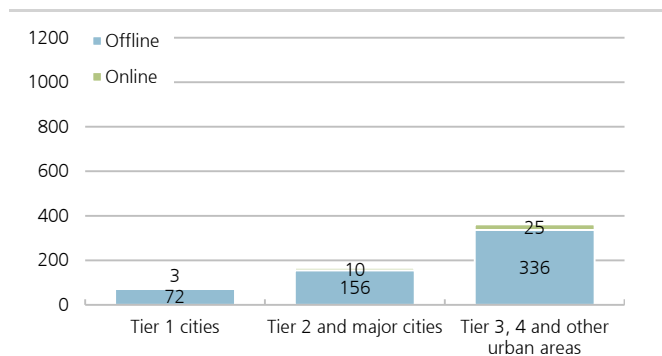
Encouragingly, the latest findings from UBS Evidence Lab's survey of 1,300 Chinese parents in Nov/Dec 2019 suggest both drivers are evolving in the direction we anticipated.

**Figure 2: China AST sector – revenue estimates**



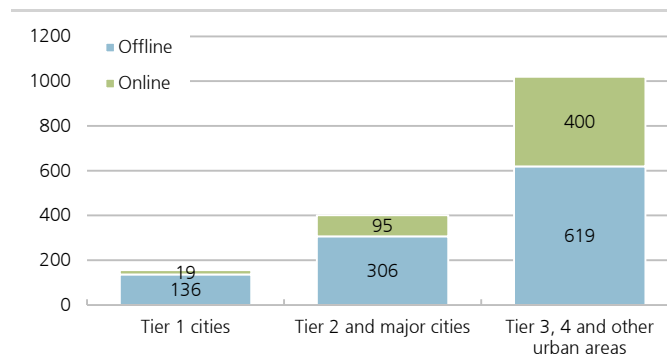
Source: Wind, UBS-S estimates

**Figure 3: China AST sector – revenue by city tiers (2018E, Rmb bn)**



Source: UBS-S estimates

**Figure 4: China AST sector – revenue by city tiers (2025E, Rmb bn)**



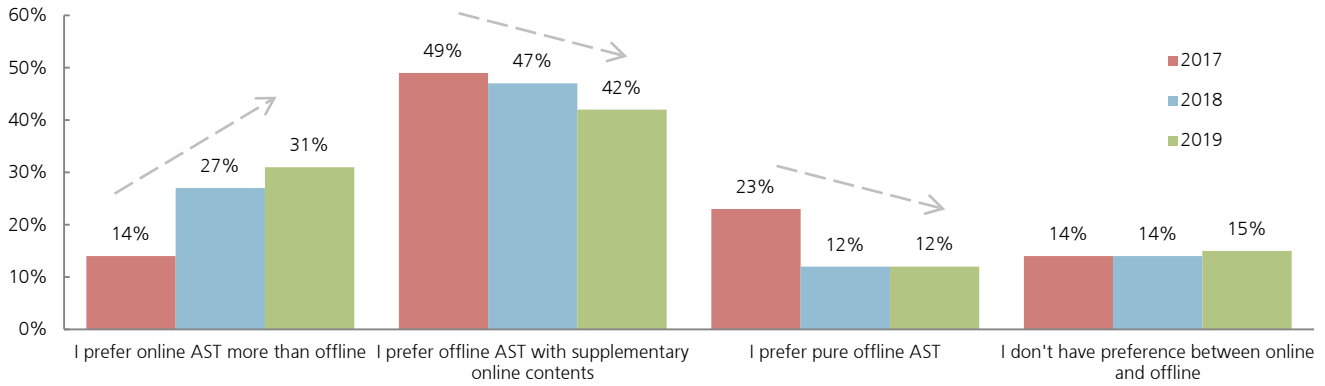
Source: UBS-S estimates

## Chinese parents increasingly receptive to the online format

According to the survey, Chinese parents' acceptance of online AST has been increasing for two consecutive years, since the launch of the original survey in 2017. The share of parents who prefer online has increased from 14% in 2017 to 31%, while the share of parents who prefer offline has declined from 72% in 2017 to 54% in 2019.

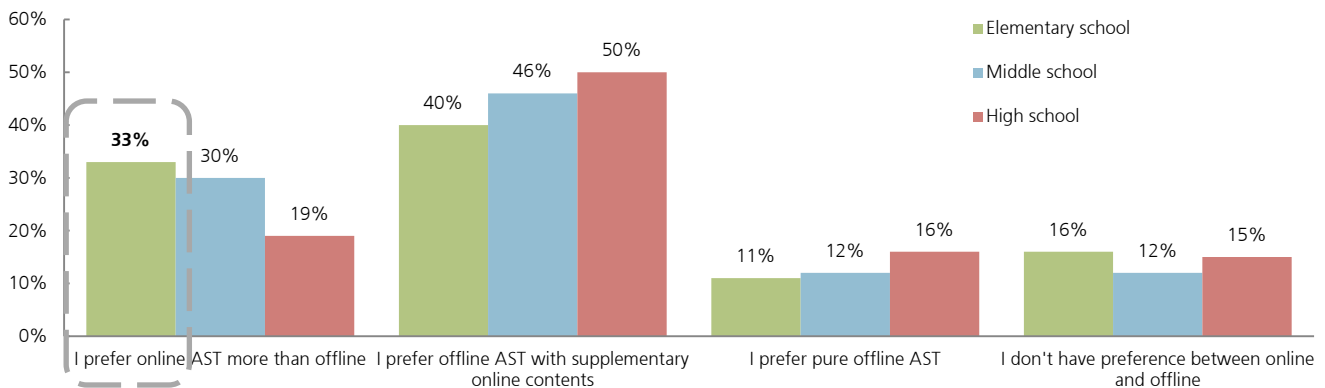
Look deeper behind the data, we noticed that parents of elementary and middle school students are notably more open to online AST than high school parents. As current high school students will gradually exit the K12 school system and more online-receptive parents will start to dominate the K12 AST consumer population, we see the shift to online as highly visible.

**Figure 5: Steady increase in acceptance of online AST during 2017-19**



Source: UBS Evidence Lab

**Figure 6: Parents of elementary school students more receptive to online; this brings positive implications for years to come**



Source: UBS Evidence Lab

### Online AST demonstrating universal appeal to parents across city tiers

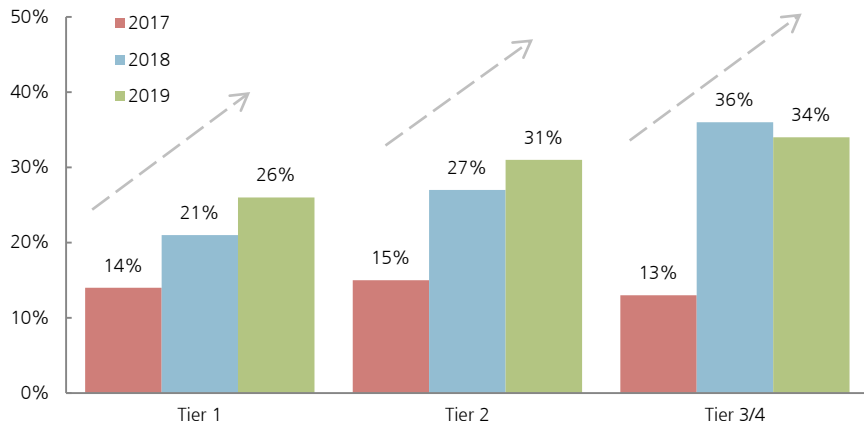
Three years of UBS Evidence Lab surveys reveal that **Chinese parents across city tiers are turning more open to online**, but for different reasons.

The survey reveals that **teacher quality** and **schedule flexibility** are the top two factors that parents consider when choosing between online vs offline AST products.

We note that in lower-tier cities, more parents believe online provides better teachers than offline there, likely a key driver behind the high online preference there. The results echo our view that online AST provides a good mechanism for connecting lower-tier cities' unmet need for good teachers with the talented teachers living in higher-tier cities.

In higher-tier cities, online AST's edge in teacher quality is narrower than offline AST; however, parents in higher-tier cities like online for its schedule flexibility.

**Figure 7: Share of parents who prefer online**



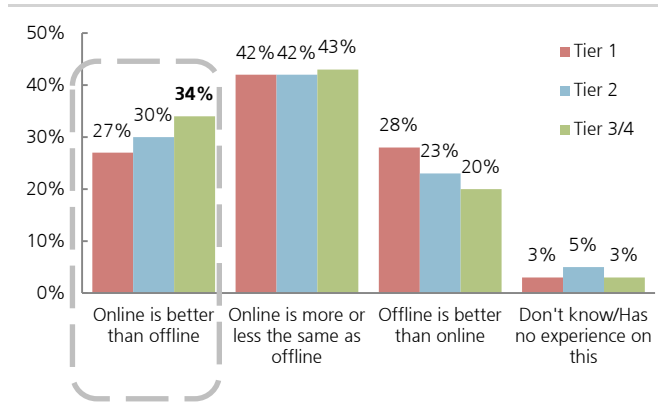
Source: UBS Evidence Lab

**Figure 8: Key factors impacting parents' decision to use online or offline**

Factors impacting AST decisions	Importance	Online is better than offline	Online is more or less the same as offline	Offline is better than online	Don't know	
<b>Quality of teacher</b>	<b>High</b>	32%	42%	23%	3%	
<b>Flexibility of class schedule</b>		45%	34%	19%	2%	
Interaction with teachers		26%	36%	37%	2%	
Students able to focus during class		26%	39%	33%	2%	
Good value for money		39%	41%	16%	3%	
Design of the course materials		30%	48%	19%	3%	
Quality of hardware for teaching (video/audio quality etc.)		34%	41%	23%	3%	
Provide personalized services		34%	39%	24%	3%	
Easiness to monitor the learning progress of children		35%	35%	28%	2%	
Outcome at test/exam preparation		25%	43%	30%	3%	
Interaction among classmates		22%	35%	40%	2%	
Easy to pay		<b>Low</b>	35%	46%	16%	2%

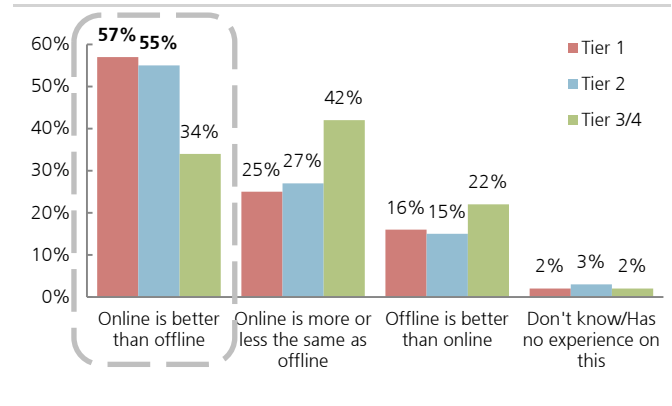
Source: UBS Evidence Lab

**Figure 9: Online vs offline by city tiers: quality of teacher**



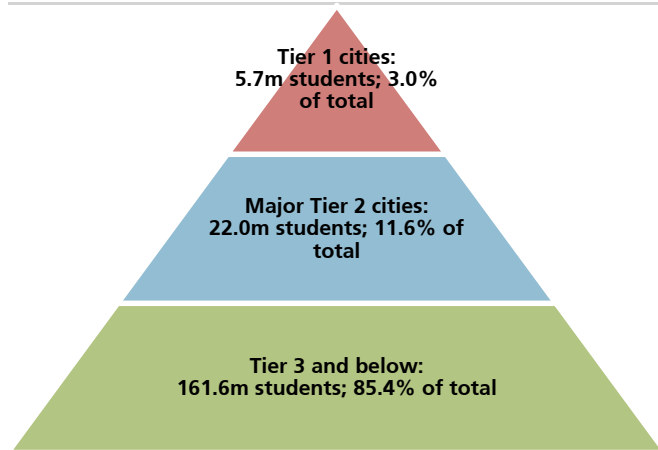
Source: UBS Evidence Lab

**Figure 10: Online vs offline by city tiers: flexibility of class schedule**



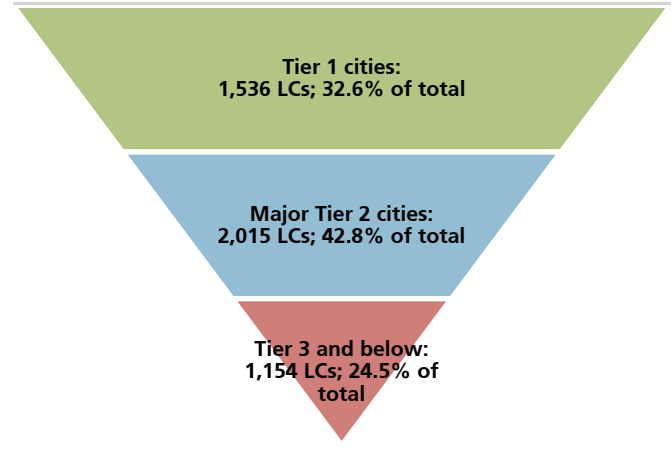
Source: UBS Evidence Lab

**Figure 11: The vast majority of K12 students in China reside in lower-tier cities (2018)...**



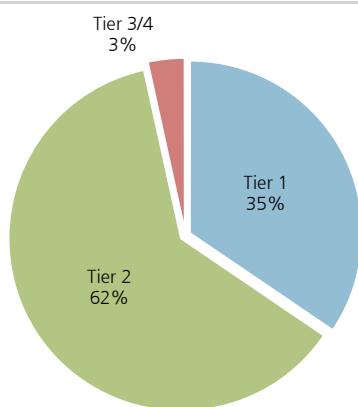
Source: Wind, UBS-S

**Figure 12: ...but are underserved by major AST brands' offline operations (2019 Q3)**



Source: UBS Evidence Lab, Wind, UBS-S

**Figure 13: Distribution of "211 Project" universities\* by city tiers**



**Top universities in China concentrated in higher-tier cities**

**Online AST provides a good mechanism for connecting lower-tier cities' unmet need for good teachers with the talented teachers living in higher-tier cities**

Note: "211 Project" consisted of a group of 116 high-quality universities in China, sponsored by high-level regulators including the State Council, Ministry of Education.  
Source: University home pages, UBS-S

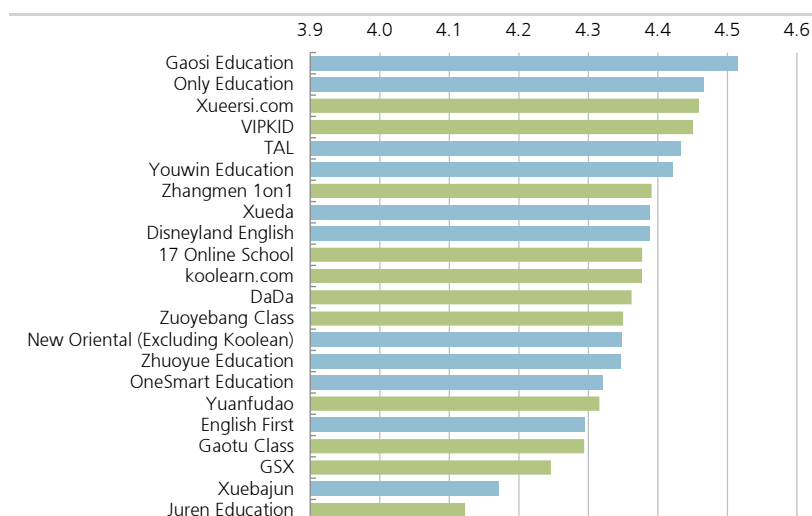
## Online AST quality increasingly competitive vs offline

Interestingly, although the majority of surveyed parents preferred some form of offline AST, we note that in terms of parent satisfaction, we do not see a clear divide for online and offline. On average, the major online and offline AST brands delivered similar levels of customer satisfaction.

We note that a brand's content and teaching staff quality could play a bigger role in parents' satisfaction than whether the class is held online or offline.

We highlight **TAL as a standout outperformer**, ranked No.1 in online and No.3 in offline, performing strongly in both formats.

**Figure 14: Parent satisfaction by brand**



Note: Respondents were given five choices: Very satisfied (5); Somewhat satisfied (4); Neutral (3); Somewhat dissatisfied (2); and Not satisfied at all (1). Above shows average scores.  
Source: UBS Evidence Lab

**Figure 15: Parent satisfaction: online brands vs offline brands**



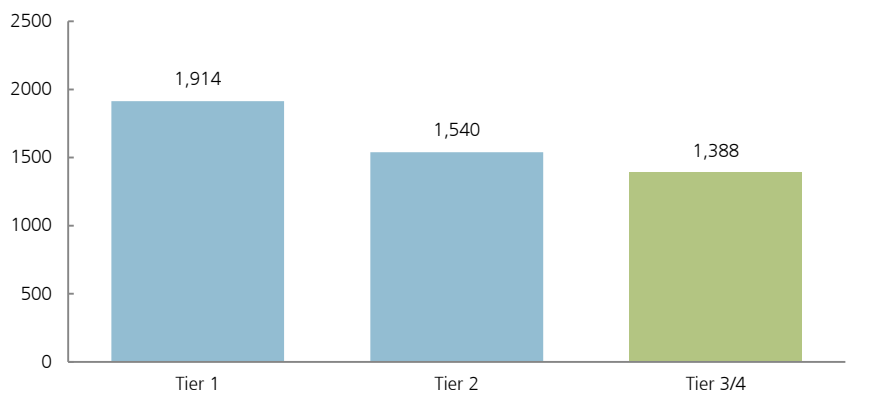
Note: Respondents were given five choices: Very satisfied (5); Somewhat satisfied (4); Neutral (3); Somewhat dissatisfied (2); and Not satisfied at all (1). Above shows average scores.  
Source: UBS Evidence Lab

## Robust spending power even in lower-tier cities

Contrary to investor concerns over weaker purchasing in lower-tier cities, parents surveyed in tier 3/4 cities showed robust purchasing power for AST. On average, tier 3/4-city parents reported spending Rmb1,388 per month on AST, only 10% below tier 2 cities and 27% lower than tier 1.

We believe the findings of robust purchasing power in lower-tier cities, home to 86% of China's 189m K12 student population, supports our bullish forecasts for the online AST sector's addressable market.

**Figure 16: Average monthly spending on AST (Rmb)**



Source: UBS Evidence Lab

## PIVOTAL QUESTIONS

[return](#) ↑

## Q: Who is well positioned to capture the substantial opportunities in lower-tier cities?

### UBS-S VIEW

We believe that to successfully penetrate lower-tier cities, online AST brands must have: 1) high-quality product ([high retention, thus sustainable unit economics](#)); 2) strong brand awareness and/or efficient marketing channels; and 3) strong operational capacity to scale business.

Findings from UBS Evidence Lab's latest survey reinforce our confidence in TAL and EDU's online operations to successfully capture the structural opportunities in lower-tier cities.

### EVIDENCE

1. TAL's Xueersi.com is a standout outperformer in the survey. Among the major online AST brands, it is the only one that ranked top three in parent satisfaction (No.1), brand awareness in tier 3/4 cities (No.2) and net promoter score (No.3).
2. EDU's Koolearn slightly lagged behind TAL's Xueersi.com but was still competitive. Among the major online AST brands, it ranked No.2 in net promoter score, No.4 in brand awareness, and No.5 in parent satisfaction. Considering Koolearn is a latecomer to the sector and its competitors have invested much more marketing dollars, we like Koolearn's results and believe they demonstrate the brand equity and know-how in education that Koolearn shares with its parent, EDU.
3. Operation-wise, TAL and EDU managed 34k/36k teaching staff in FY19, while the major online AST companies currently only manage teaching staff of 3-4k, according to company data. As K12 online AST still requires substantial interaction between students and teachers/tutors, TAL and EDU's operational know-how in managing big teams is a unique competitive advantage over the major online AST competition, in our view.

## Putting together the ingredients of success in lower-tier cities

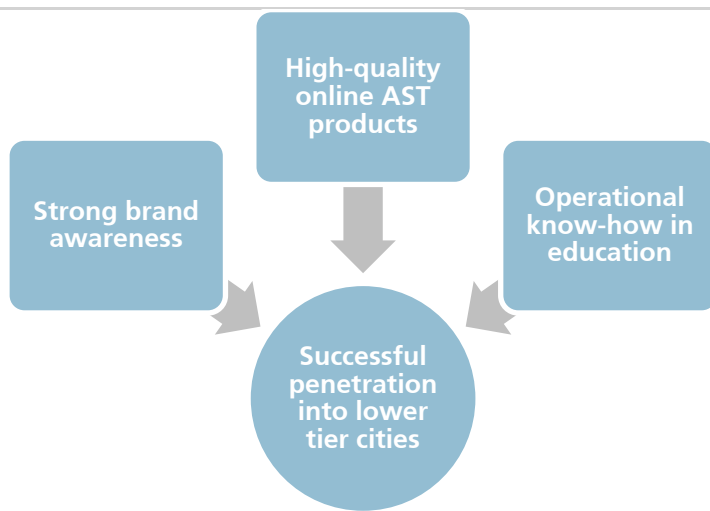
Referencing the development of offline AST, we believe successful penetration into lower-tier cities will likely need the following three elements:

1. **High-quality products:** We view high-quality AST products, which include good content, strong teaching staff, and robust IT infrastructure, as key to customer satisfaction. Customer satisfaction tends to be highly correlated to retention (Figure 19 and Figure 20), which is a critical driver for viable unit economics (see [our unit economics model](#) for sensitivity).
2. **Strong brand awareness:** We think strong brand awareness is critical to ensuring that a good product reaches a wide audience at a reasonable marketing budget. Otherwise, online AST companies will likely need substantial marketing dollars or unique/efficient marketing strategies to grow in the vast but less densely populated lower-tier cities, in our view.

3. **Operational know-how:** Based on our observations of current major online AST business models, we view online AST as fundamentally a people business, with a high-degree of interaction between students and teaching staff required to deliver good study outcomes and customer satisfaction. In this context, we believe the ability to sustainably grow a high-quality teaching staff through good training and HR management is important to ensure sustainable growth in online AST.

From these three angles, we believe **TAL and EDU’s online operations have the right ingredients to successfully capture the significant potential opportunities in lower-tier cities.**

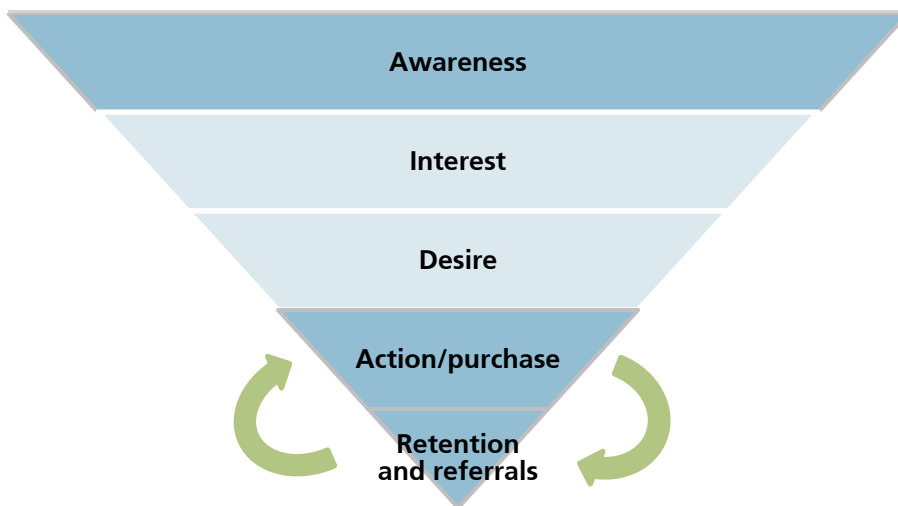
**Figure 17: Our view of what it takes to successfully penetrate lower-tier cities**



Xueersi.com and Koolearn have built up solid advantages in brand awareness, retention and referrals, backed by their industry-leading operational know-how: a powerful combination, in our view

Source: UBS-S

**Figure 18: Consumer purchase funnel in AST**



Source: UBS-S



## AST product quality: home turf of TAL and EDU

We believe TAL and EDU's decades of know-how in education from their offline operations will transfer well to their online AST products. Findings from the latest UBS Evidence Lab survey are supportive to our positive views.

TAL's Xueersi.com is a standout outperformer, ranked No.1 in both consumer satisfaction and retention among major online and offline brands in the survey.

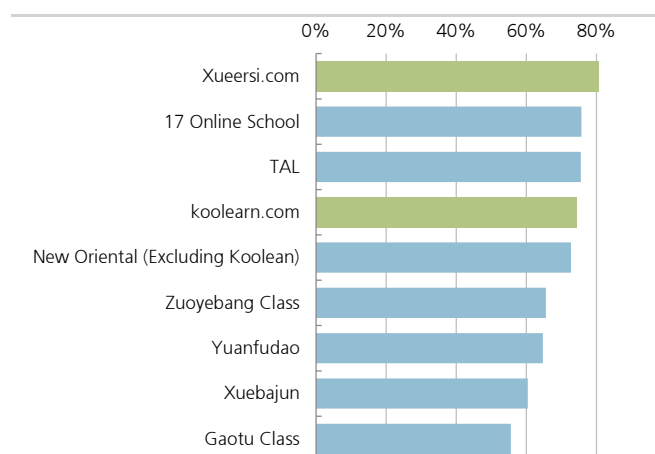
Koolearn is ranked behind Xueersi.com but ahead of other major online competitors: ranked No.3 in consumer satisfaction and retention within the online big-class segment.

**Figure 19: Parent satisfaction of major online AST brands**

Brand	Satisfaction	Format
Xueersi.com	4.5	Big class
VIPKID	4.5	1-on-1
Zhangmen 1on1	4.4	1-on-1
17 Online School	4.4	Big class
koolearn.com	4.4	Big class
DaDa	4.4	1-on-1
Zuoyebang Class	4.4	Big class
Yuanfudao	4.3	Big class
Gaotu Class	4.3	Big class
Onion Math	4.2	Others
DFUB	4.2	Small-class
51Talk	4.1	1-on-1

Note: Respondents were given five choices: Very satisfied (5); Somewhat satisfied (4); Neutral (3); Somewhat dissatisfied (2); and Not satisfied at all (1). Above shows average scores.  
Source: UBS Evidence Lab

**Figure 20: Retention of major AST brands**



Source: UBS Evidence Lab, UBS-S estimates

## Brand awareness: TAL's high S&M spending paid off

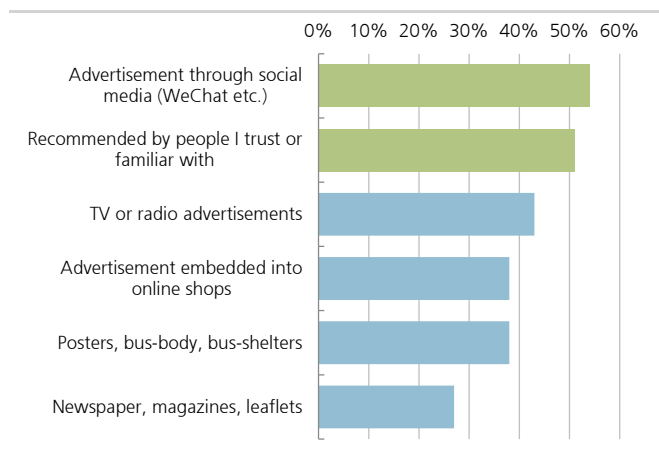
UBS Evidence Lab survey suggested ads on social media are the biggest AST information channel for parents in lower-tier cities (Figure 21). Although TAL's heavy sales and marketing (S&M) spending in recent quarters on online social media for its Xueersi.com raised some eyebrows in the investment community, it seems to have appealed to consumers in lower-tier cities and has paid off.

From 2017 to 2019, Xueersi.com rose from a relatively unknown brand in tier 3/4 cities into the No.2 brand there (Figure 22), close to the level of Zuoyebang, which has an impressive 29m weekly-active users for its homework tool app (source: UBS Evidence Lab and UBS-S estimates), and even surpassed Koolearn, who has the nationwide brand recognition of its parent, EDU.

The survey also revealed that word-of-mouth referral is almost as important as ads on social media. Encouragingly, Xueersi.com and Koolearn performed well in that channel, with top-three net promoter scores among major online competition.

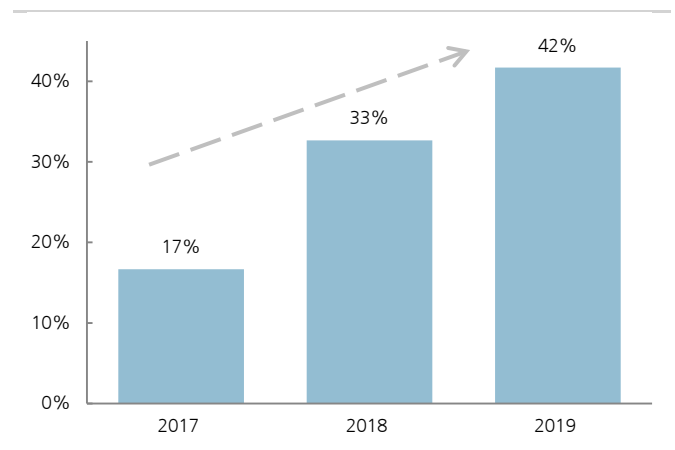
**TAL's committed S&M campaign has turned Xueersi.com into a well-known brand in lower-tier cities**

**Figure 21: Where do parents in tier 3/4 cities receive information about AST**



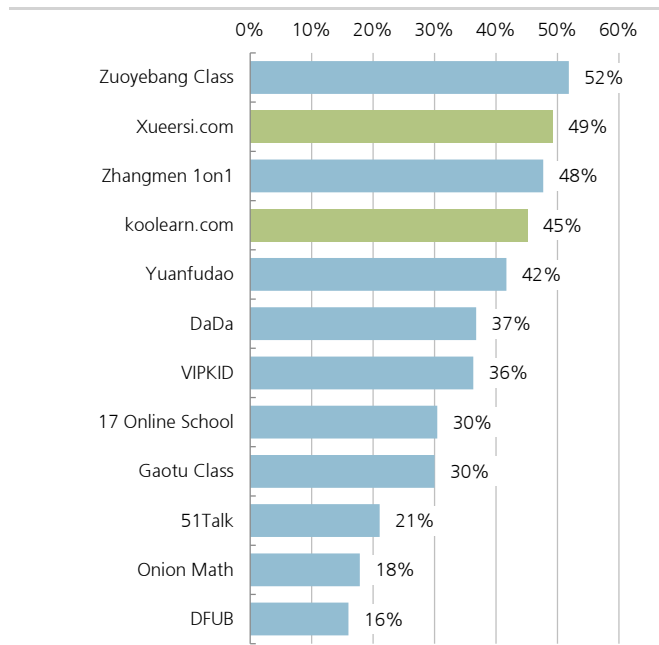
Source: UBS Evidence Lab

**Figure 22: Xueersi.com's brand awareness in tier 3/4 cities**



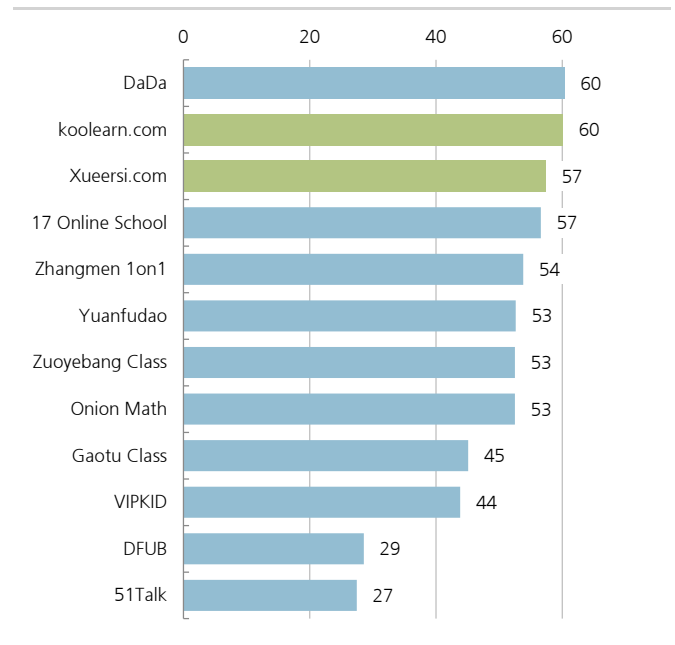
Note: Above shows % of parents from tier 3/4 cities who are aware of the brand.  
Source: UBS Evidence Lab

**Figure 23: Online AST brand awareness in tier 3/4 cities**



Note: Above shows % of parents from tier 3/4 cities who are aware of the brand.  
Source: UBS Evidence Lab

**Figure 24: Net promoter score by online AST brand**



Source: UBS Evidence Lab

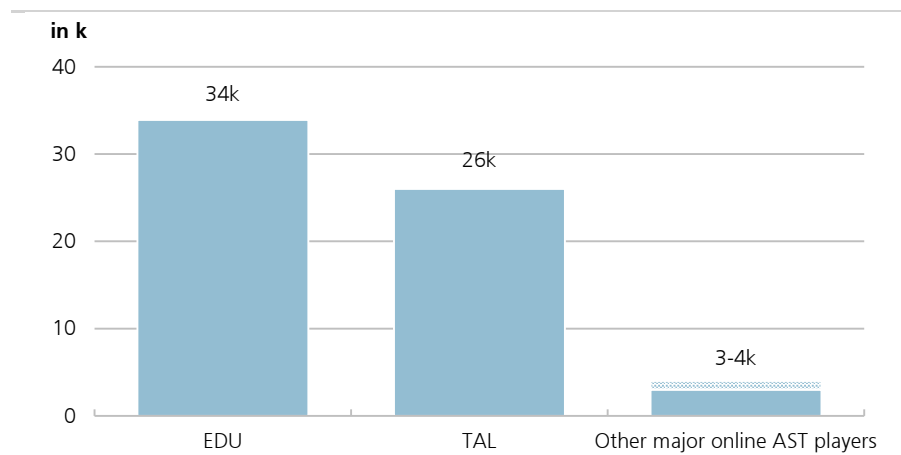
## Deep operational know-how in education backed by decades of offline history

Based on our observations of current major online AST business models, we view online AST as fundamentally a people business, with a high-degree of interaction between students and teaching staff required to deliver good study outcomes and customer satisfaction.

In this context, we believe the ability to sustainably grow a high-quality teaching staff through good training and HR management is important to ensure sustainable growth in online AST.

We think TAL and EDU's decades of operational know-how from their offline operations and experience in managing large teaching crews are unique advantages over the major competition in online AST.

**Figure 25: Teaching staff headcount (FY19)**



Source: Company data

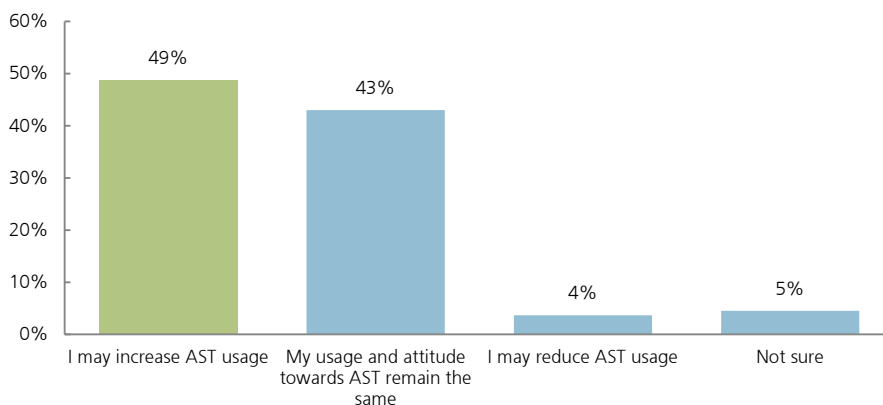
## Investor FAQs and data from UBS Evidence Lab

### Q1: Will the recent change in middle school admission policy negatively impact afterschool tutoring demand?

**A:** No. In fact, 49% of elementary school parents indicated that they would increase AST usage; 43% indicated their usage would stay the same; only 4% indicated they would decrease their AST usage.

This is in line with our analysis when the regulation was first announced ([see details](#)).

**Figure 26: Elementary school parents' reaction to the recent change in middle school admission policy**



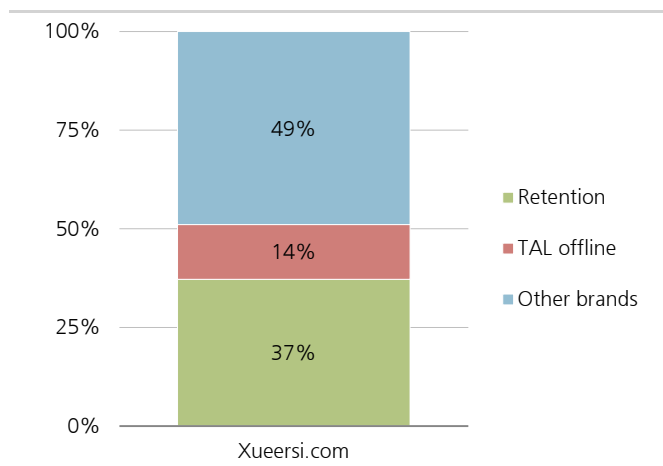
Source: UBS Evidence Lab

### Q2: Will TAL's Xueersi.com cannibalise its offline AST business?

**A:** There is some customer overlap, but not materially. According to the survey and UBS-S estimates, the biggest sources of customer traffic for Xueersi.com are: 1) competitors (49%); 2) its own retention (37%); and 3) TAL's offline customers (14%).

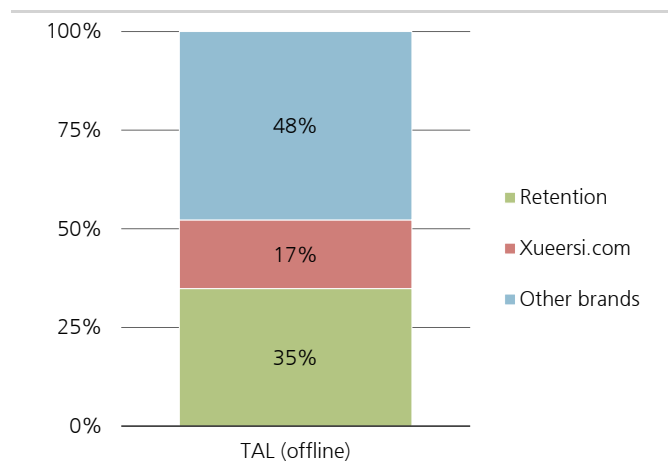
Interestingly, we note that 17% of TAL's offline traffic could also be users of its Xueersi.com. We think TAL's comprehensive online + offline offerings may have expanded TAL's wallet share within the consumer, rather than cannibalising its products.

**Figure 27: Inbound customer composition for Xueersi.com**



Source: UBS Evidence Lab, UBS-S estimates

**Figure 28: Inbound customer composition for TAL (offline)**

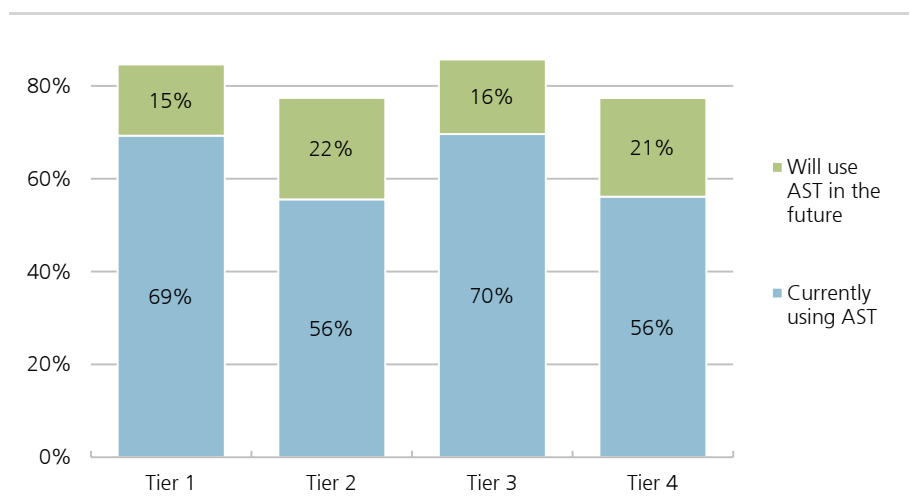


Source: UBS Evidence Lab, UBS-S estimates

**Q3: Do lower-tier cities have weaker demand for AST due to less competitive school admissions there?**

**A:** No, this does not seem to be the case. To our surprise, there does not seem to be notable penetration differences by city tier.

**Figure 29: AST penetration by city tiers**



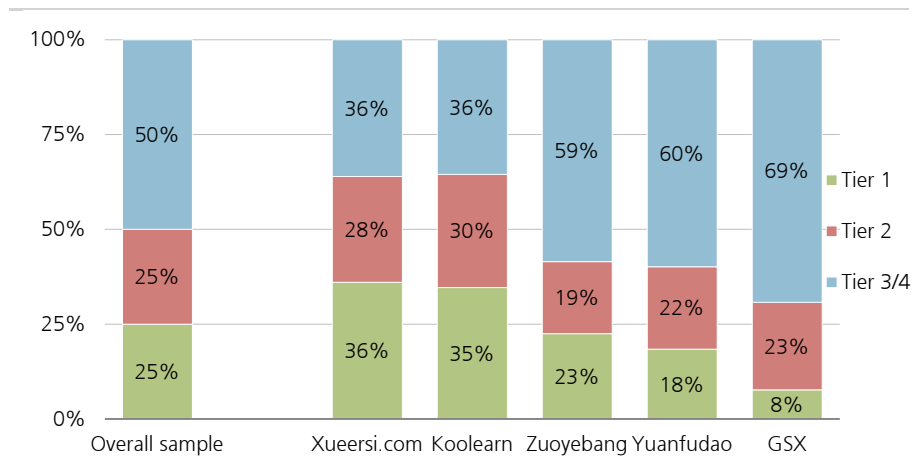
Source: UBS Evidence Lab

**Q4: Is online AST competition relatively intense now?**

**A:** Likely not on the demand side. UBS Evidence Lab survey suggests that different brands have different city-tier focuses: Xueersi.com and Koolearn are relatively overweight higher-tier cities; whereas Zuoyebang, Yuanfudao and GSX are relatively focused on lower-tier cities.

We do believe, however, that competition for advertising resources—particularly for online ads—could be intensifying, which calls for more innovative marketing strategies.

**Figure 30: User composition**



Source: UBS Evidence Lab

## WHAT'S PRICED IN?

[return](#) ↑

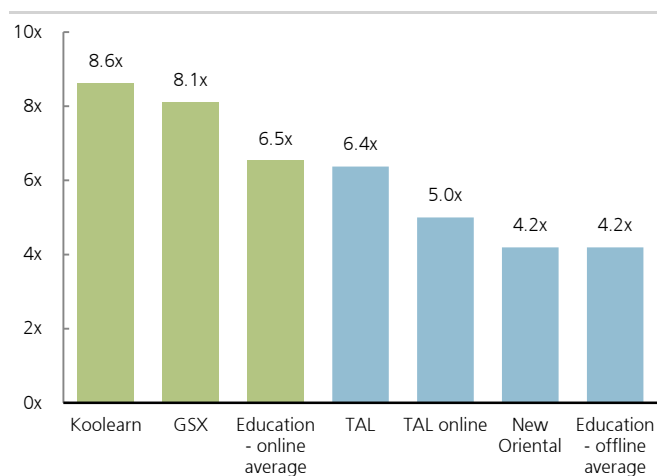
## Online AST trades at a discount to offline, adjusted for growth

The overall AST sector is highly fragmented and mostly occupied by small institutions and mom-and-pop shops. We think the leading online AST players in general are in a good position to gradually consolidate the large market, especially in lower-tier cities and we thus have Buy ratings on TAL, GSX and Koolearn. While online AST companies might look expensive on a P/S basis, adjusted for their rapid growth potential in an attractive market, they trade at discounted PSG vs offline peers, by our estimates.

We note that investor confidence in online AST has improved over the past few months, especially after TAL's Q2 FY20 beat, but we see continued debate on the revenue and profitability potential of online AST.

We highlight the significant revenue and earnings potential in online AST and think that the mega shift to online could create significant value for frontrunners—something the market has not fully priced in, in our view.

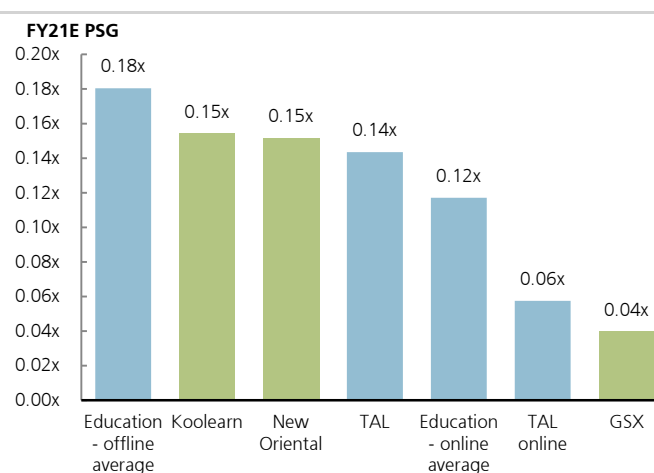
**Figure 31: FY21E PS comparison**



Note: Above data as of 14 January 2020. GSX data is 2020E. TAL, EDU and Koolearn data is FY21E.

Source: Thomson Reuters, Company data, UBS-S estimates

**Figure 32: FY21E PSG (FY21E PS over FY20-22E revenue CAGR) comparison**



Note: Above data as of 14 January 2020. GSX data is 2020E. TAL, EDU and Koolearn data is FY21E.

Source: Thomson Reuters, Company data, UBS-S estimates

Figure 33: Peer valuation comparison

Company name	Ticker	UBS-S Rating	Price (LC)	Mkt cap (USD m)	30-d ADV (USD m)	PS			Sales CAGR (FY0-FY3E)	PSG	PE			EPS CAGR (FY0-FY3E)	PEG
						FY1E	FY2E	FY3E			FY1E	FY2E	FY3E		
<b>K12 Afterschool Tutoring</b>															
TAL*	TAL.N	Buy	55.67	32,942	33.0	9.3x	6.4x	4.3x	44.4%	0.14x	71.2x	46.3x	27.1x	49.4%	0.94x
New Oriental*	EDU.N	Buy	136.84	21,600	28.9	5.4x	4.2x	3.4x	27.6%	0.15x	36.6x	25.9x	19.1x	43.4%	0.60x
Koolearn*	1797.HK	Buy	23.65	2,848	12.7	14.3x	8.6x	5.6x	56.0%	0.15x	NA	284.6x	49.9x	NA	NA
OneSmart*	ONE.N	Buy	6.95	1,117	0.3	1.5x	1.3x	1.1x	21.1%	0.06x	20.6x	15.2x	11.0x	30.5%	0.50x
GSX*	GSX.N	Buy	28.66	6,755	12.9	22.6x	8.1x	4.1x	205.0%	0.04x	153.3x	55.8x	22.9x	259.9%	0.21x
RISE	REDU.O	Not Rated	6.96	395	0.4	1.8x	1.5x	1.3x	18.9%	0.08x	16.5x	15.4x	13.9x	40.6%	0.38x
51Talk	COE.N	Not Rated	12.73	260	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Puxin	NEW.N	Not Rated	10.51	914	0.9	NA	NA	NA	NA	NA	26.2x	22.9x	8.8x	NA	NA
Youdao	DAO.N	Not Rated	16.00	1,788	0.2	9.3x	4.6x	2.6x	85.5%	0.05x	NA	NA	NA	NA	NA
Four Seasons Education	FEDU.N	Not Rated	1.71	82	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Only Education	600661.SH	Not Rated	18.06	751	2.5	2.1x	1.6x	1.4x	21.8%	0.08x	30.8x	23.5x	22.9x	NA	NA
Average				6,314	8.3	8.3x	4.5x	3.0x	60.0%	0.09x	50.7x	61.2x	22.0x	84.8%	0.53x
<b>Private higher education</b>															
China Education Group*	0839.HK	Buy	11.24	2,920	4.7	7.7x	6.1x	4.9x	27.8%	0.22x	22.5x	17.2x	14.1x	24.5%	0.70x
Minsheng Education*	1569.HK	Buy	1.34	692	0.5	4.5x	3.3x	2.7x	41.1%	0.08x	11.2x	9.0x	7.5x	25.5%	0.35x
New Higher Education*	2001.HK	Buy	2.93	539	1.9	3.6x	2.9x	2.4x	40.0%	0.07x	10.3x	7.6x	6.7x	26.6%	0.29x
Hope Education*	1765.HK	Neutral	1.69	1,449	2.3	7.4x	5.9x	5.0x	25.0%	0.23x	21.8x	17.8x	17.4x	19.6%	0.91x
Yuhua Education	6169.HK	Not Rated	5.92	2,505	6.4	7.4x	6.7x	6.2x	19.0%	0.35x	17.7x	15.4x	13.5x	39.1%	0.39x
Xinhua Education	2779.HK	Not Rated	2.43	503	0.7	7.6x	5.5x	4.9x	22.7%	0.24x	12.2x	9.9x	8.8x	12.9%	0.77x
Kepei Education	1890.HK	Not Rated	4.30	1,107	1.7	10.9x	8.9x	7.5x	20.8%	0.43x	17.7x	13.8x	11.7x	13.9%	0.99x
Chunlai Education	1969.HK	Not Rated	1.54	238	--	2.9x	2.2x	1.9x	20.8%	0.11x	11.3x	7.5x	6.0x	17.9%	0.42x
Edvantage Group	0382.HK	Not Rated	4.60	603	1.1	5.1x	4.4x	3.7x	18.2%	0.24x	13.9x	11.8x	9.7x	17.9%	0.66x
Average				1,173	2.1	6.3x	5.1x	4.4x	26.1%	0.22x	15.4x	12.2x	10.6x	22.0%	0.61x
<b>Private K12 education</b>															
China Maple Leaf	1317.HK	Not Rated	2.98	1,149	4.3	4.2x	3.7x	3.3x	16.7%	0.22x	10.4x	8.9x	8.0x	15.4%	0.58x
Viscend Education	1565.HK	Not Rated	1.85	735	5.0	3.5x	2.8x	2.2x	24.8%	0.11x	12.3x	8.1x	6.1x	32.4%	0.25x
Wisdom Education	6068.HK	Not Rated	3.48	917	0.4	3.1x	2.6x	2.3x	19.7%	0.13x	13.5x	11.0x	9.3x	26.1%	0.42x
Tianli Education	1773.HK	Not Rated	3.57	953	4.9	7.8x	5.7x	4.4x	32.9%	0.17x	26.3x	18.5x	14.5x	25.4%	0.73x
Hailiang Education	HLG.N	Not Rated	66.55	1,719	0.0	6.8x	5.8x	5.2x	14.9%	0.39x	NA	NA	NA	NA	NA
Bright Scholar	BEDU.N	Not Rated	9.19	1,108	0.2	1.9x	1.7x	1.5x	27.1%	0.06x	21.1x	16.9x	14.1x	33.2%	0.51x
Average				1,097	2.5	4.6x	3.7x	3.1x	22.7%	0.18x	16.7x	12.7x	10.4x	26.5%	0.50x
<b>Others</b>															
China East Education	0667.HK	Not Rated	16.22	4,574	7.6	7.5x	6.1x	5.0x	24.5%	0.25x	35.8x	27.5x	22.1x	30.0%	0.92x
Offcn Education	002607.sz	Not Rated	18.52	16,572	31.6	12.6x	9.4x	7.4x	35.0%	0.27x	68.1x	48.2x	37.1x	(29.2%)	NA
LAIX	LAIX.N	Not Rated	5.74	275	0.5	1.8x	1.5x	1.2x	34.2%	0.05x	NA	NA	NA	NA	NA
China Distance Education	DL.N	Not Rated	9.31	312	0.1	1.2x	1.1x	NA	NA	NA	10.6x	9.0x	NA	NA	NA
Average				5,433	9.9	5.8x	4.5x	4.6x	31.2%	0.19x	38.2x	28.3x	29.6x	0.4%	NA

Note: Data as of 14 January 2020. \* refers to UBS-S estimates. The rest are based on Thomson Reuters consensus.  
Source: Company data, Thomson Reuters, UBS-S estimates



## Survey overview

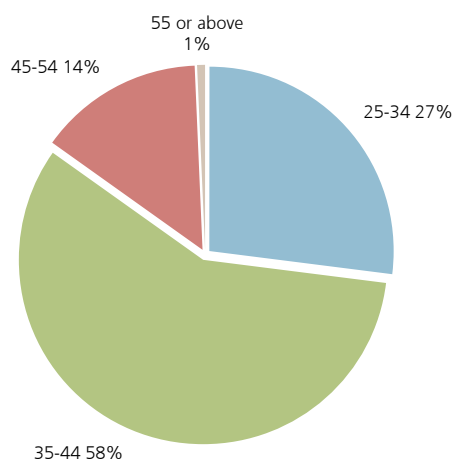
UBS Evidence Lab conducted its third China education survey in November 2019. The 2,100 respondents are parents from tier 1-4 cities in China whose children are in K12 education. We caution that, since the survey took place online, the results could be skewed toward a higher-income and/or more online-savvy population.

**Figure 34: Profile of respondents**

	Total	User type		
		Current users	Potential users	Non users
<b>Unweighted Base</b>	2100	1300	400	400
<b>TIER</b>				
<b>Tier 1/2 (NET)</b>	50%	50%	50%	50%
<b>TIER 1</b>	22%	25%	18%	18%
<b>TIER 2</b>	28%	25%	32%	33%
<b>Tier 3/4 (NET)</b>	50%	50%	50%	50%
<b>TIER 3</b>	21%	24%	18%	16%
<b>TIER 4</b>	29%	26%	32%	34%
<b>REGION</b>				
<b>Central China</b>	7%	7%	8%	9%
<b>Eastern China</b>	22%	22%	29%	19%
<b>North East China</b>	10%	10%	10%	11%
<b>Northern China</b>	30%	34%	22%	29%
<b>South West China</b>	6%	6%	6%	8%
<b>Southern China</b>	23%	23%	26%	25%

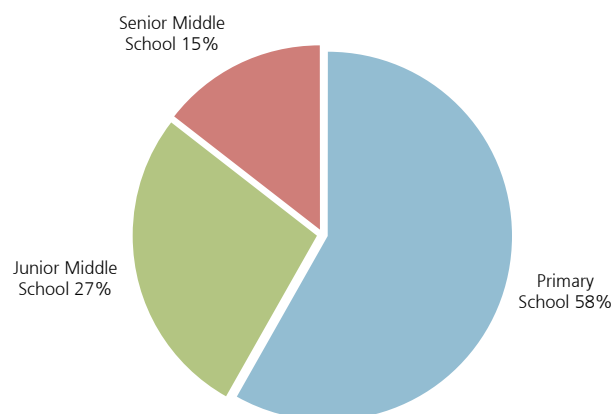
Source: UBS Evidence Lab

**Figure 35: Respondents by age – current users**



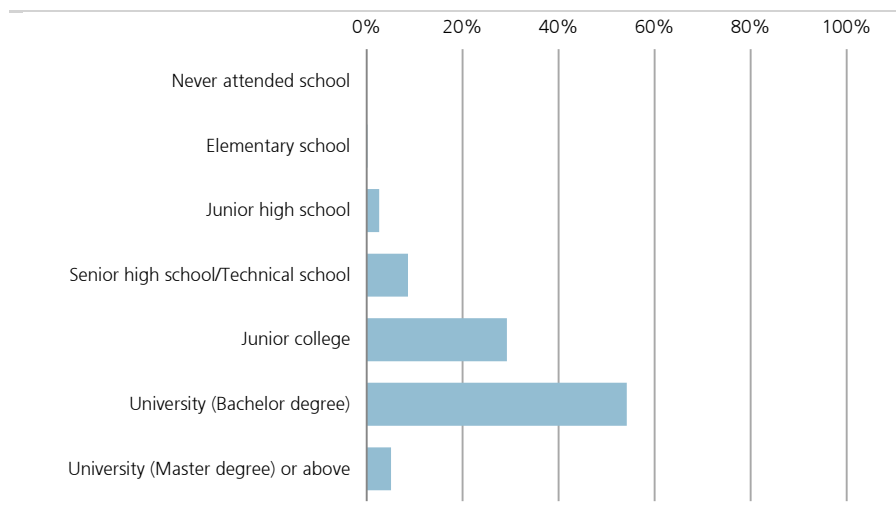
Source: UBS Evidence Lab

**Figure 36: Respondents by children's school grade – current users**



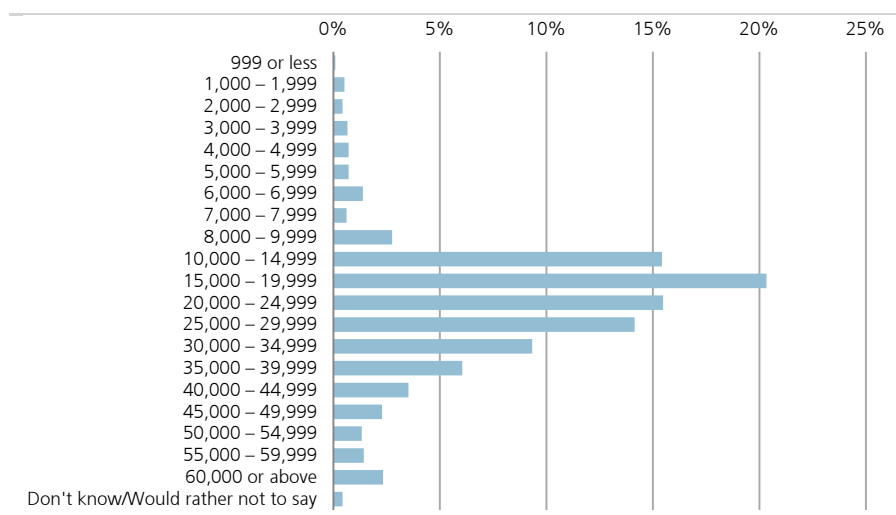
Source: UBS Evidence Lab

**Figure 37: Respondents by education level**



Source: UBS Evidence Lab

**Figure 38: Respondents by household monthly income**



Source: UBS Evidence Lab

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*\*UBS Evidence Lab is a sell-side team of experts, independent of UBS Research, that works across 12 practice areas and 45 specialised labs creating insight-ready datasets. The experts turn data into evidence by applying a combination of tools and techniques to harvest, cleanse, and connect billions of data items each month. Since 2014, UBS Research Analysts have utilised the expertise of UBS Evidence Lab for insight-ready datasets on companies, sectors, and themes, resulting in the production of over 6,000 differentiated UBS Research reports. UBS Evidence Lab does not provide research, investment recommendations, or advice, but provides insight-ready datasets for further analysis by UBS Research and by clients.*

UBS Evidence Lab fields proprietary custom surveys among consumers, business decision-makers, and healthcare decision-makers. Samples are designed to be projectable to the underlying populations. Full details of each survey are on the Methodology tab. This report leverages the following UBS Evidence Lab asset: China After-School Education Consumer Survey.

Survey results are cleansed to remove respondents who have provided low-quality answers. Online surveys are fielded among pre-existing panels of respondents who have been recruited to provide a more representative sample of the population.

For this report, UBS Evidence Lab conducted an online survey among 2,100 respondents who have children currently in primary school, junior and high school. The survey covered nationwide cities in China and it was conducted from November 22 to December 6 in 2019. This report leverages asset from UBS Evidence Lab: China After-School Education Consumer Survey. Respondents only need to answer the questions within the product and service category that are relevant to them. The margin of error for 2,100 samples is +/- 1.70% on 90% confidence level.

Wave 1 of this survey was conducted in November 22 to December 1, 2017.

Wave 2 of this survey was conducted in November 29 to December 10, 2018.

## Valuation Method and Risk Statement

For New Oriental and TAL we use SOTP to derive our price targets.

For GSX, Koolearn and OneSmart we use a three-stage DCF model to derive our price targets.

We believe key risks to China's K12 afterschool tutoring sector include: 1) risks from changes in education policies; 2) changes in parent/student study preferences; and 3) rising competition from new entrants.

We believe risks to New Oriental include: 1) weaker-than-expected acceptance of its non-English courses; 2) weaker-than-expected interest in studying abroad; 3) weaker enrolment growth, resulting in slower top-line growth and weaker learning centre utilisation; 4) policy risk (eg, government initiatives to discourage K12 afterschool tutoring services); 5) weaker-than-expected student and parent acceptance of its O2O initiatives and/or dual-teacher model; 6) rising competition; and 7) investigation into its overseas test preparation and consulting business.

We believe risks to TAL include: 1) inability to maintain consistent teaching quality during rapid expansion; 2) weaker enrolment growth, resulting in slower top-line growth and weaker learning centre utilisation; 3) policy risk (eg, government initiatives to discourage K12 afterschool tutoring services); 4) weaker-than-expected student and parent acceptance of its technological initiatives and/or dual-teacher model; and 5) competition risks.

We believe key risks to GSX include: 1) more intensive competition in the online K12 AST sector; 2) more intensive competition for teachers; 3) higher-than-expected customer acquisition costs and lower retention; and 4) weaker-than-expected demand for online AST.

We believe key risks to Koolearn include: 1) weaker-than-expected demand for online college test preparation; 2) more intensive competition in the online K12 AST sector; 3) higher-than-expected customer acquisition costs and lower retention; and 4) worse-than-expected monetisation of pre-school education business.

We believe risks for OneSmart include: 1) inability to maintain consistent teaching quality and therefore premium pricing; 2) inability to achieve/manage rapid expansion; 3) weak enrolment growth resulting in slower top-line growth and weaker learning centre utilisation; 4) policy risk (eg, government initiatives to discourage K12 afterschool tutoring services); and 5) competition risks.

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12-Month Rating	Definition	Coverage <sup>1</sup>	IB Services <sup>2</sup>
Buy	FSR is > 6% above the MRA.	44%	32%
Neutral	FSR is between -6% and 6% of the MRA.	41%	29%
Sell	FSR is > 6% below the MRA.	15%	20%
Short-Term Rating	Definition	Coverage <sup>3</sup>	IB Services <sup>4</sup>
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%

Source: UBS. Rating allocations are as of 31 December 2019.

1: Percentage of companies under coverage globally within the 12-month rating category.

2: Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

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Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
<b>GSX Techedu</b> <sup>16</sup>	GSX.N	Not Rated	N/A	US\$28.66	14 Jan 2020
<b>Koolearn Technology</b>	1797.HK	Buy	N/A	HK\$23.65	14 Jan 2020
<b>New Oriental Education &amp; Technology</b> <sup>16</sup>	EDU.N	Buy	N/A	US\$136.84	14 Jan 2020
<b>OneSmart International Education</b> <sup>16</sup>	ONE.N	Buy	N/A	US\$6.95	14 Jan 2020
<b>TAL Education Group</b> <sup>13, 16</sup>	TAL.N	Buy	N/A	US\$55.67	14 Jan 2020

Source: UBS. All prices as of local market close.

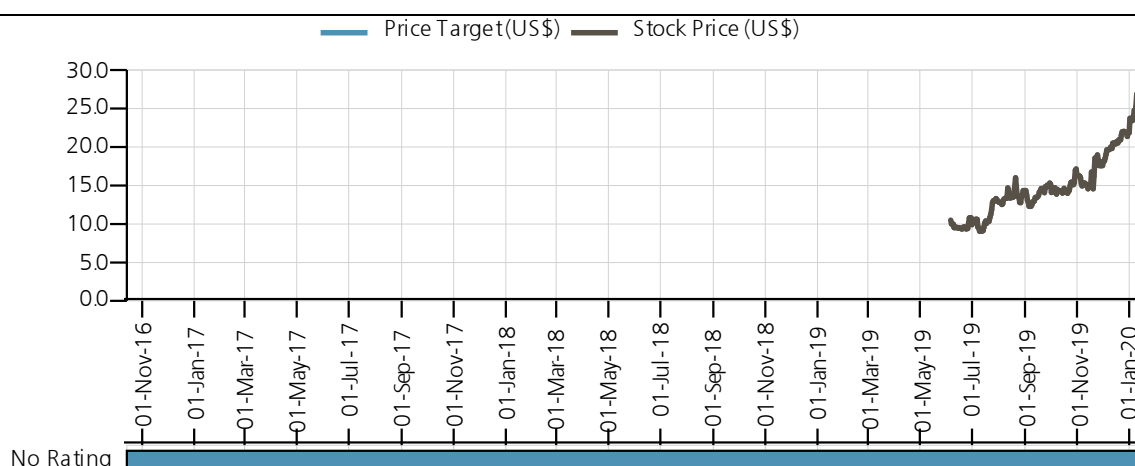
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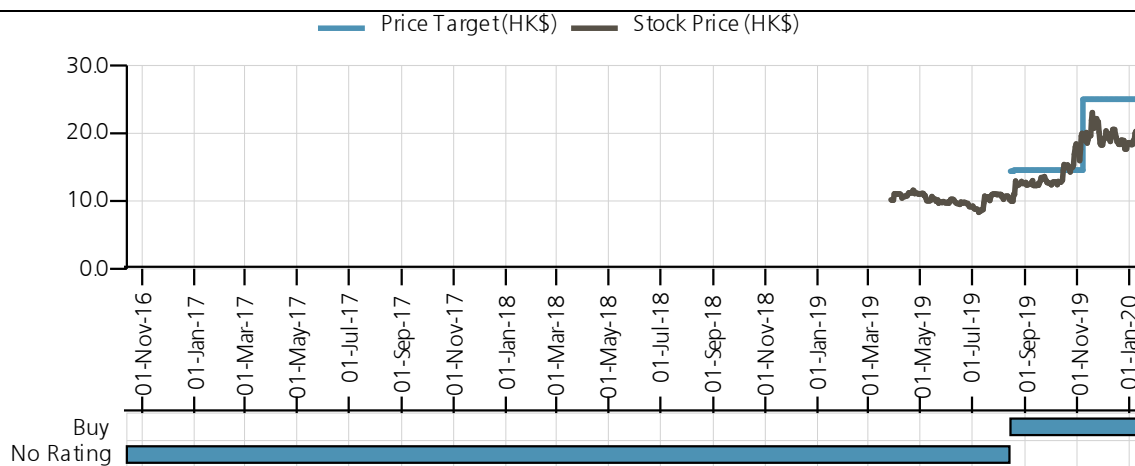
### GSX Techedu (US\$)



Date	Stock Price (US\$)	Price Target (US\$)	Rating
2016-10-14	NaN	-	No Rating

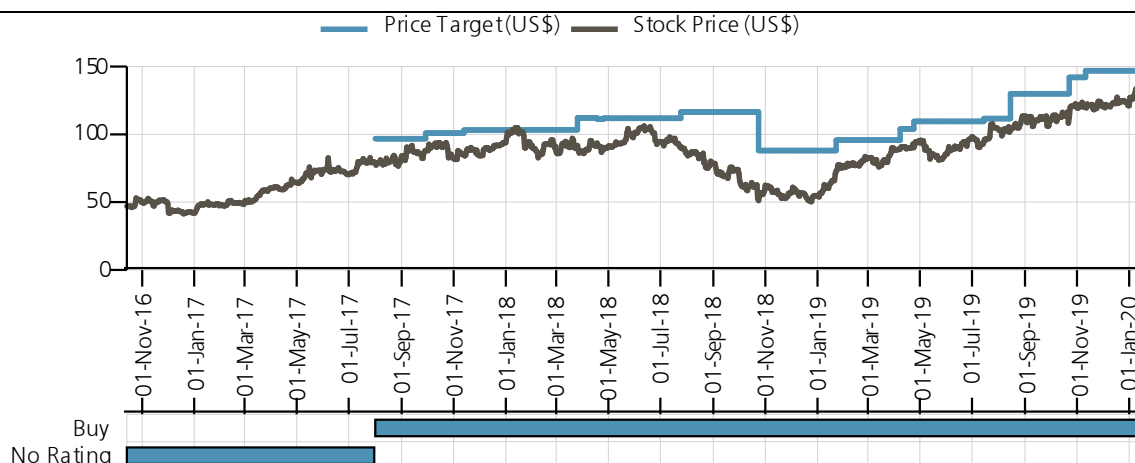
Source: UBS; as of 14 Jan 2020

## Koolearn Technology (HK\$)



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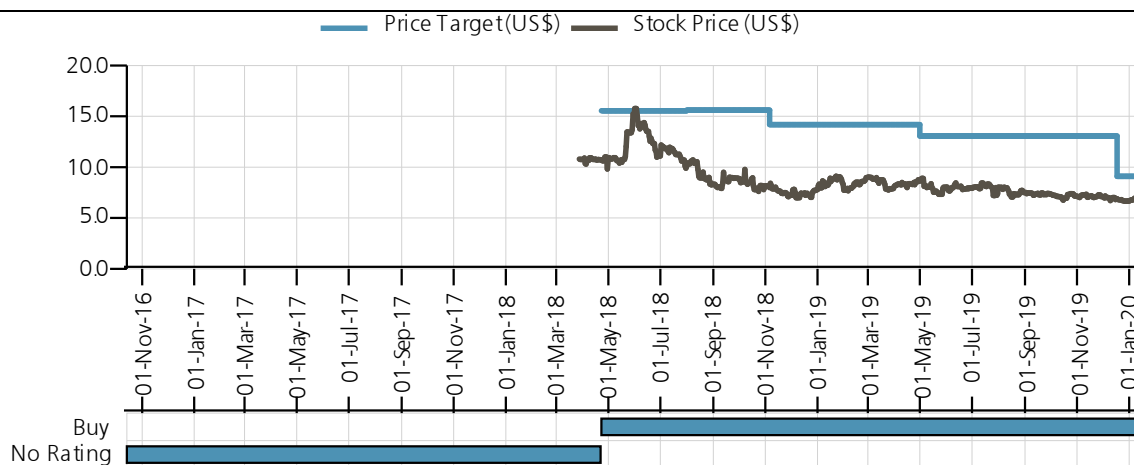
## New Oriental Education & Technology (US\$)



Date	Stock Price (US\$)	Price Target (US\$)	Rating
2016-10-14	47.05	-	No Rating
2017-08-01	78.11	96.75	Buy
2017-09-29	88.26	100.9	Buy
2017-11-13	84.58	103.17	Buy
2018-01-24	90.02	103.44	Buy
2018-03-26	91.78	112.05	Buy
2018-04-18	93.65	111.17	Buy
2018-04-25	88.47	111.82	Buy
2018-07-25	91.1	116.47	Buy
2018-10-24	51.26	88.11	Buy
2019-01-23	72.81	95.77	Buy
2019-04-08	89.25	103.98	Buy
2019-04-24	90.34	109.63	Buy
2019-07-15	94.88	111.61	Buy
2019-08-15	103.0	130.0	Buy
2019-10-23	112.43	142.0	Buy
2019-11-11	120.93	147.0	Buy

Source: UBS; as of 14 Jan 2020

### OneSmart International Education (US\$)

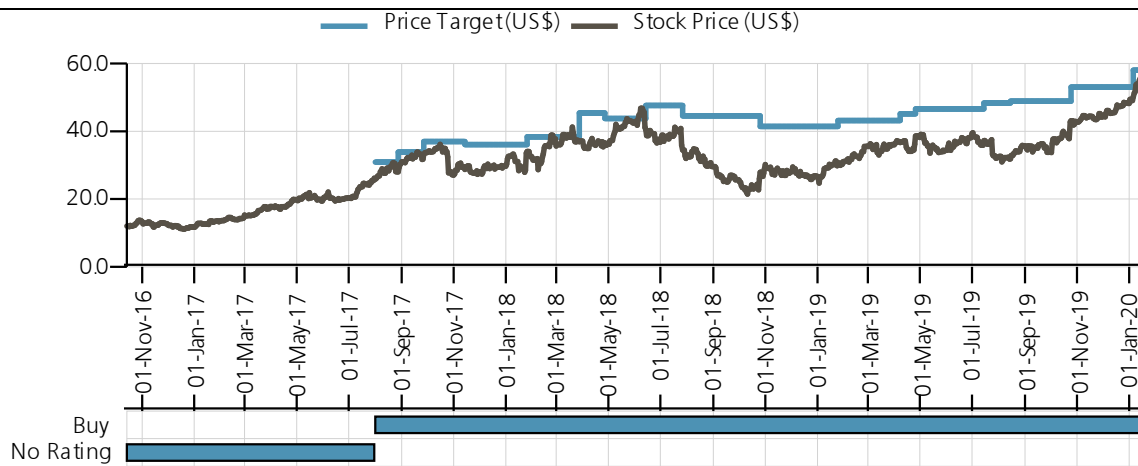


Date	Stock Price (US\$)	Price Target (US\$)	Rating
2016-10-14	NaN	-	No Rating
2018-04-23	10.7	15.55	Buy
2018-08-01	10.12	15.62	Buy
2018-11-06	8.0	14.18	Buy
2019-05-01	8.63	13.07	Buy
2019-12-18	6.89	9.1	Buy

Source: UBS; as of 14 Jan 2020



## TAL Education Group (US\$)



Date	Stock Price (US\$)	Price Target (US\$)	Rating
2016-10-14	12.04	-	No Rating
2017-08-01	25.86	30.92	Buy
2017-08-28	28.03	33.83	Buy
2017-09-27	33.21	36.94	Buy
2017-11-14	28.76	36.05	Buy
2018-01-26	34.0	38.34	Buy
2018-03-28	36.88	45.37	Buy
2018-04-27	35.9	43.79	Buy
2018-06-14	40.48	47.63	Buy
2018-07-27	34.42	44.52	Buy
2018-10-26	27.9	41.39	Buy
2019-01-25	30.6	43.18	Buy
2019-04-08	36.66	45.13	Buy
2019-04-26	38.6	46.6	Buy
2019-07-15	37.2	48.31	Buy
2019-08-15	31.84	48.85	Buy
2019-10-25	43.1	53.0	Buy
2020-01-06	50.12	58.0	Buy

Source: UBS; as of 14 Jan 2020

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