Stereotypes as Anglo-American exam ritual? Comparisons of students' exam anxiety in East Asia, America, Australia, and the United Kingdom

Jeremy Rappleye & Hikaru Komatsu

To cite this article: Jeremy Rappleye & Hikaru Komatsu (2018): Stereotypes as Anglo-American exam ritual? Comparisons of students’ exam anxiety in East Asia, America, Australia, and the United Kingdom, Oxford Review of Education

To link to this article: https://doi.org/10.1080/03054985.2018.1444598

Published online: 23 Mar 2018.
Stereotypes as Anglo-American exam ritual? Comparisons of students’ exam anxiety in East Asia, America, Australia, and the United Kingdom

Jeremy Rappleye and Hikaru Komatsu
Kyoto University, Japan

ABSTRACT
East Asian dominance in international large-scale assessments is widely known. This is often explained as an outcome of highly competitive, exam-oriented education systems in East Asia, wherein students partake in a fierce competition for limited college entrance. Although achievement scores may be comparatively higher, the argument goes, the relative success comes at a steep price, with the emphasis on high-stakes tests heightening student stress and anxiety. In this paper we refute this persistent and out-dated stereotype by focusing on changes in Japanese education over the past several decades. The two original studies we report herein show that not only do Japanese students feel less school-related anxiety and stress than they once did, but these levels are now comparable to students in America, Australia, and the United Kingdom. In showing that stereotypes do not match empirical realities, we seek to open a richer discussion around East Asian student achievement. We conclude by extending the discussion to recent changes in China, Taiwan, and South Korea. We then raise the possibility that fundamentally different outlooks on the learning process explain both differences in achievement and the persistence of the West’s distorted images of Japanese and East Asian education.

Introduction: exorcising doubts through ritual stereotypes?

In March 2016 BBC news published a humorous article entitled Top 10 exam rituals from stressed out students across Asia. ‘Exams are a time of great stress,’ the article opened, ‘Especially in East Asia, where the pressure is on to achieve sky-high results’ (Castle, 2016). Among the many ways that ‘exam-crazy students from across Asia ensure they pass with flying colours’ were the rituals of refusing to wash one’s hair (Korea), wearing red under-ware (China), and eating KitKat bars (Japan). In many East Asian countries, the article explains, particular foods and activities lend themselves to wordplays suggestive of exam success, as in the case of KitKat (Japanese: kitto katsu), adding that more generally ‘Homophones, or homonyms, play a bit part in ritual and superstition in many East Asian languages.’ The article continues that ‘ultra-keen parents’ in Korea ‘go as far as praying at...’
Buddhist temples every day for the 100 days leading up to the exam’, while students in Singapore bow to the Bell Curve God. Although a journalistic account, the assumptions driving this sort of coverage—as but one poignant example among many—are representative of a deeper Western, but particularly Anglo-American, cultural view of East Asian education: schooling is structured around passing high-stakes exams, gruelling competition goes hand-in-hand with exam pressure, and students are subject to exorbitant amounts of anxiety and stress.

The publication of this BBC article came several months before the anticipated release of results of the two leading international large-scale assessments of education. On 29 November 2016, the International Association for the Evaluation of Educational Achievement (IEA) released results from the Trends in International Mathematics and Science Study (TIMSS). These results highlighted that not only did East Asian countries continue to lead the rankings, but the gap between East Asian and other countries had actually increased. East Asia was not only continuing to ‘dominate’ but now seemed to be pulling away. A week later—on 6 December—the Organisation for Economic Cooperation and Development (OECD) officially released the results of the triennial Programme for International Student Assessment (PISA) in London. These results supported evidence of East Asian dominance. Although not spelled out explicitly, the earlier BBC news article seemed to be preparing its readers, reminding them that East Asia’s performance comes at an all-too-steep price, i.e. ‘exam-crazy students’ under large amounts of stress to succeed produced these high scores.

This narrative is continued in another BBC article, entitled ‘10 ways to be the cleverest country’ (Coughlan, 2016). It was published on 30 November 2016, two days after the TIMSS results and a few days before the PISA release. It opened: ‘When it comes to global education rankings it always seems to be the same story. Asian education superpowers take all the top spots and everyone goes in for bouts of doubt and recrimination’ . To explain the puzzle of East Asian’s high achievement, this second article suggested several contributing factors. Yet foremost among these was ‘a focused, conformist culture, a sense of collective purpose, or even an old-fashioned one-party state’. When the TIMSS and PISA exam results were made public in December 2016, these cultural views appear to ‘inoculate’ the Anglo-American public against thinking that East Asian education could have anything useful to offer. Despite Coughlan’s (2016) claim, it is more accurate to recognise—through articles like these—that particular stereotypes are quickly mobilised to explain away the differences.

Academic accounts, although undoubtedly more nuanced, still largely perpetuate the same general view of East Asia. One classic rendition comes from prominent British sociologist Ronald Dore, penned in the 1970s. Dore begrudgingly admitted the higher achievement of the Japanese system but warned of the price:

> It works; provided one thinks of it as an enormously elaborated, very expensive intelligence testing system with some educational spin-off, rather than the other way around …. The examination hell sorts the sheep from the goats; a man who can’t take psychological strain would be of no use anyway. (Dore, 1976, p. 50)

Dore’s work was, in part, attempting to explain the results of the First International Mathematics Study (FIMS) conducted in 1964. It was FIMS that found that Japan outscored all Western countries including England, Australia, and the United States, putting East
Asian achievement on the Western radar for the first time (Postlethwaite, 1967). What is striking is that such views persist even today. For example, one of the leading scholars of international higher education based in Australia very recently wrote of East Asia, ‘the same “examination hell” is now central to life in Japan as it is in all Confucian systems’ (Marginson, 2011, p. 601).

Viewed in this way, the application of well-worn stereotypes about East Asian countries has become the Anglo-American exam ritual, one rolled out each time the results of international large-scale assessments are made public. Yet there is a crucial qualitative difference from the exam rituals of students in East Asia: the Anglo-American exam ritual does not function to achieve higher scores but rather to exorcise the doubt generated by these comparative tests, results that appear to challenge some of the West’s most cherished beliefs about education. Although this projection may alleviate some of the ‘stress and anxiety’ induced by the outcomes of international large-scale assessments, it precludes the possibility for substantive learning from East Asian systems.

While the stereotype continues to perform its inoculating function, there seems little prospect of overcoming this barrier to learning. As an initial step, it will therefore be necessary to show that, in fact, East Asian systems are not populated by ‘exam-crazy students’ who are weighed down by stress and exam anxiety. More specifically, we must demonstrate that East Asian students do not achieve the ‘edge’ over their Anglo-American peers simply through longer study hours and by shouldering greater pressure, a phenomenon referred to as ‘Exam Hell’ that we adopt as shorthand throughout our piece. If Anglo-American media and scholars persist with these portrayals, we might reasonably infer that the stereotype indeed serves as a ritual for dealing with the ‘stress and anxiety’ induced by the outcomes of large-scale assessments (their own ‘Exam Hell’). In this article, we take up precisely this task.

Our contribution is to show empirically that the stereotypical image of East Asian Exam Hell does not match current realities. The analysis herein can be read in conjunction with a complementary paper that focuses on learning time (Komatsu & Rappleye, forthcoming). We limit the empirical focus to contemporary Japanese education, but conclude by extending the argument to the entire East Asian region. By focusing on Japan, a country we view as the front-edge of a wider trend unfolding across the entire region, we will show that the competition over university entrance examinations has become less significant and pressure has become less intense: stress over examinations on Japanese students has now reached approximately the same level as that of American, British, and Australian students. Despite this, achievement test scores in Japan remain high. A general schematic representation of our overall argument is found in Figure 1(a)–(c).

To be clear at the outset: we are not primarily interested in comparing levels of exam-induced anxiety and stress, but instead in removing a persistent and pernicious stereotype that blocks deeper learning from/with East Asia. That is, once the stereotype of ‘Exam Hell’ is removed, how can we explain the high performance of Japan and East Asia? In concluding the piece we offer no straightforward answers, but only a preliminary hypothesis that may help catalyse future research. Our conceptual and theoretical case continues a line of work we have been developing over the past few years (Komatsu & Rappleye, 2017a, 2017b, 2017c). We now turn briefly to a review of related research, then introduce our two original studies. Details of dataset and methods utilised are provided at the beginning of the empirical sections.
Recent research: learning time among Japanese students is now shorter than their Anglo-America peers

A driving force behind the stereotype of stressed out East Asian students is the view that East Asian students study much longer than their Anglo-American peers. East Asian students are envisaged as finishing long hours in formal classrooms before trudging off to private cram schools (‘shadow education’) where they study late into the night. Elsewhere we have shown empirically that, although this image was perhaps once accurate for some Japanese in the 1980s, it no longer holds true today (Komatsu & Rappleye, forthcoming). Through a host of changes over the past three decades, including institutional structure, demographics, economics, and general outlook on life, the long hours Japanese students once endured in

Figure 1. General conceptualisation of trends in: (a) time spent on learning; (b) intensity of competition and pressure imposed on students; and (c) international test scores for Japanese and Anglo-American upper-secondary students.
schools, both formal and informal, have been reduced considerably. Using longitudinal data from three surveys of learning time conducted by Japanese researchers, we showed that, in fact, Japanese students are now studying less than their American, Australian, and British peers, as summarised in Figure 2. We located and reported two other datasets that confirmed the declining trend for Japanese students, suggesting that these results were not a product of sampling strategy or data conditioning (for details see Komatsu & Rappleye, forthcoming).

**Figure 2.** Percentage of 15-year-old students who spent 60 hours or longer on learning: (a) OECD countries excluding Japan and Korea; and (b) East Asian countries. The time spent on learning in this figure is the composite of in- and out-of-school learning. The original data were derived from OECD (2017).
In our study, learning time was defined as a composite of in-school learning and out-of-school learning. The identified lower mean out-of-school learning time for Japanese students is perhaps most counterintuitive from the perspective of the stereotypical image of Japan, i.e. the place where cram schools abound and children toil away their (lost) childhood. Yet Figure 3 confirms the result: in focusing only on out-of-school learning hours per week, Japanese students clearly spend less time than students in the United Kingdom, Australia, and America. Here we are restricted by space from again refuting the stereotype that East Asian educational achievement is driven by cram school attendance (see Park, 2013), but wish to flag this fundamental point again here to pave the way for our wider argument that lower learning time parallels and supports the view of lower levels of stress and anxiety.

Figure 3. Out-of-school learning hours per week for: (a) OECD countries excluding Japan and Korea; and (b) East Asian countries.
As shown in Figures 2 and 3, of the East Asian countries currently only Japan shows lower levels of learning time than the Anglo-American countries of the United Kingdom, United States, and Australia. However, we make the case that, based on changes over the last three decades occurring in Japan and now confirmed to be occurring all over the region, we could forecast that within the next several decades learning time in other East Asia countries will decline in a similar fashion. These changes include diversification of pathways to higher education, changes in students’ outlook on life, and structural-economic changes. All of these are described in detail in what follows. The larger point here is that we surmise that the same changes that led to a decline in learning time also led to a parallel drop in exam-related anxiety and stress. Once we eliminate and overcome the ‘learning time stereotype’, it becomes possible to imagine that the ‘exam anxiety’ stereotype is also unfounded.

Study 1: pressure felt by Japanese students has declined

Materials and methods

Study 1 shows that pressure felt by Japanese students has declined since 1980, paralleling the decline in the time spent on learning by Japanese students (Komatsu & Rappleye, forthcoming). Study 2 then shows that the pressure felt by Japanese students is now comparable to that by felt Anglo-American students.¹

In Study 1, we used not only indices directly inquiring about pressure felt by Japanese students, but also indices indirectly related to pressure (e.g. demographic factors). The purpose was to comprehensively analyse the situation surrounding the students. We hypothesised in the analysis that the pressure Japanese students felt in the 1980s was primarily caused by three factors. First, in the 1980s the number of students was much greater than the enrolment quotas of universities. Second, in the 1980s alternative pathways to university enrolment were very limited. Third, in the 1980s students and their parents strongly believed in the link between good universities and a good life. We demonstrate in Study 1 that all three factors have undergone substantial changes since 1980, which has led to the overall decline in stress felt by Japanese students.

To examine the changes in the number of students and the quota of the universities, we used data derived from Maita (2016a). Maita (2016a) summarised data for the number of applicants for university entrance examinations and the total quota of the universities in Japan over the past several decades. Using the data, we show that the number of applicants decreased, even while the total quota increased. This led to a decline in the percentage of Japanese students who failed to enter university.

To examine the changes in availability of alternative pathways to university enrolment, we used data reported by Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2013, 2015) and Nakamura (1996). Originally, Japanese students were given virtually only one pathway to enter universities: the traditional written examinations. Viewing this as problematic, the Ministry recommended universities to provide alternative pathways to university entrance in the 1990s (Kariya, 2002; MEXT, 1997). Over the ensuing two decades, Japanese universities started providing alternative pathways, which would contribute to the reduction of pressure students felt vis-à-vis entrance exams (Kariya, 2002; Tsuboi, 2006). These alternative entrance examinations aim to assess abilities of creative thinking, academic
ambition, and attitudes of applicants. For example, a recommendation entrance examination pathway was opened up: it utilised recommendation letters written by teachers in the upper secondary schools and academic performance assessment in the schools as the basis for admissions. Similarly, the admissions office entrance examinations (‘AO admissions’) mainly utilised interview and short written work done by the applicant as the basis for entrance. To assess the temporal change in the availability of these alternative examinations, we collated data from the three sources (MEXT, 2013, 2015; Nakamura, 1996) to construct longitudinal data for the percentage of students who entered universities using these alternative pathways.

To examine the strength of the belief of students and their parents that good universities were the bridge to a ‘good life’, we used data derived from the survey conducted by NHK Broadcast Culture Research Institute (2013) in 1982, 1987, 1992, 2002, and 2012. NHK is the national broadcasting and non-partisan research arm of the Japanese government. Given its access, NHK is widely recognised as conducting the most robust public surveys. That is, its data have less systematic bias because of its sampling methodology. In the survey we use, NHK researchers first selected municipal governments randomly, then visited the same municipal government offices repeatedly, selecting students randomly using the municipal population registry. Repeating these processes, the researchers selected sample students and then visited their homes to conduct interviews. The sample size ranged between 557 and 1350 for different survey years.

Interviewing upper secondary students, the NHK survey asked the students which would be a ‘good life’: (i) a life in which one competes with her/his peers; or (ii) a life in which one enjoys life by going at one’s own pace. We used the percentage of students who selected each option to assess the change in the belief of students in the link between good universities and a good life. The survey also included a questionnaire that asked the parents of the sample students the same question. It also queried whether or not they thought Japan was a society defined by education credentialism.2 We used the percentages of fathers and mothers who responded affirmatively to this question to assess the change in the belief of parents.

To examine the change in students’ stress levels, we used data derived from NHK Broadcast Culture Research Institute (2013) and Kimura (2016). The former asked students whether or not they liked school life. The latter asked students whether or not they liked the subjects of mathematics and science, and was conducted under the sponsorship of the Benesse Education Research Institute, a well-known private educational research institute in Japan. The survey covered students’ learning across these five points in time (1990, 1996, 2001, 2006, and 2015) for upper secondary schools in four different regions, i.e. Tokyo Metropolitan area, Tohoku, Shikoku, and Kyushu. The institute selected sample schools in each area. The sample schools were consistent among surveys for different survey years. The sample size ranged between 2005 and 4464 for different survey years. The survey asked students how much they agreed with the following statements: (i) you quite often feel it is unreasonable or inexplicable that you must study so much; (ii) you feel pressure from teachers; and (iii) you feel pressure from parents. We used the change in the percentages of students who responded to the questions described above to assess changes in the pressure students felt.
Results

The number of applicants to Japanese colleges peaked in the early 1990s and has been declining since then (Figure 4(a)), a trend corresponding to the decline in the youth population in Japan. The number of students enrolled increased in the late 1980s and 1990s, primarily due to expansion of the admission quota of many private universities and the establishment of new private universities in the period (Eades, Goodman, & Hada, 2005). Consequently, the percentage of students who failed to enter a university in Japan, which was calculated by the difference between the number of applicants and that of successfully enrolled students divided by the number of applicants, has drastically decreased since 1990 (Figure 4(b)). The percentage was over 30% in the 1980s, but reached a mere 7% in 2015. This declining trend in the percentage suggests declining intensity of competition for university enrolment in Japan.

Figure 4. Trends in (a) the numbers of applicants and those who successfully enrolled; and (b) the percentage of students who failed to enter a university in Japan. The original data were derived from Maita (2016b).
In addition to the declining possibility of failing to enter a university, students began to have alternative pathways to enter university. The percentage of students who entered the university by recommendation was less than 20% of the total number of students enrolled in 1980 (Figure 5). However, this percentage increased in the 1980s and 1990s and reached 35% in the 2000s. Similarly, the percentage of students who entered the university by admissions office examinations was 1% in 2000 but reached 9% in the 2010s (Figure 5).

As for the belief of students and their parents in the link between good universities and a 'good life', the percentage of students who identified a 'good life' as one in which one competes with her/his peers was comparable to that of students who sought a 'good life' in going at one's own pace (Figure 6(a)). However, the percentage for the former had reduced to almost half of the latter by 2000, and has remained at that level since then. We obtained qualitatively the same temporal change for parents' questionnaire responses (Figure 6(b) and (c)). The percentage of fathers and mothers who chose the former as conducive to a 'good life' has been declining gradually since the 1980s. Simultaneously, the percentage of fathers and mothers who sought the latter as a 'good life' has been increasing. In line with these changes in parents' beliefs, the percentage of fathers and mothers who viewed Japan as a society characterised by education credentialism has been declining since the 1990s (Figure 7).

In line with the demographic and structural changes (Figures 4 and 5) and changes in students' and parents' beliefs (Figures 6 and 7), the data suggest substantive changes in the stress levels of students. The percentage of students who responded that they liked their schools was originally 80% in the early 1980s, but the percentage reached over 95% in the 2010s (Figure 8). The percentage of students who responded they liked mathematics and science has been increasing since the 1990s (Figure 9(a)). The percentage of students who reported feeling that it seemed unreasonable that they had to study so much has been

Figure 5. Percentages of Japanese students who entered the university by recommendation and admissions office examinations (i.e. alternative pathways). Note that the number of students who can enter through these alternative pathways (i.e. without taking entrance exams) is currently capped at 50%.
declining since the mid-1990s (Figure 9(b)). Similarly, the percentage of students who reported feeling pressure from teachers and parents declined mainly in the 1990s (Figure 9(c)), and was approximately 15% in 2015.
Discussion

These results suggest that the stress levels of Japanese upper secondary students have declined in line with broader changes in demography, institutional structure, and students' and parents' beliefs. Some of these changes clearly correspond to changes in the wider social context. Due to space restrictions, we here focus on only two major changes.

The first major change was the decline in the demand for manual labour in secondary industry in the 1980s and thereafter. We surmise that the decline in demand led, in some
part, to the increase in the university enrolment quota. In the 1970s, Japan's industry demanded a large number of inexpensive upper secondary graduates for manual, semi-skilled labour (Kimura, 2015; Sakurai, 2014). However, the advent of high-skilled industrialisation and consequent shrinking of semi-skilled industry, when combined with the introduction of computers into workplaces in the 1980s, later reduced the overall demand (Statistics Japan, 2017; Yoshimi, 2009), thus allowing the government to relax the regulation (Kimura, 2015).

The second major change was Japan's economic stagnation starting in the 1990s, which weakened the belief of students and parents in the link between good universities and a
good life. In the 1980s and earlier, major companies in Japan guaranteed a high salary and lifetime employment to employees (e.g. Amano, 1989). Students could believe the link between good universities, good companies, and the good life in the 1980s. However, this belief began to be critically questioned in the 1990s. Japan witnessed an asset bubble burst starting in 1991. Hyogo Bank went bankrupt in 1995, the first to do so since 1945 and the first in a series of subsequent bankruptcies of Japanese banks. Faced with uncertain economic times, several Japanese companies began to reduce the number of employees who were offered lifetime employment, replacing them with part-time employees (National Institute for Research Advancement, 2009). These changes in Japanese society forced Japanese citizens to recognise a much more tenuous link between good universities and a good life (Kariya, Hamana, Kimura, & Sakai, 2000; Kariya & Rappleye, 2010).

It is worth mentioning that our focus here on macro-trends and averages results in less space devoted to detailing intra-national differences, a dimension likely to be of particular interest to country specialists or area studies scholars. Kimura (2016, p. 11) has shown that a decline in out-of-school learning time was observed for different groups having various academic achievement levels. That is, the decline in the time for out-of-school learning was not specific to any particular group within Japan, but general across all groups. That said, other research has argued that there is some bifurcation emerging, particularly in the wake of pedagogical reforms of the 1990s wherein students from upper middle class families and higher achievement levels reveal less of a decline (see Kariya, 2013, 2018). These differences are important to analyse but are less important for our purposes in this manuscript: to problematise the perceived relationship between stress levels induced by a given system as a whole and comparable achievement outcomes.

**Study 2: levels of pressure felt by Japanese students are now comparable to that felt by Anglo-American students**

**Materials and methods**

Study 2 shows the pressure felt by Japanese students is now comparable to that by American, UK, and Australian students. For this, we primarily used the dataset of PISA 2015 (OECD, 2017, p. 85), but complemented with additional data generated by a major public research institute in Japan (National Institute for Youth Education, 2017).

Concerning pressure students feel, the PISA 2015 questionnaire asked 15-year-old students in participating countries whether or not they would agree with the following statements: (i) you often worry that it will be difficult for you taking a test; (ii) you worry that you will get poor grades at school; (iii) even if you are well prepared for a test you feel very anxious; (iv) you get very tense when you study; and (v) you get nervous when you don’t know how to solve a task at school (OECD, 2017, p. 85). We used the percentages of Japanese and Anglo-American students who responded affirmatively to each question. In addition to the comparison between Japan and the Anglo-American countries, we compared the mean of the percentages of students who responded affirmatively to the five questions for East Asian countries and OECD countries excluding Japan and Korea.

Japan’s National Institute of Youth Education (2017) conducted its own questionnaire survey of upper secondary students in Japan, the United States, China, and Korea. Note that this dataset lacked data for the United Kingdom and Australia and therefore our analysis
using this dataset focused on the comparison between Japan and the United States. The survey selected sample schools from at least six regions within each country. The sample sizes for the four countries were 2015, 1540, 2499, and 1800. Concerning the pressure students felt, this survey asked upper secondary students in Japan, the United States, China, and Korea to choose one of the four options: you feel (i) strong pressure; (ii) considerable pressure; (iii) little pressure; or (iv) no pressure. Students in the four countries were also asked to respond to whether or not the following elements would be the cause(s): their own expectation; parents’ expectation; and teachers’ expectation. We used these data for comparing the pressure students felt in these four countries.

**Results**

The percentages of Japanese students who responded affirmatively to the former two questions were higher than those of American, UK, and Australian students (Figure 10). However, the opposite was the case for the latter three questions. The mean percentage of students who responded affirmatively to the five questions was 60.9% for Japan, which was approximately the same as that for the United States, the United Kingdom, and Australia (i.e. 60.0%, 61.8%, and 60.3%, respectively) (Figure 11). This suggests that the stereotypical view that Japanese students study under extraordinary pressure does not reflect contemporary realities. What is even more fascinating—and potentially important for future research—is that much research on methodology in social psychology warns that Americans tend to downplay negative emotions and answer survey questions positively (see Heine, Lehman, Peng, & Greenholtz, 2002). To the extent this is true here, and finds some parallels in England and Australia, it means that the pressure of Anglo-American students could actually exceed that found in Japan.

Also interesting to note is that the stress on Korean students also seemed to be slightly less than that felt by American, UK, and Australian students. The mean of the percentages of students who responded affirmatively to the five questions was slightly lower for Korea.

![Figure 10](image-url).

**Figure 10.** Percentages of Japanese and American upper secondary students who responded affirmatively to the questions: (i) you often worry that it will be difficult for you taking a test; (ii) you worry that you will get poor grades at school; (iii) even if you are well prepared for a test you feel very anxious; (iv) you get very tense when you study; and (v) you get nervous when you don’t know how to solve a task at school. The original data were derived from OECD (2017).
than for the three Anglo-American countries (Figure 11). While it is still true that students in other East Asian countries feel greater stress than students in the three Anglo-American countries, the data show that this stereotypical view is no longer true for all East Asian countries: Japan has demonstrably changed.

Higher pressure for American students as compared with their Japanese peers obtained using PISA 2015 data was further confirmed using the other dataset (National Institute for Youth Education, 2017). The percentage of students who chose either ‘strong pressure’ or ‘considerable pressure’ was slightly lower for Japan (68.5%) than that for America (74.1%) (Figure 12). The percentage for Korea (65.0%) was even lower than that for Japan. In addition to the quantitative difference between Japan and the United States, students in Japan and the United States differed in the source of the pressure. Japanese students tended to raise their own expectation as a major cause, while American students tended to raise parents’ and teachers’ expectations as major causes (Figure 13). This result is interesting because, in

**Figure 11.** Mean of the percentages of students who responded in the affirmative to the given questions for: (a) OECD countries excluding Japan and Korea; and (b) East Asian countries. The original data were derived from OECD (2017).
another familiar stereotype, Americans are quite often deemed to be more independent and autonomous than the supposedly collectivist and ‘conformist’ Japanese (Hofstede, Hofstede, & Minkov, 2010; Markus & Kitayama, 2010; Rappleye & Komatsu, 2017).

**Discussion**

Beyond the primary comparison between Japan and the United States, it is noteworthy that students in several Western countries (e.g. Italy, Portugal, Spain, and Turkey) feel pressure comparable with those in East Asian countries. However, the stress levels of students in these Western countries have rarely been highlighted. This is despite the fact that the data used to draw Figure 11 are public. Here it is hard to avoid the conclusion that the pressure/stress that East Asian students feel is thus disproportionately emphasised.
Within East Asian countries, it is notable that Singaporean students feel the strongest pressure (Figure 11). Singapore's education is sometimes viewed as somehow ‘softer’ or more familiar than education in other East Asian countries (e.g. China, Japan, and Korea) (e.g. Schleicher, 2011). However, this view was not supported by the data. We should note that those who have made detailed *in situ* observations of Singaporean education quite often mention the high pressure that Singaporean students feel (e.g. Crehan, 2016; Nayak, 2016; Tan, 2016). Future research is needed to better understand if Singapore should be included in our portrayal of declining Exam Hell or whether it will maintain high competition and pressure for the foreseeable future.

**Conclusion: if not pressure and anxiety over exams, then what explains high achievement in Japan and East Asia?**

Our analysis has shown that school-related anxiety and stress among Japanese students has declined since the 1980s (Study 1) and now is comparable to that felt by their Anglo-American peers (Study 2). These findings support and complement research showing learning time for Japanese students has also declined and is now shorter than that for Anglo-American countries (Komatsu & Rappleye, *forthcoming*). Taken together, these findings indicate that the widely held stereotype of East Asian Exam Hell comprising of ‘exam-crazy students’ does not match current realities. For specialists of East Asia, this finding of temporal change alone is perhaps interesting by itself, but for observers of global education the findings of comparability between East Asia (Japan at this point) and Anglo-America are highly significant for the question it presupposes: if East Asian (Japanese) students’ achievement levels remain the highest in the world but longer learning time and anxiety/stress is not the cause, then what does explain the achievement? We conclude with a gesture towards one possibility, but first take up the question of how well changes in Japan prefigure changes across all of East Asia.

**Is contemporary Japan a harbinger of future changes across East Asia?**

Even if one accepts that Japanese students are studying less and feel less comparable stress and anxiety, the data presented thus far provide little support for generalisation across all of East Asia. Our argument that developments in Japan represent a prelude to a wider trend is predicated on the notion that two factors driving the end of Exam Hell in Japan are currently taking place across the entire region: declining birth rates and the enlargement/diversification of college entrance pathways.

In terms of population decline, Figure 14 shows expected temporal changes in the relative 18-year-old population for South Korea, Taiwan, and China, where the relative 18-year-old population in 1990 was assumed to be 1.0. For comparison, each country includes a comparison with the relative 18-year-old population in Japan. Although unfolding differently, it is clear that the relative decline in population of 18-year-olds (the year of college admission) is unfolding roughly in the same way it did in Japan. This creates a smaller school-age population competing for admissions to a system that was once expanded to meet the demographic bulge of the past (Komatsu & Rappleye, *forthcoming*).

Complementing this, policies adopted during the peak of the Exam Hell to alleviate pressure and stress are not only being implemented, but are now being accelerated. As discussed
above, Japanese policy makers reduced students' stress by diversifying college admissions, reducing curricular content, and expanding seats (building more universities, sometimes through converting some junior colleges and technical colleges into universities). South Korea has implemented similar policies, with the most striking figure that South Korean universities have expanded from 1691 in 1990 to 3363 in 2000 (Ando, 2013). In Taiwan, recommendations- (rather than exam-) based college admissions have advanced

Figure 14. Temporal changes in the 18-year-old population for (a) Korea, (b) Taiwan, and (c) China. For comparison, the temporal change in the 18-year-old population for Japan is also shown. The 18-year-old population shown in this figure is normalised by the value in 1990, i.e. the figure shows the 18-year-old population for a given year relative to that for 1990. The 18-year-old population for a given year was assumed to be equal to the number of live births 18 years ago. Original data of the numbers of live births for Korea, Taiwan, China, and Japan were derived from World Population Prospects (2011), National Statistics (2017), China Statistical Yearbook (2011), and Cabinet Office (2015), respectively.
considerably, and simultaneously the number of Taiwanese universities increased from 46 in 1990 to 147 in 2013 (Higure & Ishii, 2015).

China presents less clear trends at the moment. There is no doubt that competition over the National College Entrance Examination (gaokao) remains redhot (e.g. Zhao, Selman, & Haste, 2015). Nevertheless, the government has repeatedly tried to reduce the burden on students (fudan jianshao) and diversify pathways to university (Ministry of Science and Technology of the People’s Republic of China, 2010; Nanbu & Watanabe, 2012). In 2014 the Gaokao Reform Act was announced, with implementation currently taking place (2017–2020). Among other goals, these reforms explicitly aimed to reduce students’ exam-related pressure (see Burkhoff, 2015). Meanwhile, there has been a substantial expansion of higher education provision that, when coupled with the declining youth population, has resulted in a sharp decline in the percentage of Chinese students who failed to enter a university, as shown in Figure 15.

It may take several more decades for the trends we see in Japan to unfold in China, which is much larger in terms of population and still in the midst of a ‘high-growth’ era, reminiscent of the previous experiences of Japan, Taiwan, and South Korea. Given space restrictions, we have not discussed here the relationship between Exam Hell and the diploma-turned-high wage employment pipeline (in Japanese: gakureki shakai). In our parallel paper we also underscore how the bursting of the Japanese Bubble Economy and the Asian Financial Crisis

![Figure 15](image.png)

**Figure 15.** Trends in (a) the numbers of applicants and those who successfully enrolled, and (b) the percentage of students who failed to enter a university in China. The original data were derived from Sina (2015).
(1997) contributed to the breakdown of that belief and its effects on Exam Hell competition and stress (Komatsu & Rappleye, forthcoming). We surmise in that piece that China will sooner or later face a similar economic set-back that will, in turn, contribute to a lessening of the belief in the close correspondence of schooling and employment.

**Immune to learning? Stereotype as Anglo-American exam ritual**

We opened this piece by arguing that stereotypes of ‘exam-crazy’ East Asian students functioned in Anglo-American circles as a form of ritual: when the results of international student achievement are released, these images are quickly rolled out to explain away the differences, inoculating Anglo-America from the threat of needing to take educational theory and practice in East Asia seriously and/or (re)examine some of the West’s most cherished beliefs about education. Although we have demonstrated empirically that the well-worn Anglo-American view of East Asian schooling does not reflect realities, we are actually quite pessimistic that Anglo-American researchers will now turn to learn from/with East Asia. In fact, a whole range of previous English-language work has tried to overcome these persistent stereotypes over the past three decades (Finkelstein, Imamura, & Tobin, 1991; Park, 2013; Zeng & LeTendre, 1999). Most recently, British teacher Lucy Crehan, who took the time to visit the East Asian region, poignantly concluded that the myriad stereotypes she once subscribed to turned out to be false: ‘Our stereotypes about Asian education systems are misinformed; they are not all exam hellholes, devoid of joy and deep learning, and nor are they all the same’ (Crehan, 2016, p. 266). Nevertheless, the stereotypes persist.

In light of this, we submit that what we are dealing with is not a lack of empirical evidence or even a weak English-language research base. Instead, it is a problem with the modes of learning in Anglo-American research circles. In contrast to East Asia, where learning about Anglo-American educational theory and practice is on-going and highly generative for the region’s researchers, Anglo-American researchers have not seriously tried to make sense of East Asian approaches. Many factors contribute to this: a lack of language abilities, career disincentives to spend time in the region, and the persistent legacy of colonial and modernisation theory worldviews that hold on to images of the West as the vanguard of global change and innovation.

Yet, for us what is most troubling is that rather than using the ‘anomalies’ of East Asian achievement—e.g. apparently traditional modes of learning that score highly in creative problem solving tests (Komatsu & Rappleye, 2017a); low-technology learning in high-technology societies (Komatsu & Rappleye, 2017c)—to reconstitute theory in Anglo-American circles, there is a clear tendency to actively erase such anomalies through the invocation of stereotypes. Akin to a student that continually makes excuses, rather than resolutely struggles with something that does not initially make sense and thereby open the pathway to learning, Anglo-American observers, both popular and academic alike, seem content to paper over the pathway to future learning with the tropes of ‘exam-crazy’ East Asian students. As a result, Anglo-American research remains not only provincial (Takayama, 2017), but also largely unimaginative in a global sense.

The difference lies in how one views something that does not initially make sense; does not ‘fit’ one’s existing views. Does it constitute a threat or an opportunity to learn? Researchers in East Asia have clearly demonstrated through their adoption of a range of ‘good ideas’ emerging from Anglo-America that they are open to learning from the West. Meanwhile, it
is hard to find examples of Anglo-American researchers learning from East Asia (for discussion of a rare exception, see Rappleye & Komatsu, 2017). What explains this? Elsewhere we have put forth the hypothesis that the way that learning itself is understood could be decisive. As with any hypothesis, it needs further testing and revision, but is a useful avenue for taking the discussion deeper.

The difference, we argue, derives from an East Asian emphasis on learning as self-overcoming, as distinct from the Anglo-American emphasis on learning as self-fulfilment. A core assumption underlying this alternative East Asian mode of learning is that self is not solid but malleable; not fixed but discontinuous. This fundamental (ontological or pre-theoretical) difference leads to a different set of practices and pedagogical priorities. For example, in this self-overcoming model effort comes to be emphasised more than innate ability, the student–teacher relationship is configured differently, and even technological shortcuts are viewed as suspect (Komatsu & Rappleye, 2017c) (for parallels in the field of psychology, see Markus and Kitayama [1991, 2010]). In understanding the source of these different practices, we can begin to understand why achievement might still remain high in East Asian countries such as Japan, despite the relaxing of the external pressures that once generated Exam Hell.

Is it possible that the very inability of Anglo-American observers to engage in self-overcoming through a deeper understanding of East Asian pedagogy and philosophy is generated by the dominant self-fulfilling learning model embodied by Anglo-American observers, both popular and academic? Stereotypes function very well in the landscape of self-fulfilment: they immunise the self against potentially discontinuous ruptures. But in the ever-expanding horizons of the self-overcoming paradigm, the very same stereotypes obstruct the path to continual learning, necessary discontinuity, and thus—over time—substantively higher achievement.

Notes

1. Please note we make no clear distinction between pressure and stress given these are intertwined, although the former usually relates to external factors and the latter suggests subjective states.
2. Educational credentialism means that a society in which employment, social interactions, and individual status are determined primarily by which academic degrees one holds and what institutions these were obtained from (see Amano, 1989, pp. 115–119; Dore, 1976).
3. Tanaka (2018) argues that the institutional structure of the Korean upper secondary system following the 1974 Equalization Policy will maintain Exam Hell in Korea indefinitely, i.e. despite these larger social and political changes. We remain unconvinced, given the lack of data he presents. Nevertheless, future research would do well to investigate this possibility and nuance our macro-pictures with intra-regional differences.
4. Of course politically motivated, ‘shallow’ attempts that feign learning exist (Rappleye, 2012; Takayama, 2017; You & Morris, 2016), but these are not our focus here.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Jeremy Rappleye is Associate Professor at Kyoto University, Graduate School of Education. His most recent publications include Living on Borrowed Time (2016), A PISA Paradox? (2017), and A New Global

Hikaru Komatsu is Research Associate at Kyoto University, Graduate School of Education and a member of the Hakubi Project. He holds a doctorate in forestry from the University of Tokyo. His research interests lie in the scientific and philosophical study of human–nature interactions.

References


