Teaching Techniques that Highlight the Demographics Issues of Japan

Keith C. Hoy*

Abstract

This paper will examine a specific topic in a content-based English as a Medium of Instruction course offered at a private university in Japan. The course is entitled Contemporary Issues in Japanese Society and the topic focuses on effective teaching techniques to better understand Japan's current demographic challenges. It is no surprise that Japanese society is undergoing a seismic shift due to both a decrease in its birth rate and an increase in its elderly population. The implications behind this are very clear, and to get students to understand the true magnitude behind this is to employ a clear progression of instruction involving key visuals, appropriate content sites and opportunities for student feedback. To accomplish this involves 5 phases. The 1st phase is to frame this issue in an introductory quote and an accompanying line graph outlining the concepts of birth, death, and fertility rates. The 2nd phase is to give students a chance to contrast the population pyramids of Japan and Nigeria via specific content sites and from sites that utilize real-time data. This leads into the 3rd phase in which students have a chance to examine, through a key visual, the metaphorical meaning of Japan's population crises. As for the 4th phase, students consolidate the concepts they had learned through a worksheet assignment which they would later discuss in class. For the purposes of this paper, the answers from 4 student assignments will be highlighted. Lastly, the 5th phase, represents a series of follow-up lessons that focus on the types of strategies Japan is using to solve it population issues.

1. Introduction to Japan's Demographic Crises

"At risk of stating the obvious, unless something changes to cause the birth rate to exceed the death rate, Japan will eventually cease to exist. This would be a great loss for the world" (Elon Musk, Twitter, May 8, 2022.)

* Hiroshima Shudo University

　　This recent tweet by Elon Musk provoked debate – both domestically and internationally – about the critical crossroads many developed nations will face when their mortality rates exceed their birth rates.　Japan is at this crossroads right now and for students to truly understand Japan's dire situation, a well-planned series of key visuals, interactive sites with an emphasis on real-time data, are the best techniques to teach this subject area.　As a follow-up to the tweet by Elon Musk, a good visual to then show the class are the concepts of and interactions between birth, death, and total fertility rates in Japan between 1950–2018 (see Figure 1).　The data from Figure 1 clearly shows a rapid drop in birth rates (line shown in blue) after 1975 and a gradual increase in death rates (dotted line shown in red) during the same time.　Finally, the one other area that correlates strongly with the decline in birth rates, are the fertility rates (line shown in black).　It is at this point I would ask the students what the fertility rate in Japan was for 2018, and most said 1.4%.　This is below the population replacement rate calculated at 2.1%. This 2.1% simply means that in order for any society to maintain it population size, women in their child-bearing years, must have at least 2.1 children. Lastly, it is at this juncture of the lesson that I would give a brief lecture focusing mainly on the characteristics and implications of nations that have lower fertility rates.　In Japan's case, as with most developed nations, they have higher levels of income, education and healthcare.　In addition, more women are busy establishing careers instead of having children.　There are obvious benefits to having fewer children in terms of easing population
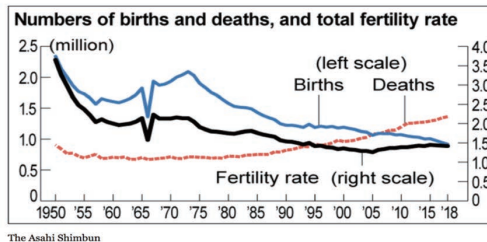

Figure 1.　Shrinking Japan: Births hit record low, deaths reach postwar
　　　　　　high.　Source: Hamada, T. Asahi Shinbun. (2019, June 10).

strains on social programs and infrastructure, but over time, there will be lack of new workers needed to replace "those who are retiring, or too few workers paying into social programs (such as Social Security in the United States) that support those who cannot work or have retired" (World Population Review, 2022).

2.　Analyzing Population Pyramids and Real-Time Data

After this brief introduction to Japan's demographic challenges, I would then display (side by side) 2 countries with 2 very distinct population pyramids.　As you can see in Figure 2, I wanted the students to guess which population pyramid belonged to Japan and which one was Nigeria.　After careful observation and discussion, most students concluded that the population pyramid on the left was Japan and the one on right was Nigeria.　It is at this point I would ask them what prominent characteristics stand out between these two nations.　The replies I got focused on the younger age cohorts (particularly the 0–4-year-olds) within the Nigerian population. Conversely many noticed the age cohorts within the Japanese population which was substantially larger especially in the 40–80-year-old range. Lastly, some students noticed the greater of number of Japanese who were 90–100+ years old compared to Nigeria which stood at 0% for both sexes.　As students look carefully at these 2 pyramids, they will notice a couple of shapes which fall into 2 of the 3 types of population pyramids.　In the case
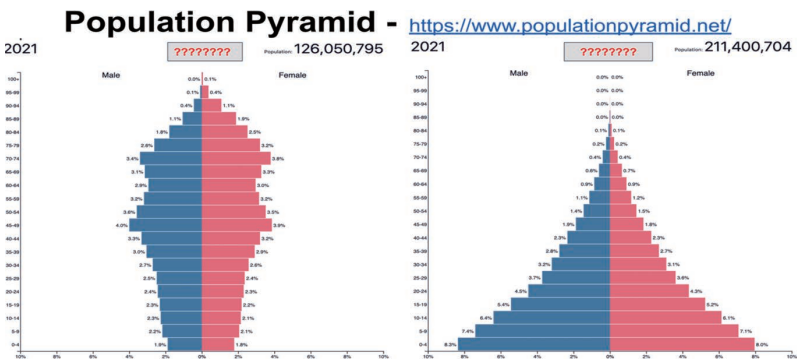

Figure 2.　PopulationPyramid.net (2021).　Japan and Nigeria

of Japan, it is known as a Constrictive Pyramid in which it is narrow at the top (older age cohorts) and bottom (younger age cohorts).　In other words, the shape is like a beehive.　On the other hand, Nigeria is characteristic of an Expansive Pyramid with a very broad base tapering quickly at the top. This is a typical pyramid shape which comprises of developing countries with "high fertility rates and lower than average life expectancies" (Boucher, 2016).　Incidentally, the Nigerian fertility rate stands at 5.4% which ranks in the top 8 in the world (World Population Review, 2022).　The last type of population shape is the Stationary Pyramid which has a rectangular shape with uniform percentages across all age groups with the exception to the elderly cohorts at the top.　A prime example would be Belgium (see Figure 3).　This type of pyramid is characteristic of developed nations that have zero to low birthrates.

Finally, for students to truly understand the magnitude of difference in terms of birth, death, and fertility rates as it relates to Japan and Nigeria, it was useful to turn to real-time data.　The best site for this was Worldometer and its focus on Japan and Nigeria's live population feeds.　For example, in Figure 4, I would flash the live data feed for Japan (125,624,113 people) and then on a split screen I would show the stream for Nigeria (218,175,565 people).　One thing that was very apparent when viewing these 2 figures for the first minute, was the gradual decrease in numbers on the Japanese side, while the Nigerian side showed birthrates occurring almost every second. This specific part of the lesson occurred at the 30-minute mark of a 90-minute
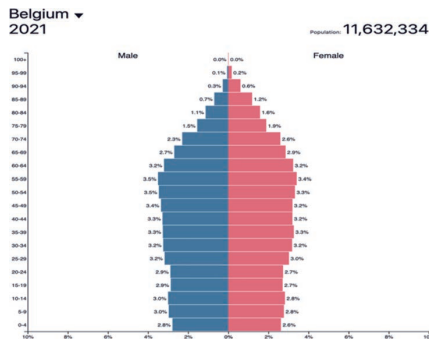

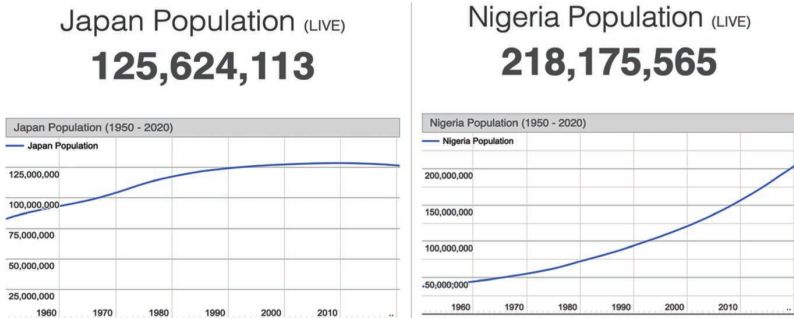Figure 3.　PopulationPyramid.net (2021).　Belgium

Figure 4.   Worldometer (2022).   Japan and Nigeria

lecture, so when I revisited these figures at the end of my lesson, there was usually a net gain of 500 births added to the Nigerian population.   In short, the juxtaposition of these 2 figures provides students with a very powerful backdrop into the dynamics of population studies.

3.   Key Visual Wrap-up

The trajectory of Japan's population challenges has obvious implications. To give students some guidance as to what those implication might be, it would be useful to show the population pyramid of Japan with an added metaphorical diagram on the right (see Figure 5).   The purpose of this
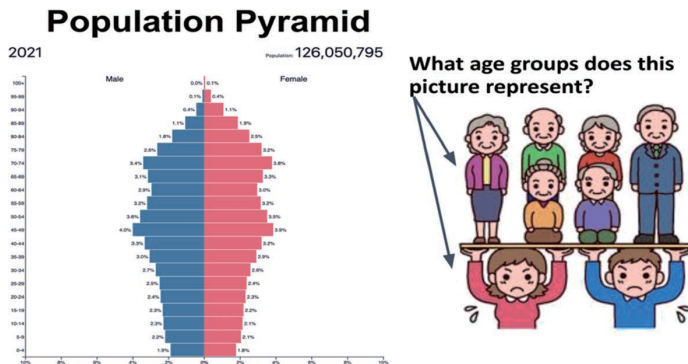

Figure 5.   Why is Japan Facing an Economic Downfall?   Source: Magar, P. SkillSphere.
(2019, June 19).

metaphorical diagram is to have students focus their attention on specific age cohorts within the Japanese population and make intelligent assumptions as to what future burdens might fall on the younger generations.　Specifically, Figure 5 will be accompanied by 3 questions, which student will discuss in pairs or in groups.　The 3 questions are: 1.) What are the age groups of those people holding up the plank?　2.) What are the age groups of those people on top of the plank?　3.) What does this metaphor represent?　Based on these 3 questions, most of the students were able to come up with some general conclusions which they would further elaborate in their worksheet homework assignments (see section 4.-Information Analysis of 4 Students).

4.　Information Analysis of 4 Students

　To better gauge student understanding of the material presented in class, a follow-up worksheet assignment (due the following week) was given to the class.　The assignment (see Appendix) focused on 3 questions which measured: how much the students understood my lecture, the degree of background knowledge they already possess as well as their ability to navigate the population pyramid site.　Lastly, I wanted the students to apply the information they already know as it pertains to their own country, or a country that they are interested in.　Based on the data received, I would like to highlight some student examples representing 4 countries: the Czech Republic, the United States, Korea, and Japan.

　In terms of question 1, the student from the Czech Republic was able to look at various age cohorts and make some good observations.　For instance, this student looked at the youngest and oldest age cohorts in Nigerian society and concluded that these groups comprised only a small percentage of the population and that "The workforce will have no issues supporting them and the population will keep on growing at a steady rate" (Hoy, 2022).　Conversely, this student noted that the general shape of the Japanese population was narrow at the base (mainly 0–20 years old) and heavy at the top (mainly 65–100 years old) which suggests that "…the workforce will keep on dwindling with time since there are more adults than children" (Hoy, 2022).　Another student who answered question 1 very well was from Japan and she focused on specific age cohorts and came up with

these interesting conclusions.　She noted that when compared to Japan, Nigeria had "fewer and fewer people as the age goes up.　I'm guessing it's because of its poor medical service situation" (Hoy, 2022).　This student correctly assumes that the health care in Japan (as in most developed countries) allows for a longer life span as opposed to those people from developing countries.　Another interesting observation this student made was the number of Japanese people in the 70s–80s as well as those in their 40s–50s which she correctly correlates as the baby boom generation after World War II and ensuing second baby boom.　Finally, this student (like the Czech student) noted the beehive shape of the Japanese population pyramid with those in the 0–4 age cohort being similar in size to those in the 90–99-year-old grouping.

As for question 2, while all 4 students concluded that the populations of Japan and Nigeria are growing in opposite directions and will do so for some time, it was the comments from the Japanese student that stood out because she was able to make the reasonable claim that Nigeria's economy will expand and grow due to its greater numbers of people in its younger age cohorts.　She goes onto add that the Nigerian economy will one day surpass that of the United States, China, and Japan and that "Japan is going to have a very difficult time due to the aging society and fewer children.　The Japanese economy won't be able to work if it keeps going like this" (Hoy, 2022).　These comments were backed up by the Czech student who reiterated the growing size of the Nigerian workforce versus that of the dwindling number of Japanese workers.

For question 3, each student chose their own country or if they were from Japan, they had to choose a country they were interested in.　According to the Japanese student, the country she chose was the United Kingdom (UK). She correctly assumed (perhaps from her past knowledge) that the UK experienced several waves of immigration which was reflected over a span of a few decades, particularly during the 1950s–1980s.　The effect resulted in robust, economic growth for this country.　She also noted that the fertility rate was slightly higher than Japan at 1.7 (World Population Review, 2022) but concluded that it is not as serious a problem for the UK.　As far as the shape of the UK's population pyramid, this student accurately categorized it

as being more Stationary than Constrictive.　The information supplied by the Czech student was interesting because she looked at her country's population pyramid at 2 points in history and noticed an increase in births from 1972–1981.　Based on this data, she concluded that this coincided "…at a time where the Cold War was easing up a little" (Hoy, 2022).　Conversely, between 1997–2001 there was a sharp decline in births which she accurately described as a time when the Czech Republic was undergoing an economic crisis.　As for the shape of the Czech population pyramid, she described it very similar to the Japan structure.　This sentiment was reiterated by the student from the United States, but on a much larger scale considering that the American population is 3 times that of Japan.　The most interesting analysis that came from this student was his mention of the number of immigrants that his country was accepting-both legally and illegally.　He felt that the influx of people into America may not be accurately reflected in the data he collected and that the numbers could be a lot higher.　In my response to him I mentioned that the site does not account for illegal or pending immigration claims, but rather on a country's birth and death rates which are then supplied to the United Nations data census.　Therefore, he is correct in assuming that the overall population gains in America are a lot higher than many other countries.　Finally, the analysis of the Korean student mirrored the current conditions of Japan.　Based on her data analysis, she noted that Korea has one of the lowest fertility rates in the world at 1% (World Population Review, 2022).　The implications of this low rate are reflected in a society in which she describes as a growing "burden for young generations due to the low birth rate and aging population like Japan…" (Hoy, 2022).

5.　Follow-up Lessons

　　The concepts that the students learned in their lesson and applied to their accompanying worksheet assignment would later be reinforced when they discussed their assignment findings in small groups.　This information exchange served as a prelude for further lessons focusing on a variety of approaches that Japan has been undertaking to tackle its demographic challenges.　One such approach focuses on the new visa law for foreign workers enacted on April 1, 2019.　Basically, this law and subsequent updates to it

has allowed more foreign workers to not only obtain Japanese citizenship, but also to sponsor their families. Another approach looks at making it easier for public and private sector employees, namely husbands, to take paternity leave. According to Yumiko Murakami, head of the Tokyo Center of the Organization for Economic Cooperation, "If fathers take leave and help their wives with babies, maybe wives will have more support at home, and they might decide to go for No. 2 or No. 3" (Rich, 2020). Finally, another approach that has been gaining traction not only in Japan but worldwide, is the introduction of the 4-day work week. According to the Japanese government, the rationale for encouraging a shortened work week would be "to improve the balance between work and life for people who have family care responsibilities or need more time off to acquire new skills" (Nakamura, 2021).

6. Conclusion

In closing, the teaching techniques outlined in this paper provide both Japanese and international university students a firm understanding of the demographic challenges facing not only Japan, but also their own countries. In my class, there were students representing four different countries which had fertility rates well below the 2.1% replacement rate. While it was necessary for the students to learn important concepts related to population studies, perhaps the most powerful part of teaching this unit was the use of real-time data as it applied to the study of Japan and Nigeria. I chose Japan and Nigeria because they represented two nations with two very different sets of age cohorts. As shown in the paper, Japan's beehive shaped pyramid versus Nigeria's expansive pyramid can be best understood - at least on an emotional level - by observing the live birth and death rates of these two countries. When I had my students observe this livestream of data, they were shocked by both the constant uptick in numbers on the Nigerian side and the steady decrease in numbers on the Japanese side. Without a doubt this part of the lesson, generated plenty of discussion and brought to light the various concepts that they were already learning in class. In addition, the input from the international students were very important because the comments they offered gave the ensuing classroom lectures further

directions on now nations could meet the replacement rate.　In particular, the student from the United States offered some very convincing arguments that although America's fertility rate is slightly above Japan's, the United States continues to be the place that immigrants (both legal and illegal) prefer to come to.　As a result, he believes that America's demographic challenges are offset by this constant flow of immigration.　The progression of activities within this lesson served as a prelude to the solutions that Japan, and other countries are trying to implement to increase their numbers.　In the case of Japan, the new visa law for foreign workers, paternal leave and the 4-day workweek are steps in the right direction.　Of course, only time will whether these will work, but more importantly is the fact that Japan's current population issues have serious global implications.　Therefore, it is necessary to examine these problems now, and look at viable solutions that will benefit all.

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Appendix

Name: (**)**

Worksheet on Population Pyramid

1. Look at the population pyramids of Japan and Nigeria (2021).　What are some of the characteristics that really stand out between these 2 countries?

2. What do the shapes of Japan and Nigeria suggest about the future population trends of these 2 countries?

3. Research your own country from https://www.populationpyramid. net/ (if you are from Japan, choose a country that you are interested in) and find out if it is similar to Japan or Nigeria, OR does it have a completely different shape?　If it has a different shape, what does that suggest?　Please share your information with the others in your group (use 2021 as your reference).