The Science Room as an Archive

*Taisho Japan and WWI*

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In 1918, the Ministry of Education ordered, for the first time, all junior high schools in Japan to incorporate students’ experiments into teaching and to secure a designated science room in a school building. This was part of the “science boom” in Japan brought about by WWI. With this and other guidelines, the Japanese government launched the first major science education reform since the Civilization and Enlightenment years of the Meiji period.

Historians have documented the ways in which the Great War fundamentally shaped modern science in Japan.¹ Scholars have also examined the science education reform during the Great War years, mainly at the elementary school level through textbooks and supplemental guidebooks.² This chapter examines one radical curriculum change during the Great War years that has received little attention from scholars: the introduction of students’ experiments to the classroom at the middle school level.³

Kishiwada Junior High was one of the schools that immediately responded to the urging of the Ministry of Education by building new science classrooms in 1918. Located in the city of Kishiwada in Osaka’s Senshū region, home of the booming textile industry, Kishiwada Junior High (thereafter Kishikō, as locals call it) provided post-compulsory education to boys in the southern half of the prefecture as well as the northern part of the neighboring Wakayama prefecture. While belonging to the oldest and more prestigious group of junior high schools, the so-called “number schools” in the prefecture, Kishikō was neither the wealthiest nor the most elite among them. Nonetheless, as a result of the science education reform, Kishikō acquired multiple rooms for various science subjects.

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³ Middle schools [*中等学校*] in prewar Japan consisted of junior high schools, normal schools, girls’ higher schools, and various kinds of practical schools; among them, junior high schools and normal schools were the target of the curricular change I discuss. In this chapter, I focus on junior high schools, where boys who graduated from the compulsory elementary schools went. Most junior high schools became high schools [*高等学校*] after WWII.
This chapter uses Kishikō’s science rooms as an archive for Taisho Japan’s relation to the Great War and the world. The approach is unique in the history of science education in Japan, in which the textbook-focused approach has been the norm. Also, while scholarship has conventionally examined either university-level research activities or the elementary school curriculum, this chapter focuses on the middle schools, as their dramatic expansion in the 1910s and 1920s was indeed a significant indicator of economic changes, the formation of the new middle class, and industrial growth during Taisho Japan.

Kishikō offers rare access to the science education reform of the WWI years because the school has kept the records of purchasing experiment tools, specimen collections, and room furniture since Meiji years. It has also preserved more than 100 experiment tools and specimen collections from the Meiji, Taisho, and Showa periods. This is a uniquely rich treasure box for historians. Some elite former high schools, namely the Third High (present Kyoto University) and the Fourth High (Kanazawa University), maintain excellent collections of this sort, but former junior high schools rarely kept any such physical trace of science curriculum of the past. Kishikō’s collection is most likely one of the largest – and quite possibly one of the few existing – collections from former junior high schools in Japan.4

The experiment room and materials at Kishikō attest to the moment in Japanese history when hands-on experiments by students – now a standard feature of the science curriculum – became the focus of pedagogy for the first time. In this regard, Kishikō’s science rooms tell a story of the New Education movement, an international movement in the late-19th and early-20th century by such educators and intellectuals as John Dewey, Maria Montessori, Francis Parker, inspired by Johann Heinrich Pestalozzi, Johann Friedrich Herbart and others, who wanted to develop a child-centered pedagogy based on children’s desire to learn and their participation through practical work.5 In Japan, the

4 I thank Mrs. Oguchi Etsuko, a former Kishikō teacher and independent scholar, and Mrs. Kakimoto and Mr. Karatsu, physics teachers at Kishikō, for sharing various materials and time. The original objects of the photos as well as school records used in this chapter are all stored at Kishikō’s archival room. The cataloguing of preserved instruments was done and published in 2002 by Mr. Yasufumi Nakaoka, a former physics teacher at Kishikō. The Third High collection is particularly well known and well catalogued. See Yukiko Nagahira, Kindai nihon to butsuri jikken kiki: Kyoto daigaku shozō Meiji Taishoki butsuri jikken kiki (Kyoto: Kyoto daigaku shuppankai, 2001).

5 The “new education” movement was also called the “new school” movement in England, and the “progressive education” movement in the US. For the New Education movement in Japan, see Sekai kyōkushiki kenkyūkai, Nihon kyōiku shi, vols. I and II (Toyo: Kōdansha, 1975); Nagao Tomiji, ed., Shin kyōiku undō no riron (Tokyo: Meiji tosho, 1988); Kiuchi Yōichi,