INTRODUCTION

Educational assessment is a measurable set of standards used in classrooms to determine a student’s knowledge of concepts, proficiency, skill levels and attitudes as well as to measure what a student has learnt at the end of a chapter, a unit or course to ensure that the required standards have been achieved (Organization for Economic Cooperation and Development, 2008). Assessments can be delivered in various forms such as through standardized testing, objective and subjective writing, performance based exams, oral presentations or task completion. It can be both formal and informal, as the important aspect of assessment is to provide students with feedback (Canfield, Kivisalu, Karr, King, & Phillips, 2015). Black and William (2006) define assessment as an activity that students perform so that the teachers can get diagnostic information to alter their teaching and the students’ learning. Through their definition of assessment, we can make the assumption that assessment includes test taking, homework and analyses of student performance.

The purpose of this paper is to explore and critically analyze the latest existing literature on different types of assessment against the backdrop of the Japanese educational model, to elucidate the implications for teachers and students of the current methods used in Japan to assess academic performance, and to suggest possible alternatives that might prove beneficial for Japanese learners in the light of recent research findings. By doing this, this literature study aims at contributing to the ongoing discussion on upcoming changes in Japanese education as the country embarks in a new era of further global inclusion.

Research for this paper was conducted extensively using online databases that listed the latest publications relevant to summative and formative testing in education. Some research was conducted using literature that spanned from the 1960s to the 1990s for historical context, and to scaffold the origins of assessment. The older literature was also used to build the backdrop of Japan and its cultural roots for foundation. During the research phase, there were no thresholds on specific journals as this researcher remained open to all literature written broadly for Japanese high school and university students. The terms and keywords used in the search were ‘summative assessment’, ‘formative assessment’, ‘summative assessment Japanese classroom’, ‘formative assessment Japan’, ‘non-traditional education Japan’, ‘educational models’, and ‘Japanese education system’. As a result, the terms and keywords provided a wealth of journal articles of second language learning in Asia which this researcher used as the basis for this paper.

The Japanese Context and Attitudes

After the Second World War, Japan’s economic development increased rapidly. This included the development of industry, economics and an increase in job growth by an average of 10% in GDP during the 1960s and subsequently higher growth until the 1980’s (Mori, 2014). With the development of industry, this also meant that educational expansion was

PUBLICATION INFORMATION

Implications of Summative and Formative Assessment in Japan – A Review of the Current Literature

Jennifer Ngan Bacquet*

University of Leicester, UK

Corresponding author: Jennifer Ngan Bacquet, E-mail: jngan22@gmail.com

ARTICLE INFO

Article history
Received: February 02, 2020
Accepted: April 04, 2020
Published: April 30, 2020
Volume: 8 Issue: 2

Conflicts of interest: None
Funding: None

ABSTRACT

My personal experience as a teacher in Japan has raised questions about the usefulness of both summative and formative assessment, the possible benefits of non-traditional approaches to classroom instruction, and the influence of assessment measures in the success of Japanese students. For instance, the use of collaborative, inquiry, task or project-based learning in Japanese high schools is nearly non-existent because of the structure of government-led educational standards, which mostly focus on preparing students for university entrance examinations. By critically looking at the latest existing literature on the uses and impact of assessment in Japanese education, this paper aims to further contribute to the discussion on the topic by elucidating possible implications for teachers and researchers who are interested in the context of Japan or similar educational settings. This paper also attempts to look at Japan’s current educational practices and how cultural tradition is woven into the integration of teaching philosophy.

Key words: Educational Models, Formative Assessment, Japan, Non-Traditional Education, Summative Assessment

Published by Australian International Academic Centre PTY.LTD.
Copyright (c) the author(s). This is an open access article under CC BY license (https://creativecommons.org/licenses/by/4.0/)
http://dx.doi.org/10.7575/aiac.ijels.v.8n.2p.28
evident, with high school enrollment increasing from 51.5% in 1955 to over 90% in the 1970s. University enrollment rate increased from around 50% in the 1980s to over 70% in 2000 while high school enrollment increased by 98% a decade later. Maruyama (2018) asserts that Japan is an achievement society and within the society, “education is expected to function as a social ladder” (p. 169). This suggests that social settings and educational achievements are in a direct correlation. This also brings about the acceptance that attainment of education is not only ideal for social reasons but a requirement. Japanese society as a whole deals with increasing mental health issues stemming from a culture where achievement is expected to bring a better quality of life. In 2018, the Ministry of Education reported that over 250 students from primary and high schools committed suicide due to pressures from school examinations. The increasing pressure to perform well on assessments is an issue in Japan, as “educational levels are correlated strongly with occupation and income and remain stable over an individual’s lifetime” (Kimura, Iso, Honjo, Ikehara, Sawada, Iwasaki et al., 2016, p. 91).

In Japan, the school system structure consists of mandatory six years of primary school followed by three years of lower secondary (junior high) and optional three years of upper secondary (high school) (Figure 1).

The National Center on Education and the Economy (NCEE) reported in 2011 that roughly 98% of Japanese students continue to go onto upper secondary school, and about 94% graduate. In Japanese schools, there is still a large emphasis placed on entrance examinations used for admission into competitive and academically focused high schools or universities. Usuda (2013) states that because Japan employs an achievement-oriented society or gakurekishakai, there is a clear hierarchy of rankings in all educational institutions, especially in urbanized cities.

The two most commonly used methods of assessing a student are summative and formative assessments (Canfield et al., 2015). In Japanese classrooms, student performance is often evaluated solely through summative assessment, which is defined as “any assessment activity which results in a mark or grade and which is subsequently used as a judgment on student performance” (Irons, 2008, p. 7). In the remaining sections of this paper, I will attempt to provide an overview of both approaches to assessment within the Japanese context, in light of its history, cultural background and current issues facing Japanese education.

**SOME BACKGROUND ON ASSESSMENT**

**Summative Assessment**

Summative assessment is a process in which an outcome is derived through criteria and standards. Scriven (1967) notes that the process of summative assessment stops at judgement. In the context of Japanese schools, the focus is on traditional methods of learning, which incorporate a curriculum designed by the Ministry of Education, Culture, Sports, Science and Technology (MEXT, 2016.). In a traditional school, according to Usuda (2013), student-centered learning is not a common classroom practice, but rather a teacher-centered obligation. Students are often expected to listen intently, absorbing knowledge through memorization. The students are not encouraged to reflect or think independently, as the teacher is usually the dominant voice in a Japanese classroom. In 2001, MEXT’s educational assessment policy proposed that assessments should be based on criterion-referenced assessment, which is assessment based on a person’s knowledge or skills against a predetermined standard with very little margin for flexibility (Lok, McNaught, & Young, 2015). The proposed policy confirms Japan’s already strong tradition of rigorous practices with an emphasis on summative assessment. Because this approach is outcome-based, Japanese students are assessed by tests which can be measured against a set of criteria but with little focus on the students’ true cognitive ability. Because of this policy, teachers must also train students in their test-taking abilities, the results of which should reflect in high marks given to students during assessments. Lok et al. (2015) also assert that capabilities such as critical thinking, problem-solving, and self-managed thinking are not fostered in outcome based assessment. Since tests are carried out following a standard criteria, schools must focus on maximizing optimal results and this becomes a narrowly focused core of the Japanese educational experience.

Despite the usefulness of summative assessment, especially through level placement and university admission standards, this researcher argues against the fairness of such standards, as student ability is not as simple as a set of measurements. Xerri and Briffa (2018) raise a question in that “assessing learners without the more formal or standardized process of testing, how could we (or employers, educational institutions, or other test users) distinguish between people based on their ability and merit rather than partiality, prejudice, or personal preferences?” (p. 229). This poses a concern that a society without summative assessment could not possibly make progress beyond the classroom. Xerri and Briffa

---

**Figure 1.** Japanese school structure (National Center on Education and the Economy, 2011)
again go on to question that reliability and standardization of informal classroom tasks and activities. They also argue that the high stakes assessment for students is not only a problem for students but also a concern for the teachers because additional training is needed for educators who wish to evaluate fairly.

The question that prompted this study and the one I intend to explore is whether summative assessment is an effective measure of success. According to educational rankings, statistics show that Japanese students outperform most Western students in fields of reading, math and science. Even with that, will societal attitudes change through ‘degreeocracy’, which emphasizes a society heavily influenced by the attainment of a degree and/or certification? Amano (1992) suggests that a test-centered environment like Japan has long been debated in the public even though there are proposals to modify the way entrance exams are administered for universities. There is ambivalence towards assessments because Japanese students are constantly exposed to ‘degreeocracy’. However, there are existing beliefs in the moral values of summative assessment, especially in Confucian heritage countries like Japan. I will explore this point later in this analysis.

**Formative Assessment**

Formative assessment is considerably more informal in nature compared with summative assessment. According to Daşkı̇n and Hatipoğlu (2019), formative assessment highlights a unique dynamic in test-taking that elicits student knowledge through informal structures. Evidence of student knowledge can be obtained through different activities such as group discussions, dialogue with teachers, reflective questions, and monitoring the students through classroom activities. Since it is based largely on observable analysis, feedback is also provided informally.

The main foundation of formative assessment is the feedback that is given to students to help them be aware of existing gaps in their learning aims (Boston, 2002). He also states that assessment is formative when it provides information based on which teachers may adapt their teaching to meet their students’ needs. This suggests that when teachers adjust their teaching methods to meet student needs, students are able to progress in assessments which leads to higher student success. Because they can show improvement through self-evaluation, they also have stronger control of their learning, thus naturally doing better in assessments. As a result, there is more encouragement for the students to put forth effort rather than have an objective to get a certain score.

There is some evidence to suggest that Japanese students may not see formative feedback as a helpful tool in their learning experience. Purdie, Hattie and Douglas (1996) did a comparative study of Japanese and Australian students in how cultures shape educational experiences throughout their lives. This study proposed that Japanese students may see formative feedback as highlighting their insecurity toward tests, which could enhance negative attitudes toward their self-esteem. Australians, on the other hand, have positive attitudes towards formative assessment. My own experience as an educator has shown that Japanese students are reluctant to seek help on assignments and do not like to receive help for the reason that it could be associated with evidence for one’s low ability. In addition to that, Elshout-Mohr (1994) makes a point to say that a student would only make good use of formative feedback if he or she can self-reflect on what they need to become better students. There needs to be a sense of self-assessment, as a student without it would not necessarily benefit. Though there is very little evidence that suggests formative assessment as having a negative effect on Japanese students, in general there is also not enough evidence for the effectiveness of this type of assessment in Japan. Wicking (2020) has listed a number of theoretical frameworks in formative assessment that have been studied by various researchers, termed ‘authentic assessment’, ‘dynamic assessment’, assessment for learning, etc. All of these frameworks share principles that prepare students for assessment in a formative focus, but this researcher argues that this might not necessarily improve learning outcomes nor prepare the younger generation of Japanese students for the challenges of a more globalized perspective in current Japan.

**THE CONFUCIAN FACTOR**

Earlier on I mentioned the long-standing and deep-rooted influence of Confucian heritage in Japan in general and its education system in particular. A more recent study from Wicking (2020) gives insight into this particular point and its impact on assessment. The Confucian thought in education is based around the teachings of Confucius, whose core values are thought to be a treasure to traditional Chinese culture. Because of China’s cultural influence in Japan, the Japanese and Chinese share this heritage. Confucianism in education is seen as the foundation of human wisdom and its importance is placed on establishing morality (Guo, 2016). The four main principles of Confucian teachings are highlighted in: (1) The stability of society is based upon unequal relationships between people; (2) the family is the prototype of all social organizations; (3) virtuous behavior toward others consists of treating others as one would like to be treated oneself; and (4) virtuous behavior in life consists of trying to acquire skills and education, working hard, not spending more than necessary, being patient and persevering (Hofstede & Bond, 1988).

Wicking (2020) argues that formative assessment uses a variety of methods to judge achievement and while even traditional schools in Japan use some formative approaches in the classroom, especially mixed nationality classrooms, and it can be problematic where assessment practices are generally summative because formative approaches are just uncommon in practice.

Han and Yang (2001) have noted four areas in which the Confucian values have impacted education. First, utilitarian perspective on education is important, as it prepares students to contribute to society. Secondly, actual learning is less important than examinations. While education has a key role, a highly skilled student could prove their knowledge through tests. Thirdly, the use of theoretical skills is more favorable than practical ones. Lastly, summative assessment
is placed with higher value than formative assessment. The Confucian values in this case neglect the principles of the latter, which, I argue, impacts Japan and perhaps Japan’s integration of global learning. When a Japanese student studies abroad, they face scrutiny in the way they are perceived as learners and some Western scholars view them as deficient, perplexed, and handicapped (Mestenhauser, 1983) because of their lack of assertiveness and ability to think critically or arrive at meaningful conclusions.

When Confucianism translates to classroom expectations, there is a link between cultural hierarchy and the role of a teacher-student. Students are not to question the teacher or to initiate discussions. The individual expression of ideas based on inquiries disrupts the hierarchal division of the classroom. Alongside hierarchy, there are a few features of behaviors linked to students of a Confucian heritage culture. For instance, Wicking’s (2020) findings were surveyed across first and second year Japanese university students with the research question of how students experience assessment through both formative and summative assessments. The findings Wicking gathered showed great importance on familial obligations, such as if the student did well on an assessment, it would be seen as an acceptable accomplishment by the family. Another finding revealed that students preferred utilitarian assessments, as in their perception it is attributed to equal learning. Students felt that if they studied hard, they would receive high marks and that one’s hard work is reflected in one’s grades. The findings exhibited that there was no ambiguity surrounding assessments and that what they scored is fair, thus showing favor for summative assessment as part of the cultural environment.

**EDUCATIONAL REFORM AND ALTERNATIVE ASSESSMENT**

The ‘Course of Study’ is a set of national curriculum standards written and mandated by the Ministry of Education. It was written in 1948 and has been revised many times since then. According to Kuramoto and Koizumi (2016) educational reforms are tied to social change that have occurred in post-war Japan. In 1948, very few students were enrolled in high schools. A revision in 1956 saw an increase in compulsory subjects to unify education amongst students. By the 1960s and 1970s, participation in high school was much higher with nearly 90% and the Ministry of Education needed a new revision. The Course of Study continued to evolve and between 1973 and 2003 lowering the number of compulsory subjects and giving students more educational freedom to study a diverse range of subjects. The current Course of Study, implemented between 2012-2013 saw an increase in curriculum content due to declining academic standards from public opinion. The Special Task Force for High School and University Articulation of the Central Council for Education (MEXT, 2016) presented a radical proposal to reform university entrance exams in Japan. The Center test (also known as the ‘common test’) is an examination given to high school students used for university admissions. It is to be abolished by 2020 and replaced by the Entrance Test, which will be an examination that covers an integrated subject-and-course type comprehensively. This would be to elicit students’ ability to use knowledge of skills. The individual examinations of each university are to be abolished in principle, and students will be given admission based on essays that judge critical thinking, presentations, group discussions, interviews and other forms of evaluation, which include the reformed common test. External examinations assessing L2 English speaking, writing, listening and reading abilities will also be used.

Due to the increasing value placed in entrance exams and the heavy focus on passing them, Kuramoto and Koizumi (2016) argue that it is extremely difficult to design examinations that function as both learning materials and measurement tools, which leads to “test aversion and dependence” (p. 428) in the way that assessment is measured, through only knowledge of subject but not the ability to utilize the knowledge itself. It is this particular point that brings us to the next section, and what has prompted me to suggest that the integration of blended classroom learning using the Classroom Response System (CRS) might be a successful addition to Japanese classrooms and perhaps a tool that could pave the way to summative assessment. I argue that in the age of digital natives, assessment will need to grow for young people in Japan as Japan’s society continues to evolve (Mork, 2014). Even with Wickers’ (2020) historical account of the Japanese and Confucian-style learning through traditional methods, society will continue to evolve and as it does, its members will need to be more technologically adept. On the other hand, in Japan students are “known for their reticence in freely offering opinions” (Mork, 2014, p. 128) and it could be an issue for educators to create materials that cater to that reticence. Black and William (2006) propose that blended learning, as a form of formative assessment, can be a helpful format of student work, feedback and analysis and an opportunity for improvements for the teachers, and this researcher suggests that this could be a way to identify better learner engagement and change the stagnant method of summative assessment.

Learning outcomes through assessment are a fundamental part of education. But how a student is assessed over the course of a term has ignited concerns about the usefulness and reliability with different methodologies (Canfield et al., 2015). A study done by Gikas and Grant (2013) suggested that formative methods such as blending technology in a traditional classroom setting are becoming more necessary as the world emerges in the direction of social media and technology. Technologies would include the use of social media platforms, tablets, laptops, smartphones, conferencing tools and online platforms for enhanced learning. Another study showed that “mobile computing devices and the use of social media created opportunities for interaction and provided opportunities for collaboration, student engagement with the content, and communication using social media, and the web” (Yusoff 2017, p. 2). This leads to the Classroom Response System, a tool used for formative assessment in large groups. It is a software program as well as a hardware system that promotes cooperative and active engagement in classroom learning. Some examples of such platforms are web-based systems such as Kahoot, Quizizz, and Plickers.
that have increased student engagement and usefulness over traditional paper assessments. In his study Sahin (2019) compared the findings of paper based assessments with those of Kahoot, Quizizz and Plickers on the basis of behavioral intention and perceived usefulness. The research showed that if the classroom has the infrastructure and environment for students to participate, they are more engaged in the learning process, thus doing better in assessments. Teachers are able to use the feedback to cater to the students’ need. Another study by Butcher (2014) shows that use of technology breaks the barrier between teachers and students. Learner disengagement begins with a lack of motivation as discussed in the OECD report from 2008. It states that it is vital that teachers learn about the “potential of formative assessment strategies which includes the use of web-based technology, “can build a sense of partnership and help students acquire a sense of ownership of their learning” (p. 10). Otherwise, external motivation to pass examinations is not something that can be good for students throughout life because researchers have pointed out a series of negative impacts the pressure of these examinations has on the quality of education in Japan: students’ over-dependence on cram schools, bullying, and school refusal syndrome (tokokyohi) among other problems (Riley, Takai, & Conaty, 1998).

This perspective does have counterpoints and potential drawbacks: a study conducted by de Jong, Savin-Baden, and Cunningham (2014) highlighted six issues that could potentially become challenges in the classroom. One of them is adopting a new method into the classroom that would potentially require a new teaching and learning style. Implementing the blended learning style would require special consideration for students who are differently-abled. Another challenge, as posited by Butcher (2016), identifies that individual learner distraction could pose a difficulty as the teaching-learning process could require too much attention and thus, assessment outcome would be low. A third consideration would be the lack of teacher training/technological proficiency in educators, not all of whom might be well-equipped to teaching in such a way. And yet, I argue as Lim, Morris, and Kupritz (2007) suggest that while educators will certainly (in some cases must) face these challenges, of the use blended learning as analyzed previously could help motivate students and help those less motivated to improve their learning outcomes.

A study by Mork (2014) concludes that for a Japanese learner, using the classroom response system in a blended learning environment has shown positively perceived results. Students used a platform called Socratic as a formative assessment tool; the class used pre-made quizzes and open-ended written discussion conducted in a classroom where the teacher was able to receive the results immediately. The study had a sample student population of 250 students, and over 90% of those surveyed stated that they enjoyed the platform. The study concluded that through this formative method, students felt empowered and their opinions were valued, something uncommon in given that Japanese learners in traditional classroom settings are not often asked to give opinions.
Ntuli, 2014, p. 300). Roux et al. (2018) designed a study using Japanese university students in a 15-week course that combined traditional learning with face-to-face classroom learning. The purpose of the study was to measure the development of cultural intelligence through blended learning, which included aspects of both summative and formative methodologies. The class structure included short lectures, textbook activities, online media such as YouTube, Ted Talks and homework. The textbook included academic reading with comprehension tasks, Japanese translations of English vocabulary along with supplemental activities created by the instructor. The summative assessment included open-book quizzes on vocabulary, listening and topics related to the content. The formative assessment aspect included online feedback surveys which highlighted the students’ engagement in the class along with their learning progress and any problems they faced. The use of online media and student centered discussions enhanced their ability to brainstorm and have peer-to-peer conversations. To measure the development of cultural intelligence, they created a 7-point scale that captures the students’ ability to adapt in diverse classroom activities. Students answered Google classroom surveys periodically that provided useful information to the researchers tracking their learning engagement. The results presented useful evidence in student performance through blended summative and formative assessment methods. The class showed an average of 88% through the summative quizzes, and the high average “could perhaps be explained by the fact that we used an open-book test format to gain maximum engagement with the learning material” (Roux et al., 2018, p. 23). Through formative assessment, students were able to show learner progress through written reflections, group class discussions and student-centered activities using classroom technology. The research presented with evidence here shows that summative assessment is only beneficial when formative methods are used. As Roux et al. (2018) conclude, for students, learning is a very personal process, which can be captured via technological means, which in turn, could be a key to improving how a lesson is taught and how learning objectives are retained. This finding shows that summative assessment does elicit a shift in student engagement through blended learning. This shift in paradigm reveals that if there are blended elements in assessment that includes an online component, this could allow for “maximum engagement” (Roux et al., 2018, p. 26) with the content while harnessing the development of other academic and soft skills.

For teachers and educators, it could mean that an outcome-based curriculum should undergo some changes to expand its reach to current learners. Because education is continuously changing, conventional methods may not be the most effective way for learners to grow in the ever-changing global contexts. Curriculum experts could implement changes slowly, such as incorporating feedback to summative testing, as discussed in Butler’s study. Hattie and Purdie’s comparisons between Australians and Japanese showed findings that link culture appropriateness in the way summative tests are given, and the general perception that isolated feedback might be counter-productive without some form of summative assessment, I argue that there should be a transformation in the current paradigms of the Japanese educational model. As Elshout-Mohr (1994) stated, formative feedback could be a useful tool if the student can self–reflect and self-assess, since there has not been evidence suggesting that formative feedback brings a negative effect. Based on the evidence gathered, it is this researcher’s position that there is room for change in testing methods used in Japan.

In looking at directions and areas for further research, students in modern societies such as Japan may benefit greatly from non-traditional learning. As shown in cited OECD report (2008) assessment of traditional classrooms, students are subjected to lecture style teaching with little formative learning methods, which can create a gap in global awareness. A survey from Benesse Educational Research and Development Center (BERD) in 2009 showed that students were spending more time studying for summative exams in high school than they were in doing classwork. The study also showed that students studied drastically less once they were in university as entrance exams were no longer needed. Moreover, this data suggests that student engagement in the traditional classroom is much more limited due to the nature of summative assessment. Another statistic conducted by the Organization for Economic Cooperation and Development states that in 2011, Japanese students studying abroad has dropped by a third from close to 83,000 students to 57,000 students. While the findings of this is not fully developed or studied yet, there is a concern that traditional Japanese style learning through summative assessment may deter students’ overall interest away from foreign countries due to the learning differences (Usuda, 2013). While the traditional assessment methods may “decrease students’ intrinsic motivation and interest in learning” (Usuda, 2013, p. 12), it may be beneficial for students to experience a broader range of blended assessment. As members of a society that is continuously changing and becoming more globalization, the younger generation of Japanese students can greatly benefit if the Ministry of Education sees the potential of formative feedback and assessment.

There is, in this researcher’s view, one final implication; in societies where the Confucian learning heritage is practiced, there is a large emphasis placed on passivity in the classroom, memorization of knowledge instead of understanding, and strict obedience. These are known as values in Confucian thought (Hattie, Purdie, & Douglas, 1996). By placing such importance on such values, assessment practices, especially in Japan, have remained stagnant for decades which in turn hinders the effectiveness of assessment (see Wicking, 2020).

While this is a result of cultural exclusivity, a survey conducted in Hong Kong, another Confucian influenced society, showed contrasting results: in a study by Tong and Adamson (2015), 45 secondary students were interviewed on their perceptions of school assessments, and the majority of the students were not satisfied with the amount of feedback received. This might be attributed to the fact that Hong Kong’s educational model has been influenced and modeled after the United Kingdom, and I argue that perhaps an
approach that incorporates formative assessment into their educational model could be explored further in Japan to ascertain further how effective it is, at least from the perspective of students’ perception.

REFERENCES


National Center on Education and the Economy (2011) Figure 1. Retrieved from shorturl.at/aAMUY


