What makes an invention successful? A case study on the *Jikji*

### Author Information

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**State:** Kentucky

### General Information

**Lesson Grade Span:** Middle or High School (7-12)  
**Targeted Grade Level/Course:** Social Studies  
**Estimated Time to Complete Lesson:** 1-2, 50-minute classes

### Focused Question

What makes an invention successful? A case study on the *Jikji*

### Standards (State/C3)

**Kentucky Academic Standards for Social Studies:**  
7.H.CO.1 Explain how religion influenced state-building, trade and cultural interactions between 600-1600.

**C3 Framework Indicators**  
D2.His.3.9-12. Use questions generated about individuals and groups to assess how the significance of their actions changes over time and is shaped by the historical context.  
D4.8.6-8. Apply a range of deliberative and democratic procedures to make decisions and take action in their classrooms and schools, and in out-of-school civic contexts.

### Student & Target Outcomes

- Students will analyze the impact of Korean metal movable type in preserving cultural texts.  
- Students will assess the factors that limited the global expansion of the *jikji* movable type.  
- Students will construct an evidence-based argument weighing the factors that make inventions more or less influential.
LESSON OVERVIEW

This lesson will have students assess the impact of jikji movable print on Korean society and beyond. Though the Gutenberg Press is credited as being the birth of movable type, the jikji predates the Gutenberg Bible by 70 years. In this focused inquiry lesson, students will focus in on what ideas were preserved within the jikji. This exploration can supplement analysis of the Gutenberg Press, providing students a case study in assessing the factors that hinder or promote different inventions’ influence. Likewise, assessing jikji and other inventions that influence mass communication allow students to grapple with how such mediums can preserve the past or be the mechanism that brings global change.

PROCEDURES

Context: This focused inquiry lesson should be taught in unison or subsequently to the Gutenberg Press. Though the metal movable type of Korea was in use prior to the Gutenberg Press, having a base knowledge of how Western printing press revolutionized European society, and likewise, propelled exploration, presents a model for comparison. Though metal movable type and its products, such as the jikji, predates the Gutenberg Press, the former did not have the global influence of the latter. Assessing the Korean press, contrasted against the Gutenberg press, allows students to consider the different factors impacting an invention’s societal influence. Likewise, this lesson has students consider the different dimensions of success, wherein they weigh the purpose/goals, outcomes, and influence of inventions.

Staging Task: To stage this lesson, students should discuss the difficulties of spreading reliable information after playing a modified version of the telephone game using oral, handwritten, and typed information. Teachers should engage students in discussion of the game either at the end or after each round.

- First, students play a traditional game of telephone, sharing information orally.
- In the next round, the original message is whispered to the first person in the line. Then, rather than continuing to whisper information to one another, students will hand write/rewrite information as they play the game. When discussing the exercise, teachers should have students discuss the benefits and limitations of this process.
  - Factors that may facilitate or hinder correct copying could include the content of the message and the writer’s familiarity with it and legibility of handwriting.
- In the final round, students use typed information (e.g., text or typed messages to communicate the ideas they hear).

Students should discuss the variability in the different types of information transmission and should consider the potential long-term and short-term possibilities for communication and
miscommunication. Additionally, teachers may introduce to students the impact of accurate communication of inaccurate information, providing space to talk about the wide dissemination of fake news. This exercise is meant to have students consider the utility of communication technology, but also weigh its benefits and potential detriments.

After completing the staging task, students progress through a series of supporting questions and complementary formative performance tasks. Sources are included below.

Supporting Question 1: What was first printed on Korean printing presses?
- TASK: Identify the first items printed with the Korean metal movable type printing press. Using the featured sources, students list the first items printed. Teachers should have students build on this task by prompting students to consider the reason for printing these texts, in particular how printing controls access to information, and likewise, the type of information being consumed. Teachers should ask questions to help students make parallels between the printing of religious texts in Korea, with how religion was both preserved and challenged by the Gutenburg press.
- SOURCES: The featured sources for this task include lists of documents printed by the Jikji.

Supporting Question 2: How did Jikji movable type preserve the past?
- TASK: Write a paragraph describing the ways the jikji allowed Koreans to preserve thoughts and beliefs. Building on the previous task, students will use the featured source, and sources from SQ1, to describe how the jikji allowed certain ideas and beliefs to be preserved. Teachers should ask questions to help students make parallels between the printing of religious texts in Korea with how religion was both preserved and challenged by the Gutenburg press.
- SOURCES: The featured source explains the particular ways the jikji preserved Buddhist thought against foreign invaders. Teachers may elect to integrate sources about the Gutenberg Press.

SQ3: What limited the use of Korean printing press technology?
- TASK: Write a claim (or series of claims) supported by evidence that answers the supporting question. Students will use evidence from the sources to consider why the Korean jikji had less international influence than the Gutenberg press.
- SOURCES: The featured sources explain the limited use of jikji, as well as the limitations posed by the Korean characters.

Summative Performance Task: What makes an invention successful? Construct an argument (e.g., detailed outline, poster, essay) that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views.

Take Informed Action: Students can extend their assessment of the jikji and consider what impacts the spread of information.
● **UNDERSTAND**: Students review their social media news feed and research how news spreads and/or is generated on their feed. Students can consider the spread of fake news, as well as ways in which they learn about factual information through “viral” stories.

● **ASSESS**: Evaluate their own news feed and consider the extent to which their feed shares factual or false information and/or how quickly viral news spreads.

● **ACT**: Follow or unfollow news or media organizations that are not contributing to the spread of factual or important information. Action plan may also include challenging or supporting a viral story.

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**FORMATIVE ASSESSMENT - include rubric**

Formative assessment tasks are described in the procedures above. The Formative Performance Tasks (FPT), Summative Performance Task (SPT), and Taking Informed Action (TIA) are listed below.

**FPT 1**: Identify the first items printed with the Korean metal movable type printing press. This assessment can take the form of a list, chart, or mind map format.

**FPT 2**: Write a paragraph describing the ways the jikji allowed Koreans to preserve thoughts and beliefs.

**FPT 3**: Write a claim (or series of claims) supported by evidence that answers the supporting question. Assessment task can be performed using one of the teaching tools on this page, particularly the Argument Organizer.

**SPT**: What makes an invention successful? Construct an argument (e.g., detailed outline, poster, essay) that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views.

**TIA**: Construct an action task that evaluates and addresses upon the spread of information through social media.

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**RESOURCE LIST**


**MODIFICATIONS & EXTENSIONS (OPTIONAL)**

Teachers are encouraged to modify any of the above to reflect student needs and classroom context.

**FEATURED SOURCES**

Below are the featured sources, organized according to the complementary supporting question. Each source is an excerpt. Any edits are noted with ellipses or brackets.

**Supporting Question 1: Featured Sources**


The oldest extant metal type printer in the world "Jikji" is a Seon (Zen) text compiled by the Korean monk Baegun in 1372. "Jikji" is composed of dharma teachings, hymns, eulogies, epitaphs, prose and poetry by the seven Buddhas, 28 Indian patriarchs, 110 Chinese Chan (Zen) monks and one Silla-era Korean monk. Unlike Western metal type printings that played a significant role in the publication of books for practical use as well as scientific texts, thus serving as the basis of the flowering of scientific civilization, "Jikji" has been used primarily as a text for monks.


Methods of casting type in metal were also developed in Korea, where they were at first associated with religious communities, which used bronze casting for other purposes. [Printing
in Korea] took place well before the invention of printing from movable type in the West, though there is no real evidence of a link between the two.


**The Birth and Peregrinations of Jikji**

Based on the writing of [Jikji creator/monk] Baegun’s teacher, Seokok Cheonggong, Jikji is a compilation of hmn’s eulogies, epitaphs, prose, poetry and other teachings by the seven Buddhas of antiquity..., 28 Indian patriarchs, 110 Chinese monks and one (Daeryeong) from Korea. Its essential teaching is sudden enlightenment about the nature of existence and then gradual cultivation of the self. The title *Jikji* has been translated as *Anthology of Great Buddhist Priests’ Zen Teachings, Master Baegun’s Excerpts from the Buddhas and Patriarchs*, and more loosely as *Sutras Pointing Directly to the Mind*.

**Supporting Question 2: Featured Sources**


At the outset, metal movable type was devised not to promote Buddhism, but rather to protect it from invaders.

In the 12th century, the Mongol ruler Genghis Khan consolidated the largest empire in human history, an area stretching from Asia’s Pacific coast westward to Persia. After his death in 1227, his successor, Ögedei Khan, continued the conquest. In 1231, Ögedei ordered the invasion of Goryeo, the area now called Korea. The peninsula was then a rare strip of land not controlled by the Mongols. For 28 years, the Mongols mounted repeated attacks on the ruling monarchy. That government, the Goryeo dynasty, sought to repel the invaders, and also took pains to maintain and protect its greatest treasure— and that meant Buddhist teachings. ...

Printing helped maintain Korea’s religion as Mongols took control of the peninsula. “There are several generations of very nationalist Korean historians who stress empathically that Korea may have been defeated militarily, but maintained its independence, its sovereignty, throughout the Mongol empire,” says [Colgate University professor, David] Robinson. In fact, Korea did become a vassal state of the Mongol empire in 1259 and remained so for eight decades. And the Mongol invasion eventually replaced its Buddhist monarchy with what
Robinson calls “a new kind of elite . . . based on merit, success in civil service examinations, and mastery of Confucianism.”

Yet the texts Goryeo aristocrats had printed stood against that sweeping change, and throughout that dark period the nation’s Buddhist canon remained firmly preserved.


**Though this article does not address the jikji, the Gutenberg Press’ impact can be compared to that of the jikji for this question/task.**

Gutenberg’s press led to mass literacy, fostered the Protestant Reformation (by undermining the clergy’s theological monopoly) and, through the easy exchange of information, enabled the scientific revolution.

**Supporting Question 3: Featured Sources**


Printing with movable type in Korea was developed at least two centuries earlier than in the West. But typography did not play as great a role as in European society, nor did it have such a tremendous impact on the people’s life as it did in European society. In the West, printing with movable type metal type is closely associated with the spread and penetration of widened knowledge to the public, while in Korea it remained largely under the monopoly of the government. ...

The printing of Korean literature in the Korean alphabet was neglected even though it would have been relatively easy and would have made a great contribution to Korean culture and the general education of the common people.


...[A]bout the time Gutenberg was born, King Taejong [in Korea] established a foundry to make bronze type for printing books. The people responded enthusiastically to the effort. “There will be no book left unprinted,” said one report, “and no man who does not learn. Literature and
religion will make daily progress, and the cause of morality must gain enormously.” When bronze ran low, people donated vases, bells, and instruments to melt down for type.

But making movable type from metal was costly for the Koreans, as the Chinese and Japanese found when they later adopted the process. That was because all three languages used characters representing syllables or whole words for printing, not alphabetic characters that represent individuals sounds. Imagine the number of pieces of type English would need if each piece of type carried not a letter but a syllable. According to one linguistics professor, English has more than fifteen thousand different syllables. In China, Korea, and Japan, printing with movable type required thousands of characters and cost so much that only government sponsorship made it possible.
What makes an invention successful?


Supporting Questions

1. What was first printed on Korean printing presses?
2. How did Jikji movable type preserve the past?
3. What limited the use of Korean printing press technology?
# What makes an invention successful?

## A Case Study of the Jikji

<table>
<thead>
<tr>
<th>Kentucky Academic Standards</th>
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                             | D4.8.6-8. Apply a range of deliberative and democratic procedures to make decisions and take action in their classrooms and schools, and in out-of-school civic contexts. |
| Staging the Question        | Students discuss the difficulties of spreading reliable information after playing a modified version of the telephone game using oral, handwritten, and typed information. |

## Supporting Questions

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</table>

## Featured Sources

| Source A: “Jikji: An Invaluable Text of Buddhism”  
Source B: The British Library Guide to Printing  
Source C: Jikji and One NGO’s Lonely Fight to Bring it Home | Source D: “The Buddhist History of Movable Type”  
Source E: “The Internet and Gutenberg”  
Source F: “Early Korean Printing”  
Source G: Johannes Gutenberg and the Printing Press |

## Summative Performance Tasks

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Inquiry Description

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This focused inquiry lesson should be taught in unison or subsequently to the Gutenberg Press. Though the metal movable type of Korea was in use prior to the Gutenberg Press, having a base knowledge of how Western printing press revolutionized European society, and likewise, propelled exploration, presents a model for comparison. Though metal movable type and its products, such as the jikji, predates the Gutenberg Press, the former did not have the global influence of the latter. Assessing the Korean press, contrasted against the Gutenberg press, allows students to consider the different factors impacting an invention’s societal influence. Likewise, this lesson has students consider the different dimensions of success, wherein they weigh the purpose/goals, outcomes, and influence of inventions.

NOTE: This inquiry lesson is anticipated to require two-to-three 45-minute class sessions. The time needed depends on what lesson elements teachers would like to focus. Teachers are encouraged to add and subtract additional resources according to preference, instructional time, and student needs. Resources can also be modified as necessary to meet individualized education programs (IEPs) or Section 504 Plans for students with disabilities.

Source List

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**Supporting Question 1**

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**Supporting Question 2**


Building on the previous task, students will use the featured source, and sources from SQ1, to describe how the jikji allowed certain ideas and beliefs to be preserved. Teachers should ask questions to help students make parallels between the printing of religious texts in Korea with how religion was both preserved and challenged by the Gutenberg press. The featured source explains the particular ways the jikji preserved Buddhist thought against foreign invaders. Teachers may elect to integrate sources about the Gutenberg Press.

**Supporting Question 3**

Students will use evidence from the sources to consider why the Korean jikji had less international influence than the Gutenberg press. They will write a claim (or series of claims) supported by evidence that answers the supporting question. Assessment task can be performed using one of the teaching tools on this page, particularly the Argument Organizer. The featured sources explain the limited use of jikji, as well as the limitations posed by the Korean characters.

**Summative Performance Task**

At this point in the inquiry, students have examined various aspects that affected the impact of jikji movable type, including how it compared to the Gutenberg Press. Students will construct an evidence-based argument using multiple sources to answer the compelling question “what makes an invention successful?”

**Taking Informed Action**

Students have the opportunity to Take Informed Action by drawing on their understandings of the jikji and the spread of information. The TIA task asks students to construct an action task that evaluates and addresses the spread of information through social media.

**UNDERSTAND** Students review their social media news feed and research how news spreads and/or is generated on their feed. Students can consider the spread of fake news, as well as ways in which they learn about factual information through “viral” stories.

**ASSESS** Evaluate their own news feed and consider the extent to which their feed shares factual or false information and/or how quickly viral news spreads.

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