


YOUR ULTIMATE GUIDE TO AUTOMATED ITEM GENERATION

AIG

PART 1



Until recently, testing professionals have always had to ***manually*** and ***painstakingly*** perform the fundamental task of ***item writing***. There has been no way to easily and rapidly expand an item pool while also maintaining its psychometric quality. As a result, we pour ***time*** and ***money*** into item development and redevelopment. Is there an easier way?

Automated item generation (AIG) has been around for a while. However, pumping out items using typical methods of item design hasn't exactly been useful or attainable for most of us, either. AIG still required the skills of a developer to pull off. That gets costly. Luckily, new ways of designing items are making it ***easier than ever*** to rapidly expand item pools at a reduced cost—***no developer required***.

But how does AIG work? ***What are the benefits?*** How does a program even get started? We'll explore these questions and more in the ***Ultimate Guide to AIG***.

WHAT IS AIG

AIG involves leveraging the expertise of content specialists, item templates, and computer algorithms to create a variety of item permutations, often resulting in hundreds or thousands of new items based on a single item model.

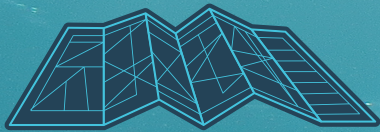
European Medical Journal

Many of the negative effects of cheating and content theft can be mitigated by a large enough item bank. But until now, **physical and economic limitations** have made it difficult to rapidly expand an item pool.

Dedicating item writers and subject matter experts (SMEs) to the arduous task of expanding your item pool can be expensive and time-consuming. **AIG transforms this process.** Using computer technology, AIG generates large numbers of high-quality test items automatically. ***Welcome to the future.***

HOW IT WORKS

1 TEMPLATE BUILD



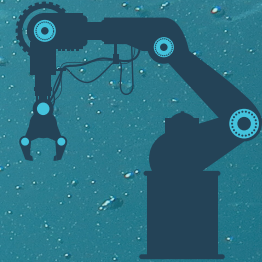
Thousands of unique items start with the construction of a strong item template or model.

2 DATA DUMP



The item template is then populated with all kinds of data and variables.

3 GENERATION



Item generation used to take forever. Some modern AIG tools require just the push of a button.

4 REVIEW & TESTING



The hundreds or thousands of new items can undergo psychometric testing and review.

5 IMPORT



Approved items are then uploaded or integrated with existing item banking and delivery systems.

AIG FOR ALL

WHAT WOULD AIG DO FOR YOUR PROGRAM?

Certification & Licensure

If the content of your exams must be constantly updated, as is the case with many certifications, AIG can reduce the duration and cost of redevelopment.

International

Exams delivered internationally are more at risk for content theft. A large item bank limits item exposure to protect the value of your exam.

K-12 Testing

Distill the content of your K-12 exams into expansive item pools to deploy more forms, thereby making it more difficult for gossip to contribute to useful pre-knowledge.

Higher Education

Use AIG to create and maintain item pools that are secure enough to be confidently used in online learning environments and expansive enough to be relied upon for years to come.

BIG BENEFITS



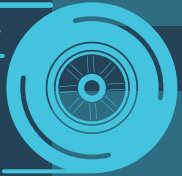
SECURITY

Reduce item exposure, stay ahead of content thieves, and build secure and adaptive exams with AIG technology.



SAVINGS

Increase productivity using a smaller team, build better exams on a budget, and save on long-term security costs.



SPEED

Some AIG tools can transform one item into 1,000 at the click of a button. Nobody can write that fast.



ACCURACY

Reduce the amount of inevitable human error by using AIG to accurately generate your new items.



CREATIVITY

Get the most out of your best resources—your SMEs—by supplying them with time-saving design tools.



POPULARITY

Your team will love the switch to AIG. It cuts down on manual labor and saves costs, reducing logistical headaches.

A SECURITY SENSATION

If security is your priority, then AIG has a lot to offer. An expanded item pool helps you...

LIMIT ITEM EXPOSURE

Numbers don't lie. More items in your item pool means fewer eyes see each item. Limit item exposure by rapidly expanding your item pool through AIG.

STAY AHEAD

To combat item theft, it is important to stay one step ahead of prying eyes. AIG makes it possible to refresh your item pool as often as necessary.

BLOCK PRE-KNOWLEDGE

A larger pool of items can prevent test takers from using pre-knowledge by making it harder for them to predict which test question they'll see. Nice try!

USE FEWER HUMANS

Maintain an extra layer of security by involving fewer individuals in the item writing process. AIG gives smaller teams the tools to be more efficient.

GET ADAPTIVE

Secure test designs such as CATs (Computerized Adaptive Tests), multiple forms, & LOFTs require large item banks. AIG makes bank expansion accessible.



4 WAYS AIG SAVES TIME AND MONEY



PRODUCTIVITY

How long would it take a team of item writers to craft 400 unique items? Using AIG, that team could potentially develop twice that many at the push of a button.

DEVELOPMENT COSTS

The boost in productivity when using AIG affords many programs the luxury of reducing the human resources necessary to create a set amount of items.

ITEM POOL LONGEVITY

Rapid item pool expansion with AIG makes more secure test designs—like CATs and LOFTs—possible. Get more bang for your item-writing buck.

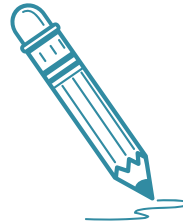
REDEVELOPMENT COSTS

The enhanced security benefits of a larger item pool mean fewer security and redevelopment costs in the long run. Over time, your budget will notice.

METHODS OF ITEM POOL EXPANSION

WRITING TONS OF ITEMS

One way to expand an item pool is to sit down and manually write lots of items. This method is nice because SMEs are highly involved, but the cost and the duration of the project can quickly add up.



THEORY-BASED GENERATION

This method of item pool expansion requires developers to use heavy-duty computer programs to build item models based on principles of cognitive psychology. SMEs are left out in the cold.



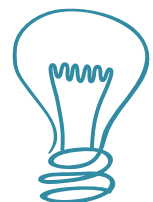
DESIGNING WITH A GUI

Recent advances in user interface technology have made it possible for subject matter experts to re-enter the equation and build items themselves using a graphical user interface to drag and drop.



SKILL-BASED ITEM GENERATION

Using this method, one single item covers the breadth and depth of a skill or objective, and data sources are added to yield every permutation of an item/objective, expanding item pools dramatically.



GETTING STARTED WITH AIG

1 RESEARCH OPTIONS

What method of AIG do you plan to use? What tools can integrate with your existing systems? Learn more [here](#).

2 TEST DRIVE

Once you've found a tool you think you'll like, take it for a test drive. Request demos. Be sure the solution works for you.

3 INTEGRATION

Now that you have your tool, you can take whatever steps you need to integrate. Do you require a developer?

4 TRAINING

Depending on the AIG solution you select, you may need to train your item writers and SMEs on best practices.

5 BUILD TEMPLATES

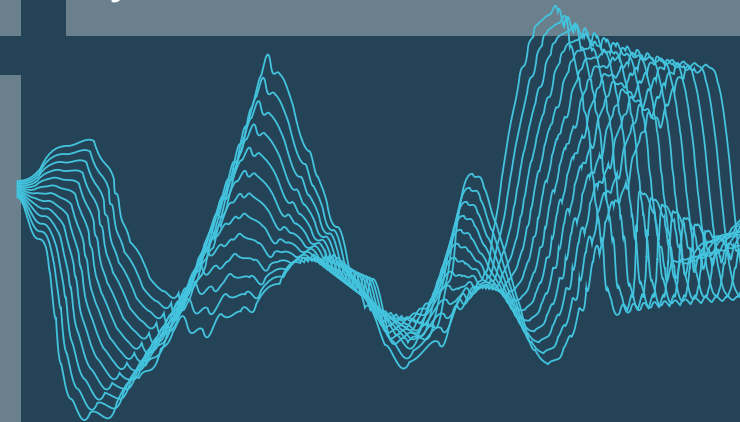
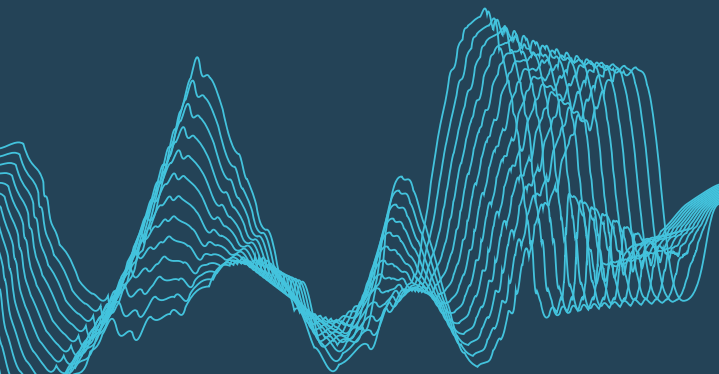
Whether you plan to use a GUI interface, cloning, SmartItems, or some other solution, high-quality templates are a must.

6 GENERATE ITEMS

The cost and duration of this step of the process will vary depending on the AIG method you've chosen.

7 MAKE IT HAPPEN

Whether they're developed and sent to you, or rendered into an uploadable file, you can now enjoy all of the benefits of your plentiful new items.



HOW CAN I CONVINCE MY TEAM TO ADOPT AIG?

"I KNOW
HOW WE
CAN
QUICKLY
INCREASE
ITEM
OUTPUT!"

"IF EXAM
SECURITY IS OUR
PRIORITY, THEN
WE NEED TO
EXPAND OUR
ITEM POOL."

"I BELIEVE WE HAVE
AN OPPORTUNITY
TO SAVE ON
OVERALL COSTS."

"OUR ITEM
WRITERS
DESERVE NEW
TOOLS."

LEARN WITH US

This learning resource was created by Caveon.

At Caveon, we recognize that validity, reliability, and fairness can only be achieved when exams are secure. Quality exams that are secure benefit assessment programs, test takers, and society alike.

That's why, for more than 15 years, Caveon has driven the discussion and practice of exam security in the testing industry.

Today, as the recognized leader in the field, Caveon's offerings have expanded to encompass innovative solutions and technologies that provide comprehensive protection: Solutions designed to detect, deter, and even prevent test fraud. We are committed to integrity in testing. Period.



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