

Development and Implementation of a Web-Based Biodata Inventory for Food Inspectors

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"... I hope you'll never take the honor of public service for granted. Some of us will serve in Government for a season; others will spend an entire career here. But all of us should dedicate ourselves to great goals: We are here not to mark time, but to make progress, to achieve results, and to leave a record of excellence."

President George W. Bush







Office of Personnel Management's (OPM's) Assessment and Training Assistance Services (ATAS)

- We deliver high quality employment and organizational assessment services to Federal and local governments
- We provide cutting-edge human resources management services by conducting basic and applied research with a specific focus on individual, organizational, and outcome assessment

Overview



Food Inspectors

- Employed by the Department of Agriculture's Food Safety and Inspection Service (FSIS)
- Work in privately owned processing plants
- Located mainly in rural areas
- Inspect meat, poultry and egg products
- Inspect live and slaughtered animals for disease and defects
- Ensure safety of food products for consumption
- Reduce incidences of foodborne illnesses

Overview



Purpose behind the project

Develop an automated application process

Concerns of FSIS

- Cost to administer paper and pencil tests
- Rurally located applicants and jobs at a distance from testing sites
- Desire to assess non-cognitive competencies, for example conscientiousness, interpersonal skills, self-management, flexibility
- Need for an automated process in an unproctored setting
- Solution by OPM
 - Recommended development of an online biographical data (biodata) inventory

Overview



The Federal Government is moving to online assessment

- Many Federal agencies are working to completely automate the hiring process, e.g., DHS, HR Lines of Business
- There is extensive interest in online assessment

Many vendors provide online hiring questionnaires and assessments





Merit Systems Protection Board Report (2004)

"The quality of selections depend on **content** – the criteria and methods used to distinguish among applicants."

- Some assessment types ruled out for FSIS due to:
 - Security issues for tests
 - Cognitive ability
 - Job knowledge
 - Suitability for an automated system
 - Structured interview
 - Assessment center
 - Work sample





Biodata identified as a good candidate

- Benefits of using a biodata inventory
 - Past success of biodata measures (Schmidt & Hunter, 1998)
 - No "perception of" right or wrong answer
 - Lower adverse impact than cognitive measures
- Practical reasons for using biodata
 - Minimal burden on applicant
 - Automated scoring of responses
 - Online administration of test possible
 - No need for proctoring





Developed based on job analysis

Collected experiences contributing to successful performance

- Based on "Life History"
- Used a panel of Subject Matter Experts
- Can be done online

Developed items

- Some items selected from existing pools
- Some items developed/written for the specific job

Step 3: Validation and Scoring



Concurrent validity study performed

- OPM administered preliminary biodata inventory to a sample of incumbents
- Supervisors completed a research-based performance evaluation

Data collected

- Data was collected via paper and pencil
- OPM and FSIS wanted to collect data online, but no computer access for incumbents at the plants

Data analyzed

- Vertical 10% scoring key created
- Final inventory cross-validated
- Cut score and adverse impact analyses conducted





Final biodata inventory hosted on USA Staffing

- Uses Federal web-based application system
 - Available to any applicant with Internet access
 - Automated scoring and ranking of applicants
- Linked to vacancy announcements on USAJobs and FSIS websites

Items loaded onto website, scoring key implemented

System tested

- Ensured that items and response options appeared correctly
- Ensured that scoring key was correctly implemented





Applying for a Food Inspector position under the old system

- 1. View vacancy announcement on USAJobs
- 2. Apply for position by mailing a hard copy of a resume and schedule appointment for testing
- 3. Travel to testing site and take test
- 4. Place on register
- 5. Make hiring decisions
- 6. Conduct background investigation, etc.



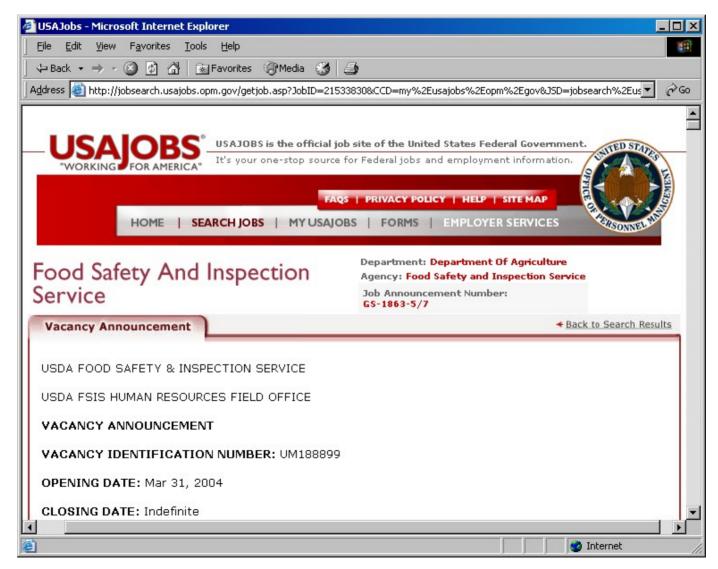


Applying for a Food Inspector position under the new system

- 1. View vacancy announcement on USAJobs
- 2. Apply for position and submit resume (electronically or by mail)
- 3. Click on link to biodata assessment
- 4. Place on register
- 5. Make hiring decisions
- 6. Conduct background investigation, etc.

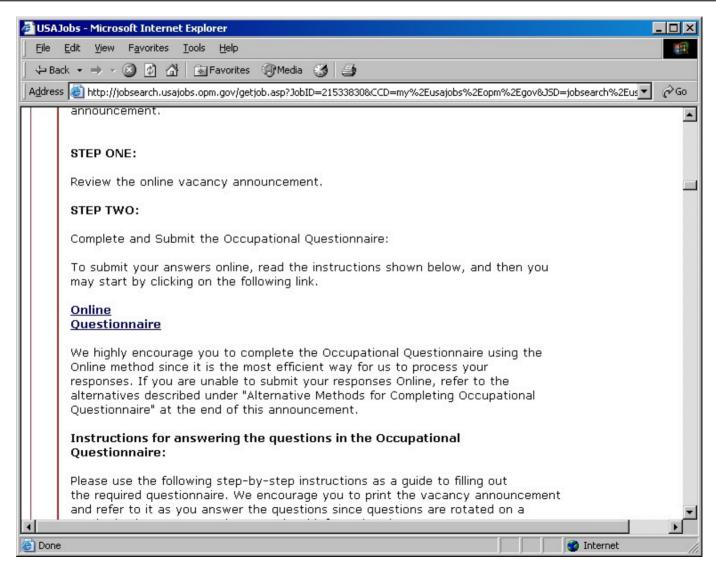






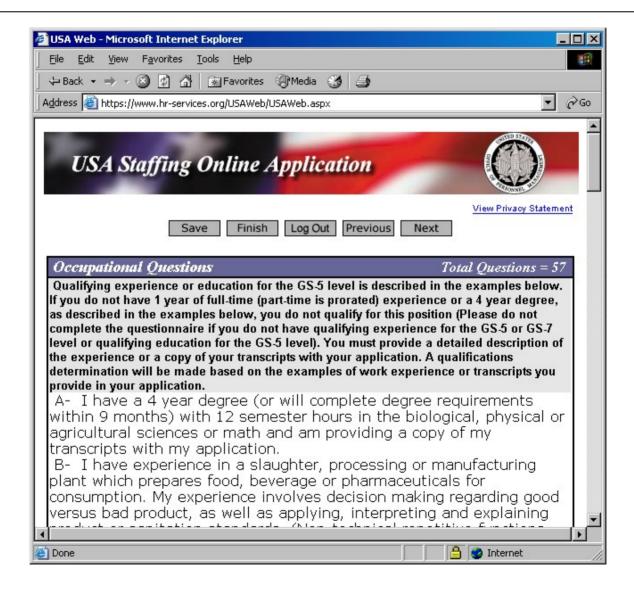






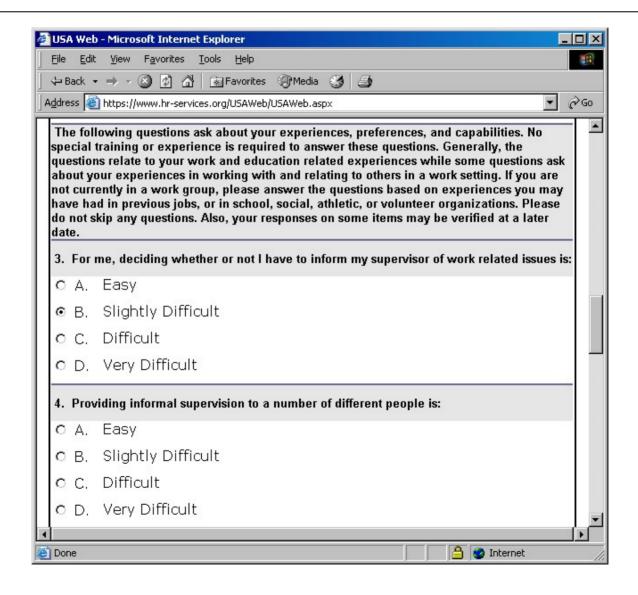






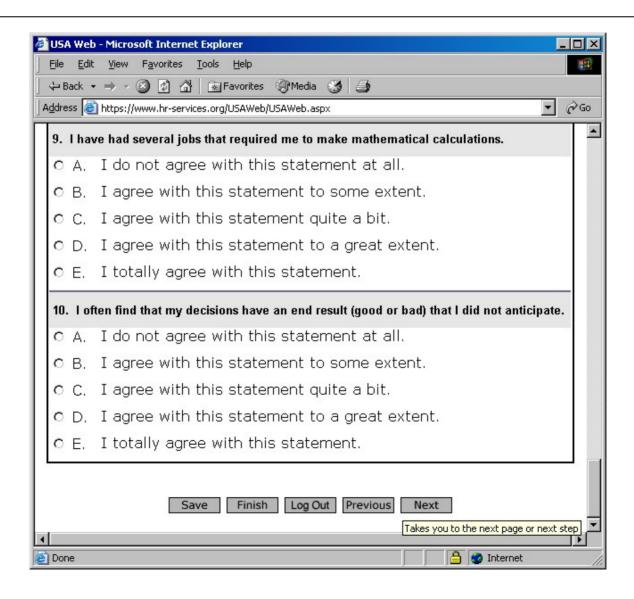






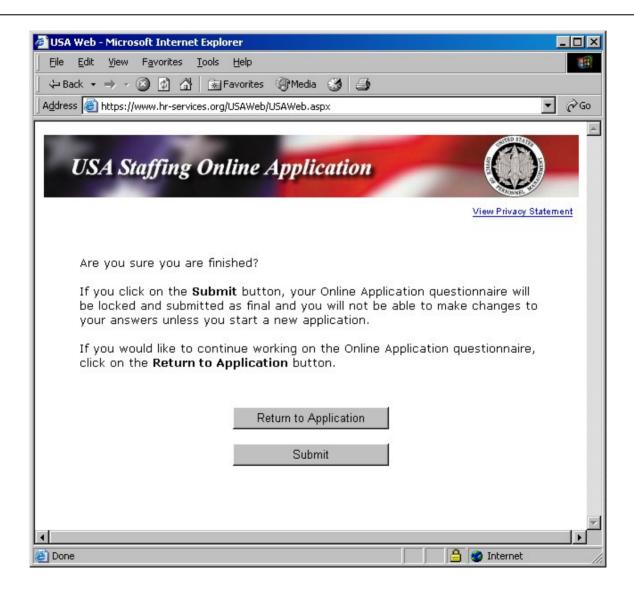






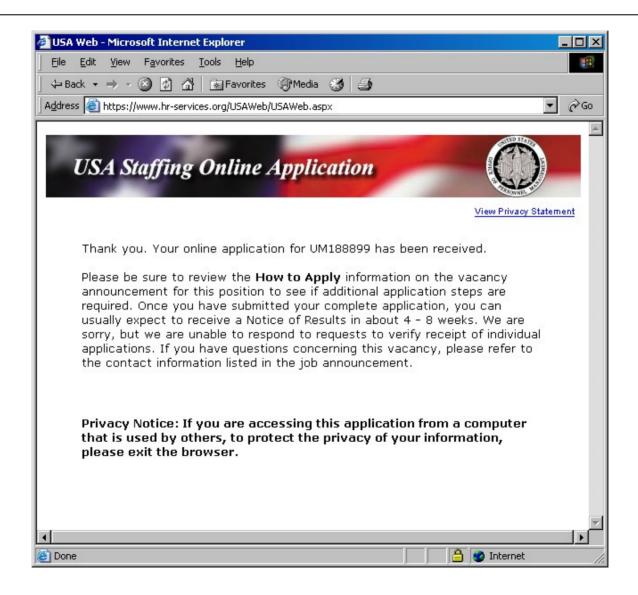
















Contributed to a 64% increase in the number of applicants and at a lower cost than a proctored test

Tested over 4,000 applicants in initial six month period Increased quality of applicants

- More applicants meeting minimum qualifications
- More applicants with relevant experience





Conducted an informal survey of HR staff

- Higher ratings (on 5-point scale) for applicants from new system vs. old system
 - Quality (new system: 4.1; old system: 3.1)
 - Availability (new system: 4.1; old system: 3.2)
 - Timeliness (new system : 4.4; old system: 3.9)





FSIS can reach a larger applicant pool

FSIS can alter recruitment strategy

- Previously FSIS focused on general recruiting
- Online system has increased available applicant pool
- FSIS can now use targeted recruitment
 - Focus on locations with the greatest hiring needs

Applicant responses can be stored electronically, as opposed to physical storage of paper tests





Decreased applicant burden

- Do not have to schedule a testing appointment
- Do not have to travel any farther than their home computer or library

Shortened application time

- Applicants can now be available for consideration within one to ten business days after submitting application
- Consistent with OPM's vision of a 45-day hiring model

Showed less adverse impact

Lessons learned



Know the limits of your testing system

- Maximum number of items
- Maximum number of response options

Know upfront, anticipate or keep in mind scoring system

- Can response option weights include decimals?
- Can response options receive positive or negative weights?
- Can scale scores be standardized?
- If not, may need to algebraically manipulate response option weights
 - Multiply by 100 to remove decimals or use rounding
 - Add a constant to make all weights positive
 - Adjust response option weights to yield standardized scores

Lessons learned



Keep hand scoring in mind

- Applicants may challenge automated scoring and ask for hand scoring
 - Is hand scoring easy to do?
 - Is hand scoring easy to follow?
 - Can hand scoring be explained to applicants, courts and your client?

Identify and handle repeat testers

Automated blocking within certain time periods

Lessons learned



Identify and discard incomplete and bogus applications

- Some applicants may begin responding and then stop for various reasons
- Some non-applicants may respond to items out of curiosity or to test the system, etc.

Provide clear, step-by-step application instructions

Perceived concerns about online testing



Concern: Applicants will not have computer access

- Department of Commerce survey showed demographic differences in computer access
 - Sharf (2000, 2005) notes possibility of "e-loaded" adverse impact

What we found: Instructions on FSIS website identify sources of free Internet access (for example, libraries)

 Ninety-five percent of 2000 in old system reapplied using the new system

Perceived concerns about online testing



Concern: Applicants will call in asking for paper applications

What we found: Only a few (less than one percent) of the 4,000 initial applicants asked for a paper application

 The overall percentage of individuals requesting a paper application is decreasing





Compare distributions of scores and criterion-related validity from:

- Applicants
 - Web-based
- Incumbents
 - Paper-and-pencil
 - Concurrent validity study data





Implement online assessments for other agencies

- Online biodata projects are underway for law enforcement and professional occupations
- Online situational judgment projects are underway for clerical and enforcement positions

Implement other types of online assessments

- Cognitive ability (with verification)
- Situational judgment



