**Overall Assessment Data**

* Overall Pre-Program Assessment scores were calculated across all items, dividing the sum of correct responses by the 51 total items to which all participants responded (though the specific items differ based on whether a main scenario question was answered correctly or not).
* One of the 30 participants did not complete the assessment before results were calculated, and so is not included in the analysis.
* Regarding the overall assessment results, the scores demonstrate adequate range, with the majority of respondents scoring between a 58%-73% correct overall.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Descriptive Statistics – Overall Assessment Scores** | | | | | |
|  | **N** | **Minimum** | **Maximum** | **Mean** | **Std. Deviation** |
| Total Raw Score\* | 29 | 19.00 | 45.00 | 32.1724 | 5.09950 |
| Total Percent Score | 29 | 37.25 | 88.24 | 63.0832 | 9.99902 |

\*Maximum possible raw score = 51

**Assessment Data by Release – Scenario Alignment**

* Two Scenarios were aligned to each release, and each scenario includes at least two main questions. The follow-up question depends on whether the main question is answered correctly or incorrectly.
* Though the Scenarios were written to address specific releases, sometimes the objectives aligned across Release content. The table and chart below represent the Release delineation as identified by each Scenario. On the next page, the Release delineation as defined by the objectives aligned is presented.
* Based on the Scenario alignment, the participants performed best on the Release 3 Scenarios, followed closely by the Release 4 Scenario performance. Release 5 displayed the poorest performance, overall, but also included the highest quantity of individual questions.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Descriptive Statistics – Release Scores by Scenario (from worst to best)** | | | | | | | | | |
|  | **N** | **Available Points** | **Raw Range** | **Minimum (%)** | **Maximum (%)** | **Mean**  **(raw)** | **Mean**  **(%)** | **Std. Deviation**  **(%)** |
| Release 5 | 29 | 13.00 | 2.00-12.00 | 15.38 | 92.31 | 6.7241 | 51.7241 | 16.56164 |
| Release 2 | 29 | 9.00 | 3.00-8.00 | 33.33 | 88.89 | 5.7586 | 63.9847 | 16.70767 |
| Release 1 | 29 | 9.00 | 2.00-9.00 | 22.22 | 100.00 | 5.7931 | 64.3678 | 15.53834 |
| Release 4 | 29 | 9.00 | 3.00-8.00 | 33.33 | 88.89 | 6.2414 | 69.3487 | 15.04115 |
| Release 3 | 29 | 11.00 | 3.00-10.00 | 27.27 | 90.91 | 7.6552 | 69.5925 | 14.22452 |

*Please note: All Releases have a large sd (14.2-16.7) indicating a fairly wide spread of individual scores around the means reported in the chart.*

**Assessment Data by Release – Objective Alignment**

* Questions were grouped based on the objective aligned (Releases 1-4). Some questions were aligned to multiple objectives in the same release, but the item is only counted once in this scoring scheme.
* Scores were calculated as follows: participant correct responses were summed across relevant items and then divided by the total possible points for that participant across those items (not all participants received the same number of items associated with each grouping).
* Release 4 (Objectives 4.1-4.8) had the lowest opportunity for demonstration, either 11 or 12 points, the lowest mean (57%), and also the highest standard deviation, indicating a wide range of scores. The majority of Release 4 Objectives aligned to the Release 5 Scenarios (in alignment with the results on the previous page).
* Release 3 (Objectives 3.01-3.10) had the highest opportunity for demonstration, between 27-29 points, the highest mean (68%), and the lowest standard deviation, though there was still variability in scores (40-89%).
* Across releases, there is wide variability in scores with a few doing exceptionally well and exceptionally poorly.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Descriptive Statistics – Release Scores by Objective (worst to best)** | | | | | | | | |
|  | **N** | **Available Points** | **Raw Range** | **Minimum**  **(%)** | **Maximum**  **(%)** | **Mean**  **(raw)** | **Mean**  **(%)** | **Std. Deviation**  **(%)** |
| Release 4 | 29 | 11.00-12.00 | 3.00-10.00 | 27.27 | 90.91 | 6.3103 | 57.1317 | 15.24258 |
| Release 2 | 29 | 16.00-17.00 | 5.00-15.00 | 29.41 | 88.24 | 10.1724 | 60.3322 | 13.21242 |
| Release 1 | 29 | 16.00-19.00 | 7.00-17.00 | 38.89 | 94.44 | 11.4138 | 64.4426 | 12.43303 |
| Release 3 | 29 | 27.00-29.00 | 11.00-25.00 | 40.74 | 89.29 | 19.0000 | 68.0559 | 9.96568 |

**Assessment Data by Objective**

* Below the Objectives aligned to Pre-Program Assessment items are delineated with the associated release and description information. On the following page, the descriptive information (mean, standard deviations) across objectives is reported.
* Interestingly, when the Release 3 Objective items are evaluated as a whole, participants did better on those items overall (see previous page), but when looking at each individual objective, performance tends to be in the middle – neither the best nor the worst.
* Participants performed best on the majority of Release 1 objectives (specifically, 1.2, 1.3, 1.4, and 1.8 represented the best performance across all participants). Note: Only Objective 1.2 was linked to more than one question, so the remaining scores were each dependent on a single response.
  + The main items associated are Release 1, Scenario 1 (question 2), which requires a general ability to identify the difference between digital services and others.
* Participants performed worst on the majority of the Release 4 objectives (specifically 4.5, 4.6, 4.7, and 4.8 were in the bottom 10 for performance across participants). Note: Objective 4.2 is not considered, as only one participant was evaluated on this objective.
  + The majority of these linkages occur in the Release 5, Scenario 1 (questions 3 and 4) and Scenario 2 (question 2) items. The Scenario 1 items generally require technical knowledge and the Scenario 2 items require understanding of solicitation, agreement and performance options.

| Release | Objective | Objective Description |
| --- | --- | --- |
| 1 | 1.1 | Define digital services and the problems they can be used to solve. |
| 1.2 | Identify key digital services roles/professionals in the digital services ecosystem and their challenges. |
| 1.3 | Identify modern design, development, and delivery methods used by digital services professionals. |
| 1.4 | Identify "who's who" in the digital services arena, including public and private sector organizations and individuals. |
| 1.5 | Illustrate your new role as a digital service acquisition professional and that of your team members. |
| 1.6 | Identify the available sources of supply within the digital services market segments, such as Open Source Software, Big Data, Xass, Cloud, and more. |
| 1.7 | Identify the high-level principles of agile development that make it effective. |
| 1.8 | Describe what sets agile methods apart from waterfall development and delivery methods. |
| 2 | 2.1 | Analyze stakeholders in your sphere of influence that will impact digital services acquisition. |
| 2.2 | Assess your agency’s readiness for change and innovation. |
| 2.3 | Analyze a digital service need to determine the most appropriate market for the service. |
| 2.4 | Ask effective exploratory questions to understand the agency's need and make recommendations on a course of action for a digital acquisition procurement. |
| 2.5 | Identify why communicating openly and responsibly with potential vendors is critical to digital services acquisition success and how to do it. |
| 2.6 | Differentiate between buying compliance and buying outcomes. |
| 2.7 | Conduct effective market research for digital services. |
| 3 | 3.01 | Identify how to develop an acquisition strategy for digital services. |
| 3.2 | Select an acquisition strategy that supports your customer's needs for a digital acquisition. |
| 3.3 | Identify the effective characteristics of a change agent and strategies to apply at different phases of the change lifecycle as you return to your agency. |
| 3.4 | Develop a communication plan and schedule to collaborate with the customer and key stakeholders on development of the acquisition strategy and support of all activities within. |
| 3.5 | Develop criteria on cost and pricing, terms and conditions, security concerns (cyber), and data rights. |
| 3.6 | Devise evaluation methods and criteria to evaluate vendor maturity and ability to deliver a product that solves a given need and given the definition of success. |
| 3.7 | Identify the role that security plays in digital service contracts. |
| 3.8 | Develop your acquisition package for procuring digital services, including proposal and source selection methods. |
| 3.9 | Define evaluation criteria, given evaluation strategy discussed in your acquisition strategy. |
| 3.10 | Share examples of acquisition innovation. |
| 4 | 4.1 | Assess the readiness of the technical evaluation team. |
| 4.2 | Implement evaluation methods and criteria to evaluate vendor maturity and ability to deliver a product that solves a given need. |
| 4.3 | Describe how to run an effective evaluation to get the best solution. |
| 4.4 | Determine the next steps that follow contract award. (Kickoff, Ramp-up, Baselining). |
| 4.5 | Identify software engineering practices for high-quality digital services like version control, continuous integration, and continuous delivery. |
| 4.6 | Explain which metrics can be used, how they are derived, and why they are used. |
| 4.7 | Determine how to execute an exit strategy and course correct. |
| 4.8 | Identify when failure actually occurs. |

| **Descriptive Statistics – Group Percentage Score by Objective (worst to best)** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Objective** | **N** | **Opportunity Range\*** | **Minimum (%)** | **Maximum (%)** | **Mean (raw)** | **Mean (%)** | **Std. Deviation (%)** |
| Objective 4.5 | 29 | 3.00-3.00 | .00 | 100.00 | 1.034483 | 34.4828 | 25.94677 |
| Objective 2.5 | 29 | 2.00-5.00 | .00 | 100.00 | 1.241379 | 37.5862 | 26.68372 |
| Objective 3.9 | 29 | 1.00-4.00 | .00 | 100.00 | 1.275862 | 44.5402 | 22.30247 |
| Objective 1.1 | 29 | 2.00-2.00 | .00 | 100.00 | 0.896552 | 44.8276 | 24.43953 |
| Objective 2.4 | 29 | 3.00-5.00 | .00 | 100.00 | 2.172414 | 46.4943 | 21.79151 |
| Objective 2.6 | 29 | 1.00-1.00 | .00 | 100.00 | 0.482759 | 48.2759 | 50.85476 |
| Objective 3.7 | 29 | 1.00-1.00 | .00 | 100.00 | 0.482759 | 48.2759 | 50.85476 |
| Objective 4.7 | 29 | 5.00-5.00 | .00 | 100.00 | 2.793103 | 55.8621 | 24.71513 |
| Objective 4.6 | 29 | 3.00-3.00 | .00 | 100.00 | 1.689655 | 56.3218 | 28.31715 |
| Objective 4.8 | 29 | 3.00-3.00 | .00 | 100.00 | 1.689655 | 56.3218 | 26.87928 |
| Objective 3.5 | 29 | 5.00-7.00 | 33.33 | 83.33 | 3.551724 | 56.9130 | 14.67090 |
| Objective 3.6 | 29 | 2.00-4.00 | 33.33 | 100.00 | 1.724138 | 58.9080 | 22.70531 |
| Objective 2.2 | 29 | 5.00-8.00 | 12.50 | 100.00 | 4.37931 | 62.9187 | 19.57284 |
| Objective 3.10 | 29 | 3.00-4.00 | .00 | 100.00 | 1.965517 | 62.9310 | 30.42247 |
| Objective 3.01 | 29 | 5.00-6.00 | 20.00 | 100.00 | 3.241379 | 63.7931 | 17.90017 |
| Objective 1.6 | 29 | 4.00-5.00 | 25.00 | 100.00 | 3.137931 | 64.8276 | 21.35929 |
| Objective 1.7 | 29 | 3.00-5.00 | .00 | 100.00 | 2.586207 | 66.2644 | 26.13934 |
| Objective 3.8 | 29 | 5.00-7.00 | 28.57 | 100.00 | 4.344828 | 67.1429 | 15.96735 |
| Objective 2.1 | 27 | .00-2.00 | .00 | 100.00 | 1.068966 | 68.5185 | 39.58474 |
| Objective 2.3 | 29 | 4.00-5.00 | 20.00 | 100.00 | 2.931034 | 68.6207 | 20.39330 |
| Objective 4.3 | 29 | 1.00-1.00 | .00 | 100.00 | 0.689655 | 68.9655 | 47.08236 |
| Objective 3.2 | 29 | 4.00-6.00 | 25.00 | 100.00 | 3.551724 | 71.7816 | 20.51389 |
| Objective 1.5 | 29 | 6.00-7.00 | 33.33 | 100.00 | 4.793103 | 71.8391 | 16.69178 |
| Objective 3.3 | 29 | 7.00-9.00 | 33.33 | 100.00 | 6.275862 | 73.3990 | 15.75155 |
| Objective 4.4 | 29 | 2.00-2.00 | .00 | 100.00 | 1.482759 | 74.1379 | 34.38410 |
| Objective 2.7 | 29 | 2.00-4.00 | .00 | 100.00 | 1.689655 | 74.4253 | 32.11548 |
| Objective 4.1 | 29 | 3.00-3.00 | 33.33 | 100.00 | 2.448276 | 81.6092 | 24.53732 |
| Objective 3.4 | 29 | 1.00-4.00 | 25.00 | 100.00 | 1.586207 | 84.7701 | 25.59500 |
| Objective 1.8 | 29 | 1.00-1.00 | .00 | 100.00 | 0.862069 | 86.2069 | 35.09312 |
| Objective 1.2 | 29 | 2.00-2.00 | 50.00 | 100.00 | 1.758621 | 87.9310 | 21.77471 |
| Objective 1.4 | 29 | 1.00-1.00 | .00 | 100.00 | 0.965517 | 96.5517 | 18.56953 |
| Objective 1.3 | 29 | 1.00-1.00 | 100.00 | 100.00 | 1 | 100.0000 | .00000 |
| Objective 4.2 | 1 | .00-1.00 | 100.00 | 100.00 | 0.034483 | 100.0000 | . |

*\*Opportunity range represents the range of maximum possible points for each objective across participants*

*Note: Highlighted objectives were not assessed for all participants because questions assessing these objectives were dependent on getting a previous question correct or incorrect.*

**Charts of Mean Percentage Scores for each Objective**

*\*Note: Objective 4.2 was only evaluated for one participant, who got the question correct.*