# The Development and Application of the Meta-evaluation Standards for Thai Higher Education Institutions

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The purpose of this research were: developed the meta-evaluation standards for an evaluation of internal quality assessment in Thai higher education institutions, validated the meta-evaluation standards, and applied the meta-evaluation standards in evaluating report results of internal quality assessment for Thai higher education institutions. The data was collected from 50 internal quality assessment reports, self-assessment reports, and were analyzed by 28 meta-evaluators. The three kinds of instruments were used consist of meta-evaluation checklist, meta-evaluation manual, and meta-evaluator training curriculum. The research finding were: 1) the new meta-evaluation standards 5 sub standards and 38 indicators, 2) the construct validity of meta-evaluation standards used confirmatory factor analysis that goodness of fit matched empirical data and the generalizability coefficients were high value when used from more than 2 meta-evaluators and from 5 reports, and 3) the quality of internal quality assessment reports. Moreover, internal quality assessments in higher education institutions were good level based on meta-evaluation standard. Results were beneficial for higher education institutions in providing a guideline that would improve the quality of higher education institutions and ensure that the findings from meta-evaluators had efficiency and effectiveness.

**Keywords:**
*Meta-evaluation standards, meta-evaluator, internal quality assessment, higher education*

## Introduction

Quality assurance had been declared as a Must for Thai educational institutions at all levels since 1999. Since then, the internal quality assessment had been conducted in every educational institution, whereas external evaluation had been carried on by The Office for National Education Standards and Quality Assessment (Public Organization) or ONESQA, at least once for each institution for a period of five years.

At the present, the concept of meta-evaluation has been recognized as a means to increase the quality and effectiveness of internal and external quality assessment. Moreover, there were no standards and tools for carrying on the meta-evaluation. The standards that were used for meta-evaluation was only meta-evaluation checklist of an evaluation project by Stufflebeam (1974). The researchers therefore intended to develop meta-evaluation standard for an evaluation of internal quality assessment in Thai higher education institutions in five standards such as validity, utility, ethicality, credibility, and cost-effectiveness.

Those who proposed the idea to develop and validate those 7 standards were: 1) Program Evaluation Standards of the Joint Committee on Standard for Educational Evaluation, 2) The African Evaluation guidelines, 3) SEVAL's Evaluation Standards, 4) The DeGEval's Standards, 5) Guiding Principles for Evaluators, (2003) 6) Essential Skills Series in Evaluation and 7) Essential Competencies for Program Evaluators. Meta-evaluation standards consisted of five dimensions that cover four standards by Stufflebeam (1974) showed in figure 1

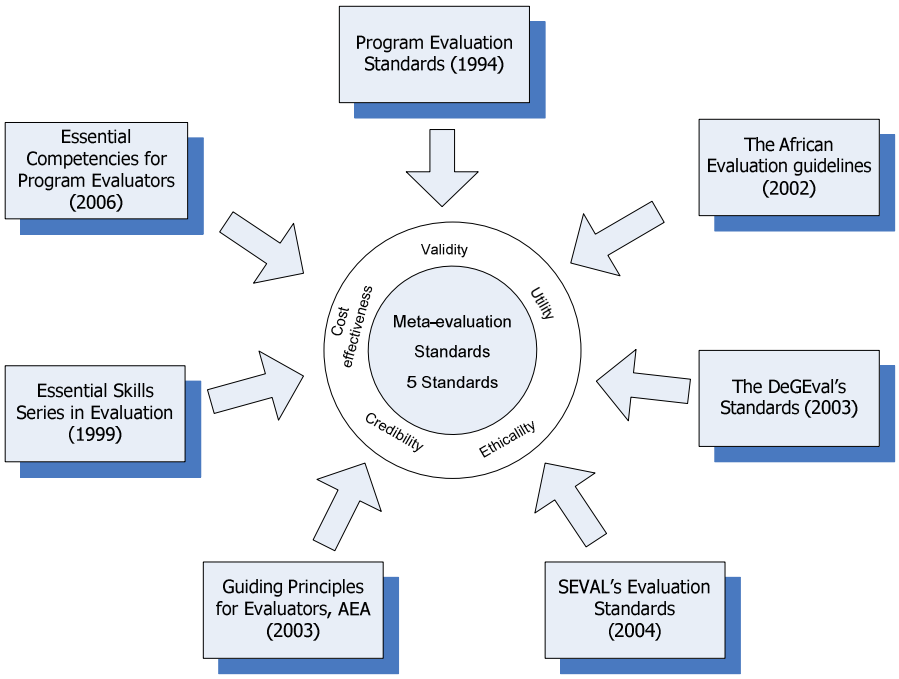


**Figure 1** Guideline for developing the meta-evaluation standards

The new meta-evaluation standards consisted of 5 standards: 1) validity 2) utility 3) ethicality 4) credibility and 5) cost-effectiveness showed in figure 2

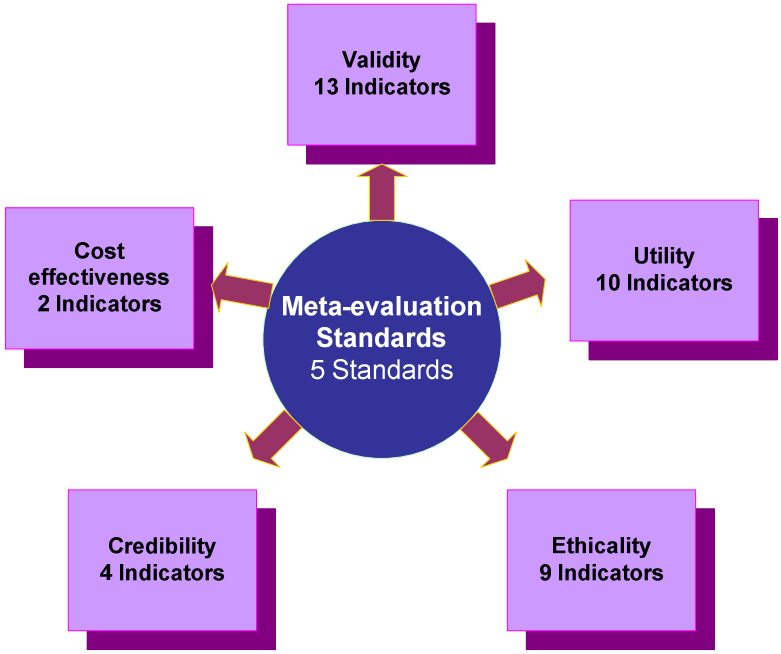


**Figure 2** Guideline of the new meta-evaluation standards

The ten steps of this research method were as follows: 1) reviewing literature, 2) defining and preparing the meta-evaluation standards and criteria, 3) validating meta-evaluation standards by experts judgment, 4) improving and correcting meta-evaluation standards, 5) developing instruments, 6) validating the instruments to be used for meta-evaluation, 7) developing in training curriculum for the meta-evaluators, 8) selecting internal quality assessment for training, 9) implementing the evaluation quality reports based on meta-evaluation standards, and 10) concluding the results.

The meta-evaluation checklist has 5 standards and 38 indicators. The meta-evaluation manual explains standards and criteria for meta-evaluation standards. The meta-evaluator training curriculum is useful for meta-evaluators.

The data was from various sources such as: documents, academics articles, texts, empirical data from 50 internal quality assessment reports that were validated, and meta-evaluation checklist. We trained 28 new meta-evaluators, and now the meta-evaluators can evaluate internal quality assessment reports. The data analyses were used basic statistics of quantitative data, generalizability coefficient, confirmatory factor analysis and qualitative data from the results of meta-evaluation.

The samples were used in this research from two sources such as: 1) twenty-eight trained meta-evaluators 2) fifty internal quality assessment reports and self-assessment reports from various institutions such as: Public Universities; Private Universities; Rajabhat Universities; and Rajamangala Universities of Technology.

The results were: 1) the new meta-evaluation standards 5 standards and 38 indicators, 2) the construct validity of meta-evaluation standards used confirmatory factor analysis that goodness of fit matched empirical data

and the generalizability coefficients were high value when used from more 2 meta-evaluators and from 5 reports, and 3) the quality of internal quality assessment reports and internal quality assessments in higher education institutions based on meta-evaluation standard. Results as follow:

1. The new meta-evaluation standards 5 standards 38 indicators as follows:

**Validity** means the evaluation should be managed document, analyzed the context, defined evaluation goal, and designed evaluation, so that evaluation can be verified accurately and quality of collection, analysis, interpretation and conclusion, that can be divided to 13 indicators., as follows:

**Va1.1** Context Identification

**Va1.2** Prominent Identification

**Va1.3** Described Purpose

**Va1.4** Evaluation Design

**Va1.5** Analysis of Document Sources

**Va1.6** Reliable Information Sources

**Va1.7** Verifiable of Information

**Va1.8** Quality of Information

**Va1.9** Systematic Data Analysis

**Va1.10** Justified Interpretations and Conclusions

**Va1.11** Disclose Positive and Negative Evaluation Report

**Va1.12** Fair Evaluation Results

**Va1.13** Verifiable Evaluation results

**Utility** means the evaluation that will be useful for stakeholders and the others the evaluation can be judged, reported clearly, disseminated in time, and guided for improving plan, with 10 indicators., as follows:

**Ut2.1** Stakeholder Identification

**Ut2.2** Period and Timeline Identification

**Ut2.3** Collecting Data Technique

**Ut2.4** Actual Evaluation Judgment

**Ut2.5** Useful Evaluation Results

**Ut2.6** Format of Evaluation Report

**Ut2.7** Clarified Evaluation Report

**Ut2.8** Comprehensible Evaluation Report

**Ut2.9** Report in Time

**Ut2.10** Dissemination of Evaluation Report

**Ethicality** means the evaluation should be set suitable assessment procedures for the reality situations that can be considered many groups of human. Evaluation can be continuous improvement by considering protection of human rights and utilization of public that evaluate completely and fairly for participants, in addition disclosure of evaluation results, with 9 indicators as follows:

**Et3.1** Assessment Communication

**Et3.2** Acceptation of Evaluation Results

**Et3.3** Continuous Improvement for Evaluation Quality

**Et3.4** Formal Agreements

**Et3.5** Disclosure and Limitation of Evaluation

**Et3.6** Protection of Human Rights

**Et3.7** Divergent Human Interaction

**Et3.8** Complete and Fair Assessment

**Et3.9** Assessment according to the Standards

**Credibility** means the evaluation should be competency of assessors and no conflict of interest that can be reliable finding and information, with 4 indicators, as follows:

**Cr4.1** Evaluator Competence

**Cr4.2** Communication skills of Evaluators

**Cr4.3** Evaluation Management

**Cr4.4** Conflict of Interest

**Cost-effectiveness** means the evaluation should be considered the worth needs resources for assessment and cost accountability, which have 2 indicators., as follows:

**Ce5.1** Resources Management of Evaluation

**Ce5.2** Budget Accountability

2. The quality of meta-evaluation standards.

The Construct Validity of Meta-Evaluation Standards used confirmatory factor analysis that had goodness of fit with empirical data ($\chi^2$= 0.84 df= 3, p=0.84067). This research found that Utility standard was highest factor weight (0.90), next Validity and Ethicality standard were factor weight (0.86, and 0.82) respectively, but cost-effectiveness standard was lowest factor weight (0.17). See figure 3 and table 1

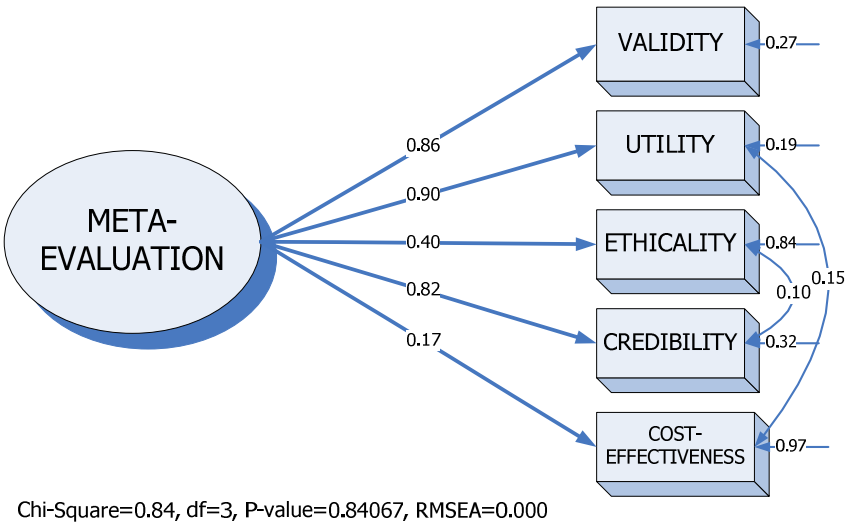


**Figure 3** Meta-evaluation standard model

**Table 1** results of confirmatory factor analysis meta-evaluation model's

| Standard | factor weight | SE | t | $R^2$ | SC | FS |
|---|---|---|---|---|---|---|
| Validity | 0.86 | 0.12 | 7.16 | 0.73 | 0.86 | 0.31 |
| Utility | 0.90 | 0.12 | 7.68 | 0.81 | 0.90 | 0.50 |
| Ethicality | 0.40 | 0.15 | 2.75 | 0.16 | 0.40 | 0.02 |
| Credibility | 0.82 | 0.12 | 6.80 | 0.68 | 0.82 | 0.24 |
| Cost-effectiveness | 0.17 | 0.16 | 1.07 | 0.03 | 0.17 | -0.06 |
| $\chi^2$= 0.84 df= 3, p=0.84067, GFI=0.99 , AGFI=0.97 , RMSEA=0.000 | | | | | | |

Note: SC= completely standardized solution, FS =factor scores regressions

The reliability of Meta-Evaluation Standards used generalizability coefficient found that when using 1, 2, and 3 meta-evaluators evaluated per report, and g-coefficient from 3 reports were 0.542, 0.689, and 0.758 respectively. They also evaluated per report from 5, 7, and 9 reports, and g-coefficient from 5 reports were 0.663, 0.787, and 0.839 respectively, g-coefficient from 7 reports were 0.734, 0.838, and 0.880 respectively, and g-coefficient from 9 reports were 0.780, 0.869, and 0.904 respectively. Meta-evaluators and internal quality assessment reports were increased therefore error variance was reduced and g-coefficient was increased. See figure 4 and table 2

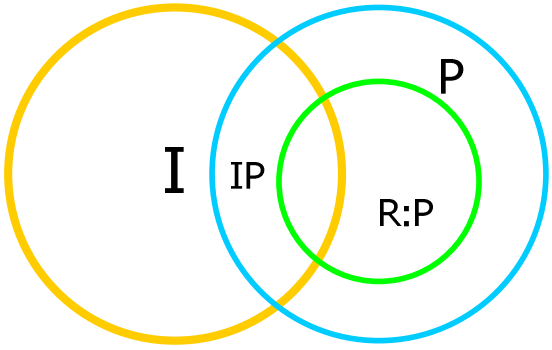


**Figure 4** Generalizability coefficient by I X (R:P) Design

**Table 2** Estimated variance component and generalizability coefficient from evaluating internal quality assessment reports

| EFFECT<br>I x (R:P) Design | $n'_p$<br>$n'_r$ | ESTIMATED VARIANCE COMPONENT IN D-STUDY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3 | | | 5 | | | 7 | | | 9 | | |
| | | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| $\hat{\sigma}^2_{(i)}$ =0.323 | $\hat{\sigma}^2_{(I)}$ | 0.323 | 0.323 | 0.323 | 0.323 | 0.323 | 0.323 | 0.323 | 0.323 | 0.323 | 0.323 | 0.323 | 0.323 |
| $\hat{\sigma}^2_{(p)}$ =0.039 | $\hat{\sigma}^2_{(P)}$ | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.006 | 0.006 | 0.006 | 0.004 | 0.004 | 0.004 |
| $\hat{\sigma}^2_{(r:p)}$ =0.018 | $\hat{\sigma}^2_{(R:P)}$ | 0.006 | 0.003 | 0.002 | 0.004 | 0.002 | 0.001 | 0.003 | 0.001 | 0.001 | 0.002 | 0.001 | 0.001 |
| $\hat{\sigma}^2_{(ip)}$ =0.014 | $\hat{\sigma}^2_{(IP)}$ | 0.005 | 0.005 | 0.005 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| $\hat{\sigma}^2_{(ir:p)}$ =0.748 | $\hat{\sigma}^2_{(IR:P)}$ | 0.249 | 0.125 | 0.083 | 0.150 | 0.075 | 0.050 | 0.107 | 0.053 | 0.036 | 0.083 | 0.042 | 0.028 |
| ERROR VARIANCE | $\hat{\sigma}^2_{\delta}$ | 0.254 | 0.130 | 0.088 | 0.153 | 0.078 | 0.053 | 0.109 | 0.056 | 0.038 | 0.085 | 0.043 | 0.029 |
| | $\hat{\sigma}^2_{\Delta}$ | 0.273 | 0.145 | 0.103 | 0.164 | 0.087 | 0.062 | 0.117 | 0.062 | 0.044 | 0.091 | 0.048 | 0.034 |
| G - COEFFICIENT | $\hat{\rho}^2_{\delta}$ | 0.559 | 0.714 | 0.786 | 0.679 | 0.806 | 0.859 | 0.748 | 0.853 | 0.895 | 0.792 | 0.882 | 0.917 |
| | $\hat{\rho}^2_{\Delta}$ | 0.542 | 0.689 | 0.758 | 0.663 | 0.787 | 0.839 | 0.734 | 0.838 | 0.880 | 0.780 | 0.869 | 0.904 |

The results of meta-evaluation in higher education institutions found that good level (M= 2.78, SD=.390), which Credibility was high mean (M= 3.21, SD=.502), next Ethicality (M= 3.11, SD=.558), Utility (M= 3.08, SD=.527), and Validity were same good level (M= 2.73, SD=.573), while Cost-effectiveness was fair level (M= 1.79, SD=.526). See table 3

**Table 3** Results of meta-evaluation in higher education institutions

| Meta-evaluation standard | N | Min | Max | M | SD | result |
|---|---|---|---|---|---|---|
| Validity | 50 | 1.40 | 3.80 | 2.73 | .57287 | good |
| Utility | 50 | 1.80 | 3.80 | 3.08 | .52705 | good |
| Ethicality | 50 | 1.50 | 3.79 | 3.11 | .55838 | good |
| Credibility | 50 | 2.25 | 4.00 | 3.21 | .50176 | good |
| Cost-effectiveness | 50 | 1.00 | 3.00 | 1.79 | .52576 | fair |
| **Total** | **50** | **1.96** | **3.65** | **2.78** | **.38963** | **good** |

The quality of internal quality assessment reports and internal quality assessments in higher education institutions based on meta-evaluation standard.

In summary, meta-evaluation results of all institutions showed that the report were good. Results of meta-evaluation in higher education institutions in figure 5 showed Credibility was the highest mean as 3.21, next Ethicality, Utility, and Validity were 3.11, 3.08, and 2.73 respectively, whereas Cost-effectiveness was the lowest mean as 1.79. In addition, results of meta-evaluation were separated by institution. The Public universities' results were the highest mean in Credibility but the lowest mean in Ethicality and Cost-effectiveness. The Private universities results were the lowest mean in Utility and Validity. Rajabhat universities results were the lowest mean in Credibility. Rajamangala universities of Technology results were highest mean in almost every standard except Credibility.

Meta-evaluation results split by university group see figure 5, Public University was high mean at Credibility and low mean at Cost-effectiveness standard because the assessors could have higher competency but no report about cost for assessment. Rajamangala University of Technology was high mean at Utility and Ethicality standard because assessors could publicize evaluation results to all groups and commutated with concerned human. Private University was high mean at Credibility and low mean at Cost-effectiveness standard because assessors had no conflict of Interest but identify less budget plan for assessment. Rajabhat University was high mean at Ethicality standard because evaluation results were accepted from concerned human.

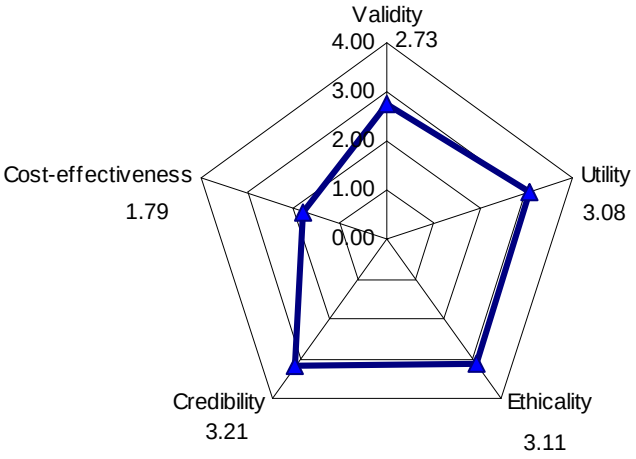


**Figure 5** Results of meta-evaluation in higher education institutions

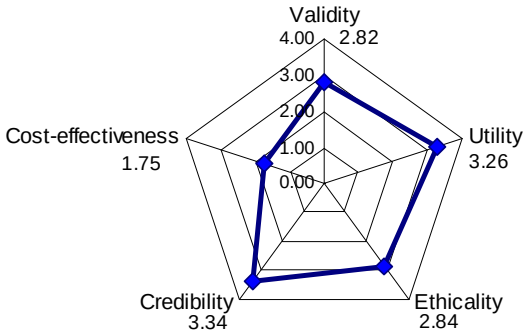


**Figure 6** Results of meta-evaluation in Public University

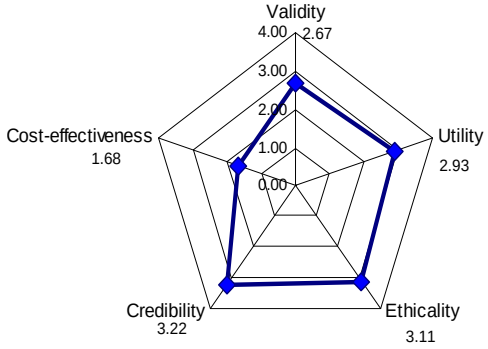


**Figure 7** Results of meta-evaluation in Private University

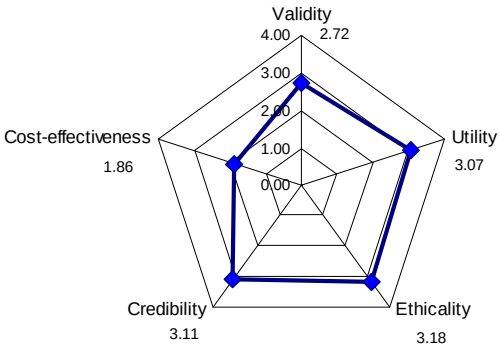


**Figure 8** Result of meta-evaluation in Rajabhat University

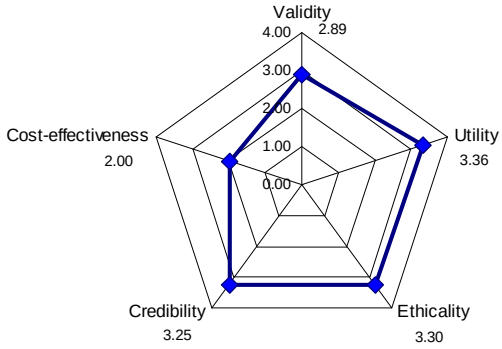


**Figure 9** Result of meta-evaluation in Rajamangala U. of Technology

Results were beneficial for higher education institutions in providing a guideline to improve the quality of evaluating and assessors in higher education institutions, to monitor the internal quality assessment process, and to guarantee that evaluates findings from meta-evaluators had efficiency and effectiveness.

In conclusion, these research findings are as follows, a new meta-evaluation standard has 5 standards and 38 indicators. Quality of Meta-evaluation standards in the construct validity used confirmatory factor analysis that goodness of fitting to match empirical data and the generalizability coefficients were high value when used from more 2 meta-evaluators and 5 reports, and results of meta-evaluation in average higher education institutions were average good level.

Recommendations, the standard format of evaluation report would consist of context and prominent institutions and the Office of the Higher Education Commission should be required set condition for correcting format evaluation report. The application meta-evaluation in 3 types as: self meta-evaluation, internal meta-evaluation, and external meta-evaluation. The training for the meta-evaluators should continue, each institution should expand the curriculum for meta-evaluator training for improving internal meta-evaluators. The useful guideline from meta-evaluation used for adjusting the internal quality assessment of the institution and improving internal assessors.

The significance of this research was a new meta-evaluation standard for Thai higher education institutions, which would be employed hopefully in the internal and external quality assessment in higher education institutions. Moreover, higher education institutions for internal quality assessment would be employed these new meta-evaluation standards. As results, the internal and external quality assessment system would be obtained for upgrading from several recommendations. This

research report would also be noted types for others graduate students as well.

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