

Optimization of Curriculum Assessment Systems and Educational Measurement Strategies in Educational Management

Yifei Song

Lee Shau Kee School of Business Administration Hong Kong Metropolitan University, HongKong

Abstract. The scientificity of curriculum evaluation directly determines the quality of curriculum teaching and the actual effectiveness of talent development. From the current implementation situation of various educational stages, there are still many problems in curriculum evaluation work, such as an overly narrow range of evaluation participants, incomplete recording of process learning information, a lack of standardized, unified measurement tools, and difficulty in applying evaluation results to improve teaching. Based on the relevant policy requirements of the new era education evaluation reform, this article combines the curriculum evaluation practices of some domestic universities and regions, identifies existing problems from an educational management perspective, and develops a multi-stakeholder curriculum assessment plan based on the basic norms of education measurement. At the same time, it proposes feasible measurement methods and quality assurance measures. These ideas and practices can provide reference for education management departments to optimize evaluation systems and standardize measurement processes, and can also align curriculum assessment with the fundamental goal of talent development, and gradually enhance the scientificity and applicability of educational management.

Keywords: Educational Administration, Curriculum Assessment, Educational Measurement, Process Assessment, Multidimensional Assessment.

1. Introduction

Curriculum assessment is an important part of educational administration activities, which can make judgments on the implementation status of courses and provide a basis for teaching adjustments and management decisions. The Overall Plan for Deepening the Reform of Educational Evaluation in the New Era, issued in 2020, proposes to change the evaluation method that overemphasizes scores and student admission, and improve outcome, process, value-added, and comprehensive evaluation [1]. This requirement provides a basic guideline for the reform of curriculum evaluation.

From the current practical situation, it can be seen that there are still significant deficiencies in the curriculum evaluation work of many schools. According to the results of the Ministry of Education's compulsory education quality monitoring, many schools still use final exams as the main way of curriculum evaluation, and do not pay enough attention to students' learning process and ability development. The evaluation method that combines process and result has not been truly popularized. In terms of participating subjects, curriculum evaluation mostly relies on student evaluation and internal management evaluation, with limited participation from industry practitioners and external peer reviewers. The pattern of pluralistic evaluation has not yet been truly formed. In addition, some schools use evaluation tools that lack standardized testing, making it difficult to ensure the stability and accuracy of measurement results, and the resulting evaluation conclusions are difficult to effectively support teaching management work. These issues have to some extent reduced the practical role of curriculum evaluation and also affected the overall level of educational management improvement.

Based on the practical needs of educational management and relevant norms of educational measurement, this article discusses the improvement path of the curriculum evaluation system. In the analysis process, this study draws on the practice of Zhengzhou University in optimizing evaluation indicators through technical tools, implementing course classification evaluation, and building a regional education quality monitoring system in Yichang to continuously improve evaluation content.

This study aims to explore the current situation and existing problems, providing reference solutions for promoting curriculum evaluation reform and enhancing the quality of educational management.

2. The Practical Problems and Management Causes of Curriculum Evaluation Systems

According to the relevant results released by the National Basic Education Quality Monitoring and University Teaching Evaluation, current curriculum evaluation still has prominent problems in implementation and management, which to some extent restricts the steady improvement of the quality of curriculum education. In the actual process of running schools, many primary and secondary schools as well as universities still use final assessment as the main basis for curriculum evaluation. For process learning information such as classroom learning status, practical operation performance, and group cooperation exploration, there is no unified observation standard and standardized recording medium, which makes it difficult to comprehensively and objectively present the real situation and actual effectiveness of curriculum teaching. The curriculum evaluation work is mostly organized and implemented by the internal academic affairs office, and professional evaluations among peers, external evaluations of industry entities, and feedback from practical units have not been effectively incorporated into the evaluation system, resulting in a relatively single evaluation perspective and difficulty in effectively connecting with the overall goals of social development and talent cultivation [2]. Looking at the standardized implementation of curriculum evaluation, many teachers and administrators do not have systematic training on educational measurement. Consequently, there are no set operation standards in important stages like creation of evaluation tools, information gathering, and information analysis. The majority of teacher-created assessment scales have no standardized validation methodologies, and personal judgement is frequently used to undermine the impartiality of evaluation results [3].

The applications of curriculum evaluation results are still quite limited at present, mostly to normal administrative functions like recognition of performance and annual review. The full system that would combine diagnostic analysis with the identification of problems and feedback-driven improvement cannot be established, therefore, teaching practice cannot be optimized and improved over time using the evidence of evaluation.

Such problems are not just simple mistakes in providing instruction but indicate real flaws of educational management, such as institutional structure, resource provision and professional development that are meant to enhance teacher evaluation literacy. It is evident that enhancing the curriculum evaluation system must not be limited to ad-hoc changes on the level of teaching operations, but requires a systematic approach to optimization under the paradigm of overall educational management. Instead, universities should start from the overall design of educational management, combine the basic requirements of educational measurement with industry practical experience for systematic improvement, and effectively solve the current obstacles in the operation of evaluation, so that curriculum evaluation can better serve the improvement of teaching quality and the achievement of talent development goals.

3. Theoretical Basis and Framework Construction for Curriculum Evaluation Optimization

The construction of a curriculum evaluation system is usually based on theories related to educational measurement, educational evaluation, and educational management. These well-established theories are consistent with current educational policies and provide necessary theoretical support for the design of evaluation plans. The educational measurement theory emphasizes that evaluation tools should have satisfactory reliability and validity, and reduce the influence of subjective factors through standardized measurement processes. This requirement is fully reflected in the quality monitoring of basic education. The concept of pluralistic evaluation opposes solely

evaluating students based on scores and advocates for a comprehensive assessment that takes into account knowledge application, practical ability, and comprehensive literacy. This approach is also in line with the relevant requirements of comprehensive evaluation in the reform of educational evaluation in the new era. Integrating assessment into the whole process of curriculum implementation, continuously tracking and adjusting various aspects of teaching in a timely manner, is also an important approach for monitoring the quality of compulsory education and evaluating teaching in universities [4].

Based on the above theory and practical experience, a curriculum evaluation system can be constructed within the framework of educational management, which includes goal alignment, process monitoring, result verification, and improvement feedback [5]. At the level of goal alignment, the main focus is on comparing the talent cultivation plan with the curriculum standards, verifying whether the curriculum goal setting is reasonable, and ensuring that the curriculum design is consistent with the direction of education. Process monitoring revolves around teaching design, classroom implementation, homework assignment, and practical activities, utilizing classroom observation, homework analysis, and verification of practical results to grasp the actual teaching situation, which meets the basic requirements of process evaluation in primary and secondary schools. The result verification process uses standardized tools that have been tested for reliability and validity, and evaluates learning outcomes based on both process performance and summative assessment results, which can meet the basic needs of normative tools in university curriculum evaluation. Improving the feedback process relies on evaluation data to promote teaching optimization, and through teaching and research activities and specialized training, the evaluation results truly serve the improvement of teaching quality. This system does not have redundant and complex evaluation indicators. While following the basic norms of educational measurement, it also conforms to the management reality of schools at all levels, and has certain reference significance for curriculum evaluation work in primary and secondary schools as well as ordinary universities.

4. The Standardized Implementation Path of Educational Measurement Strategies

Educational measurement is the technical cornerstone of the curriculum evaluation system, and its operational standardization is directly related to the credibility of the final results. According to the clear requirements of the "National Compulsory Education Quality Monitoring Plan (Revised 2021)" [6], measurement work must follow standardized processes at all stages, and every link from data collection, organization, and analysis cannot be separated from the normative framework. This is the basic prerequisite for ensuring the scientificity of evaluation. The suitability of measurement instruments directly affects the quality of teaching evaluation. Universities should prioritize established scales with standardized psychometric testing; any self-developed tool ought to be fully validated before use. Based on frontline observations, to align curriculum evaluation with fundamental goals, we should ensure that the Cronbach's alpha coefficient is not less than 0.7, and the content validity can be evaluated and verified by 3-5 subject experts to minimize the bias caused by subjective scoring [7].

In terms of the selection of measurement methods, a single-dimensional evaluation model is no longer suitable for the current needs of educational evaluation reform. A comprehensive approach that integrates quantitative and qualitative methods can more comprehensively restore the true state of teaching and development. Quantitative indicators such as academic performance and learning engagement can be accurately measured through numerical methods to obtain data; Non-quantifiable contents such as classroom performance, innovative thinking and value cultivation need to be supplemented with qualitative records and case analyses. The combination of the two can avoid the one-sidedness of evaluation results and is in line with the reform orientation of "comprehensive and integrated evaluation".

The evaluation mechanism involving multiple stakeholders is an important path to enhance measurement fairness. Under the overall planning of the teaching management department, student evaluation, peer review, and supervisory evaluation can form complementary perspectives, and reasonable allocation of weights based on the practical experience of local universities can effectively avoid the limitations of a single evaluation subject. It should be noted that the core positioning of teacher self-evaluation is teaching reflection, focusing on sorting out problems and improvement directions, and not included in the quantitative scoring system. This setting is more in line with the actual needs of teaching improvement and also conforms to the practical logic of institutional management.

The standardized management of educational data is an important guarantee for the implementation of measurement work. The Guidelines on the Classification and Grading of Education Data as well as other policies on digitalization of education implies that the proper security mechanisms must be implemented during the process of collecting, processing and using academic data and other data related to evaluation. Practical implementation of data anonymization and tiered permission settings can help decrease data leakage risks.

The use of standardized measurement practices and credible data management offers a strong empirical basis to make teaching decisions and can improve the curriculum system with time. It makes educational measurement more useful in enhancing the quality of teaching by encouraging more scientific and standardized approaches to assessment in general.

5. Practical path and reference for Curriculum Evaluation Optimization

Let us begin by conducting a systematic review of the existing course evaluation methods. Academic affairs office could collaborate with teaching and research groups to design current evaluation processes, assessment instruments used, and actual method of collecting and managing data. This review may result in a targeted diagnostic report. It should look into the extent to which the indicators of evaluation correspond to the purposes of teaching and the psychometric properties of the assessment instruments as well as evaluate whether the data-related processes satisfy the institution requirements.

Based on that, the institutions are likely to develop their supporting procedures related to course evaluation slowly. Following the two national reform plans mentioned previously, the current regulations concerning course evaluation can be improved to make the assessment practices, stakeholders positions, as well as evaluation results application clear. The course evaluation may involve both process and outcome measures through incorporation of classroom engagement, practical skills and creativity in addition to test scores [8].

We can then carry out pilot assessments in courses from a range of disciplines and grade levels, so as to verify whether the evaluation framework and measurement strategies are workable in practice. Collect opinions from frontline teachers and managers through classroom observation, teacher-student communication, data feedback, and other methods. Based on these opinions, adjust the weights and implementation steps of evaluation indicators to make the evaluation plan more in line with actual teaching needs.

After the pilot achieves the expected effects, it will be comprehensively promoted and operated for a long time, and the optimized evaluation system will be implemented in schools or regions [9]. At the same time, a regular modification mechanism will be established to ensure that the evaluation system can keep up with the pace of education and teaching reform and always maintain adaptability.

Yichang, Hubei Province has established a pluralistic evaluation system for regional education quality, which includes students' comprehensive qualities in the evaluation scope, coordinates and monitors students' academic burden and subject literacy, so that evaluation no longer only focuses on results, but also pays more attention to the optimization of the teaching process. Zhengzhou University has built a curriculum evaluation system around student growth, relying on the internal teaching management platform to standardize various evaluation processes. From the aspects of

classroom interaction, learning effectiveness, and teacher behavior, a pluralistic evaluation model has been constructed, and the use standards of evaluation tools have been unified.

These practices are in line with the actual situation of educational management, without using complex technical means. They are easy to operate and have strong replicability, making them replicable and generalizable to more regions and schools.

6. Management guarantee and implementation suggestions for Curriculum Evaluation Optimization

To effectively implement the curriculum assessment system, supporting guarantees in terms of system, faculty and resources are required, which is also in line with the reform ideas of systematically promoting and implementing step by step in the Overall Plan for Deepening the Reform of Education Evaluation in the New Era. From the perspective of institutional operation, schools can establish a dedicated curriculum evaluation working group to streamline the division of responsibilities between academic affairs coordination, research support, and teacher execution. Teaching evaluation can be part of routine teaching management. Institutions can develop their own practical guidelines based on local conditions to avoid empty or formalistic assessment. This example offers a useful reference for other colleges to implement evaluation policies more reliably. The evaluation ability of teachers directly affects the evaluation effect. Schools can regularly carry out education measurement and evaluation related training to help teachers master practical methods of scale design, data collection, and simple analysis [10]. The special training conducted by Yinchuan City in the quality monitoring of compulsory education has a significant effect on improving teachers' evaluation ability. Combining the relevant evaluation index courses of the Ministry of Education for learning can further standardize the implementation process of teachers' evaluation [11]. In terms of resource support, schools do not need to build overly complex technology platforms, and can choose simple curriculum evaluation management tools that integrate data collection, statistics, and feedback functions to reduce management costs. The course goal achievement evaluation system used by some universities in Liaoning can automatically integrate process and result data, and its simple and practical construction ideas have strong reference significance. To promote the optimization of curriculum evaluation, it is not advisable to adopt a one-size-fits-all standard. Evaluation methods and weights can be adjusted according to the differences between disciplines and stages, and adapted to local contexts. At the same time, we can learn from the experience of reform pilot projects, pilot first and then promote, steadily optimize the evaluation system, reduce the management pressure caused by radical adjustments, and gradually achieve the transformation of curriculum evaluation from experiential-based to scientific, fragmented to systematic. The regional diversified education quality evaluation in Yichang and the curriculum evaluation practice of Zhengzhou University with student growth as the core are based on the reality of education management, and the evaluation mechanism is improved in a simple and feasible way, which can provide real and effective practical reference for promoting curriculum evaluation optimization in various regions.

7. Conclusion

The advancement of modernization in educational management cannot be separated from the continuous optimization and improvement of the curriculum evaluation system, and the scientific standardization of educational measurement directly determines whether curriculum assessment can effectively diagnose and guide teaching. Based on current teaching research, it has been found that many schools still have practical problems in curriculum evaluation, such as a single evaluation perspective, insufficiently rigorous measurement operations, and evaluation results are hardly translated into practical guidance for teaching improvement. It is not difficult to find that by improving the education management mechanism, standardizing the implementation of the entire measurement process, and building a pluralistic evaluation framework covering the entire teaching

process, it can effectively improve the one-sided drawbacks of traditional evaluation, make the evaluation results more in line with the teaching reality, and provide practical and feasible references for frontline teaching improvement. In the specific promotion process, the coordination of institutional support, teachers' assessment capacity, and basic resource support is an important support for promoting curriculum evaluation to truly serve the improvement of teaching quality.

This study has certain limitations. It is mainly based on the analysis of general education scenarios, without considering the specific traits of different educational stages and disciplines between the adaptability of evaluation tools and the setting of evaluation indicators. The practical applicability of relevant optimization ideas in different regional education environments also needs to be further tested through more practice in the future.

Future studies can take into account the pragmatic aspects and developmental requirements of the educational administration in the various areas as well as the instructional properties of different grades and subjects to continue to develop and implement educational assessment instruments. Meanwhile, continuous training could be provided to help teachers enhance their ability to evaluate so that the outcomes of the assessment can be used more effectively to adjust curricula and improve teaching practices. Based on experience-based study that is based on the actual school situation, the curriculum assessment system can be more tailored to the real teaching environment, offering stronger and more concrete support in the creation of a high-quality education system.

References

- [1] Central Committee of the Communist Party of China, & State Council of the People's Republic of China. (2020). Deepening the overall plan for the reform of educational evaluation in the new era. http://www.moe.gov.cn/jyb_xxgk/moe_1777/moe_1778/202010/t20201013_494381.html
- [2] Berk, R. A. (2009). Using the 360 multisource feedback model to evaluate teaching and professionalism. *Medical Teacher*, 31(12), 1073–1080. <https://doi.org/10.3109/01421590802572775>
- [3] Xu, Y., & Brown, G. T. L. (2016). Teacher assessment literacy in practice: A reconceptualization. *Teaching and Teacher Education*, 58, 149–162. <https://doi.org/10.1016/j.tate.2016.05.010>
- [4] Black, P., & Wiliam, D. (2009). Developing the theory of formative assessment. *Educational Assessment, Evaluation and Accountability*, 21(1), 5–31. <https://doi.org/10.1007/s11092-008-9068-5>
- [5] Stufflebeam, D. L., & Zhang, G. (2017). *The CIPP evaluation model: How to evaluate for improvement and accountability*. Guilford Publications.
- [6] Ministry of Education of the People's Republic of China. (2021). National compulsory education quality monitoring programme (2021 revised edition). http://www.moe.gov.cn/srcsite/A11/moe_1789/202109/t20210926_567095.html
- [7] Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48(6), 1273–1296. <https://doi.org/10.1007/s11165-016-9602-2>
- [8] Crisp, G. T. (2012). Integrative assessment: Reframing assessment practice for current and future learning. *Assessment & Evaluation in Higher Education*, 37(1), 33–43. <https://doi.org/10.1080/02602938.2010.494234>
- [9] Quinn, D., & Shurville, S. (2009). From little things big things grow: Scaling-up assessment of experiential learning. *Campus-Wide Information Systems*, 26(5), 329–344. <https://doi.org/10.1108/10650740911004769>
- [10] Popham, W. J. (2009). Assessment literacy for teachers: Faddish or fundamental?. *Theory Into Practice*, 48(1), 4–11. <https://doi.org/10.1080/00405840802577536>
- [11] Ministry of Education General Office of the People's Republic of China. (2023). Action plan for deepening the reform of basic education curriculum and teaching. http://www.moe.gov.cn/srcsite/A26/kjcj_kjcjgh/202306/t20230601_1062380.html