*Asian Journal of Research in Education and Social Sciences*
*e-ISSN: 2682-8502 | Vol. 8, No. 3, 118-127, 2026*
*https://asianscholarsnetwork.com/asnet-journals*
*SPECIAL ISSUE: TheSustainImpact International Conference 2026*

# Conceptualizing the Effects of an Action-Oriented Teaching Method on Practical Performance in a Higher Vocational Seed Quality Testing Technology Course

**Liu Qianyu[1,2*], Che Fatimah Dinna[1]**

[1] Faculty of Education, UNITAR International University, Selangor, Malaysia
[2] College of Modern Agriculture, Honghe Vocational and Technical College, Yunnan, China

*Corresponding Author: liuqianyu5604@163.com

Received: 13 February 2026 | Accepted: 30 March 2026 | Published: 20 April 2026

DOI: https://doi.org/10.55057/ajress.2026.8.3.11

---

**Abstract:** *The paper presents a theory-based clarification on the reasons why action-oriented teaching is commonly termed as a pragmatic substitute to lecture-based teaching since it structures learning to the work-like tasks. But in VET in the agricultural vocation, the case of why it must enhance practical output is often presented in broad strokes and has not been conceptually elaborated most of the time. Using the Higher Vocational Seed Quality Testing Technology course as the point of focus, this paper will provide a theory-based discussion of how action-oriented teaching can be used to promote the practical performances of the students. The analysis combines action regulation theory and constructivist and situated learning approaches in describing a conceptual framework between instructional design and learning processes leading to hands-on competence. The concepts of practical performance in this course context are not just correct operation of the procedures but also adherence to technical standards and the correct interpretation of the testing results. The paper contends that in cases where learning tasks are organized as coherent cycles of tasks planning, execution, monitoring, and reflection, then there are high chances that the students will relate procedural steps to the underlying purpose as well as quality requirements. On this basis, the study proposes a set of theory-informed propositions to make the pedagogical logic explicit and to guide future empirical work and course redesign in vocational agricultural education.*

**Keywords**: Action-Oriented Teaching Method; Practical Performance; Vocational Education; Seed Quality Testing Technology; SDG 4

---

## 1. Introduction

Vocational education aims to prepare learners for occupations in which knowledge is valued primarily through its practical use. In agricultural fields, this requirement has become increasingly prominent with ongoing modernization and heightened attention to food security and quality control. Higher vocational education is therefore expected to emphasize the development of practical competence aligned with workplace standards, rather than focusing mainly on theoretical explanation (Billett, 2011; Zhao, 2024).

In China, vocational education has been closely linked to national development goals. Recent policy initiatives highlight competency-oriented training, stronger integration between education and industry, and the improvement of students' practical abilities. These directions have encouraged reflection on teaching practices that continue to rely heavily on lecture-based

instruction, particularly in programs where operational competence is a core learning outcome (Ministry of Education of the People's Republic of China, 2021; National People's Congress Standing Committee of the People's Republic of China, 2022).

Many institutions of higher vocation continue to teach in a teacher centered way despite the constant reforms that are being undertaken. Teaching tends to be based more on explanation and demonstration and the students are not given a chance to participate in complete work processes. Whereas these methods can help in the simple learning of knowledge, they do not necessarily assist the learner to gain confidence in the application of the procedures to real-world conditions or adapting them to the practical scenario. This has been a limitation commonly observed in the research of vocational education particularly on courses that are practice based (Billett, 2014; Moodie, 2016).

Agricultural vocational education quality of Seed testing is a representative course in practice-intensive education. Students must ensure that they use standardized procedures like checking purity of seeds, testing germination (and checking moisture) with accuracy and professionalism. The students will not be able to correlate single steps of operation with the quality requirements when learning is dominated by the verbal explanation or written protocols. Consequently, lecture-only instruction can be an inadequate tool of facilitating stable practical performance in this course (Deissinger, 2015; Cao and Jiang, 2021).

Action-oriented teaching has been proposed as an alternative instructional approach to address these challenges. In vocational education, action-oriented teaching generally refers to organizing learning around authentic or simulated work tasks so that students participate in coherent task cycles rather than isolated exercises. Originating in European vocational education systems, this approach emphasizes the integration of knowledge and action within complete work processes (Rauner, 2007; Spöttl & Windelband, 2009). Previous studies suggest that task-centered instruction can enhance engagement and support competence development by situating learning in contexts similar to occupational practice (Fischer et al., 2022; Sun, 2022; Fan, 2024).

However, in agricultural vocational education, the pedagogical logic through which action-oriented teaching may influence students' practical performance is not always clearly articulated. To address this gap, the present study adopts a conceptual and literature-based approach. Drawing on action regulation theory, constructivist learning theory, and situated learning theory, it examines how action-oriented teaching can be conceptually understood as a more effective instructional approach than traditional lecture-based teaching for supporting students' practical performance in a Higher Vocational Seed Quality Testing Technology course, in line with Sustainable Development Goal 4 (United Nations Educational, Scientific and Cultural Organization, 2021).

**Research question**: How can action-oriented teaching be conceptually explained as a more effective instructional approach than traditional teaching methods for supporting students' practical performance in a Higher Vocational Seed Quality Testing Technology course?

## 2. Conceptual and Theoretical Background

### 2.1 Action-Oriented Teaching in Vocational Education

The term action-oriented teaching is often mentioned within the context of vocational education to describe an instructional method according to which learning is coordinated around a real or simulated work activity. This approach does not distinguish the process of acquiring knowledge and applying it to practice; on the contrary, it is based on their combination in the face of full occupational activities. It has been formulated in strong connection with the European vocational education traditions, especially those inspired by the German dual system under which occupational competence is seen as a key educational goal (Rauner, 2007; Deissinger, 2015).

Action-oriented teaching puts work tasks at the forefront of the learning process as compared to the lecture-based instruction. The typical cycle of tasks that students engage in is of understanding the requirements of the task, planning the task, carrying out operations and reflecting the results. The generation of learners is supposed to grow by performing the same cycle several times, not only into technical skills but also problem-solving skills and professional judgment (Spottl and Windelband, 2009). This culture is a part of a general change in vocational teaching that involves transmission of content to development of competence.

Empirical and conceptual research in the professional sphere indicates that action-based and task-oriented methods may help to increase learners, engagement, and facilitate more learning by placing knowledge in contexts that matter (Fischer et al., 2022; Lofgren et al., 2023). Action-oriented teaching has also come into the limelight in the Chinese context with regard to the reforms that have been implemented to enhance industry-education integration and enhance the employability of graduates. The available literature shows that this method has the potential to enhance the development of skills among students in higher vocational programs, provided that it is adjusted to the local circumstances (Sun, 2022; Fan, 2024).

### 2.2 Action Regulation Theory and Skill Development

The action regulation theory also offers an effective framework that can be used to explain the impact of the action-oriented teaching on the practical performance of students. The theory was initially developed in the field of work and organizational psychology and sees human activity as a goal-oriented process that combines cognitive planning and action (Hacker, 2003). Development of skills is perceived as encompassing interdependent processes such as the need of formulating goals, planning, execution, monitoring and reflection.

Vocational education-wise, this theory emphasizes the need to involve learners in the entire task processes as opposed to the small or very instructive exercises. In cases where learning is made to emphasize on isolated operations, students can attain a procedural kind of knowledge without knowing how individual actions can be linked to larger work goals. Action-oriented teaching on the other hand, invites learners to become responsible of complete task cycles that help in building coherent and functional competence.

This point of view is especially applicable to courses that require practice. By undertaking repetitive operations over goal oriented activities, the learner is able to develop stabilized operational patterns and correct their performance through reflection. The concept of action regulation theory assists in the explanation of action-based regulation in the Seed Quality Testing Technology course where students are required to perform through the standardized procedures and interpret the result of the testing (Hacker, 2003).

### 2.3 Constructivist and Situated Learning Perspectives

The action-oriented teaching is also based on the assumptions supported by constructivist learning theory. In this regard, learning is considered an interactive process where a learner builds knowledge by engaging in activities and learning environments as opposed to receiving knowledge passively (Jonassen, 1999). The instructional methods which promote the learner activity and problem solution are thus said to be more favourable to meaningful learning.

Situated learning theory builds upon this perception by noting the importance of context in learning. This view states that knowledge and skills are acquired by engaging in social practices and they can best be acquired when learning processes are similar to real life circumstances (Lave and Wenger, 1991). This inferred that learning in vocational education should be in a workplace practice such that learning can be transferred to occupational practice.

Action-based teaching is very similar to constructivist and situated learning approaches. The introduction of learning through real or simulated work activities helps this method to assist in applying theoretical knowledge to real situations. In the case of vocational courses that are more focused on operational competence, as Seed Quality Testing Technology, these views underscore the shortcomings of decontextualized learning and reaffirm relevance of action-based learning.

### 2.4 Implications for Vocational Agricultural Education

Together, the theoretical perspectives discussed above provide a conceptual foundation for examining action-oriented teaching in vocational agricultural education. Action regulation theory emphasizes engagement in complete task processes, while constructivist and situated learning theories highlight the importance of active participation and authentic contexts. These perspectives help explain why action-oriented teaching is conceptually well aligned with the learning requirements of practice-intensive vocational courses.

In agricultural vocational education, where standardized procedures and quality requirements are central, instructional approaches that integrate theory and action are particularly relevant. From a conceptual standpoint, action-oriented teaching appears well suited to supporting students' practical performance in courses such as Seed Quality Testing Technology. This theoretical grounding also informs the conceptual framework and propositions presented in the following sections.

## 3. Conceptualization of Key Variables

In this research, two fundamental variables are addressed in that teaching methods are the explanatory and the practical performance of students is the outcome. Both variables are the conceptual definitions that are made in relation to the properties of practice-based vocational education.

### 3.1 Teaching Methods

Traditional approach to teaching is generally typified by teacher-centered education and an overemphasis on theoretical expounding in vocational education. Although these methods are effective in technical subject introduction, they tend to divorce knowledge learning and practice and offer minimal possibilities to students to experience the entire working process (Billett, 2014; Moodie, 2016). In courses that are practical in nature, this division can limit the growth of contextual knowledge and functional judgment (Cao and Jiang, 2021).

In comparison, action-oriented instruction is structured around real or simulated working activities. Students engage in wholesome task cycles, i.e. planning, executing and reflecting on tasks with more detail given to learner agency and responsibility (Rauner, 2007; Spottl & Windelband, 2009). This model is conceptual in that it combines theory and practice in meaningful task situations, which makes it more consistent with the competence-based goals of vocational education (Fischer et al., 2022; Lofgren et al., 2023). Research results in the Chinese setting, as well, suggest that action-oriented teaching can be used to facilitate the acquisition of practical skills among students under the condition of adaptation to local circumstances (Sun, 2022; Fan, 2024).

### 3.2 Students' Practical Performance in Seed Quality Testing Technology

The concept of practical performance among students is deemed to be multidimensional, namely, incorporating the accuracy of procedural performance, adherence to technical requirements, and the capability to process the information related to the task (Mulder, 2014). The performance in the course of Seed Quality Testing Technology includes the proper performance of the standardised procedures: the analysis of the seed purity, the examination of the seed germination, the determination of the seed moisture, the proper record and interpretation of the results.

Professional responsibility is also linked to practical competence in this case, since mistakes in testing the quality of seeds can influence the quality control and agricultural production (Deissinger, 2015). Conceptually, the practical performance of students is considered to be a result of learning processes influenced by the instructional methods that differ in the qualities of supporting the authentic task engagement and reflective practice.

## 4. Conceptual Framework

This paper aims at presenting a theoretical framework to explain how various teaching strategies can be used to influence practical performance of students in the Seed Quality Testing Technology course. The framework is based on the theoretical views presented above and is not aimed at reflecting the empirical causality, but explaining conceptually assumed relations.

In the context, the teaching approach is considered the main explanatory variable between the traditional lecture form of teaching and action-based learning. The differences in these approaches lie in the form of learning activities, the level of student engagement, and the levels to which learning is integrated into the real or the simulated working conditions.

Traditional methods of teaching focus 'on explaining and demonstrating' which can restrain the students to the whole process of task undertaking. Learning in these environments can be more of a declarative process and does not allow the development of operational routines and contextual judgment needed to perform effectively in practical situations. In comparison, action-oriented instruction focuses on the involvement in meaningful cycles of tasks and underlines the learning processes of task authenticity, active work, and reflection. By these mechanisms, the students will be more apt to combine both theoretical and practical action.

The model presumes that instructional strategies affect the practice performance of students indirectly in the following learning processes. The conceptualization of practical performance as a multidimensional outcome covers the procedural accuracy, the adherence to the technical criteria, the correct data recording, and the interpretation of the results. The instructional

strategies that are more action and reflection focused will then be likely to afford better circumstances of developing more practical competence as opposed to those instructional strategies which rely more on explanation.

The framework also takes into consideration contextual conditions including the availability of teaching resources, teacher knowledge and previous learning experiences of the students which might influence learning processes. These factors are not studied in the given research; however, they are provided to consider the complexity of the vocational learning environment and guide further empirical studies.

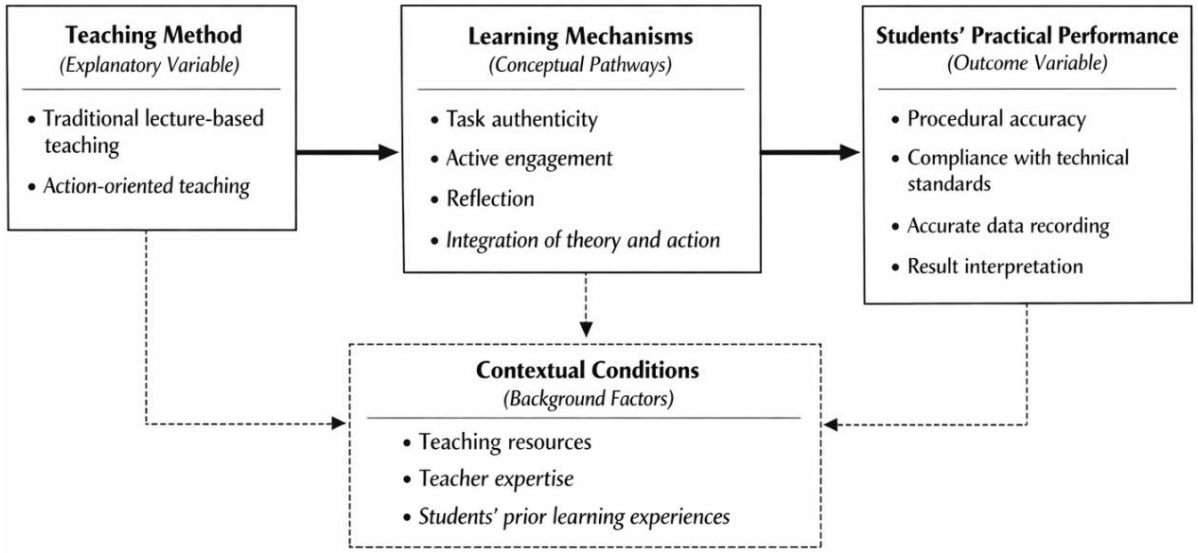


**Figure 1: Conceptual Framework**

## 5. Conceptual Propositions

Based on the conceptual framework developed in this study, the following propositions outline theoretically informed expectations regarding the relationship between teaching methods and students' practical performance in the Seed Quality Testing Technology course. These propositions are conceptual in nature and aim to clarify pedagogical logic rather than to represent empirically tested hypotheses.

**Proposition 1**

*Action-oriented teaching is more likely than traditional lecture-based instruction to support the development of students' practical performance in Seed Quality Testing Technology.*

By engaging students in complete and meaningful work tasks, action-oriented teaching creates conditions in which theoretical knowledge can be connected more directly with practical action. Traditional teaching methods, which emphasize explanation and demonstration, may provide fewer opportunities for students to develop stable operational routines and contextual judgment. From the perspective of action regulation theory and constructivist learning, action-oriented teaching therefore appears conceptually better aligned with the learning requirements of practice-intensive vocational courses (Hacker, 2003; Fischer et al., 2022).

**Proposition 2**

*Action-oriented teaching is more likely to improve the task engagement and reflective learning which are relevant to developing vocational practical competence.*

Action-oriented teaching promotes the long-term involvement in learning activities by focusing on the participation and responsibility of the learners in real or simulation tasks. Formalized reflection time also enables learners to assess their performance and correct their behaviors in the course of time. According to the constructivist and situated learning theories, such interaction and reflection is a focus of significant learning and competence acquisition (Lave and Wenger, 1991; Lofgren et al., 2023).

**Proposition 3**

*Action-oriented teaching is linked to practical performance as they rely on authenticity and coherence of task processes.*

Theoretically, the most effective way to use task-based learning is that whose tasks are similar to actual occupational tasks, and tasks with well-developed planning, execution and evaluation sequences. In classes like Seed Quality Testing Technology where the standard procedures and professional judgment are significantly needed, it is probable that the reality of assignments and entire task processes will affect the learning outcomes (Rauner, 2007; Spottl and Windelband, 2009).

**Proposition 4**

*Traditional lecture-based teaching alone may be insufficient for fostering transferable practical competence in practice-intensive vocational courses.*

Although lecture-based instruction can support the acquisition of foundational knowledge, it offers limited opportunities for contextualized practice. Without sustained engagement in workplace-like tasks, students may experience difficulties transferring classroom learning to practical settings, which helps explain the conceptual limitations of traditional teaching methods in courses such as Seed Quality Testing Technology (Billett, 2014; Cao & Jiang, 2021).

Together, these propositions summarize the theoretically assumed relationships among teaching methods, learning processes, and students' practical performance, and provide a conceptual basis for future empirical research in vocational agricultural education.

## 6. Discussion

It builds on the action regulation theory, constructivist learning theory, and situated learning theory to investigate how action-based teaching can facilitate the practical performance of students with practice-intensive vocational classes.

According to the action regulation theory, action-oriented teaching focuses on involvement in entire task cycles, such as planning, performing and reflecting on them. These forms of task organization facilitate the organization of cognitive and practical actions, and this is critical in the attainment of sound practical competence that is stable (Hacker, 2003). This integration is especially applicable in the courses where both standardized procedures and professional judgment are necessary like Seed Quality Testing Technology (Deissinger, 2015).

Constructivist and situated views of learning also describe the potential reasons that action-based teaching can be more beneficial in transferring the learning to the vocational practice. Learning activities can be integrated into real or simulated working tasks and this provides the

student with a motivational factor to build meaning by working actively in the context (Jonassen, 1999; Lave and Wenger, 1991). Action-oriented teaching offers learning conditions that are closer to occupational practice as compared to lecture-based instruction, which removes the connection between knowledge and practice (Billett, 2014).

## 7. Educational Implications

Conceptually, the analysis at the instructional level indicates that the vocational agricultural courses can be improved in terms of learning organization possible through the arrangement of learning around the typical work tasks, as opposed to individual units of knowledge. The competence-based objectives of vocational education should be connected to designing sequence of coherent tasks based on integrating planning, execution, and reflection (Rauner, 2007; Spottl et al., 2009). It is thus necessary that teachers have the subject-matter knowledge and pedagogical skillfulness to set tasks and help students reflect on performance (Billett, 2011; Fischer et al., 2022).

At the policy level, the findings are consistent with ongoing vocational education reforms emphasizing competency-based education and industry‑education integration (Ministry of Education of the People's Republic of China, 2021; National People's Congress Standing Committee of the People's Republic of China, 2022). At the same time, the effectiveness of action-oriented teaching depends on contextual conditions such as institutional resources and teacher expertise. Educational policies should therefore support flexible and context-sensitive instructional innovation rather than the uniform adoption of standardized teaching models.

## 8. Conclusion

This study examined how action-oriented teaching can be conceptually understood as a more effective instructional approach than traditional lecture-based teaching for supporting students' practical performance in a Higher Vocational Seed Quality Testing Technology course. Adopting a theory-driven perspective, the paper focused on explaining pedagogical logic rather than reporting empirical findings.

Based on the action regulation theory, constructivist learning theory, and the situated learning theory, the study formulated a conceptual framework in which the teaching methods, learning processes, and practical performance of the students are interconnected. Based on the analysis, action-oriented teaching, with its focus on authentic tasks, active interaction, and reflection, is conceptually consistent with the demands of practice-based vocational courses in the area of learning needs. Instructional methods that combine theory and practice seem to be of special interest in the context of Seed Quality Testing Technology where the central importance is assigned to standardized procedures and professional judgment.

The theoretical hypotheses developed in the research make it clear that action-oriented teaching can be used to facilitate the acquisition of practical competence and offer a theoretical point of reference in future research. The study lacks empirical support of the proposed relationships as a conceptual analysis. This is why it is recommended that future research adopt the empirical designs in order to identify the impacts of action-oriented teaching on the practical performance of students and how contextual conditions, including the teaching materials, teacher experience and previous learning experiences of students influence the effectiveness of instructional delivery.

This paper will become part of the discussion on the topic of instructional reform in vocational agricultural education by presenting a conceptually sound framework and propositions to support the idea that the teaching strategies must be relevant to the realities of professional practice.

**Acknowledgement**
The author would like to express their heartfelt thanks and gratitude to UNITAR International University for their invaluable support.

**Conflict of Interest**
The authors declare that there is no conflict of interest regarding the publication of this paper.

**References**

Billett, S. (2011). Vocational education: Purposes, traditions and prospects. Springer. https://doi.org/10.1007/978-94-007-1954-5

Billett, S. (2014). Integrating practice-based experiences into higher education. Educational Research Review, 12, 1‐13. https://doi.org/10.1016/j.edurev.2014.01.002

Cao, H., & Jiang, X. (2021). Innovation of practical teaching modes in agricultural vocational colleges. Journal of Anhui Agricultural Sciences, 49(16), 267‐269, 279. https://doi.org/10.3969/j.issn.0517-6611.2021.16.071

Deissinger, T. (2015). The German dual vocational education and training system. International Journal for Research in Vocational Education and Training, 2(1), 1‐19. https://doi.org/10.13152/IJRVET.2.1.1

Fan, S. (2024). Exploration of the DOPBL teaching model in vocational education under the background of industry‐education integration. Vocational Education, 13(4), 898‐906. https://doi.org/10.12677/VE.2024.134146

Fischer, M., Rohs, M., & Heidemann, L. (2022). Action-oriented learning in vocational education: Conceptual foundations and empirical perspectives. Vocations and Learning, 15(2), 211‐230. https://doi.org/10.1007/s12186-022-09296-6

Hacker, W. (2003). Action regulation theory: A practical tool for the design of modern work processes? European Journal of Work and Organizational Psychology, 12(2), 105‐130. https://doi.org/10.1080/13594320344000075

Jonassen, D. H. (1999). Designing constructivist learning environments. In C. M. Reigeluth (Ed.), Instructional-design theories and models: A new paradigm of instructional theory (Vol. 2, pp. 215‐239). Lawrence Erlbaum Associates.

Lave, J., & Wenger, E. (1991). Situated learning: Legitimate peripheral participation. Cambridge University Press.

Löfgren, S., Ilomäki, L., Lipsanen, J., & Toom, A. (2023). How does the learning environment support vocational students' learning of domain-general competencies? Vocations and Learning, 16, 343‐369. https://doi.org/10.1007/s12186-023-09318-x

Ministry of Education of the People's Republic of China. (2021). Opinions on promoting the high-quality development of modern vocational education. http://www.moe.gov.cn

Mongar, T. K., Alava, H., & Puhakka, E. (2022). Task-based learning in vocational teacher education. Journal of Education and Work, 35(3), 251‐266. https://doi.org/10.1080/13639080.2022.2044312

Mulder, M. (2014). Conceptions of professional competence. In S. Billett, C. Harteis, & H. Gruber (Eds.), International handbook of research in professional and practice-based learning (pp. 107‐137). Springer. https://doi.org/10.1007/978-94-017-8902-8_5

National People's Congress Standing Committee of the People's Republic of China. (2022). Vocational Education Law of the People's Republic of China (Revised). http://www.npc.gov.cn

Rauner, F. (2007). Practical knowledge and occupational competence. European Training Foundation.

Spöttl, G., & Windelband, L. (2009). Work process orientation in vocational education. European Educational Research Journal, 8(2), 272–285. https://doi.org/10.2304/eerj.2009.8.2.272

Sun, K. (2022). Action-oriented practice and students' vocational competence development in higher vocational education. Journal of Higher Education Research, 3(6), 35-42. https://doi.org/10.32629/jher.v3i6.1077

United Nations Educational, Scientific and Cultural Organization. (2021). Reimagining our futures together: A new social contract for education. UNESCO Publishing. https://unesdoc.unesco.org/ark:/48223/pf0000379707

Zhao, D. (2024). A systematic literature review on the reform of vocational education in China over the past decade. Cogent Education, 11(1), Article 2343525. https://doi.org/10.1080/2331186X.2024.2343525