



## The Competence Framework for a Vocational Teacher in Kazakhstan

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**Abstract:** Nowadays, a number of challenges in the area of vocational education in Kazakhstan have been recognized. The present survey study was aimed at evaluating the key competencies required for contemporary vocational teachers in Kazakhstan to draft the competence framework. First, twenty vocational education and training experts were interviewed to gather their opinions on what are the most important competencies for the aforementioned specialists. As a result, eight competencies have been formulated. Based on expert interviews, an electronic questionnaire was developed, through which fifty vocational teachers and teacher educators with ten to twenty years of experience in the field were requested to rate each of the eight competencies specified. According to the results, vocational teacher's abilities to apply technological devices in the educational process as well as to adapt the training material to the content specificity, students' age and skill level were found to be highest rated, whereas the ability to perform didactic transformation has been evaluated by the respondents as the least important. The findings suggest that vocational teacher education curricula in Kazakhstan should primarily focus on areas of expertise related to the capacity of future vocational teachers to employ technological devices during teaching-learning activities along with their ability to adjust the content to learners' background. If the proposed draft is being elaborated by further focus groups, it may be employed for clarifications and adjustments in vocational education and training programs in Kazakhstan, as well as for the training personnel examination, in order to enhance educational outcomes.

**Keywords:** curricula, information, methodological competence, skills

### I. INTRODUCTION

Vocational education is supposed to provide a population with a professional qualification, employment, and social integration (Gelişli, Beisenbayeva, Sultanbek, and Ussenova 2016). In particular, the example of the dual system of vocational education and training in Germany has consistently demonstrated that the enhancement of skill formation systems is one of the most effective means of promoting the development of political-economic institutions (Baethge and Wolter 2015). Kenzhegaliyeva (2018, 80-84) stated that the current vocational education system in Kazakhstan has been arranged to ensure the effective provision of the youth labor force for their professional and personal self-fulfillment. It must be noted, however, that several challenges in the area of vocational education in Kazakhstan have been registered nowadays, including its low prestige and the lack of evaluation standards (Nabi et al. 2016). According to national reports (Information-Analytic Center 2016), the share of employed technical and vocational education graduates in Kazakhstan as of October 2015 was 68%, i.e. 16% and 11.1% lower than those in Germany and Denmark, respectively. Literature analysis performed by Zhanguzhinova (2018) has led to the conclusion that crucial development goals for Kazakhstan should be a paradigm shift in educational policies along with the harmonization of relevant requirements in educational standards. In addition, while pointing out deficiencies with regard to the quality of vocational education and training in Kazakhstan, experts of the Organisation for Economic Co-operation and Development have put forward a number of recommendations, including regular updating of vocational teachers' competencies in alignment with the actual working conditions.

A range of discrepancies between the characteristics of vocational and general education has been described by Estriyanto, Kersten, and Pardjono (2017). Vocational teachers are experts in occupation and teaching in one. These types of education have different goals and characteristics so that they need different learning approaches, including the teachers' competence standards (Estriyanto, Kersten, and Pardjono 2017).

There is no clear consensus regarding the definition of the term "competence" up to date. It was specified, *inter alia*, as a combination of knowledge, skills, and attitudes, enabling teachers to fulfill mandated tasks (Zhanguzhinova 2018). Meanwhile, there is a viewpoint that teaching is much more than a task and the concept of teacher competencies may therefore vary depending on national contexts (European Commission 2013). Arifin, Rasdi, Anuar, and Omar (2017) list such benefits of developing and using competence models as revealing areas where further professional development would be needed and simplification of the procedure of vocational teacher recruitment. In view of the foregoing, the current survey research was aimed at evaluating the key competencies required for contemporary vocational teachers in Kazakhstan to draft the competence framework.

## II. METHOD

### *Participants and Procedures*

First, in order to develop the required competence framework for vocational teachers, the research team interviewed twenty vocational education and training experts from Buketov Karaganda State University and Saken Seifullin Kazakh Agrotechnical University in September 2020. All the interviewees had a Ph.D. degree in pedagogy or technology. Five of them were professors. The participating experts were invited to express their opinions on which competencies are the most essential for contemporary vocational teachers in Kazakhstan. The input from the interviewees resulted in eight competencies specified. Between September and October 2020, we designed and applied an electronic questionnaire, in which a total of 50 vocational teachers and teacher educators with ten to twenty years of experience in the field were asked to remotely rate each of the eight competencies on a rating scale of 1-3, with higher scores corresponding to a greater significance of the item.

### *Data Analysis*

With a view to the summary descriptive statistics computation and visual representation, the obtained experimental data were inserted into an Excel spreadsheet (Microsoft Corporation, Redmond, WA, USA).

## III. RESULTS AND DISCUSSION

Following the accomplishment of the above-mentioned internet-mediated survey, we arranged the given competencies according to perceived significance, from highest to lowest. In order to summarize the findings obtained, the graphical display of the descriptive data is presented in Figure 1. As is evident from the illustration, the ability to apply technological devices [and visual aids] in the educational process and the ability to adapt the training material to the content specificity, students' age and skill level have been rated by the respondents as the most important competencies of a vocational teacher in Kazakhstan. In comparison, information and communication technology competence was rated the third among the ten core vocational teacher competencies, as transpires from the results of a qualitative study carried out in Indonesia (Wagiran et al. 2019). Nonetheless, the ability to utilize information and communication technology in the teaching practice was found to be the highest priority based on the analytic hierarchy process technique (Wahyuni, Agustini, Sindu, and Sugihartini 2020).

Given the increasing digitization of education, competencies with regard to electronic learning are considered to be a crucial prerequisite for teachers' innovativeness (Loogma, Kruusvall, and Ümarik 2012). Interestingly, Tapani and Salonen (2019) indicate digital teaching skills within skills constituting interaction competency set out among teaching competencies in vocational education in Finland. At the same time, in addition to the barriers to technology implementation addressed as internal to the teacher, a number of external factors have been frequently discussed in the research literature, such as insufficient quality of computer training during teacher education (Instefjord and Munthe 2017, Gudmundsdottir and Hatlevik 2018).

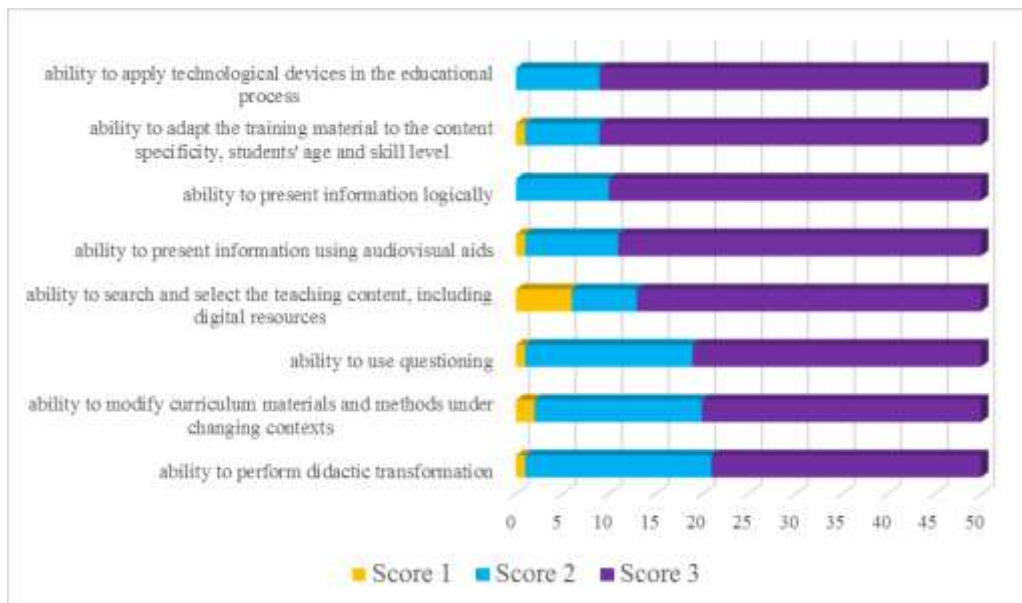


Figure 1: Vocational Teacher Competency Framework Draft Based on the Respondents' Perceptions  
 Source: authors

Because teaching is characterized by uncertainty, teachers require 'adaptive expertise': the ability to adapt their plans and practices to meet students' learning needs (Hatano & Oura, 2003; Vogt & Rogalla, 2009). As concerns the concept of adaptive teaching competency, the latter is seen as part of the general framework regarding the teaching profession nowadays (Vainshtein, Shershneva, Esin, and Noskov 2019). Particularly, teachers' capacity to attune the educational material to the subject matter and the diverse individual characteristics of students was subsumed under the teaching competency domain in a competency model for vocational college teachers in Malaysia (Arifin, Rasdi, Anuar, and Omar 2017). Furthermore, this competency seems to roughly coincide with individualize instruction competency, which was rated high on a peer-reviewed matrix of the performance-based teacher education competencies (Manley and Zinser 2012). Evidence suggests the interplay and interdependence between planning as the reflective component of adaptive teaching competency and performance as an action-related competency component, so they may be divided into adaptive planning competency and adaptive performance competency (Brühwiler and Vogt 2020). However, referring to technical and vocational education and training teacher competency profile, drafted by Grosch (2017), adaptive skills are indicated in the implementation module, but not in the planning and preparation one.

Several arguments have been made as to why the formation of a deeper content comprehension through strategy instruction is prioritized over straightforward explanations (McNamara 2010). Nevertheless, instructional clarity has fundamental significance for student learning (Klieme, Vieluf, and Baker 2009, chap. 4). As distinct from our findings, teachers' capacity to verbally communicate subject content logically (verbal communication competency) was rated sixth only out of the ten core competencies for future vocational teachers in the study by Wagiran et al. (2019).

In our research, the ability to present information using audiovisual aids has been rated third. Meanwhile, audiovisual teaching aids have been recognized as propitious for learners' assimilation of the content and are therefore conducive to improved comprehension and retention (Sugamoto et al. 2015). Moreover, the aids can conceivably gain students' attention and facilitate the development of their conceptual thinking (Nasaza 2016). Akhmetshin et al. (2019) in turn revealed and corrected some mistakes concerning the methodological background quality, which had been made while using audiovisual teaching aids in secondary-level vocational education, such as their unplanned and random implementation. The authors claim a 15–20 percent increment in the students' performance as a result. Furthermore, being interviewed, quite a number of the students held the view that the audiovisual aids appeared to have helped improve the learning process efficacy along with the learning environment.

According to Selvi (2010), selecting and organizing the content refer to the curriculum area of teacher competence. With respect to vocational teachers, their capacity to build and structure the teaching contents adequately has been categorized as methodological competence (Diep and Hartmann 2016). The occupation-specific content of vocational education highlights the significance of such competency of vocational teachers as the ability to search for and filter curriculum materials. Skills designated as "material searching" and "choosing appropriate teaching content" are included in the planning and

preparation module of competency profile draft of technical and vocational education and training teacher, developed by Grosch (2017, 282). In our survey, this competency has been rated fourth. Nevertheless, the ability to research and select instructional materials is among the 25 highest rated competencies in the list of career and technical education teacher competencies obtained in the Delphi survey research conducted by Manley and Zinser (2012). In post-Soviet Russian-language pedagogical literature, a teacher's methodological competence and the capacity to apply digital technologies in the teaching-learning process are sometimes merged into "information and methodological" competency.

Questioning tools like verbal questioning or written examinations represent a technique commonly employed by teachers in order to foster learner's thorough understanding of the key concepts of the subject matter, generate a focused discussion (Colbert et al. 2015), encourage student involvement (Ahmad and Latib 2015), and to assess learner's level of comprehension of a topic, e.g. workplace procedures (Rido 2017). In accordance with a competency model for technical vocational education and training lecturers proposed in a research undertaken by Hamisu et al. (2017), questioning competency is associated with a thinking competency group. Kira et al. (2013, 77) outlined a total of 22 components constituting the questioning competency, such as "ability to ask students to comment or elaborate on one another's responses."

We recognize vocational teacher's ability to modify curriculum materials and methods under changing contexts as pedagogical flexibility. For instance, there may be alterations in the pace of the training program to work out perplexing aspects. This competency can be considered partly coinciding with what was specified as teacher's "ability to maintain a high working ability in extreme conditions" in a questionnaire survey performed in three Kazakh universities (Nabi et al. 2017, 841). Similar to our results, this quality had the least significant value there.

The didactic transformation was defined as "the transformation of disciplinary knowledge to knowledge as it is to be taught" (Bass 2005, 417). Didactic transformation of curricular content may be also described as the conversion of complex science content to a simplified scientific language (Ferreira and Pitarma 2018, 85-99). Making the curricular contents comprehensible for vocational education and training students, particularly by means of adequate data representation formats, was claimed to belong to didactic ability and facilitate transferring vocational knowledge between the work context and the classroom context (Alvunger and Johansson 2018). This competency seems to be close to the concepts of the top four competencies reported here, it is therefore not quite clear why the didactic competency has been evaluated as the least important for vocational teachers in Kazakhstan.

In a survey carried out among experts of machine-building enterprises (Udartseva et al. 2018), they expressed a preference, as expected, for the manufacturing skills of future vocational teachers. In consonance with our findings, the ability to use modern technical equipment was found to be one of the highly valued competencies. Another high-rated competency revealed in our survey research is the one concerned with vocational teacher's capacity to accommodate the material taught to learners' individual needs, which makes it paradoxical that the lowest score was given to vocational teacher's ability to ease student's acquisition and retention of information. This seemingly inconsequential fact might be presumably linked to the respondents' conservative mindset.

#### IV. CONCLUSION

The results of the present research suggest that vocational teacher education curricula in Kazakhstan should primarily focus on areas of expertise related to the capacity of future vocational teachers to employ technological devices during teaching-learning activities along with their ability to adjust the content to learners' background. Given the small sample size of the survey reported here, the findings should be interpreted carefully. Provided that the proposed draft of the vocational teacher competence profile is being elaborated by further focus groups, it may be employed for clarifications and adjustments in vocational education and training programs in Kazakhstan, as well as for the training personnel examination, in order to improve educational outcomes. This work highlights the need for future efforts with a view to evaluating competencies required for contemporary vocational teachers in Kazakhstan.

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