Abstract

2018 KEDI Survey Research on Student Competencies

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The study aimed to monitor six types of key competencies of elementary, middle, and high school students in Korea, as in the 3rd survey conducted among the five ones planned in 2015. About 12,560 students participated in the survey 2018, and their key competencies were compared by grade, gender, region, and the school type. Comparisons were also conducted regarding the key competencies among 3rd graders of middle school participating in each survey of 2016, 2017, and 2018. Trends were investigated by comparing middle school data of 1st graders in 2016's, 2nd graders in 2017's, and 3rd graders in 2018's survey. Lastly, a theoretical review was carried out to explain the reasons for the validity limitation by adopting self-reporting methods when assessing students' competencies. Among several reasons, the impact of social desirability bias was addressed empirically in this study. The results are as follows:

As the results of survey 2018, students' competencies generally dropped or drew a U-shaped with age. Self-manage-ment skill was higher for male than female students. The opposite was the case with Knowledge & Information processing skill, Communi-cation skills and Civiccompe-tency. Female students scored higher performance in Verbal thinking skill while no meaningful gender difference was found in Mathematical thinking skill. In Capital city and rural areas, competency scores tend to drop rapidly between the 6^{th} grade of elementary school and 3^{rd} grade of middle school. In large- and middle-sized cities, however, the dropping curve was relatively flat. For all six key competencies, the autonomous high school scored the highest, special-purpose high school, general high school, and the specialized vocational high school ranked in descending order.

When comparing competency scores between 3rd graders participating in 2016's, 2017's and 2018's survey, the highest performance was found among male students in the 2nd survey conducted in 2017. Results were similar with female students but some exceptions; Knowledge & Information processing skill, Aesthetic sensibility, and Verbal and Mathematical thinking skill were highest among female participants in the 3rd survey conducted in 2018. In Capital city, students' performance was found to be the lowest in the 2nd survey while it was the highest among the other three regional areas. In Capital city, interestingly, self-reported competency levels tended to be low while Verbal and Mathematical thinking skills, which were measured by tests, were relatively high. Lastly, students in rural areas displayed the lowest performance in general.

Comparisons were carried out for competency scores between 1st, 2nd and 3rd graders of middle school participating in each survey conducted in 2016, 2017, and 2018, The two tested competency scores improved while the remaining self-reported competency scores dropped or drew a U shaped-curve with grade level. No apparent patterns were found by gender. Across all grade levels, competency scores were the highest in large-sized cities and lowest in rural areas.

Those self-reported survey results should not be straightforwardly interpreted to display differences or patterns of students' competency levels themselves. Rather, these findings are recommended to be viewed as differences in students' confidence or perception about key competencies, presumably under the social context. Attempts were made to empirically explore the effects of social desirability bias (SDB) on self-reported performances. Students' SDB were measured by the 8-item scale devised for this study. As the results, (1) about 6-9% of students were categorized as the high SDB group, (2) male students occupied a larger proportion in the group, regardless of grade, and (3) the proportion increases even larger in turn for higher grades. Meanwhile, contrary to theoretical anticipations, no significant differences were found in the desire for social approval, positive or negative emotional status, parenting styles, peer relationship, and experiences of school violence between the high and low SDB group. However, the findings can also be regarded to be predicted, considering the fact that all these individual features were estimated by using self-reporting methods, and the estimations were affected by students' SDB.

Investigation on responding patterns showed interesting gaps between the two SDB groups. The low SDB group exhibited the middle responding pattern while the high SDB group displayed the extreme responding patten across all measuring items for the individual characteristics. Also, in the high SDB group, school violence experience increased with age while no such consistent patterns were found in the low SDB group. These results imply the impact of SDB on self-reported personal features.

The high SDB group displayed higher performance scores than the low SDB group across all self-reported key competencies. When comparing their actual academic competencies with self-perception of those, the high SDB group showed a greater overestimating tendency relative to their low SDB counterparts. Lastly, among middle and high school students, a greater discrepancy was found in their responses between two items with the same meaning but stated in a different manner. Additionally, the magnitude of discrepancy varies across the competency types. These entire results suggest that SDB relates with students' overestimating likelihood of competencies.

On the basis of these findings, this study proposes (1) some methodologies to improve self-reporting measures in educational research in order to enhance the productivity of evidence-based policies propelled by central and provincial governments, (2) discriminative educational policies by regional context and school type for effective enhancement in students' competencies and confidence about them (3) improvement in conceptual understanding on key competencies among teachers and students to facilitate competency-based learning in schools, (4) development of evaluation methods by adopting digital technologies to collect competency-based learning data for a long-term development in our education.

Keywords: key competencies, self-reporting methods, social desirability bias