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SPECIAL ISSUE ON MANAGEMENT AND INNOVATIVE APPROACHES IN EDUCATION

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This special issue aims to shed a light on the application of innovative approaches and education management. The introduction of innovation in educational institutions does not just happen. Often it is the work of an interested and dedicated teacher. Such teachers are often frustrated in their efforts to change the curriculum because they lack both the necessary leadership skills for substantial change and they do not have an understanding of how innovation affects and spreads in an organization. School principals, in their position as curriculum leaders, should play a crucial role in bringing innovation into the classroom. Many, however, play an encouraging, but less active, role in supporting the teachers' efforts to change the curriculum. While this type of leadership has been sufficient in the past, the introduction of computing technology for tackling emerging education issues has become an integral part of innovative policies and instructional practices. In this sense, this issue focuses on innovative approaches, from the viewpoint of education and management. We have collected papers with a novel approach to dealing with education management issues in the turbulent contemporary education setting. The topics include quality management issues, the impact of the declining birthrate on enrollment in elementary education, an innovative learning performance, the student-teacher ratio issue, the flow of international students in higher education, as well as related management issues, in a wider context. The selected topics and related research designs will provide examples for further study.

The authors have discussed the related issues at the different levels of education, such as preschool, primary, secondary, higher education, as well as issues in a broader context, for example, building a better assurance framework to enhance the teaching quality in preschools. Huang and Chang's study indicates that the PDCA (Plan-Do-Check-Act) cycle can be a useful tool in an education setting. Their study proposes a teaching quality assurance system by using PDCA for early childhood education. The findings suggest application of a useful PDCA framework for determining the obstacles that might exist in preschools. In the Asian culture, some zodiac signs are seen as being more favorable than others. Traditional Chinese culture believes that dragons are auspicious, and children who are born in that year are considered to be very fortunate. Therefore, the birthrate is higher in some auspicious years, such as in the Year of the Dragon, while in some years, such as the Year of the Tiger, there is a lower birth rate. Compulsory education in Taiwan begins from elementary school; thus, the birthrate has a direct impact on elementary school enrollment, which subsequently affects the class size and the number of full-time teachers. Chang and Chang's study targetes a series of datasets among infants and the first grade of enrollment in elementary schools. ARIMA (Autoregressive Integrated Moving Average) was used to build predictive models for the number of newborn babies. The results found that the Year of Dragon and Tiger had a significant effect on elementary school enrollment. The findings of this study also suggest that there are possible issues related

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to the rapid changes in elementary school enrollment, such as the teacher preparation programs, unequal educational resources per student, different class sizes, and potential budget planning in elementary schools. This study validates how cultural beliefs can affect the number of infants born and school enrollment. As similar trends also take place in China, Vietnam, and Hong Kong, it might be worthwhile studying the similarities and differences. Regarding student performance, numerous theoretical studies have focused on detecting the cycle of change, in order to improve the performance of the proposed models. Lin et al.'s study proposes an approach for detecting the trends and periods of change for the students' academic performance and the parents' educational investment through fuzzy statistics, by employing the K-means method. They explored the use of the fuzzy correlation coefficient to represent the linear relationship between the two variables. They took the median of a dataset as a comparative reference point to divide the linear relationship into two districts. The innovative method that is used to detect the issue is called the Fuzzy Hierarchy of Correlation (FHC) method. The methodology in this study may offer more realistic findings on the effects of educational investment on academic performance. Chen et al.'s study focuses on the issue of primary education in China. They employed a cross-correlation function, an ARIMA or ARIMAX model to verify the future trends of student and teacher numbers. In a global context, the ratio of students to teaching staff in primary education is 15, on average, in OECD countries and 14, on average, in the EU22, and China is approaching that standard. The findings suggest that the fittest ARIMA models were used to interpret the trend of Student-Teacher Ratio (STR) properly. The findings reveal that the calculated STR with the trend of fluctuating student and teacher numbers will decline in future, while the predicted STR might increase in the future, based on the proposed ARIMA model with STR series data. The forecasting results provide useful policy information for balancing the number of students and teachers.

Moreover, internationalization is an irreversible development trend in higher education in the world, and the mobility of international students has become a significant phenomenon in the process. In the global higher education setting, China has been in a position to provide a large number of outbound students over the past few decades. Even though China's higher education has moved to a universal stage since 2018, the outbound student mobility has shown sustainable growth over the past few decades; moreover, the number of inbound mobile students is relatively smaller than that of outbound students. Taking China as an example, Xia and Chang's study provides an innovative model for investigating the net flow of student mobility and for interpreting the pattern that can reflect the landscape of internationalization in a specific higher education system. The result of net flow forecasting can provide useful information for policymakers at an institutional or national level. This study demonstrates how the related ratios can be transformed in higher education to interpret the phenomenon of global mobility and to predict its future trends, and it suggests the extensive use of the research design to detect similar issues in the higher education setting. Jin's study demonstrates the hierarchical regression models that tackle the joint impact of the board size and CEO duality on a firm's performance. Based on the perspective of the agency theory, the stewardship theory as well as the resource dependence theory, the findings suggest that both the board size and the CEO duality of firms relate negatively to a firm's performance. Moreover, the R&D intensity negatively moderates the relationship between the CEO duality and a firm's performance. The testing model can be applied to tackling comparable issues in similar settings.

We know that evidence-based studies can offer useful policy information in the initiative stages. In this issue, we focus on innovative computing technologies for tackling the issues in education. The collected papers provide a good research design framework for verifying the useful evidence for policy-makers or institutional practitioners. Hopefully, these research examples will prove to be useful for further studies.