

Exploration of the Digital Transformation Path for the Post-Award Management and Personalized Services of Scholarship or Grant Recipients

Zhuqing Chen*, Xiaolong Yang

School of Computing, Neusoft Institute Guangdong, Foshan 528225, Guangdong, China

**Author to whom correspondence should be addressed.*

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: The post-management and service for scholarship or grant recipients have faced new challenges and opportunities due to the rapid progression of digital technologies. The traditional post-award management framework for scholarship recipients shows significant limitations, especially in dynamic monitoring and service standardization. To tackle these challenges, a restructured approach integrating three core digital components has been developed, including dynamic profiling models, intelligent alert systems, and personalized service matrices. This transformation shifts the management model from outcome-based tracking to comprehensive process optimization, ultimately establishing a data-driven support mechanism that enhances the educational effectiveness of financial assistance programs.

Keywords: Scholarship or grant recipients; Digital transformation; Post-dynamic management; Personalized service

Online publication: June 6, 2025

1. Introduction

Educational subsidies serve dual functions as financial support mechanisms and strategic instruments for advancing equitable educational access while cultivating comprehensive student development. However, accelerated digital transformation in education reveals structural limitations in conventional post-award support systems, particularly their diminishing capacity to capture students' multidimensional demands with requisite precision and responsiveness, thereby compromising the optimization of financial aid efficacy.

The introduction of digital intelligence technology in educational management provides an opportunity to solve this problem, because the realization of dynamic management and personalized services for students through digital intelligence technology is of great significance for improving the accuracy and effectiveness of financial aid work and promoting the all-around development of students.

2. Problems existing in the traditional post-award management and service of the scholarship or grant recipients

Current challenges in post-award management and personalized services include unscientific management, undifferentiated service delivery models, and poor information sharing.

2.1. Lack of scientific and systematic management methods

Conventional management practices predominantly dependent on manual documentation processes demonstrate systemic deficiencies in monitoring recipients' multidimensional development. The absence of automated tracking mechanisms frequently results in delayed updates of critical student indicators—including academic progression, extracurricular engagement, and psychological well-being—leading to the inability of managers to accurately grasp the current development situation of recipients. This operational gap consequently hinders administrators' capacity to deliver evidence-based interventions aligned with individual developmental trajectories.

2.2. Failure to tailor services to individual needs

Undifferentiated intervention strategies often emerge in current management and services, which fail to take into account the heterogeneous development trajectories and customized support needs of the recipients. Considerable heterogeneity exists among scholarship or grant recipients regarding academic objectives, career pathways, and extracurricular engagements, yet institutional mechanisms maintain a uniform assistance modality. This standardization of service delivery contradicts demonstrated beneficiary diversity, ultimately undermining both intervention efficacy and beneficiary satisfaction.

2.3. Insufficient information sharing leads to data silos

Systemic fragmentation persists across key administrative units—particularly between financial aid administration, academic affairs, and career services—manifesting insufficient information sharing including interdepartmental data silos within institutional architectures, asymmetric information distribution between administrative bodies and student beneficiaries, and inadequate feedback loop mechanisms. This dysfunction fundamentally undermines the development of the post-award management and personalized services of scholarship or grant recipients, as evidenced by longitudinal studies showing a 23.7% efficiency loss in cross-departmental collaboration. Consequently, the institution's capacity to deliver integrated student management and support services becomes operationally constrained, violating the core principles of holistic learner development frameworks.

3. Necessity of digital transformation for post-award dynamic management and personalized services of the scholarship or grant recipients

Digital transformation is crucial for the post-award dynamic management and personalized services of scholarship or grant recipients, as it helps to collect and analyze the information of the recipients throughout the entire cycle, adjust the intensity of assistance in real time and dynamically and precisely meet individualized needs, thereby enhancing the quality of assistance and educational effectiveness and promoting the all-round development of students.

3.1. Adapt to the development of educational informatization

The digital era has witnessed educational informatization emerge as an indispensable trajectory for pedagogical

restructuring, with digital transformation — operationalized through UNESCO's Education 2030 Framework — constituting its fundamental implementation mechanism^[1].

It is possible to achieve the application of advanced technologies like big data analysis, cloud computing, and artificial intelligence facilitates dynamic management and personalized services for recipients, which is essential for meeting the demands of educational informatization development.

3.2. Improve the management efficiency and accuracy

In the post-award management of scholarship or grant recipients, digital management platforms can be employed to facilitate real-time data collection, organization, and analysis, which approach enhances the efficiency and accuracy of information processing.

Furthermore, school counselors and student affairs managers can utilize such platforms to promptly access recipients' academic, living, and psychological status, which enables more precise management and service provision, thereby optimizing information processing efficiency and accuracy while reducing management costs.

3.3. Meet the needs of recipients' individualized development

Scholarship and grant recipients exhibit distinct developmental needs and potentials that necessitate tailored support systems. Implementing digital transformation in post-award management enables institutions to deliver personalized academic mentoring, career development strategies, and psychological support services through multidimensional tracking systems and data-driven assessment tools.

This approach empowers awardees to optimize their individual capabilities while fostering holistic growth aligned with their unique trajectories.

4. Digital transformation path for the post-award management and personalized services of scholarship or grant recipients

A dynamic tracking and managing mechanism for scholarship or grant recipients has been established, and precise personalized service delivery through data analysis and intelligent platforms has been enabled by leveraging digital technology.

4.1. Build an integrated digital management platform

To realize the interconnection and interoperability of school information, the authors propose developing a unified post-award management platform for scholarship or grant recipients that integrate systems such as students' record management, educational administration, and financial aid, thereby establishing functional modules for data collection, storage, analysis, display, and interaction for these students. The data is analyzed to generate reports that help make strategic decisions regarding students, courses, programs, departments, and staff by management information systems^[2].

During operation, this platform will connect with various business systems to automatically collect students' personal information, grades, family economic conditions, awards and assistance records, and other relevant data. Upon completion of data cleaning and standardization, a comprehensive database for scholarship or grant recipients will be established.

Additionally, the school will encourage the scholarship or grant recipients to utilize mobile applications to independently update information regarding part-time job experiences and social practice activities, thereby

enriching the data dimensions.

4.2. Achieve precise profiling and dynamic monitoring through big data analysis

The dynamic student data management using resource optimization technology in the higher education platform proposed in this study can effectively improve the efficiency of college student data management ^[3]. During the post-award management of scholarship or grant recipients, the school's student financial aid management department can utilize big data analysis technology, which can mine and analyze multidimensional data such as students' academic performance, consumption behavior, and social activities. Subsequently, accurate student profiles can be constructed to understand students' learning abilities and directions of interest. Then, a dynamic monitoring model can be established to track students' status changes in real time.

When recipients face academic decline, worsening family financial circumstances, or irregular spending patterns, the dynamic monitoring system automatically activates an early warning mechanism that promptly alerts counselors to implement appropriate support measures, including academic guidance, psychological support, and emergency financial aid.

4.3. Introduce artificial intelligence services to enhance the level of personalized services

Artificial intelligence technology has been extensively applied, significantly enhancing the personalization of services during digital transformation. Artificial Intelligence for Assessment and Feedback shows that artificial intelligence can effectively enhance students' learning outcomes and meet their individualized needs ^[4]. Intelligent recommendation systems, utilizing collaborative filtering and deep learning algorithms, can accurately offer students learning resources, information on scholarships and financial aid, career planning, and internship and employment opportunities based on their profiles, which help students plan their personal development.

Virtual intelligent assistants can provide round-the-clock online consultation via voice or text, which services cover financial aid policy interpretation, life service consultation, and mental health counseling. They automatically answer common questions and can manually transfer complex ones, thus improving service efficiency.

4.4. Establish a collaborative and co-governed mechanism for the post-award dynamic management and personalized services

Large sums of time, money, and energy from various educational departments are invested in educational research each year in the hope of yielding productive outcomes for educational practice, which produce the bulk of the curricula, assessments, and professional development opportunities that directly affect great numbers of teachers and learners ^[5].

Against the backdrop of digitalization, schools face new challenges in the post-award management of scholarship or grant recipients. To address these challenges, schools should strengthen interdepartmental collaboration and establish a multi-departmental coordination mechanism that includes the student financial aid management department, the teaching department, the employment guidance department, and the mental health education department.

By building a digital management platform to facilitate information sharing and collaborative work among these departments, schools could create an all-encompassing, end-to-end recipient management and service system, which will provide students with higher-quality services to meet the challenges of the new era.

5. Retrospect and prospect

Digital transformation presents new opportunities for the post-award management and personalized services of scholarship or grant recipients. Through building digital management platforms, applying big data analysis, introducing AI services, and establishing collaborative governance mechanisms, schools can achieve precise management, dynamic monitoring, and personalized services for recipients, thus improving the quality and efficiency of educational assistance work and promoting the overall development of the scholarship or grant recipients.

However, during the digital transformation process, data security and privacy protection must be prioritized to safeguard the rights of scholarship recipients. Robust encryption methods and data access controls should be implemented to prevent the leakage of students' sensitive information, which clarifies the boundaries of information collection, use, and storage, ensuring students' personal privacy is respected and protected.

As technological innovations continue to emerge and advance, the application of digitalization in post-award management and personalized services is bound to become more profound and extensive. It is set to play an increasingly significant role in achieving the goals of educational equity and talent development, opening up new avenues for optimizing resource allocation and enhancing service precision in the education sector.

Funding

The 2024 Guangdong Province University student financial aid special research project "Exploration of Innovative Models for the Post-award Management and Services of Scholarship or Grant Recipients Empowered by New Quality Productivity" (2024DRXJ-XG01)

Disclosure statement

The authors declare no conflict of interest.

Author contributions

Zhuqing Chen: Built the thesis framework and developed its core ideas, controlling academic standards and leading the topic selection, and was also responsible for writing and refining the majority of the content.

Xiaolong Yang: Assisted in gathering materials and organizing data, contributed to drafting and polishing some sections, and offered suggestions for improving the manuscript's details.

References

- [1] UNESCO, UNICEF, World Bank, UNFPA, UNDP, UN Women, UNHCR, 2015, Education 2030: Incheon Declaration and Framework for Action for the Implementation of Sustainable Development Goal 4: Ensure Inclusive and Equitable Quality Education and Promote Lifelong Learning Opportunities for all. UNESCO, Incheon.
- [2] Kuadey NA, Ankora C, Adjei L, et al., 2024, Evaluating Students' User Experience on Student Management Information Systems. *Advances in Human-Computer Interaction*, 2024(8450204): 1–11.
- [3] Lu CH, Saeed O, 2023, Dynamic Student Data Management Using Resource Optimization Technology in Higher Education Platforms. *Mobile Information Systems*, 2023(9686763): 1–10.

- [4] Hooda M, Ran C, Dahiya O, et al., 2022, Artificial Intelligence for Assessment and Feedback to Enhance Student Success in Higher Education. *Mathematical Problems in Engineering*, 2022(5215722): 1–19.
- [5] McKenney S, Schunn CD, 2018, How can Educational Research Support Practice at Scale? Attending to Educational Designer Needs. *British Educational Research Journal*, 44(6): 1084–1100.
- [6] Guo CJ, 2019, Post-award Management and Services for Funded University Students. *Western Quality Education*, 5(14): 160–161.
- [7] Wang JB, 2025, Research on the Current Status, Existing Problems, and Countermeasures of Student Financial Aid in Guangxi Universities under Digitalization. *Educational Observation*, 14(1): 16–19 + 23.
- [8] Han X, Han XY, Yang MY, 2025, How Student Financial Aid Policies Achieve Educational Effectiveness: An Empirical Study Based on Universities in Beijing, Shanghai, and Zhejiang. *China Higher Education Research*, 2025(2): 36–43.
- [9] Jiang QH, Yuan XY, 2024, Driving Forces and Prospects of Digital Transformation in University Funding Education Models. *Jiangsu Higher Education*, 2024(7): 88–95.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.