Research on the construction of information fusion oriented social work information system

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Abstract. This paper studies the information storage and fusion need in the procedure of social work. Information management is a common problem to social work. According to the theory and method of information system development, this paper discusses the significance and design of social work information system development, and finally gives the overall implementation framework and some common function modules of information system.

1. Introduction

China's modern social work sprouted in the 1930s, but it did not develop until the 1980s when the urban community service activities promoted by the Ministry of civil affairs and the National Education Commission jointly set up social work majors in some colleges and universities [1]. So far, great progress has been made. According to the report on the development of China's social work in 2018, social work has further developed in terms of professional service system, funds, personnel, organizations and policies. Taking the development status of social work organizations as an example, by the end of 2018, there were 9793 social work service institutions, 867 social work industry associations, 383000 professional social work posts. There are 51000 work service stations [2]. Social work practices go deep into targeted poverty alleviation, drug control, medical care, children, the elderly, the disabled, mental health and community governance. Large scale social work institutions and social workers need more information systems.

At present, the information level of social work service institutions in the management work is not high, and the information level of social workers in the service work is not high. First, some social work service organizations have established their own portal websites, micro-blog, blogs or official account numbers. Take websites as an example. These websites have set up columns such as information disclosure, service project introduction and talent recruitment. The functions of the websites are single. They are mainly for external publicity, and only have browsing function. They can't communicate with users. The website information is updated slowly. There are still some institutions that have not set up websites due to capital and manpower problems. The official account is the main way of publicity for the current social work organizations. Besides the external publicity, it is also convenient and quick to save money, but it cannot support the office informatization. Even if the propaganda of the same social work organization is scattered in different places, there is no integration. Secondly, the service process of social workers lacks the support of information system, or the utilization rate of social workers to information system is very low. On the one hand, common file
storage is mainly used for different service information such as case owner information, activity arrangement, scheme design, and so on, which cannot be queried online or automatically; on the other hand, the records of service process are self-made by various service agencies, and there is no uniform standard for the document format between different organizations, and there is no unified measurement criterion to judge which one. The service process is more accurate and comprehensive, and it is difficult to evaluate the service process. This difficulty is very obvious in the process of service referral of service object or service handover of institution replacement, which not only reduces the accuracy of referral, but also prolongs the adaptation speed of novice handover after staff turnover, and also loses a large number of historical service records of the organization, resulting in the loss of information resources. Therefore, we need to speed up the provision methods and techniques to allow social workers to think and act within the timescale expected of them [3].

Third, although the informatization level of social work institutions and social workers is not high, the information system has been applied in the field of social work management for a long time. Large scale social work institutions, using modern technology such as computer and communication, can realize office automation, improve work efficiency and quality, and improve working environment. On the one hand, only large-scale service organizations, rather than small-scale organizations, have realized automatic office, because the purchase of the system is expensive and cannot be purchased by small organizations. On the other hand, the current automatic office system of social work institutions has fewer financial functions, which need to be purchased additionally, which increases the burden of social institutions with limited funds.

To sum up, the informatization application in the field of social work is mainly in the field of publicity and management, but these two functions are scattered in different platforms, and the integration of the same platform is not realized. The information level in the service process is low, let alone integrated into the same platform.

The application of information system in the field of social work belongs to a kind of micro social work management. It is also a social work method and process, including the management of human resources, finance, information, objectives, time, plan and service process. Through the information construction, it is not only to improve the office efficiency, but also to promote the service in the field of social work to be more professional and standardized. Therefore, it is necessary to overcome the obstacles of non-systematization, simplification, decentralization, non-standard and high cost of service system, capture and integrate the whole social work informatization data to help social work move towards informatization.

The research of social work information system appeared in the 1970s. Early studies explored the factors that promote the development and success of information systems, including system structure, project members, data integration, flexibility of reports and documents, simplification of forms, bottom-up design and various standards [4]. There are also researches on information system development for professional fields, mainly focusing on hospital / medical and school / education. Taking the social work service of medical system as an example, a customized database application system swdbo has been developed, which aims to help hospital social work supervisors manage daily operations, plan and track resource utilization, monitor the impact of social workers and meet the requirements of hospital social work responsibilities. Assist the social work director to manage daily business, plan and track resource utilization, supervise the influence of social workers, and meet the responsibility requirements of social work in hospital [5]. Some studies trace back to the hospital social work information system The history of hswis includes the management and control of daily operation, planning and tracking resource utilization, forecasting hospital social work service demand, monitoring the impact of hospital social workers on patients served, comparing planned and actual activities and results, and meeting hospital social work responsibility requirements. Medical social workers can also use it to record, collect, analyse and write work reports [6]. Some studies have also developed a social work information system for a hospital, including the determination of referral problem categories, service categories, and classification of contracts with patients, expected results
and actual results. It can not only manage social work services, but also allow social work departments to compete for scarce resources [7].

Taking education as an example, in order to combine the courses and professional fields completed by students with the needs and opportunities of field educators, and match students and field educators (match students with field educators according to the courses and professional fields completed by students, as well as the needs and opportunities of on-site educators), the school of social work information systems (sswis) system has been researched and developed. The system is based on various learning management systems (LMS) and integrated planning and consulting services (IPAs) technology development [8]. Some studies have also focused on the school social work information system (sswis), a relational database designed and developed by school social workers themselves, to help school social workers manage their cases in the short and long term (establishing an improved data collection system to better help them manage the short-term and long-term case volume). There are also studies that describe the practice of social workers in collecting and maintaining data and evaluate information management systems that allow the input of data related to direct and indirect service activities [9].

The research of social work information system in China mainly focuses on theoretical exploration, but lacks of system development research. The exploration study thinks that social work service project needs the management of information system, and the convenience, additional service benefit and information security degree should be considered in the application [10]. Social work service institutions attach importance to professionalism, standardization and standardization methods, which can be achieved through information technology. Social workers can also use information technology to integrate professional methods and skills into service management and grasp service progress and important nodes [11]. In terms of system development, existing studies have built the social work information system on the existing open-source framework, which is difficult to modify and expand [12]. The information system applied in this paper is originally developed according to the needs of social work institutions and social workers, with clear and concise functions, and integrates different functions into one system, which is convenient for the staff to operate conveniently.

This paper first defines the information system, and then mainly introduces the various functional modules of educational administration and teaching auxiliary information system designed based on the basic needs of colleges and universities. In this educational administration and teaching assistant system, administrators can use their own authority to manage the account numbers of teachers and students, add, delete, modify and check the specialties and courses of colleges and departments, add teaching classes, divide students into classes, return teaching class scores, and so on. Teachers can check the list of students in the teaching class, publish assignments, conduct online examinations and submit them through their own accounts. Students can view their own course information, complete homework and submit, view examination information and scores.

2. System design and implementation

In terms of management, social work institutions need to improve the registration information with the help of management information system, and timely analyse and follow up the management of human resources, projects and finance, so as to promote the optimization of management and make the development of institutions more sustainable.

Social workers, especially the front-line staff, through the analysis of long-term data, draw some regular reference suggestions, which can give the previous reference suggestions after the preliminary information of the case owner, so as to reduce the time of problem diagnosis. It can also refer to the past service records and query the effective solutions in similar cases, as a supplement or reference for new project owners to formulate new goals. It is helpful for social workers to summarize cases, expand the number of service groups, and help improve the quality of service.

Social work service system is a comprehensive information system, which needs to be analyzed and developed according to the process of social work service. We have developed user login module (including social worker, administrator, case owner), financial management module, social worker
introduction module, news and internal notice module, file upload and download module, social work service information module, online chat room module, Meeting notice and leave module, and so on.

These modules play a very practical role in the process of social work, which truly reflects the characteristics of social work informatization.

The following are the screenshots of main use of each module, limited to the paper's margins, will not detail the specific functions of each module.

Figure 1. Social worker introduction module

Figure 2. Meeting notice and leave module

Figure 3. News and internal notices module
Figure 4. Service plan module

Figure 5. File upload and download module

Figure 6. Chat room module
3. Conclusion
This paper has developed the prototype of social work information system with many practical functions. In this system, administrators, social workers and case owners can not only meet their own needs by using the corresponding modules, but also improve the management function of administrators, reduce the difficulty and intensity of social workers' work, and solve case owners' matters in time. In a word, the perfect function of the social work information system can improve the work efficiency of administrators and social workers, reduce the difficulty of social work, and improve the quality of case owners' service, which is the significance of developing this information system.

In the next step, we will apply the system to some cooperative social work organizations, listen to their feedback and make the next round of modification to improve the system; and according to the status evaluation needs of social workers, realize the information fusion module.

We plan to collect enough business data and operation data through subsequent users' actual use, analyse the characteristics of these data, and then design appropriate data fusion algorithm, so as to carry out the next research on the fusion algorithm of social work evaluation/evaluation.

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