JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

A SURVEY OF CURRENT RESEARCH TRENDS ON THE USE OF ROBOTIC PROCESS AUTOMATION IN EDUCATION

[1]Mrs. S. Andal Ishwarya ., [2]Mrs. P. Banupriya.,

[1]Assistant Professor.,[2]Assistant Professor.,

[1]Department of Computer Science., [2]Department of Computer Science.,

[1]Parvathy's Arts and Science College, [2]Parvathy's Arts and Science College.

Abstract:

Today, the rise of Artificial Intelligence (AI), robotics, and other digital technologies are profoundly creating a demand for new professions with evolved digital skills. Educational institutions must adopt these technologies in order to promote digital skills development and empower students to lead active and creative digital lives. Recently, the education sector is ready to witness a revolution with robotics process automation (RPA) technology. RPA offers traditional companies a pathway to digital transformation. It focuses on the elimination of inefficiencies and the effort of human resources that is wasted while executing mundane tasks. RPA helps teachers, educators, students as well as parents directly or indirectly. This solution revolutionizes the education sector as sorting out the registration, reduction in processing time, automating attendance and making sense of it all and improved administration. The objective of this research article is to introduce RPA in education and propose an RPA model to the smart education system. RPA can help out here by saving time and under a budget which is a limited & crucial resource for educational institutes.

Introduction

Education is definitely one of the most difficult sectors to automate. Effective education has to do with more than just transferring information from teachers to students. Modern education requires social interaction and an adaptation to the individual student's learning needs and capabilities. The rapid adoption of smartphones/ smart gadgets for educational purposes and the availability of high-speed Internet are the prime factors boosting the smart education. Besides this, the adoption of e-Learning (nowadays smart education) would help in increasing the overall smart education. Smart education is a cost-efficient and more convenient way of learning as it provides training and tutorials from experts, improved courses, certification programs, and others. Despite the great leaps such systems have taken, automation alone cannot solve every issue in the global education system. Using the incredible potential of automation improves educational content, strategy, and policies Focusing on automating the teaching process may result in an entirely digital learning experience that promotes outdated skills and fails to prepare students for the future.

Smart education seamlessly manages student data from admission up until graduation. It enable easy access to attendance, schedules, grades, library catalogues, events and more. It improves documents processing and security. It also enables teachers to better advice and support students' success. These factors motivated to apply RPA technology to smart education. The RPA technology eliminates inefficiencies and the effort of human resources that is wasted while executing mundane tasks. It leads the creation of a virtual workforce and creates multiple possibilities for educational organizations. RPA helps teachers, administrative staff, students as well as parents directly or indirectly. Automation encompasses a diverse set of technologies ranging from continuous delivery and continuous integration tools to hybrid cloud management to the machine vision tools deployed in autonomous vehicles. RPA is a subset of business process automation (BPA), for the use of technology to execute the activities and workflows that make up a business task with minimal human intervention. RPA is an essential part of where ML is headed in the education industry. RPA allows teachers to aid students who may have a disability or a different learning background to grasp the concepts of their classes with higher accuracy. This ultimately leads to better grades, the development of more applicable skills in the real world, and a higher chance of finding career paths that suit each student.

2.Traditional Education System

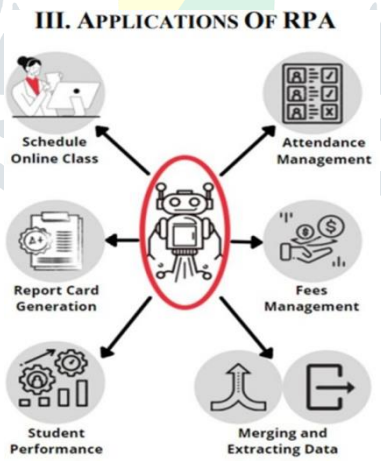
In the traditional teaching system, there is still a lack of communication between education and technology. In many educational institutions, a lot of time is spent on educational activities that do not add any value to the core aim of their very existence. the teachers prepare learning materials, manually grade students' homework & class tests, provide feedback to the students and their parents during the learning progress. Hence, the teachers may be burdened with an unmanageable number of students, or varying student learning levels and capabilities in one classroom. For instance, attendance of the students' needs to be taken several times a day. This data has to be sent to the central office for different purposes. This is one of the inefficient systems. The administrative department is usually the one charged with most tasks, and is the one that takes most time for paperwork. Maintenance of records, compilation of attendance reports, communicating with students' parents, issuing memos and circulars, scheduling meetings, reservation, facilitating result and fees & fines related documents to students, managing employees, collaboration, vendors records are only a few of the tasks, the onus of which lies on the administrative staff's shoulders. Massive number of applications to be filtered and assessed on standards is the primary task in terms of time taken.

Solution to the problem

The objective of this paper is to introduce RPA technology into educational sector and to propose a RPA process model to smart education. The proposed RPA model is a reliable to smart education that helps teachers and students to do their tasks in a shorter time but also allows them to coordinate their work, The Automation or Chatbot has a simple one conversational screen that caters everything for everyone. Adding cognitive services to the Chatbot will make it smart, able to self-learn and improve with experiences

RPA in Education System

There are many areas in the education system that are plagued with manual tasks that are better suited for robots. As the next generation of learners are more tech practical understanding, they can access what they are familiar with in the consumer technology they already use Some of the areas in the education system suited for robots are Search portals and self-checkout at Libraries are becoming more and more commonplace. This frees Librarians from such repetitive and low-value tasks so they can help students with more educational inquiries, while giving students more autonomy through technology. The classroom has plenty of areas where automation can improve the student and teacher experience. From onboarding a new student in a class, to helping people understand how and where to access school resources, these processes can easily be simplified and streamlined by way of automation to further free up faculty's time for more impactful work. Spending such resources on operational management does make sense where the goals are to attract and educate more students more effectively by way of automation. This would release resources for activities that directly affect core constituencies for students and educators. Todays, RPA can transform education as a more customized learning experience, predicting career paths, less bias in grading, and setting up appointments. RPA technology will ultimately reduce the pressure on students and creating a more comfortable learning experience for all parties. For example, RPA uses smart algorithms to determine which teaching methods are likely to work on each student. Technological advances such as this one are allowing lecturers to aid students who may have a disability or a different learning background to grasp the concepts of their classes with higher accuracy. This ultimately leads to better grades, the development of more applicable skills in the real world, and ahigher chance of finding career paths that suit each student.



How RPA Works.

RPA products broadly comprise three fundamental elements: a set of developer tools, a robot controller, and the software robots. The developer tools are used to define jobs. The jobs are sequences of step-by-step instructions a robot follows to perform a particular business process. The instructions, which need to be very detailed, may include business rules or conditional logic, such as if/then decisions. Developer tools are used only in modelling the processes and making changes to them; they are not required to actually run the processes. The robot controller plays three essential roles. It serves as a master repository for defined jobs, the robot controller facilitates version control. The robot controller assigns appropriate roles and permissions to users, and provides controls and workflows to govern the processes of creating, updating, testing, reviewing, approving, and deploying jobs to the robot workforce. Finally, it assigns jobs to single or grouped robots, and monitors and reports on their activities. Software robots carry out instructions and interact directly with business applications to process transactions. Some robots keep detailed logs of their actions and decisions for compliance and audit purposes, as well as to help companies identify additional process improvement opportunities Benefits. RPA is a user-friendly and cost-effective tool. The benefits of RPA include low technical barriers, increased accuracy, meet regulatory compliance standards, existing systems remain in place, no interruption of work, improved employee morale and employee experience, reliability, consistency and increased productivity.

Conclusion

RPA technology can noticeably transform the way educational institutions work in the modern era. It reduces the workload on the staff and teachers. It allows them to focus on teaching and creative decision making. It can reduce the gaps that the educational institutions face when it comes to excelling in the field of management with technology. The research article reviewed the various tasks to automated in the education sector. The reviews included various modern technology RPA. This article identified various tasks to be automated and introduced RPA technology with RPA model. In future, it is proposed introduce RPA architecture to smart education that can improve the quality of education

References

1. Çano, Erion. (2017). Hybrid Recommender Systems: A Systematic Literature Review. Intelligent Data Analysis.

2. Daniel Faggella, (2019). Process Automation, Examples of Artificial Intelligence in Education. Palanivel Kuppusamy and Suresh Joseph K. Robotic process automation to smart education, Elena Haidukova, (2018). Workflow Management Vs. Business Process Management Vs. Robotic Process Automation Explained.

3. Harel Tayeb, (2020). Ready, Set... RPA! Getting Started with Robotic Process Automation. Hu, Zhifeng. (2016). Research on Big Data Application in Smart Education System.

4. Ibtehal Talal Nafea, (2018). Machine Learning in Educational Technology.