

# DIGI SCHOOL AGENT

**Anshul H<sup>1</sup>, Varsha A<sup>2</sup>, Yashwanth P<sup>3</sup>**

Department of CSE(AI&ML), Maharaja Institute of Technology Mysore, India<sup>1-3</sup>

**Abstract:** Effective communication of daily academic content remains a major challenge in many schools despite the growing adoption of digital tools. Homework, notes, and announcements are still largely shared through verbal instructions, handwritten boards, or unstructured messaging platforms, leading to information loss, inconsistency, and increased workload for teachers. This paper presents the Digi School Agent, an intelligent, conversational AI-based academic content management system designed to address these challenges.

The proposed system provides a centralized platform where teachers can upload, update, retrieve, and manage school content in a structured manner. Unlike traditional systems, Digi School Agent integrates a natural language conversational interface that allows users to interact with the system using simple commands. The platform also offers real-time analytics and auditing features to monitor academic activity, teacher engagement, and content distribution across classes and departments.

Developed using FastAPI, SQLite, HTML, CSS, JavaScript, and an AI conversational framework, the system demonstrates improved accessibility, automation, and transparency in school communication. Experimental usage and testing confirm that the system effectively simplifies academic workflows while supporting data-driven decision-making in educational institutions.

**Keywords:** Conversational AI, School Content Management, Educational Automation, Academic Analytics, Intelligent Agent, Digital Education

## I. INTRODUCTION

The way we learn has changed a lot with transformation. We have courses and can take exams from home. We even have classrooms now.. When it comes to sharing information at school things are still pretty old fashioned. Schools spend a lot of money on systems for tests and online learning. But for things like telling students what homework to do what is going on in class and making short announcements we still do things the old way. We use chalkboards tell students things loud or pass around handwritten notes. Digital transformation has not really changed the way we do these things at school. We still use methods for things, like homework instructions, class notes and short announcements.

Students have a time with some things. When they are, in class they have to write down a lot of information fast. If they get distracted for a second they might miss something important. If a student misses one class it can be a problem. They have to ask their friends what they missed look through their notes or try to remember what the teacher said. The student has to do a lot of work to catch up. This happens a lot so students often have to rely on their friends to help them out. The Students have to rely on their friends because they miss something in the class and this becomes normal for the students.

Teachers have to deal with a lot of inefficiencies. One teacher may teach the subject to many classes in one day. The teacher has to give the instructions over and over again. The teacher also has to make the assignments many times and explain the same things to many students. This is a waste of time for the teacher. It gives them a lot of extra work. Teachers have to do the things many times and this is not a good use of the teachers time. The teachers time is valuable. It should be used in a better way. Teachers, like all teachers face these problems.

Class-based messaging groups try to fill the gap. They are not organized and are hard to manage. The information gets lost in all the messages and it is tough to control what is being said. For the people in charge it is even harder to see what is going on. There is no way to know who shared what how often assignments are given or if the subjects are being covered equally in all classes. Sometimes you just want to know something, like what homework was assigned yesterday but you cannot find the answer easily. Class-based messaging groups have a lot of problems like trying to figure out if the subjects are being covered equally in all classes and if assignments are being given often.

These persistent gaps highlight the need for a centralized, intelligent system that modernizes everyday academic communication while reducing complexity and improving consistency across students, teachers, and administrators.

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## **II. LITERATURE SURVEY**

So many schools are trying to change the way they do things with technology. Managing content every day is still a big mess. There are a main things that make this happen with academic content management. These main things, with content management are:

- Academic content management is a problem
- Schools really have to deal with an amount of information and things to keep track of I mean Schools have so much content that it can be overwhelming, at times Schools are talking about a lot of books and papers and things that need to be organized and this is something that Schools have to do every day.
- Managing content is really tough to handle on a daily basis it is a big task to deal with academic content management every single day

These are the things that make academic content management a big mess, for schools when it comes to academic content management. Academic content management is a problem because of these things. It is still academic content management that causes trouble.

### **1. Fragmented Academic Communication**

School information is over the place. You can see it on chalkboards in paper notebooks in chat threads and even, on the teachers phones. There is no one spot where you can find everything you need.

This makes it really tough to find the school information when you actually need it. You have to look for the school information in a lot of places which's slow and really frustrating. The school information is what you need to find. It is hard to do that when it is everywhere.

The school information is over the place and it does not make sense. You need the information to do your school work. The academic information is what you need to get your work done. It is hard to find the information because it is not in one place. Finding the information is really tough. This is because all the academic information is not in one place. You have to look for the information in many different places to find what you need for your school work. The academic information is really hard to find because it is, over the place.

### **2 Loss of Academic Continuity**

When students are not in school they miss out on the class materials. The class materials are what students do not get to see when they are absent.

Even if the teacher posts the information on the computer the class materials can still be tough to find.

This is because the information gets buried under all the messages and it is hard for students to find the class materials when they need them again.

The class materials are really important for students.

It is a problem, for students when they cannot find the class materials. The students really need to have the class materials so they can keep up with what's going on in the class. This is very important for the students to have the class materials.

### **3 Increased Teacher Workload**

Teachers have to teach the things to different classes. They have to say the thing many times. This is a waste of time for the teachers.

The teachers also have a lot of work to do to keep track of everything. Teachers have to do a lot of paperwork.

The things that the teachers teach are the same for all the classes of the teachers.

The teachers repeat the content, for all the class sections of the teachers. Teachers have to teach the academic content to all the classes of the teachers.

### **4. Absence of Monitoring and Analytics**

Schools do not have ways to keep track of what is going on with the students. The schools need something to help them understand what is working for the students and what is not working for the students. This will help the schools make decisions, about the students. The students will benefit from this because the schools will know what the students need to succeed.

Schools need to know if the things they are doing are actually working. This is very important for institutions like schools.

Schools have to make sure that the things they are doing are really helping the students. Educational institutions, like schools want to know if they are doing things the way.

The school needs to figure out if the teachers are doing a job of teaching the lessons. They have to check if the teachers are teaching the lessons properly. This is important because the teachers are supposed to be teaching the lessons in a way that the students can understand. The school has to make sure the teachers are teaching the lessons properly so the students can learn what they need to know.

The students are learning about all the subjects they need to know. They are studying math and science and history and other things like that. The students are getting an education and they are learning about all the subjects that are important for them to know. The teachers are making sure the students learn about all the subjects, like English and math and science so they can do well in life.

I wonder if the students are actually listening to what the teacher's saying in class. The students are supposed to be learning things in class. Do the students really care about what the teacher's teaching the students, in class? Schools have to make sure the students are getting an education. The Schools need to do this so the students can learn things. Schools are the place where students go to get an education. Schools have to make sure the students are getting an education at these Schools.

Schools and colleges have to figure out a way to make sure the students are learning what they need to know. The students need to learn the things that're important for them. Educational institutions, like schools and colleges have to do this so the students can do well in life. They have to make sure the students are learning the things.

### **III. THE SOLUTION**

Meet Digi School Agent, a platform that helps make school work easier. This means they do not have to use different ways to talk to each other. Digi School Agent puts all the school work in one place uses intelligence to help people talk to each other and does routine tasks automatically. It also gives people information they can use to make decisions. The platform is easy to use for everyone. Digi School Agent is a tool, for teachers, students and administrators because it is simple and easy to understand.

The main thing about Digi School Agent is that it has a system for organizing school work. This system helps teachers put up change get and manage their teaching materials in a way that makes sense. They can store things like homework, class notes and announcements and other things they use to teach. Each of these things has information attached to it like the teachers name, the class, the subject what kind of thing it's when it was made and any files that go with it. This means that everything is easy to find and always available when you need it. Digi School Agent is really good, at keeping all this information organized. So students do not lose their notes much and they have something to look at when they miss a class with the notes. The notes are a reference point for the students when they are not, in class. The students can look at the notes. Know what they missed in the class with the students notes.

The platform has a way of talking to people. People can talk to the system in a way and the agent figures out what they mean and does what they ask. This means teachers do not have to do the thing over and over. They can just say something once. It will happen in many places at the same time. This is also good for people who're not good, with computers. The platform is easy for them to use because they can just talk to it in a way.

For people who manage things at schools Digi School Agent is a tool that helps them see what is going on. It makes reports that show things like what's being uploaded to classes, how different subjects are being taught what individual teachers are doing and what is happening from week to week or month to month. This information helps people who teach see what they are doing and find out where students are not paying attention. It also helps make sure that all subjects are being taught equally.

The tool also keeps track of everything that happens on it so you can see what was uploaded and when. Who did it. This way everything is out, in the open. You can see what is going on with Digi School Agent.

The system is made with a set of tools including FastAPI, SQLite and a web page that works well on different devices. This makes the system easy to grow and use with equipment.

The system is also designed to be able to add features like talking to the system getting a short version of content and making good guesses about what will happen next.

#### **IV.     PROPOSED SYSTEM**

The new system puts all the school work in one place. It gets rid of notes things the teacher says in class and messages that are all over the place. Instead it uses a system that keeps everything organized. Each thing the teacher posts has the format. This helps the students and the staff when they need to look at school work. The new system makes it quick and easy to get the school work you need. The system is made to be easy to use. It has two ways to work with it.

First there is a website that teachers can use to make school work change things they already made get rid of old things and look at things in a way that is easy to understand and use every day for school.

The other way is to talk to the system and tell it what to do like saying "show me the homework for class 9A on March 12" or "put up the notes, for chemistry" and the system will do what it is told to do with the information it has. This method of working with things has two parts. It helps people who like to use the style of doing things and it also helps people who like to talk to the computer. The dual interaction approach supports both interface-based workflows and conversational usage of the computer. This way people do not have to look through a lot of menus to get what they want from the dual interaction approach.

The platform has analytics and auditing built in from the start. This means users can get information like how many thingsre uploaded what subjects people are contributing to how many homework assignments are done each week and how active each teacher is. The auditing part shows what has been uploaded recently who is contributing a lot and what is happening in each class over time. There is also a part called Teacher Profile that connects the things teachers upload to their own names so you can see what is going on in each department and compare things, between subjects. This makes it possible to see patterns like which department's the most active or to compare what academics do in science and what they do in humanities. You can find out things, about the active department or compare the work that academics do in the science department and the humanities department.

#### **V.     LITERATURE SURVEY**

##### **1. Role of AI Chatbots in Education: Systematic Literature Review (2023)**

I looked at a lot of studies 67 to be exact. It seems like chatbots are really helping students and teachers. They answer questions. Give students personalized help with their school work. This helps students stay interested in their classes even when they are not in school. When students have questions they can get answers away which helps them keep moving forward with their work.

Chatbots can also help students learn skills like how to write better solve problems and understand things more clearly. They do this by explaining things in a way that's easy to understand and by talking to the students. For teachers chatbots can help with things like answering questions giving out class materials and helping with other tasks.

There are still some problems, with chatbots like making sure they give accurate answers do not give wrong information are fair when grading students and keep student information private. Chatbots are really helping students and teachers. They are getting better at things like answering questions and giving personalized help. The review talks about how important it's to integrate things in a responsible way and that teachers need to be trained properly. It also says that schools should have rules about how to use things. The review emphasizes integration and teacher training and it thinks clear usage policies are necessary, for responsible integration.

##### **2. Application of Artificial Intelligence (AI) in Educational Management (2023)**

This survey looks at how Artificial Intelligence's used in educational management to make learning personal automate tasks that administrators have to do and make tutoring smarter. It also helps to make assessments better. The good things about this are that students are more engaged we can predict how well they will do. We can make decisions about what we teach based on data. The problems are things we already know about: doing what is right keeping information being fair and teachers not knowing enough about technology. The people who wrote this say that Artificial Intelligence should help teachers make decisions and that it has to be fair and clear with people checking to make sure everything is okay. Artificial Intelligence is used to make things better, in management so it is important to get it right.

##### **3. Agentic AI in Education Survey (IEEE Access, 2025)**

Agentic AI is about systems that work on their own and try to achieve goals in education. These systems are different from others because they remember things for a time understand the situation and change the way they work over time. Agentic AI systems can be, like teachers, friends, helpers or people who plan what we learn. They are able to think, make

plans and adjust to things for a long time. This study suggests a way to group Agentic AI systems based on the roles they play in teaching how much they can work on their own and what they look like such as text based systems, characters, robots or systems that use ways to communicate. The benefits of this are that we can make things more personal and get feedback that helps us. We can also look at things before they become a problem. People are worried about being open and honest. They do not want anything to be unfair. They are also worried about how this will change the way teachers do their jobs. In the future we will be working on making things clearer so people can understand how decisions are made. We will also be working on making computers that can remember things and work with people and computers together. The main thing we want to do is make sure people and computers can work together well like teachers and computers working together to help students. Benefits like personalization and proactive feedback from computers will keep happening and we will have to deal with concerns about transparency, bias and shifts, in teachers roles.

#### **4. Applications of AI Models in Educational Analytics and Decision Making: A Systematic Review**

This review of Artificial Intelligence in analytics and decision-making is based on the PRISMA method. It looks at Artificial Intelligence in education especially in developing regions. The people who did this review started with a lot of papers. 19,114 To be exact. They only chose 70 of these papers to really look at and these papers were from the years 2000 to 2021. What they found out is that Artificial Intelligence can find patterns that traditional statistics cannot. Artificial Intelligence can predict how well students will do identify students who're at risk of dropping out and classify what students will achieve after they finish their studies. It does this by using things like decision trees, neural networks, Support Vector Machines and regressions. Even with all these findings a lot of the results are still being tested or are only true, in certain places, which makes it hard to turn them into policies that can be used everywhere especially when it comes to Artificial Intelligence. Data sets are often narrow, and adoption in regions like Latin America is limited despite clear need. The study calls for broader datasets, scalable

### **VI. OBJECTIVES AND METHODOLOGY**

#### **1. OBJECTIVES**

The Digi School Agent is trying to make school work easier by using a system. This system helps teachers, students and administrators store and manage homework, notes from class and important announcements all, in one place. The Digi School Agent wants to replace the way of doing things, which was not very organized.

The main goal of the Digi School Agent is to make sure everyone can get to the information they need easily. The Digi School Agent also wants to use a helper that can understand what people are saying. This way users can get the information they need or make changes without having to look through a lot of options. The Digi School Agent makes it simple for users to find what they need. Functionally, the system supports full CRUD operations through both a dashboard and conversational commands, and offers analytics such as subject-wise content distribution, teacher activity levels and upload totals, along with auditing for recent activity and weekly engagement. From a technical angle, the project focuses on a lightweight, scalable stack: FastAPI, SQLite, HTML/CSS/JavaScript and Google AI. The design emphasizes accurate data storage, quick retrieval and an approachable user experience.

#### **2. METHODOLOGY**

Development followed a straightforward workflow. Requirement analysis first identified communication gaps: unstructured storage, poor accessibility and lack of analytics. In design, the team defined the database schema, UI layout and conversational flow. The backend was implemented with FastAPI and SQLite to support reliable CRUD and analytical operations. The frontend dashboard used HTML, CSS and JavaScript for responsive interaction and real-time updates. Conversational intelligence was integrated with Google AI so natural-language commands trigger backend actions. Analytics and auditing modules were added to surface insights. Finally, the system underwent functionality, responsiveness and reliability testing before being assembled into a full-stack solution.

### **VII. SOFTWARE REQUIREMENTS**

#### **Software Requirement Specification (SRS)**

The Digi School Agent is a tool that makes school work easier to manage. This is something that people can rely on. It is smart. The Digi School Agent has tasks that it must complete. The Digi School Agent has to have qualities so that the Digi School Agent can work properly. The people who created the Digi School Agent thought about what tasks the Digi School Agent should be able to do and what qualities the Digi School Agent should have so that the Digi School Agent can do its job correctly. The Digi School Agent is meant to be helpful. The people who made the Digi School Agent want it to be something that people can trust.



**Functional Requirements**

The system is really helpful for teachers because it lets them manage all their content in one place. Teachers can make homework. Then look at the homework they made change the homework if they need to and even delete the homework if they do not need it anymore. The system also helps teachers, with notes and announcements so they can do things with notes and announcements. All of the content including homework and notes and announcements is kept in a way and the system also gives teachers extra information that is useful for the teachers to have.

The system has a helper that allows users to talk to it in a very natural way like they would talk to a person. Users can ask the helper to do things for them such as getting their homework or putting up notes for the special helper to remind them about the homework and the notes. The special helper is really good at doing tasks, like this for the users.

The main page of the system is really easy to use. The system shows all the content of the system in a way that makes a lot of sense.

The system also gives you updates of the system on time. This is good because you get to know what is happening with the system.

The system looks at how thingsre going and gives you ideas about things like what subjects people are uploading the most. It tells you what teachers are doing and what is popular in each class. The system does this with the homework the notes and the announcements.

The auditing features help us keep track of timestamps and see what people have uploaded recently. They also show us what is happening on a basis.

We have something called a TeacherProfile module that connects information about the teachers with the things they are teaching. This TeacherProfile module is really useful for the teachers. It helps us to know more about the teachers and the Teacher Profile module. The system and the Teacher Profile module work together to make things easier, for us. This really helps the departments understand what is happening and make sense of everything that is going on in the departments. The departments can see what is going on. Then they can figure out what it all means for the departments.

**Non-Functional Requirements**

The system gets to you quickly. It is very good. Always works properly. The system stores your information in a way.

The system is easy to use. This is because the system has an interface that you can use from any device. You can use the system from anywhere.

The system is designed to handle work that will come up in the future. The people who made the system wrote the code in a way. This means the system is easy to understand and fix if something goes wrong with the system. The system is reliable and the people who built the system did a job, with the system. This means the system is easy to take care of and update. The system is good because it can grow with things and it is easy to maintain because it has simple parts and clear instructions, which is what the system is all, about the system.

**Hardware and Software Requirements**

The system requires a minimum of 4 GB RAM, a dual-core processor, and basic storage capacity. It runs on standard operating systems and is developed using FastAPI and Python with SQLite for storage, HTML/CSS/JavaScript for the frontend, and Google AI for conversational capabilities.

**VIII. CONCLUSION**

The Digi School Agent is really helpful because it shows us how we can use Artificial Intelligence and automation to make managing our school work a lot easier. We can use the Digi School Agent and Artificial Intelligence to do things so we have more time to focus on the Digi School Agent and our school work.

The Digi School Agent is really helpful because it gives us one place to put everything. This makes it easier for the teachers, the students and the administrators to use the Digi School Agent. The Digi School Agent is simple, to use.

This thing has a dashboard. You can have a conversation with it. The Virtual Assistant is, like a person that you can talk to. You can talk to the Virtual Assistant like you would talk to a person.

This makes it really easy for you to do tasks and find the information that the system has. The system is simple, to use. It helps you to find the information you need from the system.

The Digi School Agent is really helpful because it shows us what the Digi School Agent is doing. We can look at the Digi School Agent. See everything that is happening with the Digi School Agent.

We can take a look, at what the studentsre doing with each of the subjects. This will give us an idea of how the studentsre progressing with the subjects. We will be able to see what the students are doing with each subject and understand their performance.



The main thing is to check what the students are doing with each subject and find out if they need any help. We need to check what the students are doing with each of the subjects to know what they are learning. Checking what the students are doing with each subject is very important.

We can see what the teachers are contributing to the school. The teachers are doing a lot of work. We can see what the teachers are actually giving to the students. This is really helpful because it shows us what the teachers are contributing. We can even check what happened at a time. We will look at the details of the event at that time to see what the situation was like, with the event. We will check the event at that time.

This thing really helps us make decisions and stay on top of the things that are important, to the decisions we make with the things we have to do.

The Digi School Agent is really helpful, for the Digi School Agent users that is the teachers, students and administrators and it helps them use the Digi School Agent in a way. Built on a lightweight, scalable tech stack, the solution is practical for real school environments and ready to evolve with future enhancements.

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