

## **Can An Angel Become Our Friend?**

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*Relating with today's students is a challenge. Learning institutions are looking for ways to reach students in a better manner, in the face of increased competition, shifting demographics and tighter budgets. Today's students have short attention spans and different learning styles. They learn in short, disjointed bursts. The need for educators, administrators and institutions to provide authentic evidence of learning outcomes and student performance is increasing daily. One of the ways this problem has been approached is by utilizing Computer Management Systems. Another approach to this problem is the use of interactive response systems (IRS). This paper will help instructors and instructional designers who are considering improving classroom delivery and making the learning process more enjoyable. Results of the study show how incorporating these suggestions provide users with superior results.*

### **INTRODUCTION**

Increased competition, shifting demographics and tighter budgets have forced educational institutions are looking for ways to reach students in a better manner. Most Universities face the same challenge: resources are scarce and demands placed on the system continue to grow. Personnel and financial resources must be effectively utilized to achieve the best possible return on investment in terms of both time and dollars. How does one stimulate a student's interest in learning? In particular we could use some structure that will integrate technology, provide tools that assist instructors, save time, produce more positive outcomes, enhance interactions and engage students. One of the ways this problem has been tackled is by offering online courses with Course Management Systems. The trend towards the use of the Internet in academia is clear with a number of courses using the Web for the delivery of course material. This permits the user to access subject matter content and support at a time, place and pace that is suitable and convenient for the individual learner As the internet has become integral to our everyday lives, web-based educational course management systems have become more familiar and more sophisticated. However, there is no reason why traditional courses cannot also take advantage of CMS. The focus of them is to aid instructors develop meaningful learning experiences and improve learning outcomes They help to promote interaction among and between students, support curriculum, assessments and surveys, facilitate team learning and collaboration and feedback. Flexible access to information and resources are key features of online educational

technologies. ANGEL, a popular cms, currently supports more than 140,000 student/course combinations at Penn State. Another beneficial mechanism employed is Classroom Performance Systems. The purpose of this paper is to investigate the perceptions of undergraduate students toward these nontraditional features and help individual faculty members (and instructional designers) who are considering course management systems and classroom performance systems. Results of the study show how instructors may incorporate the use of this technology and how inclusion of these two tools provides educators with better learning outcomes.

## **BACKGROUND**

Use of variety in classroom delivery is essential. Instructors should be concerned in engaging their students. Rather than sit back, we need to promote discussion and create flexible instruction. We need to bridge the gap by changing the classroom from the traditional image to accommodate the increasing technological and social character of education. There are various ways to liven up educational sessions. Some examples of experimental learning include, PowerPoint, whiteboard/blackboard, videos, quizzes, breakout exercises, q&a participation, external speakers, in-class demonstrations and case studies. Business case studies, with discussion and participation, can transform a dull teaching environment into a lively and memorable session. As a result, the use of business situations as part of training sessions is gaining popularity. Case studies can be used in a variety of ways. One way is to use the material for idea generation. First, participants can analyze the case study individually and come up with ideas. Then, those ideas can be shared, discussed and debated in small groups or together by the entire class. It is much more effective and enjoyable for students to discuss real-life situations than to talk about theory alone, according to Nigel Goodwin, Ivey-Nanyang case writer with the Asian Business Case Centre at the Nanyang Business School in Singapore. One knows Business case studies can transform a drab training session into a lively and memorable experience. However, we need to remember, no one method or technology fits all situations.

## **COURSE MANAGEMENT SYSTEMS**

There are numerous course management systems available, some popular ones being Blackboard, Webct, Moodle and ANGEL. Most have similar features. Articles written have compared the functionality of these different systems [1] (Hall 2003; [2] Van de Pol 2001). With an eye on a more efficient use of university resources, the selection of a central product has resulted in the ability to provide a robust campus-wide learning environment with greater potential for faculty and students to collaborate and share expertise and resources. The CMS offering provides an environment in which any student or teacher can view instructional content, collaborate with educators, evaluate academic performance, and access learning resources anytime from anywhere in order to achieve their educational objectives. CMS helps faculty to easily share and reuse learning objects across sections, courses, organizations, and institutions. It provides students with better tools to navigate learning resources and document their work. It offers student-centered learning, greater instructor efficiency, anytime anywhere access, improved evaluation and outcomes management, and access to high quality learning content. It enables instructors to distribute quick and convenient communications with one student or an entire class via announcements, e-mail, and messaging features. It allows for techniques that support individual and alternate student learning styles, individualized programs, and customized

release of content and activities. They typically present a streamlined user interface, utilize breadcrumbs and a course map, include images in quiz questions and permit randomization, allow an equation editor available during tests, have a built-in HTML editor, and add video/multimedia, import/export grades to/from Excel. Course management systems can perform dozens and dozen of functions. Until recently, faculty used cms principally to manage the more mundane tasks associated with teaching. Much use was given to content presentation tools within the CMS [3] (Morgan 2003). However, most instructors, presently, are interested in performing, typically, the following 10 functions as shown by Table 1:

**Table 1: Ten Functions**

Upload a course Syllabus and a document ,
Add a drop box and submit a file,
Enter grades
Comment on a student’s drop box submission,
Create a Team using the Random Team Generator,
Post a message to a course discussion forum,
Create a group,
Add an announcement to the welcome page and/or add a calendar event
Include a page of lessons
Create a brief quiz

There is additional sophistication and flexibility in the advanced features. But these go unutilized by many. More than eighty percent of the four-year private and public universities that use course management systems have settled on a "single product standard" for course management, meaning they use one primary system [4] (Green).

## **INFORMATION REPORTING SYSTEMS**

IRS is a tool that links students via remote control to a professor's computer. Each remote control is assigned to a particular student, making keeping track of responses an easy matter. Classroom lectures become interactive learning sessions when every student must respond to questions during the lecture. Typically, there are a few individuals who answer all the questions. With IRS, it requires all students to respond. Since students have to be engaged for a period of time, it prevents them from slipping out of attention. The technology also balances anonymity and accountability. While students must respond to questions the actual answers individual students give are not displayed. A professor can later go through and extract the answers from individual students to ensure they are paying attention to the material and not simply pressing the same or random buttons. Student presentations are rarely honestly evaluated because people are afraid of offending their peers. They feel intimidated if it isn't anonymous, The IRS allows for anonymous responses, but also permits the professor to check a student's assessment records to make sure they aren't giving all perfect scores. Questions can be in any format including written questions, images, sound or video files. IRS allows one to engage, to access and to achieve. IRS solves the question whether participation is counter-intuitive. In an article by Podkul, in the Daily Pennsylvanian, he says, “Raise your hand in a classroom with 70 students and chances are you will not get called on. Raise your hand in a seminar with 15 students and chances are much

better that you'll get called on.” Rewarding students a percentage of their grade for class participation is a great way to encourage lively class discussion. But many professors fail to realize that there is a hard limit to the effectiveness of class participation grades: In lecture classes of 70 students, large class participation requirements are both unfair and detrimental to quality class discussion. Professors tend to repeatedly call on the same person. When, on a day, 20 out of the 70 people get called on in class, it is unfair for the professor to let the student in the front of the room talk three or four times, especially when 20 percent of your grade is at stake. Even when people are rated on the quality of the comments, it is exceedingly easy to game the system: If a quality comment counts for two points while an average comment counts for one point, just keep raising your hand over and over again to say gibberish, and you'll end up on top. Thus, even though professors say they prefer quality over quantity, their grading schemes often send the opposite message. Clearly, class-participation grading schemes are not scalable to a large classroom environment. IRS helps solve this problem. It allows the following advantages:

#### 1. ENGAGE

IRS allows one to gather opinions. Its use guarantees a democratic vote without any effort to collect the data. It allows anonymity. Each person can give an honest answer without catering to in-house pressure or company politics. It provides a non-threatening environment allowing all students to participate - even the shy ones. IRS keeps students on their toes by having interactive classes. It promotes complete attention by requiring audience participation, thereby invigorating the class. One can deliver embedded evaluation. It can be used alongside a PowerPoint presentation to keep everyone alert.

#### 2. ACCESS

An IRS is equipped to calculate and compile session results instantly for a class of any size. Regardless of if you have a class of 20 or 200, IRS can handle it. It usually can administer and grade multiple-version tests. One can easily access grades. and post them. IRS will obtain feedback instantly generate percentage and graphed totals of each question's answer totals.

#### 3. ACHIEVE

A student's progress can be measured. An IRS provides different reporting tools to quantify and analyze student data in a timely and comprehensive manner. An IRS increases the flow and speed of information. It delivers information to other professors, students, administrators. Professors can relay results. It provides students the chance to see all their grades without using office time to gather them. IRS is a tool that collects and organizes data instantly, specially useful for a professor that teaches several classes in a week. Research on the learning benefits of questions has shown that the learning environment can be improved by more than 100% by the application of various questioning approaches. The use of appropriate questions have proved to engage the learner, focus the learner on specific objectives, help the learner practice retrieval and application of information to answer questions and provide opportunities for feedback allowing students to understand why they missed specific questions.

Universities have been using course management programs such as Blackboard for some twenty years. Blackboard (Bb) is a powerful course management tool that combines the best of the web, email, and bulletin-board forums. Faculty can employ Bb as a medium to post content for and exchange information with students, and students can participate in meaningful learning collaborations. I have been using it in numerous courses, including MIS, Computer Applications, POM. Utilizing this course management system has gone well. While most of us like status quo, there are others who ask, is there something superior? Upon request, I was asked to teach a similar course for a different University, this time employing ANGEL. I was intrigued since I

researched that ANGEL obtained a high level of voluntary adoption – Nearly eighty percent of faculty and students within the first year. Because ANGEL has a “normal” view for beginners and casual users that is simplified for basic use, even people somewhat uncomfortable with technology are using ANGEL. The system supports nearly 100,000 students on six Indiana University campuses. ANGEL customers include two of the largest universities in the United States, Penn State University and Michigan State University, large community college systems, small and large public and private postsecondary institutions. ANGEL provides instructors measurable time savings. It helps them develop meaningful learning experiences and improve learning outcomes. It provides timesaving, pedagogically effective tools. It was like having a teaching assistant. Moreover, there is added sophistication and flexibility in the advanced features. Three of ANGEL’s most powerful and unique areas are: Exception reporting and tracking, Content repositories and reuse and Dynamic, personalized learning paths.

**Exception Reporting and Tracking**

Intelligent and productivity agents help streamline the teaching and learning process. Exception Reporting and Tracking are examples of efficient steps taken to achieve a specific, very common task. The agents enable one to monitor student progress and provide critical intervention and feedback, affecting positive learning outcomes. One example of exception reporting is ANGEL’s WhoDunIt Agent. The agent’s purpose is to quickly identify situations that are “out of bounds” and to communicate with the learner in an efficient manner. It allows the instructor to easily identify and e-mail users based on specific criteria such as “who has not completed their evaluation” or “who scored 85% or higher.” It also allows the instructor to easily identify and email users on specific criteria such as “who has not completed their evaluation” or helps an instructor assess the need for critical intervention as well as positive feedback, based on results of the reporting tool. What’s New Agent displays all items (i.e., the exceptions) that the user may need to address. For example, you can use the What’s New Agent to determine if any assignments have been submitted and not yet graded. Importantly, you can enter the grading form by just clicking in the item in the What’s New list, as shown in Table 2. This tool, in essence, can serve as an automatically updated “to do” list. The following people have completed case ch4.

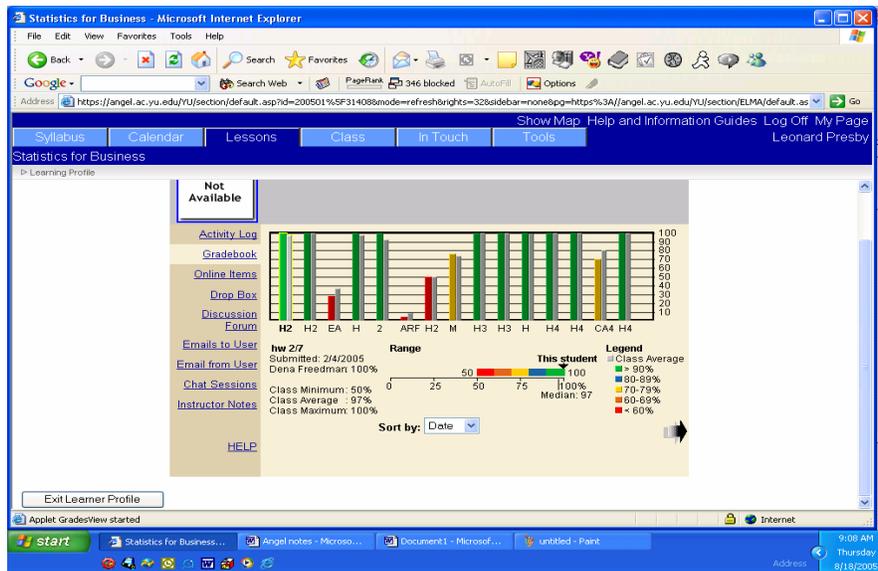
**Table 2: Result of Completed Work  
WhoDunIt - Completed Item  
Statistics for Business**

#	NAME	USERNAME
1.	Benchimol, Marge	mbenchim
2.	Gold, Joseph	Jgold
3.	Green, Samuel	sgreen
4.	Green, Mel	Mgreen
5.	Ulmar, Joyce	Julmar

ANGEL’s Learner Profile organizes all grading information in one display. Other information, or “views,” about the instructor’s interaction with a student that can be accessed includes a log of the student’s activity on the system, all email correspondence, and message and chat

participation. On any of these views, you can “drill in” for more detail by clicking on the item, as shown in Table 3.

**Table 3 Drill Down Results**



The Learner Profile organizes all the interaction points between the student and the instructor into a student-centered view. The task is to “perform a quick, comprehensive review of students’ performance and drill where needed to determine if the instructor should take action.” Other good examples of ANGEL’s exception reporting, tracking, and task-oriented tools include: determining who has not logged in for a specified period, drilling into individual student’s participation on a threaded discussion board and being able to grade it, changing the answer on a test and optionally having ANGEL re-grade previous submissions.

### **Content Repositories And Reuse**

To encourage sharing, reuse, and repurposing of learning content, ANGEL offers repositories/resource libraries that can be organized by course, department, school and campus. These libraries are used to store useful ANGEL learning objects. All forms of ANGEL content, or objects, can be stored in the library including web pages, files, assessments, surveys, drop boxes, etc. to be reused by others with access to the library

### **Learning Paths**

For high-enrollment courses or courses that you teach repeatedly over time, you may be interested in making individual student’s experiences dynamic based on their performance, their learning style, or other learner-specific attributes. ANGEL supports this type of personalization through a unique feature called “Triggers and Actions.” Triggers and Actions provide advanced capabilities to enable ANGEL to take an action on your behalf when a specified event occurs or a condition is met. Figure 1 shows one reason why ANGEL is a preferred system.

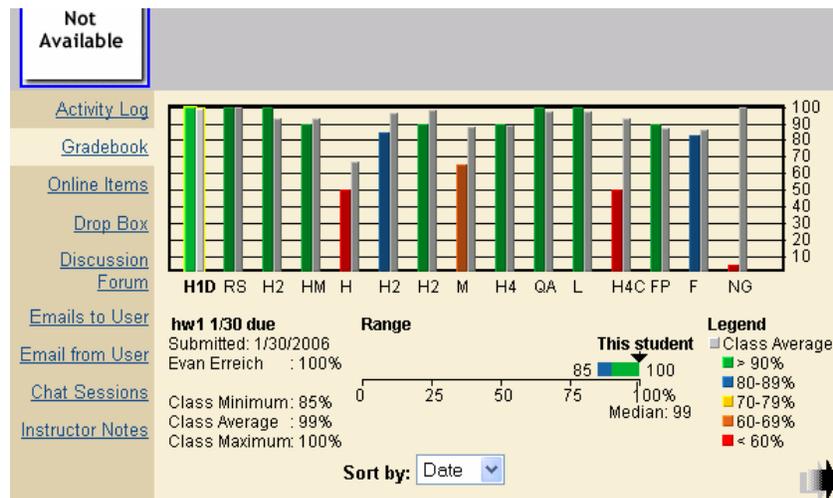
## Figure 1: Instructor Tools

### INSTRUCTOR TOOLS

[Attendance Manager](#)  
 Take attendance and review attendance information  
[Course Gradebook](#)  
 Manage both on-line and off-line grades for this course  
[Learner Profile](#)  
 Learner-centric performance measures and statistics  
[Milestones](#)  
 Manage Course milestones and review user progress  
[Ungraded Items Agent](#)  
 Lists all items with one or more ungraded submissions  
[User Preview Tool](#)  
 Preview how the course looks to users

The instructor has the ability to customize the attendance screen to allow only days that class is in session. Furthermore, he/she has the ability to classify the attendance as present, late, sick or some other description. ANGEL incorporates intelligent agents, such as, Learner Profile, that enable instructors to monitor student progress and provide critical and feedback affecting positive learning outcomes. The Agent keeps instructors on top of student activity by automatically alerting them when students are not meeting performance expectations. It keeps a log of student's activity on the system, all email correspondence, message and chat Participation. See figure 2.

Figure 2. Student Activity



Instructors can include real-time video with slide or web presentations within the optional synchronous tools. Course developers can integrate streamed Real audio and video into a course. Students can create, share, categorize and annotate bookmarks in a personal folder. Students can bookmark any content material in a course. Students can create online clubs, interest, and study

groups. Students can send email to their groups, use a shared chat space, calendar and announcements, and share material privately within the group. Students from different courses can interact in a system-wide chat rooms or discussion forums. Instructors can maintain private notes about each student in a secure area. Instructors can get a report that summarizes individual student performance on assignments. A flag can be set on individual course components to track the frequency with which students access those components. custom reports can be obtained. Instructors can share tracking information with students. Instructors can get a report displaying the date/time each student accessed a specific course assessment, assignment, or self-assessment. Instructors can view all student folders simultaneously.

The system supports management of curriculum and competencies. Instructors can specify prerequisites and sequence of each course within the curriculum. In this schema, discussion forums become powerful teaching and learning tools that engage students in active learning. A grade tutorial is useful for the first time user. ANGEL allows you to place drop boxes, discussion forums, quizzes, etc. right in the same area (folder) of your course content. In Bb, you had to leave the course content area to do any of this and then click back into the course and locate where you left off.. Setting up teams is also less cumbersome; there were several steps in Bb. I particularly like the navigation menu on the left side of the screen which assists users in locating what they want quickly. This also saves time and clicking. One of the powerful features in Angel is Instructor Reports. One of them shows which students signed in for a particular day. See figure 3.

**Figure 3: Log Activity  
Logged Activity Report, Statistics for Business**

**Show entries for** Everyone

**starting on** June 7,  
2006 AM 12 :  
00

**continuing through** June 7,  
2006 AM 12 :  
00

EST/EDT

June 7,  
2006 AM 12 :  
00

EST/EDT

Show Entries
Done

DATE	USER	ITEM	EVENT
6/7/2006 1:12:45 PM	sygreen (Shmuel Green)	LOGIN	
6/7/2006 1:20:00 PM	sygreen (Shmuel Green)	LOGOUT	
6/7/2006 9:50:10 PM	presby (Leonard Presby)	LOGIN	

A useful feature is a summary report of how many times students have logged on in the semester. See figure 4.

**Figure 4: Check in Amounts of Students Login Report Management Info Systems - B**

User	Logins	First Login	Last Login
Abed, Selha	78	9/25/2006 2:29:15 PM	9/27/2006 11:26:29 PM
Birn, Laurie	191	9/25/2006 11:22:24 AM	9/29/2006 4:03:14 AM
Celler, Farrah	56	9/25/2006 11:27:55 AM	9/28/2006 7:51:14 PM
Dabah, Chana	28	9/8/2006 10:40:51 AM	9/21/2006 2:48:07 PM
Deutsch, Courtney	78	9/29/2006 10:35:51 PM	9/29/2006 5:01:37 PM

Students can create, share, categorize and annotate bookmarks in a personal folder. Bookmarks can be created with any content material. Students can create online clubs, interest, and study groups. Email can be sent to their groups and a shared chat space can be used. Students from different courses can interact in a system-wide chat rooms or discussion forums. Instructors can maintain private notes about each student in a secure area. Instructors can get a report that summarizes individual student performance on assignments. Instructors can set a flag on individual course components to track the frequency with which students access those components. Instructors can set up custom reports. Instructors can share tracking information with students. Instructors can get a report displaying the date/time each student accessed a specific course assessment or assignment. Instructors can view all student folders simultaneously. The system supports management of curriculum and competencies. Instructors can specify prerequisites and sequence of each course within the curriculum ANGEL is an intuitive and logical system. It has features for instructors no other system has. The ability to track student activity within each course, the flexible customization enabled by ANGEL action editors, and features including "WhoDunIt" and the Learner Profile. Some of the key features are summarized in figure 5.

**Figure 5: Key Features of Angel**

provides instructors measurable time savings
Improve learning outcomes
sophistication and flexibility in the advanced features
intelligent agents
Learner Profile
Log of student's total activity on the system
What's New Tab
WhoDunIt Agent.
exception reporting

It gives them the chance to take the concepts and techniques they are learning from reading or lectures and apply them to real situations material

**METHOD AND RESULTS**

136 undergraduate business students were surveyed with their impression regarding both CMS and IRS. The grade level distribution of the participants is shown in Table 4. 60% of the students had taken a online class.

**Table 4: Grade Level of Student Participants**

Grade	Percentage of Respondents
Freshman	0
Sophomore	18
Junior	40
Senior	42

Two questions were administered to the students.

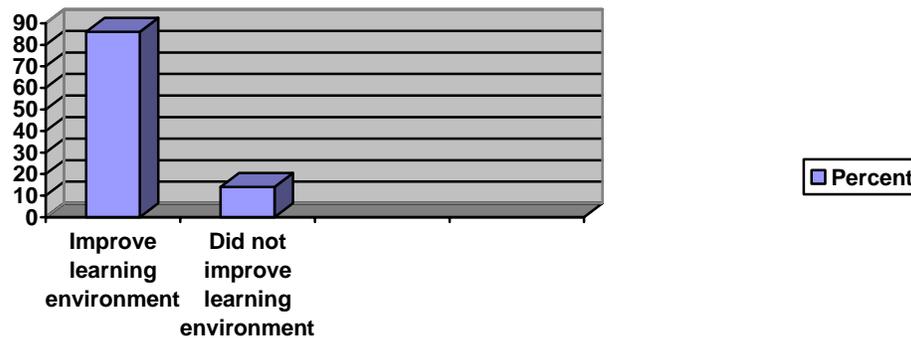
1. Do you find using a CRS contributed to your understanding and enjoying the class more than without incorporating it in the course? Results of this are shown in Figure 6

**Figure 6**



2. Did inclusion of an IRS improve your learning environment by allowing for better feedback? Results of this are shown in Figure 7.

**Figure 7**



## CONCLUSION

Angel's simple interface makes it easy for users to quickly begin using ANGEL. It allows the instructor to easily reuse previously developed content and to individualize instruction. The features exemplify the best of technology harnessed to enhance teaching and learning. ANGEL is robust with features like timed quizzes, the Who Dun It agent. It has Action Items let you create self-paced courses, conditionally release materials, and perform Features like the custom grade book and attendance manager to make tedious administrative tasks easier. The Learner Profile lets you view all student-related activities for any student in the course from one screen. It allows instructors to efficiently manage instruction, communicate quickly, easily, and effectively, and develop the sophisticated learning experiences today's demanding educational climate requires. It helps them develop meaningful learning experiences. It helps students improve learning outcomes, provides sophistication and flexibility. It provides timesaving, pedagogically effective tools. ANGEL has features our previous CMS didn't have like reporting functions, multiple drop boxes, discussion forums that are linked to the grade book. Overall, ANGEL is just more accommodating and useful. The ability to copy one course section to another, the ability to grade discussion forums, students' ability to use the equation editor and HTML editor are among some of the features which tend to be used. In order to help learners develop meaningful learning experiences, improve learning outcomes, provide timesaving, pedagogically effective tools, grab on to this ANGEL.

IRS, in your class, has the ability to inspire and engage students. The Professor has the ability to obtain immediate feedback from every student. One has the ability to streamline grading and export results to Excel, Word, PDF. Typically, automated assessment features lets students answer test questions at their own pace while keeping track of answers and grades behind the scenes. Most important to many is the non-threatening environment allowing all students to participate - even the shy ones. We should all take advantage of innovative products that enhance the learning process in our educational institutions through the use of computer-based technology, software, and the Internet Technology should be utilized as a practical tool for teaching and learning:

Both CPS and IRS, pedagogically effective tools, provides instructors measurable time savings. Each help to develop meaningful learning experiences and improve learning outcomes, while engaging students. It is like having a teaching assistant. A methodology for academic success is possible with the help of these two aids.

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