올인과외: ALL-IN-ONE Platform For Private Lesson

Seunghwan Lee, Moonhee Park, Chaeyeon Lee, and Jaeyoon Jung

capstone Team D

Abstract. These days, many university students are involved in private lessons as a tutor to earn money. However, managing private lessons often causes some chaos between multiple tools and applications to track tuition, class schedules, student progress, and curriculum. This separate management system can become complex and inefficient for tutors. On the other hand, students struggle keeping track of their own schedules, assignments, and progress, which can disturb their overall learning process. Furthermore, parents lack visibility into their children's progress, relying only on partial updates from students themselves, which can lead to incomplete understanding of the process.

To handle all these problems, we propose a brand-new all-in-one web application for any private lessons, designed to track the entire private lesson management process for tutors, students, and parents. Most existing solutions only deal with matching challenges between student and tutor. In other words, there is a significant lack of such comprehensive tools in the current market. So, our web service offers a unified platform for seamless and efficient private lessons.

With our intuitive UI(User-Interface), individually customized tracking system, detailed progress dashboards, and well-systemized monitoring interface, our new web application aims to ultimately enhance the learning experience for everyone involved.

1   Introduction

This is a project proposal for unified web application dealing with private lessons. The project will be referred to as 올인과외 from now on. This name has a meaning of going all-in while managing everything in an all-in-one approach.

1.1   Importance of Suggested Problem

Many university students work as a tutor for private lessons to earn extra income. Private lessons usually involve three different roles of people, tutor, student, and parents. Also, it includes diverse tasks to manage, such as schedules, performances, curriculum, or any notes. For schedule adjustment, the most popular service is Kakao Talk, which offers easy discussion and real-time conversation in non-face-to-face manner. For performance management, usually tutors keep in

track with tools like Excel, or digital memo. When it comes to curriculum check-ing, it frequently requires searching the Internet for information. Even worse, since students' curricula are not standardized due to government policy, it is very confusing and complex to manage.

Like this, managing one private lesson requires at least three different services to look out for information. However, it is important to note that none of the three parties - tutors, students, and parents - can dedicate their whole time for private lessons. One of the primary purposes of private lessons is seamless management with great time efficiency, but this complex process hinders the efficiency.

Especially when the child grows up, entering adolescence, parents struggle to communicate directly with their child. Also, parents often hesitate to ask directly to the tutor due to concerns that they might place additional burden on the tutor. So, many parents have hard time of knowing exactly how the private lessons are progressing or whether their child is performing well.

To solve these problems, an all-in-one web application for private lessons' management and monitoring is extremely important.

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1.2   Previous Approaches

Most of the existing services in the market today merely include online tutor-student matching services. The most popular mobile application '김과외' would be a good example. Another category is management system designed exclusively for tutors. It only offers basic features like memo, calendar, and tuition tracking. However, it lacks communication with students or parents, and it doesn't provide an overview of the lesson.

Many previous services were provided in forms of mobile application, so it has a great merit of mobility, but has a disadvantage on various functions or comprehensive dashboard.

1.3   Proposed Solution

In the context of problems that we have identified and the lack of services in the market today, we propose an all-in-one web application which manages the overall process of private lessons. Our solution highlights especially the conve-nience on management, in a single glance for everyone involved. 올인과외 offers three main features - comprehensive dashboard, customized tracking system, and easy-to-use monitoring interface.

Comprehensive dashboard When learning and studying, metacognition is has become increasingly important these days. Metacognition basically means having an absolute understanding of one's current state while studying. Within precise metacognition, students are expected to study efficiently and know their personal weak points to improve.

Our comprehensive dashboard feature supports students in developing their metacognitive skills. Through the dashboard, students can recognize their score trends, completeness of their assignment, curriculum status and more. This dashboard provides an objective number of one's learning progress so that anyone can easily recognize one's ongoing status. This feature will highly enhance student's learning experience, tutor's teaching experience, and parent's monitoring experience.

Customized tracking system When tutors are involved in private lessons, they often manage multiple students simultaneously. This can lead to confusion regarding each student's ongoing curriculum and progress. To address this issue, our customized tracking system allows tutors to manage their students more efficiently and effectively.

The tracking system is designed to facilitate personalized management for each student. Tutors can easily access and organize information based on individual learning plans, ensuring that no detail is overlooked. Furthermore, even when dealing with various curricula, tutors can select specific academic years to quickly review the relevant materials and progress for each student.

Easy-looking monitoring system From a parent's perspective, it is crucial to have a straightforward and intuitive user interface that allows easy access to information regarding their child's private lessons. Our easy-looking monitoring system is designed with simplicity in mind, ensuring that parents can effortlessly navigate through the application.

The monitoring system provides an overall view of the student's schedule, including supplementary classes and remaining sessions. Parents can easily track the progress of their child's lessons, helping them stay informed about any necessary adjustments or additional support required.

Additionally, parents have the ability to review the student's performance trends, allowing them to understand how their child is progressing over time. Each session includes notes left by the tutor, providing valuable insights into what was covered during the lesson and any areas that may need further attention. This comprehensive approach not only keeps parents informed but also fosters a collaborative environment for supporting their child's education.

2 Motivation & Objective

2.1 Motivation

The current tutoring system operates by managing schedules, tracking grades and learning progress, managing assignments, and monitoring academic performance using various applications and tools separately. This creates inconvenience for teachers, students, and parents alike. In particular, teachers are forced to juggle multiple tools to track students' progress, leading to an inefficient process for managing lessons. Moreover, this method increases the likelihood of students

missing assignments or falling behind due to difficulty managing their schedules. Parents also lack clear information about their child's academic performance and progress, which can cause anxiety about the learning process.

When tutoring multiple students simultaneously, if progress, grades, and assignments are not systematically managed, the quality of lessons may suffer. Additionally, poor communication between parents and teachers exacerbates the situation.

To solve these inefficiencies, a systematic and integrated tutoring platform is needed. All members of our team have personally experienced these issues through tutoring and recognized the negative impact that such inconveniences can have on students' academic performance. As a result, we are motivated to develop an integrated platform that enables better communication and systematic management of learning for teachers, students, and parents. Through this platform, we aim to reduce the complexity of tutoring and improve the quality of lessons.

2.2   Objective

The goal of this project is to develop a comprehensive and intuitive web application for tutoring, providing an environment where teachers, students, and parents can easily manage tutoring sessions.

1. Simplification of Tutoring The platform supports communication between teachers, students, and parents, allowing for clear sharing of progress, assignment completion, upcoming tests, and class schedules. This helps prevent information gaps and enhances the structure of learning.

2. Increased Efficiency Teachers often manage multiple students simultaneously. A tailored tracking system helps them efficiently manage each student's learning plan and progress. This allows for personalized learning management for each student.

3. Support for Improving Student Achievement By providing learning progress reports and performance dashboards, students can clearly understand their learning status and set effective learning goals. This helps students enhance their academic performance on their own.

4. Transparency for Parents A user-friendly interface enables parents to easily check their child's learning progress and grades without unnecessary communication. By providing transparent learning information, it encourages parents to actively engage in their child's learning process.

By achieving these goals, we aim to provide an integrated web application that improves the quality of tutoring by resolving inefficiencies commonly found in the tutoring process.

3   Related Work

We have researched several apps and websites related to tutoring. However, upon examining existing applications, we found several inconveniences and areas that need improvement. Below are the findings regarding a few apps and websites that offer functionalities similar to what we envisioned.

3.1   클래스팅(Classting)

This app is accessible on various devices, including web, mobile, and tablets, making it highly convenient. Additionally, it provides multiple ways to invite members, such as class codes, QR codes, and SMS, and offers various login options, including Google, Kakao, Naver, and standard membership registration, enhancing user convenience.

Moreover, it allows users to extract grade statistics in Excel format, and the progress tracking feature enables students to feel a sense of achievement while helping teachers plan their lessons effectively.

However, due to its many features, 클래스팅(ClassTing) is divided into various categories, which makes it complex. It focuses on communication management between teachers and parents through features such as alert notifications, activity photos, and video transmissions. As it primarily targets classrooms, it may not be suitable for private tutoring users.

3.2   수업기록노트(Class Record Note)

This app allows users to easily record class times, tuition fees, and homework, and provides a feature for checking weekly schedules. The calendar function enables users to note the characteristics of classes, with various settings for regular classes, make-up classes, free classes, canceled classes, and absences. It also includes a feature for setting tuition payment dates.

There is a functionality for recording homework, allowing users to set deadlines, repetition, and types of assignments. Another advantage of this app is that it provides reminders for class times and allows for backups through account synchronization.

However, despite these useful features, a significant drawback is that this app is only available for teachers. It is limited in that teachers cannot communicate homework deadlines, tuition payment dates, or canceled class dates with students or parents.

3.3   레슨북(Lesson Book)

레슨북(Lesson Book) is an app that offers lesson matching, schedule management, and membership management functions. Instructors can manage their students' schedules, while students can book nearby lessons and manage their own schedules. This app allows instructors to easily view the schedules of multiple students in monthly, weekly, and daily formats, facilitating effective schedule

management. Additionally, it enables instructors and students to share class content, allowing for progress tracking and feedback. It also provides a reminder feature to help remind users about upcoming classes.

However, a disadvantage of this app is that it lacks a note function in the calendar. Moreover, features like lesson promotion and nearby instructor search and matching can make it somewhat complex and unnecessary.

3.4   클래스노트(Class Note)

클래스노트(Class Note) provides features such as instant sending, temporary saving, and scheduled sending from the notice board, along with the ability to attach photos and videos. During the time period of 22:00 to 05:59, a message recommending scheduled sending for non-urgent situations appears as part of an etiquette campaign. College students often manage their schedules late in the evening after attending classes during the day. In contrast, students and parents have different active hours, so considering this, the scheduled sending feature is very useful in preventing important notifications from being missed. Additionally, it allows for messages to be sent to specific students or to all students.

The schedule can register holidays and make-up classes, and it is possible to send overall announcements. This app offers various modes, including teacher mode, administrator mode (which allows administrators, principals, vice principals, and homeroom teachers to use tuition payment functions), and parent mode (for parents, guardians, and students).

However, this app includes functions such as medication request forms, consent forms for returning home, and meal plans, making it more suitable for groups targeting younger children, such as those in elementary schools or kindergartens, rather than for private tutoring.

3.5   Other apps, such as 올바른 과외

올바른 과외(Olbaleun Private Tutoring) and 김과외(Kim Tutoring), focus on connecting private tutors and students as their main function, making it challenging to manage tutoring effectively.

Overall, while the reviewed tutoring platforms all have useful features, they either focus solely on tutor matching or have user communication difficulties due to the centralized management by tutors and complex unnecessary functions. Thus, although many tutoring platforms exist, they are not suitable for effectively managing tutoring sessions while allowing smooth communication between teachers and students through a single web application.

4   Problem Statement and Solutions

Many students, parents, and tutors face the inconvenience of using multiple applications to manage private lesson-related tasks such as scheduling, tracking

progress, managing assignments, and monitoring grades. This can lead to missed information, unnecessary time wastage, and conflicts between parents and tutors due to improper management. Furthermore, there is often no structured handover process, and information is communicated verbally, leaving new tutors unclear about the student's previous progress and assignments. This problem is not limited to just a few students, as many tutors and parents share these common difficulties. If tutors fail to systematically manage the progress of their lessons, the efficiency of the student's learning decreases, and parents are left unsure about the effectiveness of the private lessons due to the lack of clear evaluation of their child's academic performance. All of our team members have also experienced these inconveniences while tutoring, and after discussion, we concluded that a solution is necessary.

Our approach to solving this problem is to provide an integrated private lesson management web service that consolidates all essential private lesson tasks into a single platform. It is designed with a strong focus on user convenience, leveraging the advantages of a web-based platform. Instead of switching between multiple applications, users can access all the necessary information in one place, significantly reducing the complexity of managing tasks. Teachers, students, and parents each have their own dashboards, where they can view private lesson schedules, grades, progress, and assignments in real time, minimizing the risk of missing information or causing confusion. This web service, with its intuitive interface, makes even complex functionalities easy to access, saving time and maximizing learning efficiency. Concretely, our solution includes the following components.

4.1   Comprehensive Dashboard

4.1.1 Integrated Calendar Function To reduce the inconvenience of schedule management, we provide integrated calendar feature to all users. Tutors, students, and parents can view the private lesson schedule at a glance, and both tutors and parents can check the remaining private lesson sessions and payment date. This prevents the problem of miscalculating the number of remaining lessons and tuition fees. In addition, tutors can manage different schedules for each student and view the schedules of multiple students in monthly, weekly, and daily views.

For students, all schedule management is mainly done by the tutor, so they don't have to spend additional time to manage their own schedules, which helps them only focus on studying without any disturbing processes.

4.1.2 Progress Report Systematic management of private lesson sessions is key to successful lessons. To achieve this, a progress report feature is provided. The system tracks the student's performance trends over time, displaying the data in clear graphs or tables. Tutors are required to input students' quiz scores or school exam results, to generate a report. This visualized information is also provided for parents, so that they can check their child's progress through

monthly reports, which helps alleviate any concerns they may have about the effectiveness of the private lessons.

Moreover, we expect these progress and grade management features to be useful during the handover process. Each report session also includes notes from the tutor, providing insights into what was covered and what needs further attention. When a new tutor takes over, they can receive information about the whole progress and performance, allowing them to smoothly plan the following lessons.

4.1.3 Assignment Report If students do not complete their assignments properly or if proper evaluations are not conducted, it can cause difficulties in subsequent lessons. To solve this problem, we provide an assignment management feature that allows assignments to be systematically managed. Tutors can assign tasks and track students' performance and completion status. We also plan to provide parents with the ability to check their child's assignment completion status. Additionally, tutors can attach supplementary materials needed for the lessons, which students can download and print directly from the platform.

4.1.4 Exam Management system During the exam preparation period, we provide a D-Day management function to help students plan their studies effectively and give motivations. Students can register key exam dates such as midterms, finals, and college entrance exams, and manage the remaining days until the exam. This allows students to create a structured study plan and focus on exam preparation.

4.2   Customized tracking system

When tutors are involved in private lessons, they often find themselves juggling multiple students simultaneously. Unlike classroom teaching, where a standard curriculum is followed for a group, private tutoring requires handling diverse academic levels, unique learning needs, and separate schedules for each student. This type of fragmented management can easily lead to confusion and disorganization, particularly when tutors need to remember the progress, curriculum, and individualized goals of each student. Keeping track of these various aspects manually or using basic tools like spreadsheets can quickly become overwhelming and error-prone.

For example, if a tutor is managing students from different academic years—one in elementary school and another preparing for college entrance exams—staying on top of each student's specific curriculum, homework status, test results, and feedback can be a daunting task. A minor mistake or oversight, such as mixing up a student's assignment deadline or skipping a part of a customized study plan, can disrupt the learning process and reduce the effectiveness of the lessons. Without a well-organized system, tutors can struggle to provide the high-quality, personalized instruction that is expected from private lessons.

In addition, the system is designed to handle the complexity of managing multiple curricula at once. Tutors can filter and sort the information based on specific academic years or subjects, which significantly reduces confusion when dealing with different educational requirements. For instance, if a tutor needs to check the curriculum for a student in Grade 5 and then quickly switch to a high school student's curriculum, they can do so effortlessly with a few clicks. This flexibility ensures that the tutor can easily keep track of where each student stands and adjust their teaching approach accordingly

Overall, our customized tracking system not only reduces the administrative burden on tutors but also enhances the overall learning experience by ensuring that each student receives the appropriate level of attention and guidance. By providing a clear and organized view of all student data, this system helps tutors deliver more targeted and effective lessons, ultimately improving the quality of private education.

4.3 Easy-looking monitoring system

From a parent's perspective, staying informed about their child's private lessons is crucial, yet it is often challenging due to the lack of direct involvement. Parents typically rely on updates from their children or occasional feedback from tutors, which can lead to a fragmented understanding of the child's progress. This can be frustrating, as parents may feel disconnected and worry about whether their investment in tutoring is truly benefiting their child.

Our proposed easy-looking monitoring system is designed to solve these issues by offering a simple and intuitive interface, ensuring that even non-tech-savvy parents can easily navigate it. The system provides a comprehensive view of the student's overall schedule, including regular sessions, supplementary classes, and the number of remaining sessions, making it easier to track lesson times and any changes at a glance.

As mentioned in 4.1.2 , everyone involved in the private lesson system can receive a visualized report in a daily, weekly, and monthly manner. This feature is expected to keep everyone stay engaged and have meaningful discussions with the tutor. By offering this comprehensive yet straightforward monitoring system, we bridge the gap between parents and the tutoring process, allowing for seamless communication and collaboration to support the student's education.

5   Planning in Detail

5.1   Role Distribution

Our team has divided project roles according to the selected technologies. Design work will be done using Figma to create the user interface and overall design. The frontend will be developed using CSS, while the backend will utilize Django for server management and MySQL for database handling.

Name	Role
Seunghwan Lee	Backend
Moonhee Park	Frontend
Chaeyeon Lee	Backend
Jaeyoon Jung	Fronted

Table 1. Roles

5.2   Schedule

The following table represents the schedule for the team project. Full-scale development will begin in week 6, with a focus on efficient communication between the frontend and backend teams. From weeks 12 to 13, continuous testing is planned to enhance the completeness and quality of the work.

Week	W5	W6	W7	W8	W9	W10	W11	W12	W13
Survey	Create Questionnaire	Survey	Analysis						
Design	WireFrame	Design							
Frontend		UI		API				Beta Testing	Additional Improvements
Design		DB Schema	API					Beta Testing	Additional Improvements

Table 2. Project Schedule

References

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